The background of the cover is a photograph of a sunset over the ocean. The sky is a mix of dark blue, purple, and orange, with the sun just below the horizon. The water is dark blue with some white foam from waves. In the foreground, there are dark, jagged rocks.

# The Arduous Path to Enlightenment

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## Preface

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This book is a book I could never write as a young man. Don't get me wrong. I wrote pieces in high school that are themes to some of the book's topics. For example, I asked my English teacher for permission to write about comparative religions for my class paper. He said no. And he was right. Even with some years of education and international travel, Chapter 2 covers comparative religions, which was the most challenging chapter to write. I struggled to find a commonality between religions and strip away the dogma. Instead, I wrote *Psychedelic Drugs Used in Psychotherapy* for my 11th-grade English paper. Unfortunately, my English teacher did not enjoy the paper, and I earned a D+. I submitted the same paper for my correspondence course, Psychology, at Indiana University. The professor loved it, and I earned an A+. Yeah, I know. I had a lot of trouble in school and had to take extra classes to graduate on time. I don't have that paper anymore, but Chapter 7 covers psychedelic drugs.

Many events in my life helped shape who I am and made me receptive to the material in this book. For example, I found *A Separate Reality* by Carlos Castaneda in my grandmother's basement. My aunt Jan, a hippie, had left it there. This is one of my favorite books. I bought all of Castaneda's books. As an older man with experience, I like his books but question whether they are nonfiction works. As Castaneda wrote each book, he had to outdo the previous books, so his teaching under a man of knowledge became more adventurous and fantastical than the previous book, similar to a movie franchise like Star Wars and Fast and Furious. Each movie must out due the previous one.

My journey across different countries, immersing myself in their cultures, traditions, and religions, has provoked and transformed my thinking. Then I took a teaching job in Morocco, a country that played a pivotal role in shaping the final pieces to this book. It was in Morocco, where I delved into the depths of Islam and Sufism, the spiritual arm of Islam. The pastor at my church in Morocco was a

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beacon of inspiration, seamlessly weaving lessons from the Quran, Old Testament, and New Testament. Her teachings broadened my perspective on religion, challenging my preconceived notions and opening my eyes to new ways of seeing and worshiping God.

We can be harsh and cruel to ourselves through introspection and self-reflection. We atone and ask for forgiveness for those mistakes. If something prevents us from asking for forgiveness, we replace those mistakes with acts of kindness. There is no need to drag a large baggage of regrets and sorrows with us as we traverse the path of enlightenment. We must free ourselves from these regrets and sorrows and become the best versions of ourselves. Bon voyage!

- Ken Szulczyk

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# Chapter 1. Introduction

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“The strong overcome their opponents, the mighty crush them, the shrewd outwit them, the cowardly hide from them, but the enlightened transcend them.”

- Matshona Dhliwayo

The Age of Enlightenment sparked a revolution in thought and ideas in Europe during the 17th and 18th centuries. One of the drivers was the scientific revolution, which led to the ideas of enlightenment. Scientists made discoveries in astronomy, medicine, and physics, fueling ideas in empiricism and rationalism. These ideas laid the groundwork for applying scientific advancements and discoveries to all aspects of our lives. The Age of Enlightenment emphasized humanism, individualism, reason, and science.

Scientists challenged the authority of the church during the Middle Ages. For example, Nicolaus Copernicus (1473 – 1543) defied the church by showing the Earth and planets revolve around the sun. The church believed we were the center of God’s creation and the sun and planets revolved around us. However, we are not even in the center of our galaxy. Sir Isaac Newton (1642-1727) established physics with his three laws of motion. Then Charles Darwin (1809-1882) suggested life on Earth evolved by natural selection. Many other scientists contributed to our scientific knowledge in defiance of the church.

Philosophers contributed to the Age of Enlightenment and challenged the church’s authority. For example, Voltaire (1694 – 1778) advocated freedom of expression, religion, and the separation of the church and state. René Descartes (1596 – 1650) argued that the mind and body are inseparable, and we cannot have one without the other. Of course, we build upon that idea in this book with the trinity – healthy mind, healthy body, and spirituality. At last, John Locke (1632 – 1704) argued for the idea of limited government and that governments have duties and obligations to their citizens. In some circumstances, the citizens can overthrow their government and institute a new one. Locke is also credited with the phrase –

separation of church and state<sup>1</sup>. Accordingly, these political philosophers advocated ideas that challenged the authority of the church and state.

The Age of Enlightenment spread the ideas of liberty, progress, and tolerance, which toppled and altered governments. The American and French Revolutions challenged oppressive monarchies. The American Revolution led to the creation of the United States of America when the 13 original colonies declared their independence from Great Britain in 1776 and adopted the US Constitution in 1789. Accordingly, the founding fathers founded the US federal government on the ideas of separation of powers, checks and balances, and limited government.

The French Revolution was not successful, especially for the Age of Enlightenment. Protestors overthrew the French Monarchy and executed King Louis XVI. The directory ruled over France with Maximilien Robespierre being one of the prominent members. Robespierre received a king's scholarship as a young man to study law at a university, the same man on the committee who ordered the king's execution. Robespierre founded the French Republic on "liberty, equality, and fraternity." A great quote from Robespierre is, "The secret of freedom lies in educating people, whereas the secret of tyranny is in keeping them ignorant."

The French monarch and French republic were beset with numerous problems. Famine and starvation broke out in France after the 1788 harsh winter. People began rioting in Paris over rising food prices. The French Republic invaded neighboring countries and lost military battles. The committee under Robespierre feared the spreading chaos, uprisings in the provinces, and the paranoia that France's enemies would invade.

The committee started the Reign of Terror on September 5, 1793, when the committee gave itself the authority to arrest and

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<sup>1</sup>There is a theory that a government has an incentive to separate church and state. The Christian religion has split into numerous denominations, and the denominations rarely work together while viewing each other as competitors. Thus, the government does not have to worry about the church unifying and challenging the government's authority. Separation of church and state weakens the church's authority and power.

execute anyone. The guillotines in Paris were kept busy as rivulets of blood flowed along the streets of Paris. The Reign of Terror ended on July 27, 1794, when the committee arrested and executed Robespierre. The chaos in France allowed a young, brilliant general, Napoleon Bonaparte, to overthrow the French Republic in 1799 and establish a dictatorship.

Many ideas of enlightenment returned in the 1960s in the United States. The hippie generation triggered the counterculture movement. They pursued the ideas of enlightenment in terms of liberating themselves from traditional societal norms and values and mixed new forms of religious and spiritual practices. The hippies rejected Western religions while embracing teachings and philosophies from Buddhism, Hinduism, Taoism, and other Eastern religions. They lived in communes, listened to rock and roll, smoked marijuana, and practiced meditation and yoga. They also experimented with psychedelic drugs such as lysergic acid diethylamide (LSD) and psilocybin (magic mushrooms). Their goal was to explore their minds, seek wisdom, and achieve higher states of consciousness.

The hippies lived in communes, where a large group would live together. They shared similar interests and learned how to live and cooperate with each other. They lived freely based on the principals of peace, love, and unity. They challenged the concept of a nuclear family and traditional values and allowed members to have relations with whom they liked. A common theme in dystopian novels is the destruction of the traditional family.

The commune helps foster a sense of community, interconnectedness, and shared purpose. It is similar to the religious monasteries, where monks and nuns live together in a commune with few material possessions while focusing on their religious duties, practices, and spirituality. Usually monasteries advocate abstinence and do not allow relations between members because monks and nuns can concentrate solely on their spiritual development without the disruptions and diversions of relationships and material possessions.

The hippies participated in political and social activism. They advocated for a more enlightened society, and they hosted protests

and political demonstrations, such as anti-war, civil rights, environmental protection, and gender equality. Over 100,000 hippies converged at the Lincoln Memorial on October 21, 1967, to protest the Vietnam War. The hippies protested peacefully with the extent of their violence, being some protesters burning their draft cards and the American flag.

The hippie movement waned at the end of the 1960s. It was probably the arrest of Charles Manson and his family in 1969 that put hippies in the nation's spotlight. Charles Manson and his family lived in a commune at Spahn Ranch, a closed-down Western movie set. The Charles Manson family is confirmed to have murdered nine people, including the actress Sharon Tate, but the count may be as high as 23.

The hippies waned in popularity with the federal and state governments and mainstream Americans. The US Federal made LSD and other hallucinogens illegal. Then new drugs came onto the scene, such as cocaine, methamphetamine, and pills like uppers and downers.

The decline of the hippie commune could be based on simple economics. A commune has ten or more unemployed adults living together. That commune needs to have a source of money flowing in to pay for rent, food, utilities, and transportation. Who wants to be the employed commune member who contributes the weekly pay into the community pot to support a bunch of unemployed people lying around the house all day doing drugs?

The hippie influence persists to this day. The hippies stood for peace, love, and spiritual exploration. The rock group Grateful Dead revived some of the hippie's camaraderie, culture, and ideas through their music and concerts until the lead singer, Jerry Garcia, passed away in 1995.

The Age of Enlightenment had a lasting and profound influence on Western civilization. This Age of Enlightenment shaped modern culture, law, philosophy, politics, and science. The Age of Enlightenment promoted education and literacy, and citizens had access to a wide assortment of books, magazines, and newspapers. This age also emphasized secularism, religious tolerance, and religious freedom. Many people still follow the principles of

enlightenment, such as human dignity, liberty, and reason; they also believe in and support democratic governments, human rights, and social justice.

This book revives many of the ideas from the 1960s. We view enlightenment in this book as a means to make us better people and realize all our talents and abilities to improve ourselves and our society. Next, we connect enlightenment to several prominent theories of personality.

## ***How Psychological Theories Relate to Enlightenment***

We start with Sigmund Freud's theory of personality, commonly called as psychoanalytic theory. He defined how the conscious and unconscious parts of the mind interact with each other. We start with the classic parts of our psyches.

- **Id:** The animal, the instinctual part of our brains. This is the little devil who wants to experience gratification and pleasure.
- **Superego:** The superego retains societal norms and values. The superego informs us what is morally right and wrong. The superego would retain our religious beliefs, morality, and piety.
- **Ego:** The ego represents our consciousness and rationality. It mediates the conflict between the id and superego and finds a balance between them.

Freud's theory may not be so far off from reality since each part of our brain specializes in specific processes. For example, the cerebellum handles the balance and coordination of the muscles in our bodies. The parietal lobe handles how we perceive the world, while the hippocampus is involved in learning and remembering. These areas also further specialize with more specialized functions. Our behavior, senses, and thoughts are the different areas in which the parts of the brain communicate with each other. Thus, we can

view the idea of enlightenment as a way to integrate these areas better, which allows these areas to better communicate with each other.

Our unconscious minds shape our behavior and personality. Another aspect of enlightenment is uncovering and exploring these deep layers of our psyche or our minds. We bring unconscious conflicts, motivations, and memories to the surface of our conscious minds, which allows us to self-reflect, integrate, and heal.

The last part of Freud's theory relevant to enlightenment is how we protect ourselves from painful and threatening emotions, feelings, and thoughts. Our unconscious minds use defense mechanisms to deny, project, or repress painful thoughts and feelings. Denial means we refuse to accept these painful thoughts and feelings, even when someone confronts us with the truth. Projection is that we attribute our painful feelings and thoughts to someone else. For example, a spouse has naughty thoughts and feelings for another person who isn't a partner. That spouse using projection will accuse the partner of having an affair. Finally, repression is when the unconscious mind blocks memories of painful thoughts and feelings.

Another aspect of enlightenment is we recognize, confront, and accept these painful feelings, emotions, and thoughts. We learn not to judge them but to incorporate them into our conscious minds. Thus, we contemplate, reflect, and heal ourselves from these painful thoughts and feelings, which helps us gain more clarity, freedom, and peace.

Carl Jung's theory of personality builds upon Freud's. Jung adds the idea of individuation, where some people integrate the conscious and unconscious parts of their mind to achieve self-realization. By becoming self-realized, we learn our true identity, potential, and talents. We use this knowledge to gain a sense of purpose and meaning in our lives.

Carl Jung theorized that we all share a collective unconscious, a deep layer in our minds that all humans share. Jung called these universal images, patterns, and symbols – archetypes <sup>[1]</sup>. The archetypes are inherited and innate <sup>[1]</sup>. They shape our behaviors, emotions, and thoughts.

The common archetypes include:

- **Persona:** Our persona is the mask we wear at social events, gatherings, and situations. Our culture and upbringing shape our persona, which helps protect us from the outside world.
- **Shadow:** The shadow represents our psyche's hidden and repressed aspects. We often use defense mechanisms to bury, deny, and suppress the dark aspects of ourselves. By reflecting, confronting, and integrating the dark aspects of our personalities, we can attain greater authenticity. Thus, we are true to ourselves. We help integrate our egos with our dark side to become more complete. Then we can become more compassionate and empathic with others.
- **Anima and Animus:** The anima and animus reflect the feminine and masculine aspects of our personalities. This could explain why women are usually attracted to masculine men, while men are generally attracted to feminine women.
- **Hero:** The hero represents our struggles, tribulations, and transformations that we go through in life.
- **Self:** The self is the balanced, integrated, authentic self.

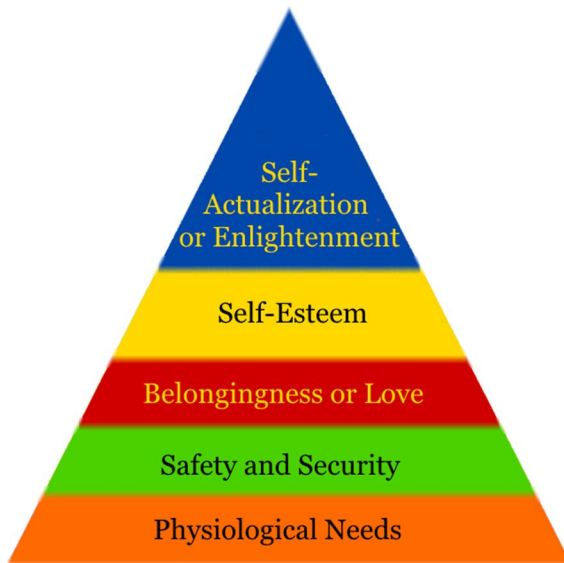
Carl Jung did not define an archetype for spirituality. However, an archetype is represented by images, myths, and symbols. Our quest, our journey to explore our self-archetype leads to integrating and unifying ourselves until we are complete. The quest to explore the wise old man archetype leads to gaining insight, wisdom, and spiritual guidance. Furthermore, we can view the divine archetype as a journey to find God, which helps complete us. We will discover in Chapter 2 that Buddhism, Hinduism, and Islam are a pursuit of human perfection, where we strive to become God-like.

This book shows we can use techniques to explore our minds and our psyches. We use dreams, imaginations, mindful meditations, lucid dreaming, sensory deprivation, and mind-altering

drugs to connect with our archetypes. We can explore the deep recesses of our minds and psyches to gain greater awareness and uncover hidden aspects of ourselves. By exploring our unconscious minds and archetypes, we can gain profound insights, timeless wisdom, and spiritual truths and experience unity or interconnectedness with others. Thus, our explorations help facilitate our journey towards enlightenment.

Maslow's Pyramid, also called Maslow's Hierarchy of Needs, is another psychology theory that applies to enlightenment. He proposed his theory in 1943 <sup>[2]</sup>. Maslow defines universal needs for every human as a hierarchy <sup>[2, 3]</sup>. These needs do not depend on culture since every human requires them, but culture shapes how people pursue and attain these needs <sup>[2, 3]</sup>. Maslow's theory helps us understand human development and motivation as we go about life to satisfy these needs <sup>[2, 3]</sup>.

Everyone starts at the bottom level with physiological needs, which Figure 1 shows. As we satisfy our needs at one level, we can move up to the next level, like progressing player pieces on a game board. The hierarchy of needs are listed from the bottom to the top.



**Figure 1.** Maslow's Hierarchy of Needs

- **Physiological Needs** <sup>[2, 3]</sup>: We need clothing, drink, food, shelter, sleep, and warmth. For example, homeless people wander the streets with no food and shelter. Unfortunately, they do not satisfy their physiological needs and thus remain stuck at this level. Homeless people cannot move up to the next level of needs. Therefore, people struggling to meet their physiological needs are limited in pursuing enlightenment and spirituality.
  
- **Safety and Security Needs** <sup>[2, 3]</sup>: We need control, order, and predictability in our lives. For example, if we live from paycheck to paycheck or are uncertain whether we will have a job tomorrow, we are not satisfying our safety needs. Again, we are not likely to progress up to the next level on Maslow's Pyramid.
  
- **Belongingness or Love Needs** <sup>[2, 3]</sup>: We have emotional needs for interpersonal relationships, intimacy, and belonging to a group with similar interests.
  
- **Self-Esteem Needs** <sup>[2, 3]</sup>: We need to gain self-worth, accomplishment, and respect. We may seek out college degrees and certificates to further our goals, or we may become scientists and doctors to earn the respect of our peers. We can also become entrepreneurs in a high-tech startup. We remain stuck on this level if we feel inferior or have low self-esteem.
  
- **Self-actualization Needs** <sup>[2, 3]</sup>: People achieving this level realize their full potential and nature. They pursue personal growth and fulfill their abilities and talents. They are also creative, solve problems, and possess a sense of purpose. We can place enlightenment at the top of Maslow's Pyramid, where enlightened individuals gain profound insight and wisdom. Some could say enlightened individuals experience a transcendence of their egos because they gain a deep

understanding of themselves and the world around them as they pursue higher states of consciousness.

We are much too complex with diverse motivations and needs for a human personality theory to dissect and explain us. However, to gain enlightenment, we need to integrate our emotional, mental, physical, and spiritual needs. We also see that Maslow's self-actualization is similar to Jung's self-realization. Both theories advocate that to become enlightened, we must pursue personal growth, discover our true selves, and realize our full potential. Then, we can gain compassion, inner peace, and wisdom.

### ***Altered States of Consciousness***

The pursuit of enlightenment involves experiencing altered states of consciousness. We become used to shifting our awareness and perception to other states, which helps us gain profound insights, boost creativity, and make us better humans. We experience altered states temporarily by fasting, meditation, praying, psychedelic drugs, spiritual practices, and sensory deprivation. Although we temporarily experience altered states, the aftereffects of these altered states persist and can last for a while.

A common factor of enlightenment and altered states of consciousness is the dissolution of the ego. Some call this the transcendence of the ego. Our egos provide our sense of identity; they are the voices always talking to us, like chattering monkeys. Our egos stand in between our ids, the part of us that is always seeking pleasure and the superego, the part that imposes morality and restrictions on our behavior. Enlightenment involves the dissolution of the ego, where we can sit in contentment and not want anything. Our egos are not mediating the struggles between our ids and superegos. Without an ego, we feel connected and interconnected with everything in nature. We become more sensitive to what occurs around us. At this moment, time stops while we perceive everything around us. We gain an inner peace and feel a wonderful bliss.

Altered states and enlightenment affect our brain waves. Altered states of consciousness involve shifts in our awareness and perceptions. Our brain waves determine which state of awareness we are in. As our brains process feelings, senses, and thoughts, our brains' neurons fire in clusters like a wind blowing through a wheat field. The firing of neurons gives off electrical energy that we can measure as electrical waves. Our state of awareness involves how fast these neurons fire (the frequency) and how intense (the magnitude). Furthermore, specific regions of our brains handle different aspects of our perception, personality, and senses. These distinct regions of neurons can work together or against each other as they consume energy from firing. Thus, thoughts are energy.

Neurons require energy to fire, and they fire in waves. As neurons fire quicker or more clusters of neurons fire, they consume more energy. We start with the most energy-intensive brain waves first and work down the list.

- **Gamma Brain Waves:** We are conscious and in the highest state as we process higher-level cognitive functions, such as paying attention, analyzing information, and engaging our memories <sup>[4, 5]</sup>. We are writing, reading, solving problems, or learning a foreign language. We are memorizing or recalling memories. Our brains are consuming energy as clusters of neurons process information. Our brain waves oscillate between 30 to 100 hertz. A hertz is the number of times our brain waves alternate from low to high and high to low per second.
  
- **Beta Brain Waves:** We are still conscious and processing data as we concentrate, think, or solve problems. However, our brains do not consume as much energy as they do in the gamma brain wave state, as the brain waves oscillate between 13 and 30 hertz <sup>[4, 5]</sup>.

Our brains require a lot of energy to fire and process information. Our brain waves slow to the lowest level as we enter a deep sleep. The slowest brain wave is the delta wave.

- **Delta Brain Waves:** Our brains and neurons consume a lot of energy during regular operation, which creates waste products and reactive oxygen species (ROS). ROS are charged molecules that can damage other molecules and cells. As we enter deep sleep, our brains slow to stand by, and our bodies turn on cleaning and cleansing processes to clean up these wastes and ROS. During the delta state, our brain waves oscillate between 0.5 and 4 Hz <sup>[4, 5]</sup>. That is one of the reasons why sleep is so important. Deep sleep helps clean up the waste products in our brains and bodies.

The last two brain wave states are associated with altered states of consciousness and enlightenment. These states lie between full consciousness and deep sleep. The two brain wave states are:

- **Alpha Brain Waves:** We are conscious, but we are contemplating, meditating, or relaxing. Brain waves slow from 8 to 12 hertz <sup>[4, 5]</sup>.
- **Theta Brain Waves:** Theta waves are similar to alpha waves. However, we are in a deeper state of relaxation and meditation. Brain waves slow from 4 to 7 hertz <sup>[4, 5]</sup>. Being in this state may allow us access to deeper levels of consciousness and insight, which may boost creativity.

As we traverse the arduous path to enlightenment, we affect all our brain wave patterns. However, the alpha and theta brain wave states are the best altered states to nurture and experience periodically. These two brain wave states guide us along the path to enlightenment.

By periodically experiencing altered states of consciousness, we cause long-term changes to our brains and change our brain structures. Altered states of consciousness affect our brains' neuroplasticity, which means the neurons forge new pathways between neurons and reorganize how our neurons communicate with each other. The neurons in some regions of the brain can

become denser, especially regions that handle attention, emotions, and self-awareness. Altered states may also synchronize different neuron clusters to better communicate with each other, which helps open the door to enlightenment. Thus, altered states can have long-lasting effects on our attitudes, behavior, perception, and worldview.

Altered states of consciousness help integrate and quiet the warring factions of our brains, such as the id, ego, and superego. By reorganizing our brains' structures, our different brain clusters communicate with each other better. The diverse network of neuron clusters becomes more coherent as neurons synchronize communications between neuron clusters. Thus, we can gain new insight and experience bliss and peace as we prepare our minds for enlightenment.

Our minds are similar to light bulbs. The incandescent light bulb emits a lot of heat and gives off light with different, discordant frequencies and magnitudes in various directions. If we could synchronize all the light rays onto one spot with the same frequency and magnitude, we would get a laser that cuts through metal. All the light's energy is focused coherently, focusing the light's power onto one spot. Consequently, enlightenment is focusing the power of our minds onto one idea, one purpose, while ending the warring factions within our brains.

## ***Spirituality***

Altered states of consciousness and enlightenment are intertwined with spirituality. Many religions support practices that help slow our brain waves to the alpha and theta states. It is no coincidence that we feel God or the divine is near us during these states. Some people may define enlightenment as a state when our consciousness and the divine unite, or we become God-like.

We will experience spirituality as we traverse along the path to enlightenment. We can define spirituality as something that surrounds and underlies the ordinary world of our lives, minds, and world. We can also view spirituality as another archetype of our personalities. We can view spirituality as coming from God or the divine that influences the world around us. The Christians call

spirituality the Holy Spirit; Star Wars fans call it the life force that connects and permeates all life in the universe. Whatever one calls it, spirituality is a sacred mystery that gives us meaning and purpose in life. Spirituality helps us make sense of why we are here and that we are all in the same boat, bobbing and dipping in the high waves and winds of life.

Spirituality leads to the idea of the soul. Many religions refer to something that transcends our physical bodies at the time of death. Christians and Muslims refer to this something as the soul, while Jews call it the divine spark. There is some scientific evidence that something separates from our bodies at the moment of death, which we discuss in Chapter 8. Here is where religions differ. Buddhism and Hinduism believe the soul returns to a living body for another cycle of life, while Christians, Jews, and Muslims believe that our soul is judged by how we live our lives on Earth and where we go next in the afterlife.

The mystery of our lives is to realize and cultivate this spirituality. Again, religions differ significantly in this area. Buddhists and Hindus believe we develop our bodies, minds, and spirituality to evolve into souls that escape the endless cycles of death and rebirth. Sufism, the spiritual practices of Islam, believe we are put on this Earth to attain human perfection, pursue the path to God, and merge with Him <sup>[6, 7]</sup>. Sufism includes meditation, rhythmic movements, music, and poetry <sup>[7]</sup>. Christians and Jews think we should live pious lives and act similarly to God. Although the religions differ, the one thread that connects them is that we harbor a deep longing to search for this greater reality, this spirituality that connects us to the Divine. We may have an archetype for spirituality.

Spirituality creates and supports communities. Churches, mosques, tabernacles, and temples form anchors in every community. Places of worship often transcend a place to worship God and the divine. These places help their communities learn to read and write, administer medicine, clothe, feed the unfortunate, and help victims of natural disasters and war. These places also offer places to learn religious doctrines and seek encouragement, insight, and wisdom from religious leaders. At last, spirituality and

enlightenment are often interwoven with some of these religious doctrines.

Spirituality forms a foundation and catalyst for our journey to enlightenment. We use the techniques in this book to awaken our true nature and realize our highest potential. Spirituality helps liberate us from suffering, find our place in this world, give back to our communities, and experience profound joy, tranquility, and wisdom. We attain Jung's self-realization or Maslow's self-actualization.

As we find out in this book, the path of enlightenment intertwines with what we will call the trinity – a healthy body, a healthy mind, and spirituality. These three things are connected, and each influences the others. Thus, as we strengthen our spirituality, our minds and bodies become healthier. We may lower our stress and can endure more stress. We may also heal our minds and bodies and feel that we have more energy and vitality<sup>[8]</sup>. Then our healthy minds and bodies create a thirst to search for spirituality.

Our journey along the path to enlightenment will affect all areas of our lives. This journey will impact our relationships, work, hobbies, and daily activities. Enlightenment is not just about altered states of consciousness and mystical experiences; it also transforms us to become the best versions of ourselves, achieve higher states of awareness, express compassion with others, and connect with God or even become God-like.

## ***Conclusion***

We will learn that enlightenment requires the trinity—a healthy body, a healthy mind, and spirituality. These ideas are embedded in the background of all chapters in this book, and religious texts and scientific studies are cited throughout to hone in on this central idea.

A synopsis of the chapters is as follows:

- **Chapter 2:** An overview of the world's major religions, including Eastern philosophies such as Buddhism and Hinduism and Western religions such as Christianity, Islam, and Judaism. Religions help us understand why God put us

here, what we are supposed to do while we are here, and what happens to us at death.

- **Chapter 3:** We cover the basics of fasting. Fasting exemplifies the trinity of enlightenment – a healthy body, a healthy mind, and spirituality.
- **Chapter 4:** We cover the basics of meditation, such as the health benefits, the various types of meditation, and how to perform them.
- **Chapter 5:** We spend about a third of our lives sleeping; thus, we cover lucid dreaming, when some sleepers become conscious and aware while dreaming. Lucid dreaming offers the possibility of further growth and development by exploring our minds.
- **Chapter 6:** We cover the Restricted Environmental Stimulation Technique (REST), where we meditate and explore our minds in a sensory deprivation chamber. As we unplug all our senses from this world, REST forces us to turn our thoughts inward and self-reflect.
- **Chapter 7:** We cover the controversial methods to attain enlightenment. We explore the use of marijuana and psychedelic drugs, such as ayahuasca, ecstasy, LSD, magic mushrooms, and peyote, to race along the path to enlightenment.
- **Chapter 8:** We cover near-death experiences. We have some anecdotal evidence that something inside us survives and transcends death. Religions appear correct as our souls transcend death and enter another realm of existence.
- **Chapter 9:** We conclude this book with final thoughts. We highlight Calhoun's experiments on rodents, which show that all life on Earth needs challenges, sufferings, and tribulations.

Otherwise, we cannot grow. If everything is given to us without challenges in life, we become weak; then we wither and die.

We use these ideas and techniques to quiet our minds, improve our health, discover inner peace, and attain some wisdom. These chapters help us understand why we are here; what our purpose in life is, and how we progress along the path to enlightenment. Of course, this path is filled with barriers, bumps, and treacherous obstacles to slow our progress. However, we persevere and do not give up. We keep searching for the meaning of life and how we can realize all of God's gifts that he has given us.

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## Chapter 2. Why Are We Here?

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“It is you who must make the effort. The masters only point the way.”

- The Buddha

We cover several major religions in this chapter because religions explain why we are here, what we are supposed to do during life, and what happens when we die.

The first belief is that God or Gods created the universe and then created humans. Even in religions with one God, God has an army of angels who help God manage the universe. Furthermore, God watches over us, gives us rules and commandments, and punishes us for breaking these rules. Religion continually evolves and espouses a variety of rituals, stories, and symbols <sup>[9]</sup>. Religion becomes embedded into our culture and influences how we think and pursue goals. These differences in religion cause us to think differently and grant us different perspectives through our life journey.

Most religions encourage us to perform religious ceremonies and rituals. These ceremonies and rituals aim to keep God on our minds and how best to serve him. Most religions encourage us to approach life with hope, fear, humility, and reverence to the Creator. God encourages us to follow a pious and righteous life without sin. Ceremonies and rituals involve how to ask God for forgiveness for committing sins and how to memorize and recite religious texts such as the Holy Bible and the Quran. The most powerful ritual is the act of praying, where followers bow down to God with humility. We view prayer as a form of meditation, which we cover in Chapter 4.

All religions have sacred objects and symbols. These objects and symbols convey strong emotions. For example, the Hindus view temples, cows, and the Ganga River as sacred. Meanwhile, the Christians view the church, Bible, and cross as sacred. The cross started as a cruel form of Roman capital punishment to humiliate and induce pain and suffering to those condemned to die for certain crimes. The Roman governor crucified Jesus with two thieves. Then

the cross became the symbol of Jesus's crucifixion and resurrection. Finally, Muslims hold the Quran, mosque, and crescent moon as sacred objects. The churches, mosques, tabernacles, and temples become anchors in a community that brings people together to share a common purpose.

A religion becomes an organization of emotions, beliefs, and rituals. A swami becomes a leader of a Hindu temple, while monks and nuns take care of Buddhist temples and monasteries. Christians have over 30,000 denominations. For example, the Roman Catholic Church has a centralized authority structure with the Pope controlling the Catholic churches from Rome. At last, Mecca is the sacred heart of Islam. Mecca has the Kaaba, a simple structure in the center of the main mosque that holds the black stone. Followers circle the Kaaba and kiss the heavenly stone because it fell from the heavens.

This chapter removes the ceremonies and rituals and explains why God put humans on Earth. Religions answer what we are supposed to do while we are here and what happens to us when we die. We cover Hinduism, Buddhism, Christianity, Judaism, and Islam. We shall discover that these religions share common themes to these questions. Although they espouse different ceremonies, rituals, and beliefs, they help us get to the same place.

## ***Hinduism***

Hinduism is considered one of the oldest religions in the world. Hinduism has various gods endowed with different powers. For example, Brahma, the creator of the universe, created the first humans, Manu and Shatarupa, whom we would call Adam and Eve. Another God, Vishnu, the protector, appears as a fish to Manu and tells him of the impending Great Flood. Manu constructed a boat, and Manu and Shatarupa survived the Great Food, becoming the parents of humanity. The Holy Bible separates Adam and Eve and Noah and Naamah. Finally, the God Shiva is the destroyer, but Hindus worship many gods.

Western religions have one God who employs an army of angels. Christians, Jews, and Muslims believe God is the supreme

being who created humans and has an army of angels under his command. The archangel, Michael, is the second most powerful being after God for Christians, while the Israelites named God Yahweh with the second most powerful being Metatron in the Book of Enoch. Metatron is a protector, gives divine revelations, and is a guide between heaven and Earth. At last, Muslims refer to God as Allah with the angel, Gabriel, who delivers God's messages to the people by communicating with prophets. This angel helped the prophet Muhammed to write the Quran. Then the angels, Munkar and Nakir, guide the deceased to their ultimate fate in the afterlife.

We view death as a river that divides life and death. We remain on the banks on one side of the river and live out our lives. As death strikes us, we cross the river to the other side <sup>[9]</sup>. The river provides a clear division between life and death, and Western religions, Christianity, Islam, and Judaism, believe we cross this river once. Then God judges by how we live and whether we pass into heaven or be cast down into the fiery pits of hell. Hinduism espouses a different philosophy where we can cross this river repeatedly as we spiritually grow with each crossing <sup>[9]</sup>. Hinduism believes the soul is eternal and can evolve and grow along its spiritual journey.

Hinduism espouses that everyone has a duty or dharma. That duty depends on what our social roles are and which stage of life we are in. For example, we divide our lives into four parts, and of course, we assume we live for a hundred years. Accordingly, we focus on our education during the first 25 years. The second 25 years are creating a family and rearing children. We can concentrate on building our career and garner assets. In the next 25 years, we go into semi-retirement and give back to the community, while in the last 25 years, we renounce our family and wealth and head into the wild to focus on spiritual development <sup>[10]</sup>.

As we go through life, we must fulfill our duties and strive for spiritual growth. We must be honest, cultivate patience, refrain from injuring other lives, and show compassion and virtue to others. What we do in this life sticks with us and follows us into our next lives, which brings us to the idea of karma.

Karma means that every action we do has a consequence; thus, a cause and effect. If we do negative actions, we incur negative

consequences. We pay for these negative consequences in this life or carry them with us and suffer from them in the next life. We have the famous saying, “You reap what you sow.” If we do good deeds, we take these good deeds into the next life. By progressing in our spirituality in this life, we will be more enlightened in the next life. By doing good deeds in this life, we may experience more favorable circumstances in our next life.

According to Hinduism, we can return to our next life in any form, whether we become insects, animals, birds, or humans. That is why Hindus treat all life as sacred. Some Hindus are vegetarians and do not consume meat. It depends on the sect; however, some sects eat limited portions of meat or sacrifice animals for religious rituals.

In Hinduism, all life and species are interconnected. One particle is connected to another particle, while one life form is connected to another life form. Buddhism continues this concept, where a Buddha is connected to other Buddhas that transcends space and time <sup>[10]</sup>. We can be reincarnated into any animal or insect. The goal is to become peace with the environment <sup>[10]</sup>.

Humans are at the top in the animal kingdom, which provides many opportunities to learn valuable lessons and work through karma. We should accumulate good karma and minimize bad karma. Many religious people, regardless of religion, perform a variety of rituals, such as prayers and meditation, to become nearer to God. We help our fellow humans and contribute to the well-being of society, whether we help feed the homeless, help the sick and infirm, or help with charities. Our goal is to preserve harmony and balance in the universe.

Hindus worship the divine and develop their spirituality. They become closer to God(s) by devoting themselves to rituals, prayers, meditation, and charitable acts. Hindus pursue enlightenment, where they obtain profound understanding and inner peace and feel at one with the universe or even one with the divine. They free themselves from the never-ending cycle of reincarnation. Various Hindu sects utilize different methods and means to achieve enlightenment.

## **Buddhism**

Buddhism was founded in India in the 6<sup>th</sup> century and shares several ideas with Hinduism. Buddhists do not believe in a god or gods, a soul, or participate in religious ceremonies and rituals. However, Buddhist literature is filled with references to deities and Gods along with many rituals.

Although Buddhists do not believe in gods or deities, supernatural figures can help or hinder us in our pursuit of enlightenment. For example, many Buddhists worship Avalokitesvara, a deity who hears people's pleas and comes to their aid <sup>[11]</sup>. As Buddhism spread across Asia, people referred to Avalokitesvara by various names, such as the Lord of the World in Asia, Kuan Yin in China, and Kannon in Japan <sup>[11]</sup>. Buddhists also believe in reincarnation. For reincarnation to exist, something must transcend death and pass into the next physical body, which sounds eerily like a soul.

The God Avalokitesvara helped fasting become part of Buddhism. An Indian legend tells of a poor woman afflicted with leprosy <sup>[11]</sup>. She fasted and worshipped the deity Avalokitesvara, who cured her. Out of appreciation, she was ordained as a Buddhist nun. We will learn in Chapter 3 that fasting switches the body from burning glucose (i.e., sugar) as its primary fuel to fatty acids and ketones. Slow-growing bacteria cause leprosy, and fasting would starve the bacteria of its food, sugar.

Buddhists do not have an Adam and Eve story. Our soul is placed on Earth to allow us to reach the highest level of spirituality <sup>[12]</sup>. Our spirit is sent to the world to experience hardship and difficulties <sup>[12]</sup>. Then we are given a lifetime assignment to overcome these obstacles and hurdles <sup>[12]</sup>. If we fail to overcome these obstacles, they will occur repeatedly in future lifetimes through the cycle of reincarnation <sup>[12]</sup>.

Reincarnation ensures our previous deeds and actions in former lives follow us into the next life <sup>[12, 13]</sup>. Karma ensures we have obstacles in life that originate from the bad habits we have picked up <sup>[12, 13]</sup>. God gives us a way around any obstacle that blocks our path <sup>[12]</sup>. Our goal is to overcome these bad habits and perform good

deeds. Although we may not attain the highest level of the gods, the next lifetime will reward our good deeds <sup>[12]</sup>. Enlightened beings can also experience rebirth. However, they retain their full consciousness and work to help their fellow human beings <sup>[14]</sup>.

The universe has many realms and levels. A person doing evil deeds in one's lifetime could be born in a ghost realm <sup>[12]</sup>, where this person experiences extreme hardship, hunger, lack of water and electricity, and modern conveniences such as those in an undeveloped country <sup>[12]</sup>. Some souls may be re-born in a hell realm that imprisons souls and restricts life's pleasures <sup>[12]</sup>. These souls may experience extreme fear, despair, hatred, and remorse or experience extreme cold, heat, or other harsh conditions. The Buddhist hell does not emphasize physical or corporeal punishment. The time served in hell depends on the severity of the bad karma.

All living things possess a level of spirituality <sup>[12]</sup>. Insects are at the bottom and possess the least spirituality, while reptiles have more spirituality than insects <sup>[12]</sup>. Subsequently, chickens possess more spirituality than reptiles but less spirituality than cows and pigs <sup>[12]</sup>. Finally, humans are kings in the animal world and possess more spirituality than animals <sup>[12, 14]</sup>. At last, deities, gods, immortals, and Buddhas have attained the highest level of spirituality <sup>[12]</sup>.

Buddhism originates with the founder, Siddhartha Gautama, a Hindu prince born in 563 BC in Lumbini, Nepal <sup>[10]</sup>. His first name, Siddhartha, means a "wish fulfilled <sup>[15]</sup>." Similar to many important religious figures, writers, worshippers, and followers embellish the child's birth, such as he radiated with a dazzling light and spoke upon leaving the womb. The nearby animals came to witness the birth, etc.

Christians would recognize the glowing with a dazzling light as the transfiguration of Jesus as he and his clothes shone bright like the sun in front of his three disciples, Peter, James, and John on a mountaintop while the prophets Moses and Elijah appeared by the side (Luke 9:28-36, Mark 9:2-13, and Mathew 17: 1-13 <sup>[16]</sup>).

The king isolated his son, Siddhartha, from the harsh world. Everyone in the king's court was young, pleasing to the eye, and must appear happy; dead plants and leaves were cleaned from the gardens daily <sup>[15]</sup>.

The prince asked his father to travel outside the palace. However, his father tried to hide the widespread poverty, surrounding the palace. The king ordered beggars to remain indoors. People in the streets were ordered to wear their best clothes <sup>[15]</sup>. However, Siddhartha encountered old, frail men, children wearing rags, destitute beggars, and sick people; the prince finally met a wondering, holy man <sup>[15]</sup>.

The problems of the world bothered Siddhartha. He took a last look at his son and wife and snuck out of the palace <sup>[15]</sup>. He renamed himself Gautama and became a sage <sup>[15]</sup>. He also renounced his royalty and kingdom and pursued answers to world problems, such as poverty, suffering, old age, and death, and the most important pursuit - enlightenment <sup>[8, 10, 15]</sup>.

Gautama searched for teachers, but the teachers could not answer how to end suffering <sup>[15]</sup>. He gave up on teachers and pursued his own course. He rejected the world and practiced asceticism, fasting, and yoga for many years. Asceticism is when a devout religious person denounces all worldly pleasures and focuses on spiritual development. Furthermore, Gautama meditated under a Bodhi tree for 49 days, searching for the source of suffering. Mara, the evil one, tried to prevent Buddha from discovering the truth by sending hail, rain, and wind <sup>[15]</sup>, similar to Jesus fasting for 40 days in the desert as the devil tried to tempt him.

One day, Buddha sat under a Bohdi tree and pondered deeply within his mind. He meditated intensely for seven days and nights, awakened with the nature of existence, and remembered his past lives <sup>[8, 10]</sup>. Thus, he named himself Buddha or the “awakened one” <sup>[8, 15]</sup>, while the Bohdi tree became the tree of enlightenment <sup>[15]</sup>. Buddha attained enlightenment at the age of 35 <sup>[10, 15]</sup>.

The extreme fasting and rice pudding could have induced a psychedelic trip. The rice pudding contained milk, which is rich in tryptophan. Thus, tryptophan raises the serotonin and tryptamine levels in the brain <sup>[17]</sup>. In Chapter 7, we shall learn about psychedelic drugs that stimulate the serotonin levels in the brain, such as LSD, psilocybin, ayahuasca, and mescaline. Psychedelics induce hallucinations, dissolve the ego, and enhance spiritual experiences.

Essentially, Buddha went on a natural, hallucinogenic trip induced by extreme fasting and breaking the fast with milk rice pudding.

Buddha spread Buddhism around the country. He traveled throughout the country and ordained 60 monks. He told the monks to go to 60 different places to spread the teachings <sup>[15]</sup>. The monks could add new members to the monastic order, i.e., the sangha. Buddha allowed women to join the order as nuns <sup>[15]</sup>. Buddhists rejected the caste system in India. Eventually, he founded the Anathapindika Monastery <sup>[15]</sup>. The Buddha is similar to Jesus walking through the countryside as crowds gathered around him to hear his teachings. Jesus added twelve disciples, who spread his teachings across Israel and beyond.

The Buddha lived about 80 years and died around 483 BC (543 BC) <sup>[10, 15]</sup>. His last words were, “Everything is subject to change. Remember to practice the teachings earnestly <sup>[15]</sup>.”

The three jewels summarize Buddha’s life.

- **Buddha:** Buddha achieves enlightenment. Gods and Buddha sit at the highest realm and are filled with benevolence and compassion <sup>[12]</sup>. Compassion is the highest form of love with no intentions <sup>[12]</sup>. They have experienced all life’s obstacles and overcame them to achieve the highest level of awareness <sup>[12]</sup>.
- **Dharma:** The Buddha gave us teachings or Dharma. The teachings are summarized in this section.
- **Sangha:** A community or Sangha of monks and nuns, who follow the teachings.

The Buddha tells of the four noble truths.

**1. Suffering:** The world is filled with suffering <sup>[10, 15]</sup>. Just by being born on this Earth, we are meant to suffer. The pain begins for both the mother and child as the child comes out of the womb and into the cold world, leaving behind the cozy, warm womb. Suffering can be physical, such as getting sick, afflicted with a disease, or

feeling the pain and ravages of age. Suffering can be mental, such as feeling lonely, depressed, or sad or living in ruins without the necessities after an earthquake, hurricane, or the ravages of war <sup>[15]</sup>. We may feel exhausted and burnt out working a stressful job for an ungrateful boss while falling behind on paying the bills.

**2. The Cause of Suffering:** Desire, greed, and selfishness cause suffering <sup>[10, 15, 18]</sup>. Desire and greed are bottomless and fleeting. It is like feeding a little monster; it is always hungry and demands attention and food. It sounds eerily like Freud's id. In Sufism, we suffer because we are separated from God <sup>[7]</sup>.

The American economy, for example, encourages everyone to go into debt to buy the most expensive clothes, carry the best smartphone with the latest features, and wear flashy jewelry and clothes. We must live in the most expensive mansions on the block, park modern vehicles in the driveway, and fill our homes with an endless supply of cheap crap.

This cycle of American consumerism is never-ending, mirroring the ever-changing world <sup>[18]</sup>. Companies will devise better smartphones, offer new stylish clothes, and build larger, flashier homes with the latest conveniences. A materialistic attachment gives us the thought of gaining and losing things in life, which is a source of pain <sup>[12]</sup>. We contaminate our souls once we become attached to anything <sup>[12]</sup>. A good example is a rich man who wanted to follow Jesus. Jesus told him, sell all your possessions, give everything to the poor, and then come and follow me (Matthew 19:16-30 <sup>[16]</sup>). We know how that went – the rich man kept his money and ran away.

**3. Eliminate Desire:** We must eliminate desire, greed, and selfishness. Then we will end our suffering. We attain a state of peace, lose our sense of self, i.e., our ego, and become happy <sup>[15]</sup>. We achieve nirvana and can escape the endless cycle of deaths and rebirths. This is part of asceticism, where monks and nuns join monasteries to come closer to God by living with the bare essentials and filling their lives with meditation and prayers.

**4. Eight-fold Path:** Buddha teaches the eight-fold path, which helps us cease our desires and ends our suffering.

- **1. Proper Understanding:** We must correctly understand ourselves and the world <sup>[15]</sup>. For example, we know we must study hard in school, which educates us and makes our teachers and parents happy <sup>[15]</sup>.
- **2. Right Thought:** We must think correctly. We know being angry, greedy, or dishonest will get us into trouble with others <sup>[15]</sup>.
- **3. Right Speech:** We know that lying, gossiping, cursing, and using harsh words can hurt other people <sup>[15]</sup>. Buddha said, “Pleasant speech is as sweet as honey; truthful speech is beautiful like a flower, and wrong speech is unwholesome like filth <sup>[15]</sup>.”
- **4. Right Action:** We do not harm or kill another life <sup>[15]</sup>. We do not steal or use sex in a harmful way <sup>[15]</sup>.
- **5. Right Livelihood:** We do not work that would harm others. We cannot work in jobs that traffic people, produce weapons, slaughter animals, or produce drugs and liquor <sup>[15]</sup>.
- **6. Right Effort:** We do our best to become a better person. We do not use drugs, drink alcohol, become easily angered, or fornicate like hippies ingesting aphrodisiacs.
- **7. Right Mindfulness:** We should always consider what we think, say, and do. We concentrate and focus on everything.
- **8. Right Meditation:** Meditation helps calm our minds. We studied meditation in Chapter 4.

## ***Tibetan Buddhism***

In the beginning, monks and nuns dedicated their lives to the teachings of Buddhism <sup>[8]</sup>. However, new ideas emerged, such as bodhisattva, when people began dedicating their lives to liberating others <sup>[8]</sup>. Thus, anyone could pursue the path of enlightenment, whether they were monks and nuns in monasteries or laypeople working and living in the busy, materialistic world <sup>[8]</sup>. Buddhism became egalitarian and became open to anyone regardless of their gender or social status <sup>[8]</sup>.

Buddhism spread from India, which imposed a rigid caste system. A person is born into a caste. There is no social mobility or movement between castes, and marriage is prohibited between couples from different castes. The highest caste were the priests and scholars, with the warriors and rulers coming second. The third caste was merchants and landowners; finally, the laborers and servants came last. People remained in their caste for their entire lives.

Wandering monks and scholars spread Buddhism to Asia, such as China, Japan, and Tibet <sup>[8]</sup>. Buddhist teachings mingled with local culture, societal norms, and traditions, which shaped practices and teachings in different countries. For example, Christianity went through changes. The Old Testament clearly states that we have our day of rest and worship on Saturday, the day of the Sabbath. Nevertheless, Emperor Constantine, the first Roman emperor not hostile to Christianity, switched the day of rest to Sunday, the Roman day to worship the Sun god in 325 AD, or sun-day, the day of the sun. Christians later justified Sunday because of the resurrection of Jesus on Sunday.

Padmasambhava founded Tibetan Buddhism in the 8<sup>th</sup> century. They took many of the teachings of Buddhism and tried to make Buddhism logically complete <sup>[11]</sup>. Buddhism split into four sects with different beliefs, practices, and rituals. The Mahayana Sect believe their spiritual leader, Dalai Lama, is reincarnated from a deceased spiritual master and a descendant of Avalokitesvara, the deity who helps people in need <sup>[11]</sup>. The Dalai Lama became the Tibetan head of state until the Chinese invasion in 1950.

The goal of Tibetan Buddhism is to reduce ourselves and our environment to nothingness or emptiness. (It sounds like we are removing our ego in the Freudian sense). Then we can visualize the deity in front of us and seek his guidance. We can open our minds and commune with this deity to access his omniscient mind and gain knowledge and ultimate truths. This deity sounds like the entity described in the Tibetan Book of the Dead.

The Tibetan Book of the Dead is a sacred text from Tibetan Buddhism. Although not an easy read, the book gives a glimpse of the dying process. Death, rebirth, and the intermediate state between death and rebirth. Simply put, death is just another journey after life, which we explore in Chapter 8 on near-death experiences. Nevertheless, the Tibetan Book of the Dead corroborates some parts of near-death experiences.

The Tibetan Book of the Dead includes the following key ideas:

- **The Nature of Death:** Death is simply a transition from one state to another. Our consciousness survives. A dying person experiences three states. First, he or she experiences death itself, or the bardo of death. Then, he or she experiences a transition between death and the next reincarnated life, the bardo of dharmata. The last bardo, the bardo of becoming, is when the soul is reincarnated and born into a new physical body.
- **Guidance for Loved Ones:** The sacred text includes instructions and rituals, such as mantras, prayers, and visualizations for loved ones of the deceased to help that soul navigate the challenges in the afterlife. Loved ones help restore the deceased's consciousness after death to help the deceased become accustomed to an unfamiliar environment <sup>[14]</sup>. Loved ones support the deceased in their journey towards liberation.
- **The Wake Ritual:** The loved ones place a white cloth over the deceased, and no one can touch the corpse <sup>[14]</sup>. Lamas chant all day and night while someone reads the Bardo Thodol, which helps the soul reach the Western Paradise Amitabha <sup>[14]</sup>. People

who experience near death describe a beautiful paradise with no time <sup>[19]</sup>. The past, present, and future are merged as one <sup>[19]</sup>. Loved ones must keep the body for three and a half days to four days after death because they believe the deceased is sleeping or in a trance <sup>[14]</sup>. (Jesus took three days for his resurrection, and Jesus brought Lazarus back from the dead, who was dead for four days). Then loved ones cremate the body to prevent the soul from returning to their physical body <sup>[14]</sup>, while poor families cut up the deceased into pieces and feed them the birds <sup>[14]</sup>.

- **The Bright, Dazzling Light:** The souls of the deceased meet a bright, dazzling light that they call Wisdom. Buddhists recommend trusting this light. People experiencing near death report an interaction with a bright light who emanates pure love <sup>[19-23]</sup>. Then they experience a life review under this light's guidance <sup>[19, 21, 23, 24]</sup>.
- **Last Thoughts:** We must maintain awareness and clarity throughout the dying process. Our final thoughts influence the intermediate state and the next rebirth <sup>[14]</sup>. Our thoughts are like seeds. They germinate, take root, flourish, and influence what we become mentally <sup>[14]</sup>.
- **The Illusion of the Self:** We recognize the illusory nature of our ego. Clinging to a fixed sense of identity perpetuates suffering. Enlightenment opens a door for us, allowing us to end suffering and realize how we are all interconnected.

The Tibetan Book of the Dead reinforces the concept of karma and reincarnation. Karma means our good and bad deeds have cause and effect, influencing future cycles of death and rebirth. To attain enlightenment, we must do more good deeds than bad to accumulate good karma. Of course, we want to be reborn as humans because humans have the highest spirituality, which allows souls to attain Buddhahood when we can escape the endless cycle of deaths and

rebirths <sup>[14]</sup>. Thus, we free ourselves from the endless cycle of death and rebirth and achieve nirvana, i.e., enlightenment.

## ***Christianity and Judaism***

The first book in the Bible, Genesis, tells us why God put humans on Earth. The first reference to humans is Genesis 1: 26-28; God created humans in Gods' image, in Gods' likeness. (The author preserves God in the plural). We are created to reflect God's characteristics and nature in our lives and relationships. We were meant to enjoy a close relationship with God. In the beginning, Adam lived in the Garden of Eden to work and care for the garden (Genesis 2:15 <sup>[16]</sup>). They could also walk and talk with God. Although God put Adam and Eve into the Garden to take care of it, we were meant to enjoy a close relationship with Him.

God told Adam and Eve to "be fruitful and increase in number; fill the Earth and subdue it" (Genesis 1:28 <sup>[16]</sup>). God wanted us to populate the Earth and care for and cultivate the land. God also gave humans dominion over the birds, fish, livestock, wild animals, and all animals that move along the ground. Thus, God put man on Earth to care for and govern God's creatures on Earth (Genesis 1: 26 <sup>[16]</sup>).

God gave us free will. He told Adam and Eve that they could eat any fruit from any tree in the Garden except the fruit from the tree of knowledge of good and evil, or surely they would die (Genesis 2: 16-17 <sup>[16]</sup>). Thus, God tested humans to see whether they would obey his commands and submit to his will. The Old Testament is filled with God sending prophets to remind his people of God's commands. The people would receive God's mercy if they lived without sin and temptation and God's wrath if they chose to sin.

The Western religions differ from their Eastern counterparts regarding death and the afterlife. In Christian, Jewish, and Islamic contexts, God creates souls that become united with a physical body while spending their time on Earth. At the time of our deaths, our souls separate from our bodies. Then God judges us on how we live. If we defied God's commandments, God thrusts us downward into the fiery pits of hell. If we lived by the teachings in the Bible or Quran, we lived an eternity in heaven. Hell is the eternal

punishment, unlike Buddhism and Islam. Buddhists and Muslims could be released from hell if they atone for their sins.

Western religions believe that when we die, we are judged and then sentenced. However, ideas of reincarnation were known in the ancient Western world. Plato, a Greek philosopher born in 348 BC, wrote in the last book of the Republic about reincarnation and a near-death experience.

In the last book of the Republic, Plato wrote that Er, a soldier, was killed in battle <sup>[25]</sup>. Er's body did not decay, although other dead soldiers were already decaying <sup>[25]</sup>. Er witnessed the afterlife as other souls stood before judges, where souls were judged and sentenced according to their actions during life <sup>[25]</sup>. Then Er saw the Earth had two chasms. The just souls ascended upward in one chasm while the other souls descended downward in the other, deep chasm with symbols of their misdeeds attached to their backs <sup>[25]</sup>.

Er saw the lives of every animal and man who experienced every condition <sup>[25]</sup>. Er saw the lives of tyrants, famous people, and beggars <sup>[25]</sup>. For every misdeed a soul did to another, a judge sentenced them tenfold <sup>[25]</sup>. Since humans can live 100 years, the maximum penalty would be 1,000 years <sup>[25]</sup>. Souls who caused many deaths, enslaved cities or armies, or were found guilty of other evil behavior, are sentenced tenfold <sup>[25]</sup>. Judges also rewarded souls tenfold who were holy, sought justice, or were benevolent <sup>[25]</sup>.

Er watched the souls choose new lives. The lives they chose depended on previous behavior with souls doing good behavior ascending to a higher state of being while those doing bad behavior descended into lower states. Plato did not refer to heaven and hell in the Republic. However, some souls became animals like birds, lions, and monkeys <sup>[25]</sup>.

The souls are prepared for their next journey and are led to a river, where they drink the river's waters to forget their previous lives <sup>[25]</sup>. Er was not allowed to drink from this river <sup>[25]</sup>. Then Er experienced an earthquake and thunderstorm, as the souls were forced upward like shooting stars into their new births <sup>[25]</sup>.

Er awakened on a pyre after spending 12 days in a near-death experience <sup>[25]</sup>. We cover near-death experiences in Chapter 8. The point of Plato's Republic is the soul is immortal and can endure

every type of good and evil. The end goal for each soul is to attain virtue and wisdom, which leads to harmony and union with the divine. Plato repeats many ideas from Buddhism.

The takeaway from this section is that we were meant to have a relationship with God. We are meant to worship and honor him and take care of the land and creatures on Earth. We are meant to develop morally, grow spiritually, and fulfill our destiny according to God's plans.

Some men and women join monasteries as monks and nuns and practice asceticism. Practitioners take a vow of celibacy and silence, and they fast regularly<sup>[11]</sup>. The idea is to free oneself from hedonistic pleasures and stay away from the materialistic world while focusing on spirituality and becoming closer to God<sup>[11]</sup>. They also keep God on their minds by praying five to seven times daily.

## ***Islam and Sufism***

Islam shares many similarities with Judaism and Christianity. God (or Allah) created Adam and Eve to be God's representatives on Earth, who are called stewards or vicegerents. All humans came from Adam and Eve, and God told them to go, inhabit, and populate the world with their descendants. Humans are meant to maintain balance in the world and manage the world's resources (Quran 2:20<sup>[26]</sup>).

God created humans to worship and obey him. "I did not create the jinn and mankind except to worship Me (Quran 51:56<sup>[26]</sup>)." The jinn are spirits that are a lower form than angels but can appear in human or animal form and possess humans. Thus, God put us on this earth to recognize, obey, and worship our creator. We are supposed to live a righteous life in accordance with God's commandments. We have responsibilities and obligations towards ourselves, others, and the environment. Our lives on earth determine our fate in the afterlife, whether the righteous go to paradise and those who disobeyed God's commandments go to the Fire.

God gave Adam and Eve free will. God told them that they could eat anything from the Garden of Eden except a fruit from a particular tree (Quran 2:35-36<sup>[26]</sup>). God tested Adam's and Eve's free will.

However, the Quran differs from the Old Testament in two ways. First, Eve did not eat the fruit first. Adam and Eve ate the forbidden fruit together. Second, God taught Adam and Eve the consequences of disobedience and the importance of repentance. Adam and Eve were meant to violate God's command and eat the forbidden fruit. Otherwise, Adam and Eve would not have left the Garden of Eden and gone out into the world to represent God <sup>[6]</sup>.

God created Adam in his image; thus, all Adam's children are created in God's form. Hence, we have the potential to attain perfection <sup>[6]</sup>. Prophet Muhammed said, "Assume the character traits of God!" Thus, we adopt God's characteristics and properties. The virtue of Adam's fall is God provided a way for his children to return to Him because He promised to return Adam and his children to paradise <sup>[6]</sup>. That is why Islam calls Adam the first prophet. God taught and guided Adam on how to lead a righteous life and how to worship God. Then Adam passed God's teachings onto his children.

God sent many prophets. Islam accepted many prophets from the Bible, such as Noah, Abraham, Moses, David, Solomon, Elijah, John the Baptist, and Jesus. Abraham became the father to both the Arabs and Jews. The prophets guided people and told them what was good and bad for them <sup>[6]</sup>. The prophets also gave humans instructions on how to return to God willingly before God takes them upon death <sup>[6]</sup>.

Islam sanctions some formal rites with the purpose to draw nearer to God. We have to understand the inner significance while we maintain the external form. For example, Muslim perform a purification ritual where they wash their hands up to the wrist three times and rinse their mouths with water thrown in by their right hand <sup>[27]</sup>. Muslims clean and purify themselves before praying to God.

All Muslims must perform the five pillars of Islam:

- **Shahada** (or profession of faith): Followers have only one God to worship, Allah. The Prophet Muhammad is the last prophet sent to deliver God's message to the people.
- **Salah** (or prayer): Muslims must pray five times a day and perform the prayer with the presence of God in their hearts <sup>[27]</sup>.

The prayers keep God in the prayers' minds <sup>[6]</sup>. The prayer bows down before God alone with the goal of annihilating oneself in the presence of God <sup>[27]</sup>, the dissolution of the ego in the Freudian sense.

- **Zakat** (alms-giving): All wealth and blessings come from God. Giving part of one's wealth to the poor and unfortunate shows compassion and empathy. It also shows that Muslims have a collective responsibility to help those in need, help redistribute wealth, and create solidarity by bringing people together as a community.
- **Sawm** (fasting): Muslims practice dry fasting during the month of Ramadan every year. Muslims cannot eat, drink, smoke, or engage in sexual activity between dawn and dusk <sup>[27]</sup>. Fasting also imposes discipline upon the soul as fasters refrain from passions and desires as they cultivate the attributes of God <sup>[27]</sup>. Muslims are also encouraged not to lie or engage in envy, jealousy, and pride during Ramadan <sup>[27]</sup>. In this sense, followers suppress their Freudian ids.
- **Hajj** (or pilgrimage): All Muslims must travel to Mecca for the Hajj if they are able. The pilgrimage keeps God's remembrance in the believers' hearts <sup>[6]</sup>. Many banks in Muslim countries have special savings accounts for the Hajj.

Some could argue that Islam is a form of karma yoga. All Muslims must observe the Sharia, the law that defines the religious and secular duties and the consequences for breaking these rules <sup>[6]</sup>, similar to karma, where an account of our good and bad deeds are recorded and follows us into our next lives. The purpose of the Sharia is to define the activities that conform to God's will <sup>[6]</sup>. Islam has a branch that not all Muslims recognize, which is Sufism. Sufism focuses on the mysticism and spirituality of worshipping God. They believe in the dissolution of the ego and merging their consciousness with God <sup>[7]</sup>. Some Sufism meditation practices are

included in Chapter 4 of this book but Sufism also includes music, poetry, and rhythmic movements <sup>[7]</sup>.

Muslims believe the soul connects the spirit to the corporeal body. The spirit is pure, while the body is corrupt <sup>[6]</sup>. The soul becomes the life and consciousness after the person is born from the meeting of light and clay <sup>[6]</sup>. The soul is immersed in the world open to the infinite <sup>[6]</sup>. Although humans are created from the single divine spirit, souls evolve to become distinct and unique <sup>[6]</sup>.

Islam considers humans to hold a special status since humans can reason, worship, and hold stewardship over the Earth. Muslims live their lives until their deaths. At death, people no longer have the freedom to choose whether they shall live by God's guidance <sup>[6]</sup>. Humans can freely choose what type of existence they experience in the afterlife. They can choose to cultivate their soul to achieve perfection and conform to the Prophet's example, or they can reject the teachings <sup>[6]</sup>. Once God has lifted his veil, the individual's self is annihilated. The Muslims with piety and righteousness ascend to paradise while the others are banished to the Fire.

Muslims believe God does not send people to hell as punishment but to have mercy on them <sup>[6]</sup>. If a Muslim who rejected God's guidance is allowed into paradise, that person would suffer embarrassment and torment in the presence of God and the prophets <sup>[6]</sup>. Nevertheless, God has mercy and is forgiving. Some Muslims banished into hell can repent. Then God redeems their souls and allows them into paradise, not the eternal damnation in a Christian sense. God is forgiving.

Muslims are peaceful people. However, Muslims have the concept of Jihad, where they will go to war as a last resort to maintain their way of life as described by God. They use war to drive out the enemy, establish security, and secure peace <sup>[27]</sup>. Jihad also prevents evil forces from annihilating their society and allows Muslims to practice their faith according to God's wishes <sup>[27]</sup>. By sacrificing their bodies on the battlefield to protect their way of life enables Muslims to gain immortal lives in paradise <sup>[27]</sup>. Thus, Jihad ensures Muslims can pray and worship God with no hindrances and obstacles.

Jihad is also an internal battle. Muslims must watch over their soul to keep their soul pure while preventing evil forces from entering their souls <sup>[27]</sup>.

The purpose of Islam is to remember God; Muslims turn their minds and whole existence to God in order to become God-like <sup>[6]</sup>. If people find wealth and view themselves as good and positive, they are not humble and will have little love for God <sup>[6]</sup>. The ultimate goal is to return to the original state of humans, which they refer to as the annihilation of the ego, where nothing exists but God <sup>[6]</sup>. Hence, Muslims can return to their natural state before God created the universe.

## ***Conclusion***

We connect religions to the ideas of Sigmund Freud. He espoused that our minds have three parts: The id, the superego, and the ego, which are defined as:

- **Id:** The id is the primitive part of our brains. It is the little, impatient demon who is always hungry and wants to experience pleasure and instant gratification. Religion tries to control, discipline, and moderate this part of our psyches.
- **Superego:** The superego houses and internalizes the morals, societal values, and rules that we learn while growing up. It becomes a repository for morality, conscience, and feelings of guilt and shame when we violate these moral principles. The superego also contains the ideas of karma and divine judgment when we die.
- **Ego:** The ego is the mediator between the id and superego. It becomes the part that engages in self-reflection, ethical decision-making, and moral reasoning. Religion helps to shape and cultivate introspection, mindfulness, and self-awareness.

We use enlightenment to bring peace to these warring parts of our brains, similar to the Jihad, the internal mental battle that we all face.

We use Carl Jung's concept of self-realization to integrate our minds' unconscious and conscious parts. We also use the techniques in this book to reconcile our inner conflicts, embrace our faults and talents, and accept our good and dark aspects. For example, if we relive a traumatic experience, we focus and take this traumatic experience and incorporate it into our ego. Consequently, we foster creativity, personal growth, and spontaneity to become the best that we can be. We develop a sense of calling or purpose that uses our passions and talents and aligns with our values. Thus, the goal of enlightenment is to become the best versions of ourselves as we dodge bullets and bombs on the battlefield that we call life.

One thing that religions teach us in this chapter is to help us become better versions of ourselves. These 11 vows allow us to think, meditate, and self-reflect, which helps strengthen our bodies, our minds, and our spirituality. These ideas are summarized from the religions discussed in this chapter.

- **1. Fasting:** All religions discussed in this chapter advocate fasting. Although fasting has a spiritual dimension, it helps us gain control over that little, impatient demon, the id. We learn to say no to that always ravenous, naughty little demon. Regular fasting helps reinforce the theme of this book—the trinity for enlightenment: a healthy mind, a healthy body, and spirituality. In Chapter 3, we learn about fasting in detail and its importance in strengthening the trinity of enlightenment.
  
- **2. Determination:** An enlightened person must have strong determination. The path to enlightenment is a long, arduous journey filled with numerous obstacles, roadblocks, and potholes. Only a determined person can overcome these obstacles, roadblocks, and potholes and progress along the path of enlightenment <sup>[28]</sup>. We learn to become better people <sup>[15]</sup>. We work harder; we study harder, and we become better versions of ourselves.

- **3. Energy:** Practicing meditation and quieting our minds can make us drowsy and sleepy<sup>[28]</sup>. We are also used to interacting and conversing with others; it takes time to quiet our minds and withdraw from external stimulation<sup>[28]</sup>. We need alone time to self-reflect.
- **4. Ethicality:** Unethical behaviors and unhealthy mental thoughts have harmful effects on us<sup>[28]</sup>. These behaviors and thoughts stir strong emotions like anger, hatred, lust, and greed<sup>[15, 28]</sup>. We can become trapped in these behaviors and thoughts as we continue doing them and reinforcing them<sup>[28]</sup>. Thus, we do not kill, steal, misuse sex, or use intoxicants<sup>[11, 15]</sup>. We, of course, discuss using marijuana and hallucinogens in Chapter 7 to quicken our pace along the path of enlightenment. We also avoid extreme forms of eating, drinking and entertainment and avoid taking an exalted seat<sup>[11]</sup>.
- **5. Truthfulness:** Lying is similar to ethicality and includes backstabbing, mean words, and gossiping<sup>[15]</sup>. Once we tell one lie, it may lead to more lies. Lying could also stir our emotions in fear, guilt, and worry if people discover that we have lied<sup>[28]</sup>. Enlightened individuals tell the truth and behave ethically; thus, they hide nothing<sup>[11, 28]</sup>. They mean what they say<sup>[28]</sup>.
- **6. Renunciation:** We relinquish and abstain from our sensory pleasures<sup>[28]</sup>. Remember Maslow's hierarchy of needs: The lower needs engage our sensory pleasures and materialistic needs<sup>[28]</sup>. We remove these distractions, and then we can focus on higher needs and higher levels of thinking<sup>[28]</sup>. That is the importance of fasting—to sever the connection between food that holds a tight grip on us.
- **7. Patience:** Impatience comes from the need to change something<sup>[28]</sup>. We learn calm and patience and live in the current moment<sup>[28]</sup>, relishing everything around us in awe. A

person who accepts his or her current moment can accept the way people are <sup>[28]</sup>.

- **8. Equanimity:** From childhood, we learn and are conditioned to like and dislike things in our environment <sup>[28]</sup>. We become servants to our environment and have difficulties concentrating and finding our purpose <sup>[28]</sup>. As we become enlightened, we perceive all experiences with ease and calmness, whether the experiences are beautiful or horrible <sup>[28]</sup>.
- **9. Generosity:** Generosity is embedded in all great religions. If we understand the true nature of generosity, we share it with others, like a meal, clothes, or shelter <sup>[28]</sup>. Generosity helps us overcome the intense emotions of attachment, greed, and hatred as we help others in need <sup>[28]</sup>.
- **10. Loving Kindness:** We wish good will to others whether they are our friends, neighbors, or enemies <sup>[28]</sup>. We express loving kindness in prayers and meditation. In Chapter 4, we learn the technique of loving kindness meditation.
- **11. Wisdom:** Wisdom occurs at many levels. We gain wisdom as we concentrate and focus our minds and remove bad habits and thoughts <sup>[28]</sup>. Positive habits and thoughts create a positive feedback loop that allows us to control and focus our thoughts even more, obtaining more wisdom <sup>[28]</sup>. We also learn to work hard and not be lazy or idle <sup>[15]</sup>.

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## Chapter 3. Fasting

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“O you who believe, fasting is prescribed for you as it was prescribed for those before you, that you may become mindful of God.”

- Quran 2:183 <sup>[26]</sup>

Fasting is the backbone of enlightenment because it embodies all three aspects: A healthy body, a healthy mind, and spirituality. The spirituality of fasting kicks in anywhere from 10 to 24 hours, when peace and calm inundate the mind. Fasting brings inner peace.

What is fasting? Fasting is depriving ourselves of food for some time. One form of fasting, the dry fast, deprives a person of all food and drink, even water. In this chapter, we briefly discuss all aspects of fasting.

Every religion has incorporated fasting into its practices. The following faiths show how prominent fasting is:

- Jews practice dry fasting during the Day of Atonement, also called the Yom Kippur, the holiest holiday of the year.
- The major prophets of the Bible were fasters. Elijah, Jesus, and Moses performed a 40-day fast (1 Kings 19:8, Exodus 34:28, and Matthew 4:2, <sup>[16]</sup>).
- Other Biblical fasters include David, Esther, and Luke (2 Samuel 12:16, Esther 4:16, Luke 18:12, <sup>[16]</sup>). Luke, the doctor who witnessed Jesus’s miracles, performed intermittent fasting when he fasted two times per week (Luke 18:12, <sup>[16]</sup>).
- Saul was the evil Roman tax collector who became blind at the sight of the resurrected Jesus on the way to Damascus. He dry fasted for three days and transformed into Paul, one of the most influential Christians in the Bible (Acts 9:9, <sup>[16]</sup>).

- Muslims dry fast from sunrise to sunset during the month of Ramadan. The Prophet Mohammad recommended followers dry fast on Monday and Thursday.

Not all Christian denominations follow fasting despite numerous Biblical characters being avid fasters. For example, fasting has fallen out of favor for the Western Roman Empire followers, while the Eastern Orthodox still fast. Furthermore, the Mormons of the Church of Latter-day Saints dry fast on one Sunday each month.

We follow the Buddhists' reasons for fasting, where fasting is the body's meditation <sup>[29]</sup>. In the beginning, Buddhists viewed eating as a choice, but that choice coalesced into a habit. Bodily processes work against us and try to get us to eat <sup>[29]</sup>. That little demon inside of us always wants to be fed. Therefore, our bodies provoke a demand for food by creating urges and cravings. Thus, Buddha says the body strikes out if the body's needs, urges, and cravings are not met. Thus, fasting helps our bodies overcome this incessant consumption <sup>[29]</sup>.

Constantly eating creates another problem. We restrict ourselves to the physical level when our minds are preoccupied with consumption <sup>[29]</sup>. We remain at the bottom level of Maslow's Pyramid and fail to restrain Freud's id. Although we must utilize consumption to obtain energy to move to the next level, we must focus on shutting down this consumption to achieve a higher state <sup>[29]</sup>. That is why Buddhist monks eat once daily, usually in the morning <sup>[29]</sup>. Fasting becomes a means of attaining contentment for the body by restricting eating time; hence, we achieve freedom from eating <sup>[29]</sup>.

We do not use fasting to harm the body <sup>[29]</sup>. For example, the Jain religion, an offshoot of Buddhism, practices extreme fasting, where the followers starve themselves to death to attain spiritual enlightenment <sup>[30]</sup>. Thus, the Jain followers escape the perpetual cycle of death and reincarnation via fasting until death.

## ***Why Does Fasting Work***

When we start a fast, our body gradually transitions from burning glucose for fuel to utilizing fatty acids and ketones. The fasting clock starts ticking once we consume our last morsel of food or sip our last calorie-laden drink. It takes our digestive systems approximately 6 to 8 hours to process that food into energy. The first hormone, insulin, peaks an hour after our last meal.

- **Insulin:** Insulin is a hormone that informs cells that glucose is available for energy. Insulin also tells the fat cells to begin storing more fat. Insulin levels tend to peak an hour after eating and gradually fall.

Between 12 and 16 hours into a fast, insulin and blood glucose levels drop to low levels <sup>[31-36]</sup>. The body switches to glycogen, which is stored glucose.

- **Glycogen:** Our bodies store glucose in the liver and muscles as glycogen. The liver stores from 400 to 500 calories of glycogen, while the muscles contain 1,400 to 2,000 calories <sup>[37, 38]</sup>. As we consume glycogen for fuel, our bodies release excess water.
- **Glucagon:** This hormone has the opposite effect of insulin. Glucagon peaks about 13 hours into a fast and causes the liver and muscles to release glycogen <sup>[31, 32, 34, 35]</sup>.

Glucagon informs the cells that energy is becoming scarce. Thus, the body switches to consuming fats for energy. The fat cells release fatty acids, which the liver breaks down into ketones. Many cells in our bodies can utilize ketones and fatty acids for fuel. The liver also produces limited quantities of glucose, which the liver, red blood cells, and 25% of our brain use for fuel.

After 12 hours into a fast, we begin to experience significant physiological changes. However, the real benefits of fasting start to

kick in after 16 hours <sup>[39]</sup>. This longer fasting period allows our body to switch to fats for energy.

### ***Autophagy***

Autophagy is one of the cleansing and cleaning processes of fasting. The word autophagy comes from two words: auto, meaning self, and phagein, meaning to eat <sup>[40]</sup>. Our cells are little cannibals, and they can potentially eat defective, damaged parts of themselves and recycle the proteins <sup>[40-45]</sup>. Our bodies evolved with autophagy, which helps us survive starvation periods <sup>[43, 44]</sup>.

Our bodies need protein to build new structures. As we evolved, we would alternate between periods of starvation and feasting. The goal of our bodies is to survive, which we call hormesis. Furthermore, our cells have two sensors to detect the presence of food and energy. The first sensor is the mammalian target of rapamycin (mTOR) that senses insulin, proteins, oxygen, and energy <sup>[36, 40, 43, 44, 46-50]</sup>. Thus, mTOR switches off when no external energy is coming in. The second sensor is the adenosine monophosphate-activated protein kinase (AMPK) that turns on when nutrients and energy become scarce <sup>[36, 44, 45, 48, 50]</sup>. AMPK can also turn mTOR off <sup>[44, 50, 51]</sup>.

As we start fasting, our bodies process the remaining food in our digestive systems. Eventually, insulin and glucose levels drop as carbohydrates and protein become scarce. Then AMPK turns on while mTOR switches off. Then our cells create little Pacman called autophagosomes that search for damaged parts of the cell. The Pacman gobbles the damaged cell part and fuses with lysosomes, which are little stomachs filled with digestive enzymes. The enzymes break down the cell parts into proteins, which the cells can utilize to build new cell structures during times of starvation <sup>[40, 42, 44]</sup>. The autophagosomes can also gobble and break down bacteria and viruses <sup>[44]</sup>. Thus, we take an old car and replace the bad and damaged parts with new parts. In no time, we are driving around town in style in a remodeled classic car with an engine purring like a newly born kitten.

Researchers debate how long we must go without food before autophagy clicks on. Estimates range from 8 hours to three days. Our digestive systems have processed all the food within 13 hours because glycogen levels increase while insulin levels drop <sup>[31]</sup>. Furthermore, researchers discovered that the autophagy gene, ATG12, becomes activated during 16-hour fasts for overweight fasters <sup>[52]</sup>. Nevertheless, overweight people may suffer from elevated insulin levels that could inhibit autophagy <sup>[44, 53]</sup>.

Two Nobel Prizes were awarded for mapping out autophagy. In 1974, Christian de Duve was awarded the Nobel Prize in Physiology and Medicine for discovering autophagy, or more specifically, the lysosome. In 2016, Yoshinori Ohsumi won the Nobel Prize for discovering several autophagy processes.

Autophagy is a complex process and comes as three types.

- **Macroautophagy:** We already discussed the first type, when AMPK switches on while mTOR switches off. The cells create autophagosomes that resemble little Pacman. They eat the damaged cell structures, damaged proteins, debris, bacteria, and viruses. <sup>[42, 43, 45-47, 49, 54-56]</sup>. Then the autophagosomes attach to lysosomes, which contain the digestive enzymes to break down the debris <sup>[44-47, 49, 54-57]</sup>. The broken-down components become proteins and raw materials that cells can fashion into any cell part <sup>[43, 46]</sup>.
- **Chaperone-mediated autophagy:** This autophagy type has a more direct route than macroautophagy. The cell has unique proteins that search and attach themselves to other proteins within a cell. Then the protein fuses directly with the lysosome to break it down <sup>[45, 47, 58]</sup>.
- **Microautophagy:** This autophagy type is similar to chaperone-mediated autophagy. The lysosome can attach directly to any cell part except the nucleus <sup>[45, 47]</sup>. The nucleus contains our DNA.

Fasting and nutrient deprivation can activate both macroautophagy and chaperone-mediated autophagy [47, 58]. Meanwhile, microautophagy is part of a cell's routine maintenance, which fasting does not trigger.

Autophagy is essential for a long, healthy life [48]. Autophagy recycles the damaged parts of a cell and helps old cells function like new ones. Thus, autophagy slows aging and age-related diseases by having cells function at their best [41, 42, 47, 48]. Furthermore, autophagy fixes one of a cell's most important parts, the mitochondria [45, 54, 59]. Scientists call this mitophagy. Mitochondria are a cell's power plant that supplies heat and energy to a cell. Autophagy helps maintain healthy mitochondria that ensure our cells have plenty of energy.

We do not know how intense autophagy becomes during a fast, except through animal and rodent studies. For example, scientists studied male mice and detected few autophagosomes in their neurons when they were well-fed. [60]. The autophagosomes became larger and more numerous after 24 hours of fasting [60]. After the mice fasted for 48 hours, the mice's neurons had about 3 to 4 times more autophagosomes, which were also larger [60]. Of course, mice have a higher metabolism than humans, and fasting for 24 hours is much stronger in mice than in humans.

We do not have a way to measure the intensity of autophagy since it occurs within our cells [61]. We have two indirect measures. First, we could measure our insulin and glucagon levels because we know blood insulin levels decrease while glucagon levels increase during a fast [62]. Second, we can measure the degree of ketosis by measuring the ketone level. Our bodies switch to fatty acids and ketones as food becomes scarce. Thus, we can use urine ketone strips, acetone breath analyzers, or blood ketone strips (which are expensive). A deeper state of ketosis implies our cells are deprived of energy and thus are activating autophagy as a survival mechanism.

Although we cannot measure how much our cells activate autophagy, we can implement several measures to intensify the state of ketosis, which indirectly activates more autophagy during fasts.

- **Exercise:** We should exercise during a fast, probably towards the end of a fast. Exercise depletes our glucose and glycogen stores quickly. Both aerobic and resistance training could activate autophagy. For example, mice running on a treadmill for 30 minutes activated AMPK and switched off mTOR [63].
- **Sunshine:** We should get sunshine during a fast. We absorb the sun's rays through our skin, which produces Vitamin D. Vitamin D can switch off mTOR, which could activate autophagy.
- **Extreme heat or cold:** We expose our bodies to extreme heat or extreme cold, such as sweating in a hot, steamy sauna or diving into an icy cold lake during winter. A cold shower can also help. Exposing our cells to extreme conditions switches on defensive mechanisms like autophagy to ensure the cells' survival.
- **Dry Fasting:** This chapter discusses dry fasting under the fasting methods. A dry fast is where fasters abstain from all food and drinks. Thus, dehydration intensifies a fast. As we lose water through urination, the blood concentrates sodium, which pulls water from the cells. Hence, the cells lose water, which switches on autophagy to ensure the cells' survival. We call this dehydration hypertonic stress.
- **Ketogenic Diet:** We have several ketogenic meals before our fast. We discuss the ketogenic diet in this chapter. The ketogenic diet restricts our caloric intake of carbohydrates to 5% or less, about 20% of which are proteins, while the remaining comes from fats. The ketogenic diet can push us into ketosis quicker during a fast.
- **Supplements:** We can take coconut oil, berberine, or resveratrol to activate autophagy by turning on AMPK [64, 65]. Coconut oil comprises medium-chain fatty acids, which help switch our bodies to fat-burning mode.

Although we cannot slow down the aging process, we can periodically fast to switch on autophagy. Autophagy keeps our cells healthy and helps delay age-related diseases. Thus, we could have a long, healthy life via autophagy.

### ***Longevity Genes***

A whole branch, epigenetics, studies fasting and how it affects our genes. Although our DNA encodes the blueprint for designing our bodies, epigenetics is how our environment shapes which genes switch on or off. We should not be surprised that fasting affects our cells at the genetic level.

One such change is the epigenetic clock, buried deep within our genetic code. This clock slowly ticks the moment we are born until we breathe our last breath<sup>[66]</sup>. Scientists call this the Horvath clock, named after the discoverer<sup>[66]</sup>.

Our DNA is similar to a computer program. However, computer programs are digital, where information is coded as either on or off or ones or zeros. Our DNA is more complex and composed of four nucleotides, i.e., molecules. They are the building blocks of our DNA program: Adenine, cytosine, guanine, and thymine<sup>[66]</sup>. Geneticists refer to these molecules by the first letter – A, C, G, and T. Consequently, our cells possess the machinery to read this DNA and build structures using transcription.

We can see that our DNA is much more complex than a computer. A computer has two states – on or off, while DNA is encoded in four molecules. Furthermore, our DNA is a double helix, meaning the code on both strands is identical. The double helix ensures accurate replications and copies are made when our cells divide. Thus, our DNA has about 6 billion nucleotide pairs.

It may be incorrect, but we can view DNA as one long program that can build all structures within our bodies. Every cell in our body has this DNA program. However, cells are restricted to which part the cells can read and transcribe. For example, a heart cell needs access to the DNA program to build structures that the heart cell needs. The other parts of the DNA are covered with methyl groups

that block the cell from reading that part of the DNA. A methyl is a molecule that attaches to parts of the DNA and prevents the cells from reading that portion of the DNA. Furthermore, a stem cell would have few restrictions because it is a blank cell. As a stem cell develops into a particular cell, parts of the cell's DNA are covered with methyl groups to prevent the cell from reading that part. Thus, a stem cell develops an identity.

Over time, our cells begin to age. Some methyl groups are added to the DNA. Thus, that cell cannot build particular structures. In other places, a methyl group falls off the DNA. Hence, that cell can make a new structure but not necessarily the correct structure the cell needs. For example, a liver cell ages and loses some methyl groups. Thus, the liver cell can build more appropriate structures for a skin cell. Furthermore, liver cells may lose the ability to produce a needed structure. Hence, aging causes the cell to lose its identity.

A cell loses its identity as it ages by adding and removing methyl groups. We call this process methylation. Human DNA has over 20 million methyl groups, several thousand of which correspond to the Horvath clock <sup>[67]</sup>. As cells age, they can gain an additional 40% in methylation and lose about 60% <sup>[67]</sup>.

We need one more puzzle piece before discussing longevity genes. The DNA is a long strand. Our cells must wrap this DNA around small protein balls called histones, such as wrapping a long document around a scroll <sup>[66]</sup>. Every cell wraps the DNA like a scroll to place on the shelf for storage.

Let us say we are going to fast. Our bodies send a fasting signal to our cells that food is scarce. Our cells take that scroll off the shelf and unravel a portion of it to read. For example, during fasting, the cell builds autophagosomes to search out and recycle damaged parts.

As we age, our cells lose the ability to read and transcribe certain information on the DNA because of methylation. Furthermore, our cells are constantly raveling and unraveling the DNA to read it. Thus, the cells lose the ability to build new structures because they cannot read the DNA. In David Sinclair's words, "Aging, quite simply, is a loss of information <sup>[66]</sup>." Aging is simply a process when cells lose the ability to read the DNA and build structures.

Scientists have yet to figure out why methylation occurs or why the cells lose the ability to read the DNA. However, they discovered a group of genes called sirtuins. Most mammals possess these sirtuins, which regulate, repair, and reproduce DNA [45, 66].

The seven sirtuin genes perform the following:

- **SIRT1:** This gene helps repair DNA, maintains epigenome control, improves glucose tolerance, and lowers blood insulin and cholesterol levels [66, 68-71]. The SIRT1 gene helps delay cell death (i.e., apoptosis) and lengthen telomeres [66, 70, 72-74]. Telomeres are the caps at the end of the DNA strands. Once the telomeres become too short, the cell can no longer divide and become a senescent cell, which some call zombie cells.

Some scientists believe these zombie cells are responsible for aging. When we are young, we have few senescent cells. However, as we age, we begin to accumulate more of them. Our immune system can detect and remove these zombie cells. However, our immune system becomes less efficient as we age, and zombie cells multiply in number. Unfortunately, these zombie cells send out cytokine messages to nearby healthy cells and interfere negatively with them. Too many zombie cells can interfere with tissues and organs.

- **SIRT2:** This gene regulates egg health and cell division [66, 68, 69].
- **SIRT3:** This gene helps control energy metabolism and is located in mitochondria [66, 68]. SIRT3 helps mitochondria burn fatty acids and produce more energy and antioxidants [36, 45, 75]. Mitochondria produce energy, which creates reactive oxygen species, i.e., charged molecules that can damage cell structures. Thus, the antioxidants help neutralize these charged molecules.

Scientists genetically modify mice to analyze the outcomes. For example, scientists bred mice that under-express the SIRT3 gene.

These mice had trouble utilizing fats for energy and were intolerant to coldness [76]. Furthermore, SIRT3 could also suppress cancer growth and, thus, extend longevity [45, 68, 69, 75].

- **SIRT4:** Mitochondria possess this longevity gene, which aids in controlling energy metabolism and may help prevent cancer [66, 68, 69].
- **SIRT5:** Mitochondria have this gene, which helps control energy metabolism [66, 68].
- **SIRT6:** This longevity gene repairs DNA and controls the epigenome [77]. SIRT6 can rebuild the telomeres at the end of the DNA strands so healthy cells can continue dividing [66, 68, 70, 77]. Thus, SIRT6 delays cell senescence and is shown to extend longevity in animals if this gene is overexpressed [73, 77-79]. Finally, SIRT6 could prevent the formation of several cancers [80].
- **SIRT7:** This gene helps repair DNA and maintain epigenome control [66, 68].

We know fasting activates SIRT 1, SIRT 3, and SIRT 6 [36, 37, 69, 70, 75, 79, 81]. The ketogenic diet also turns on SIRT1 and SIRT3, while exercise and calorie restriction activate SIRT3 [36, 37, 69, 70, 75]. It is possible that fasting, exercise, and the ketogenic diet affect other sirtuins, but this research area is relatively new.

The epigenetic theory of aging helps explain why we age. In one experiment, researchers bred special mice that allowed the researchers to induce artificial breaks in the mice's DNA. The sirtuins went to work to fix this broken DNA. However, the constant damage consumed the sirtuins, and the mice aged prematurely [66].

The sirtuins need nicotinamide adenine dinucleotide, which we call NAD<sup>+</sup> for short [69, 74, 82]. We can refer to NAD<sup>+</sup> as energy for the sirtuins. As we age, cells produce less NAD<sup>+</sup>, which confirms that aging hits our cells all at once [82-84]. Thus, our cells lose the

ability to repair the DNA or read and build new structures from the DNA.

Lower NAD<sup>+</sup> levels lead to common aging diseases such as arrhythmias, atherosclerosis, diabetes, fatty liver, heart disease, high blood pressure, high cholesterol, and obesity <sup>[71]</sup>. Researchers also linked low NAD<sup>+</sup> levels to brain diseases such as Alzheimer's, Huntington's, and Parkinson's <sup>[84]</sup>.

We require high NAD<sup>+</sup> levels to maximize our longevity and energize our sirtuins. The following may help boost the NAD<sup>+</sup> and extend our longevity. We should not be surprised that all these factors are identical to factors activating autophagy except for the first item.

- **NAD<sup>+</sup> Precursors:** We could take vitamin B3 in the form of niacin, niacinamide, or nicotinamide riboside (NR) to raise NAD<sup>+</sup> <sup>[74]</sup>. Many health enthusiasts also take nicotinamide mononucleotide (NMN), which technically is not Vitamin B3. The NR supplement may be the best choice because it can quickly enter the cells and has few processing steps to convert into NAD<sup>+</sup> <sup>[83]</sup>.

NR and NMN supplements can be expensive, while niacin and niacinamide are cheap. Although niacin and niacinamide may not be as effective as the others, niacin supplements boosted NAD<sup>+</sup> by 8 times in patients' blood with NAD<sup>+</sup> deficiencies <sup>[85]</sup>. In addition, mice taking nicotinamide had lower incidences of skin cancer and better immune responses to ultraviolet rays <sup>[74]</sup>.

- **Low White Carbs:** We should not be surprised that a diet low in refined carbohydrates helps extend longevity. Our bodies easily break down white carbs like sugar, bread, flour, grains, potatoes, and rice into glucose. Remember, if we always eat carbs, we burn glucose for energy, not fats. If we are always burning glucose for energy, we have lower NAD<sup>+</sup> and, thus, activate fewer sirtuins <sup>[69]</sup>. Consequently, people with high glucose blood levels speed up their epigenetic clocks <sup>[66]</sup>.

- **Diet:** Our diet can also slow the ticking of the epigenetic clock. The Mediterranean diet limits white carbs like sugar, flour, potatoes, and rice and focuses on plant-based foods like fruits, legumes, nuts, seeds, and whole grains. Researchers have shown that the Mediterranean diet removes years off the Horvath clocks <sup>[86]</sup>. In addition, a diet with limited glucose (i.e., white carbs) and supplemented with probiotics and phytonutrients slows the ticking of the epigenetic clock <sup>[67, 87]</sup>.
  
- **Healthy Living:** Scientists show that healthy living can remove years off the Horvath clock. Calorie restriction, exercise, fasting, heat shocks, sleep, and relaxation exercises work together to keep the body healthy and turn back the hands of Father Time <sup>[67, 87]</sup>. The exercise type does not matter. Both aerobic and resistance training raise NAD+ levels and activate those sirtuins <sup>[88]</sup>.

The epigenetic theory of aging also explains why smoking tobacco is one of the worst habits we humans can do. Cigarettes rapidly age us. Smokers look good when they are in their twenties as they smoke. Then smokers hit their 30s but look like they are in their 40s. Then they look like they are in their 60s while in their 40s. Smoking damages DNA because it contains thousands of toxic chemicals. Although the sirtuins repair this DNA damage, they do not return to their original place to help protect the DNA from other problems. Diverting the sirtuins for this constant damage from cigarette smoke accelerates aging since they cannot stay in their original positions to repair the DNA <sup>[66]</sup>.

Smoking tobacco may lead to insulin resistance, which prevents the body from utilizing glucose as energy <sup>[89]</sup>. The toxic chemicals in tobacco can damage the mitochondria <sup>[59]</sup>. The damage from tobacco activates autophagy and the sirtuins to repair this damage. We have a dilemma. If the smoker had not smoked, they would not need to expend the body's resources to repair that damage. Autophagy and sirtuins could fix other damage not related to smoking.

The longevity genes help connect fasting to brain health. Our brains and nervous systems generate and consume large amounts of energy, which creates reactive oxygen species as a byproduct. Those charged particles can damage neurons inside our brains and nervous systems. However, by activating SIRT3 via fasting, this longevity gene supports mitochondrial health and protects our neurons. Activating SIRT3 may also protect us from common brain diseases, such as Alzheimer's, Huntington's, and Parkinson's [75].

### **Stem Cells**

We know fasting affects the body's stem cells. A stem cell is a blank cell that sits off to the side on standby. Once our bodies and cells experience stress, the stem cell activates and replaces damaged cells. Thus, the stem cell can become any cell in the body. Stem cells come in various classes. The most versatile class is the embryonic stem cells, which can turn into any cell in the body. Meanwhile, bone marrow stem cells can only turn into heart muscle or bone cells [90, 91]. The same factors that activate autophagy and longevity genes also activate the stem cells.

As we age, everything in our bodies, including stem cells, undergoes a decline. The older we get, the fewer stem cells our bodies produce [91, 92]. Furthermore, each time a stem cell divides, the telomere, a protective cap on the end of a chromosome, becomes shorter. This process continues until the stem cells reach a point where they can no longer divide. The presence of shorter telomeres may cause stem cells to perform poorly [91].

Many people experience digestive problems when they age. The constant processing of food damages the cells in the digestive system. A damaged digestive system cannot process food well. For example, scientists discovered that old mice have trouble metabolizing fats because stem cells do not function properly when they replace the damaged cells [93, 94]. However, a one-day fast improves the functioning of stem cells in the digestive system for both young and old mice [93, 94]. Consequently, the one-day fasts healed the digestive systems of young and old mice [93, 94]. At last,

scientists discovered that two-day fasts regenerated liver cells in mice <sup>[95]</sup>.

Stem cells prefer to use fatty acids for fuel <sup>[93, 94]</sup>. Thus, we can see why fasting and intense exercise can trigger stem cells since our bodies switch to metabolizing fats during these conditions. For example, intense exercise causes our bodies to consume glucose and glycogen, which leads to fat burning. More research is needed to determine whether fasting reverses stem cell decline as we age.

Scientists and researchers are making breakthroughs in aging. For example, Shinya Yamanaka was awarded the Nobel Prize in Physiology and Medicine in 2012. His research team discovered that by adding four genes, Oct3/4, Sox2, c-Myc, and Klf4, to mature skin cells, the skin cells reverted to stem cells <sup>[96]</sup>. Then scientists inserted these stem cells into mice embryos, which helped the mice develop <sup>[96]</sup>.

The problem with inserting stem cells into the body may lead to undesirable effects. For example, Yamanaka's research team found when they inserted these stem cells into the mice's skin, they grew into tumors and various non-skin cells <sup>[96]</sup>. YouTube and the internet are filled with stories about people's success in inserting stem cells into their bodies. Nevertheless, other people claim stem cells cause weird structures to grow. For example, one woman had a doctor inject stem cells into her face to lessen wrinkles. Unfortunately, the stem cells grew into bone tissue.

Dr. Sinclair expanded on Yamanaka's research. His research team utilized a virus to carry three genes – Oct4, Sox2, and Klf4 into the cells <sup>[66]</sup>. The cells became younger <sup>[66]</sup>. Then they used an antibiotic to deactivate these genes. Just remember the Horvath clock from the last section. As cells age, new methyl groups are added to the DNA while other methyl groups fall off. Aging causes cells to lose their identity. What is interesting is the cells know where to add and remove the methyl groups on the DNA to restore the cells' identity.

We know that fasting helps restore the functioning of the stem cells. Healthy stem cells replace damaged cells and tissues in our bodies and help us quickly recover from injuries, sickness, and times of extreme stress like fasting.

## ***Hormesis and Life's Stressors***

Fasting works along the ideas of hormesis. Biologists use hormesis to explain how a substance or a mild stressor can influence the human body positively in low doses but harm or kill the body in high doses. For example, people can ease their pain or lower a fever by taking a low dosage of acetaminophen, but in high doses, acetaminophen damages the liver. Thus, hormesis ensures our bodies become stronger by exposure to low-stress levels from the environment.

The activities that create hormesis are the same ones that activate autophagy, longevity genes, and stem cells. Several stressors include:

- **Fasting:** We deprive our bodies of food for 12 hours and beyond. Food deprivation stresses the body as it scrambles to handle the food deprivation. Of course, if we fast too much or too often, fasting causes malnutrition and can harm our bodies. In addition, a dry fast adds dehydration to the mix and intensifies the fast. Thus, the body responds to overcome this stressor.
  
- **Heat and Coldness:** Our bodies regulate our temperature to be within 37<sup>0</sup> Celsius (or 96.40 Fahrenheit). Exposure to coldness or high heat forces the body to respond to this stress to maintain our core body temperature. Cold showers, ice baths, saunas, or sweating under a hot sun with high humidity forces the body to maintain its core body temperature under stress. The Russians add to this by sitting in saunas to warm up and jumping in cold lakes during winter to shock the body.
  
- **Hypoxia:** We can deprive ourselves of oxygen as a therapy. However, the author does not recommend this. Some people reported health benefits from breathing in enriched oxygen. Air contains about 21% oxygen. However, certified scuba

divers can dive with up to 36% enriched oxygen. Please note that pure oxygen is dangerous and highly flammable.

- **Exercise:** Both aerobic exercise and resistance training benefit the body. The body must adapt to supplying oxygen and nutrients to cells during aerobic exercise like a long run. Furthermore, the body must adapt to stresses put on the muscles and bones from resistance training. Some claim the best aerobic exercise is interval training, where the person cycles through bursts of high intensity followed by low intensity, as it puts the largest stress on the body.
- **Diets:** Our bodies prefer glucose as fuel rather than fats because our bodies always take glucose first. Some people are constantly eating carbohydrates, which the body breaks down into glucose; thus, they never switch their energy source to fats and would never enter a state of ketosis. The converse may also be true. Some people are always on the ketonic diet, where they severely restrict carbohydrates; however, this may not be good either, always being in ketosis. Our bodies may benefit if we cycle between regular and ketogenic diets as we always switch our cells' fuel source, providing mild stress to our cells <sup>[64]</sup>.
- **Fruits and Vegetables:** Vegetarians and vegans eat solely a plant-based diet. However, plants do not want to be eaten and produce natural pesticides <sup>[97]</sup>. Thus, plants can contain natural poisons and toxic substances. For example, almonds, beets, cereal grains, potatoes, soy, spinach, and tea contain oxalates. Although not poisonous, they cause kidney stones, joint pain, and digestive system problems for people who accumulate oxalates in their bodies. Oxalates provide mild stress for people eating oxalate-containing foods.

The concept of hormesis is that we should always change our fasting and exercise regimes <sup>[62]</sup>. For example, we should do several 18-hour fasts, followed by a prolonged fast of 24 or 36 hours. We could also do one or two dry fasts monthly, with the others being

water fasts. Cycling through different fasts with varying durations prevents the body from adapting to one regime; it also provides mild stress, which can help lower diseases and extend our longevity <sup>[98]</sup>.

Hormesis can explain why Americans are in a perpetual state of poor health. We live and work in air-conditioned homes and offices during hot summers and warmly heated homes and offices during cold winters; we drive our cars everywhere, even to the store around the corner from our houses. Machines, tools, and equipment perform all our menial labor, minimizing the stress and sweat from menial work. Food is available everywhere, and we eat regularly and constantly and rarely feel hunger pangs. Therefore, American society gives us and our cells an easy life, which seldom experiences hormesis. Our bodies do not switch on autophagy, trigger stem cells, or activate longevity genes, while our health suffers.

### ***Fasting Health Benefits***

Scientific studies show fasting imparts many health benefits. For example, Dr. James McEachen treated 715 patients at a Californian sanatorium between 1952 and 1958. Forty-one percent of his patients completely recovered <sup>[99]</sup>. Another 50% of patients showed some improvement in their health, while the last 9% showed no improvement <sup>[99]</sup>. In another large study, 1,422 healthy subjects fasted from 4 to 21 days <sup>[100]</sup>. However, it was a partial fast because they could consume up to 250 calories daily <sup>[100]</sup>. 84% of the participants claimed their health had improved, while two suffered from medical problems <sup>[100]</sup>. That is the power of fasting. Pharmaceutical companies cannot produce any medications that can match the efficacy and safety of fasting.

The simple act of abstaining from food for a time can impart many health benefits. These health benefits traverse a spectrum of cells, organs, and tissues in the human body.

Fasting helps alleviate the symptoms of the following diseases:

## ***Autoimmune Diseases***

The immune system is critical for a healthy, functioning body. Bacteria, fungi, and viruses assault and attack our bodies every day. Our immune system must hunt down these foreign invaders and destroy them before they cause severe damage to our bodies. Unfortunately, as we age or gain weight, some cells release chemical messengers called cytokines. The cytokines inform the immune system, and our immune systems prepare for battle against foreign invaders. That is the problem. If our immune systems are always on high alert, we get chronic inflammation, when the immune system harms healthy cells, organs, and tissues and triggers autoimmune diseases <sup>[38]</sup>. Some doctors and researchers think centenarians live long lives because of low inflammation <sup>[101]</sup>.

The immune system has many defenses to identify and destroy foreign invaders. One method is that an antibody attaches itself to a foreign invader because the antibody attaches to an antigen on the foreign substance <sup>[38]</sup>. An antigen is a molecule or part of a foreign substance. Once the antibody tags the foreign substance, the tag tells the immune system to destroy it. As we age, some cells become abnormal or send out cytokines. Then the antibodies attach to these abnormal cells. These abnormal cells are embedded with healthy cells, which the immune system starts attacking, triggering chronic inflammation <sup>[38]</sup>.

Fasting is one of the best natural methods to reduce inflammation and helps alleviate the symptoms of many autoimmune diseases, such as the following <sup>[38, 102, 103]</sup>.

- **Acute Glomerulonephritis** <sup>[104]</sup>: The immune system attacks and damages the kidneys, which could lead to kidney failure.
- **Grave's Disease**: The immune system causes the thyroid to overproduce hormones <sup>[38]</sup>. The thyroid hormones affect how our bodies utilize energy.
- **Inflammatory Bowel Disease**: Chronic inflammation is the immune system constantly attacks the digestive system,

causing abdominal pain, diarrhea, fatigue, rectal bleeding, and weight loss. Inflammatory bowel disease occurs as Crohn's disease or ulcerative colitis <sup>[38, 104]</sup>. Ulcerative colitis causes pain and swelling in the colon or large intestines. Crohn's disease causes pain and swelling in many tissues between the mouth and anus. Fasting reduces inflammation and allows the digestive system to heal.

- **Lupus:** The immune system attacks multiple healthy tissues and organs of the body, such as the kidneys, heart, brain, skin, and joints <sup>[38, 102]</sup>. High estrogen levels could help trigger Lupus in women, and women usually have a rounded appearance <sup>[38]</sup>.
- **Multiple Sclerosis:** The neurons in the brain and nervous system are covered by a myelin sheath, like the insulation covering the wiring in our homes. Without this insulation, the wires would short and cause a fire. Unfortunately, inflammation can trigger the immune system to attack and destroy this myelin sheathing <sup>[38, 105]</sup>. Consequently, fasting can lower inflammation and help reduce the symptoms of multiple sclerosis <sup>[38, 99, 104]</sup>.
- **Pancreatitis:** Digestive enzymes break down the pancreas, causing inflammation <sup>[104]</sup>. The pancreas is crucial for insulin production. Insulin informs cells that glucose is available, and the cells absorb glucose for energy.
- **Psoriasis:** The immune system causes the skin cells to overproduce new skin cells in the deepest layers, causing white scaly patches to form on the skin's surface <sup>[38]</sup>.
- **Rheumatoid Arthritis:** The immune system attacks healthy cells in the joints, causing pain, stiffness, and swelling <sup>[38, 105]</sup>. Fasting decreases inflammation and lowers pain and stiffness; fasting patients may reduce their medications <sup>[102, 104, 106]</sup>.

- **Rosacea** <sup>[104]</sup>: Victims suffer from extreme redness around the cheeks and nose <sup>[38]</sup>.

## ***Bacteria, Viruses, and COVID-19***

Fasting makes us healthier by improving our health, rejuvenating our bodies, and improving our immune system. We all remember the proverb, “Feed a cold, starve a fever.” A fever may represent a bacterial infection, while a cold is a viral infection.

We know fasting is effective for bacterial infections because bacteria are living organisms that feed on sugar, i.e., glucose. Fasting causes our bodies to switch to ketones as glucose becomes scarce. Bacteria starve without glucose <sup>[107]</sup>. Furthermore, fasting puts healthy cells into protection mode, which helps them survive a vicious attack from the immune system <sup>[107]</sup>. At last, fasting makes the immune system healthier, so it can clear out foreign invaders quickly and efficiently. For example, research shows fasting protects mice from bacterial infections like listeria and sepsis, while non-fasted mice die from these bacterial infections <sup>[107]</sup>.

Viral infections differ from bacterial infections. Bacteria are alive; they can replicate themselves. Meanwhile, viruses are composed of proteins that enter specific cells. They do not require glucose as food. Then the virus hijacks the cell’s protein-producing machinery and makes copies of itself. Eventually, too many viruses overwhelm the cell and destroy it. The same mouse experiment showed that fasted mice died from the influenza virus, while well-fed mice survived <sup>[107]</sup>.

Fasting should be effective against viruses. The cells switch to cleaning mode, which we call autophagy, and the cell searches for things inside to recycle. Viruses are bundles of protein that a cell can capture, break down, and recycle <sup>[46]</sup>. Autophagy can also devour and decompose bacteria into proteins <sup>[46]</sup>. The complication comes from the immune system as it triggers apoptosis. The immune system triggers cells infected with a virus to self-destruct <sup>[107]</sup>. On the other hand, autophagy tries to save the cell and remove the damaged components, while apoptosis destroys the entire infected cell.

The COVID-19 epidemic struck the world between 2020 and 2022. The official statistics record over 7 million deaths from this virus. The virus tends to attack people with common comorbidities, such as cancer patients, diabetics, obese people, current and former smokers, senior citizens, and males <sup>[108-113]</sup>.

Although fasting may not eliminate viral infections directly, fasting helps reduce the major risk factors, such as cancer, chronic inflammation, diabetes, high blood sugar, and obesity <sup>[113-115]</sup>. A healthier body helps people recover from infections and illnesses quickly.

The following factors aggravate viral and COVID-19 infections:

- **Blood Sugar:** People with chronically high blood sugar levels experience slower healing and a weaker immune system, whether they have prediabetes or diabetes. The coronavirus is ruthless against people with high blood sugar levels as they are more likely to experience complications, be admitted to the intensive care unit, or die from the infection <sup>[113, 116]</sup>. People with high blood sugar levels can also suffer from Influenza A (H1N1) virus <sup>[117]</sup>. In addition, diabetes is one of the diseases of metabolic syndrome, where diabetes is associated with heart disease, high cholesterol, high blood pressure, obesity, and strokes. Thus, fasting helps lower chronically high blood sugar and reduces the health problems associated with diabetes.
- **Cancer:** Cancer patients are more likely to suffer complications from the coronavirus. Fasting may help reduce the chances of getting cancer and slow or reduce cancer's growth, which we discuss in a later section.
- **Chronic Inflammation:** Chronic inflammation causes cells to send out too many chemical messengers called cytokines that tell the immune system to kill cells, even healthy cells. The coronavirus could trigger a cytokine storm that causes the infected cells to go wild, sending out too many messages and prodding the immune system to overact and destroy cells whether healthy or sick <sup>[103]</sup>. Fasting lowers chronic

inflammation and could prevent the coronavirus from inciting a cytokine storm <sup>[118]</sup>.

- **Obesity:** Obesity is one of the diseases of metabolic syndrome and is also associated with cancer, diabetes, high blood sugar, and heart disease. Furthermore, the immune systems of obese people respond to vaccines weaker <sup>[113]</sup>. Periodic fasting can help people slim down and lose weight.
  
- **Senior Citizens:** People 65 and older can suffer from complications of the coronavirus. Although fasting cannot reverse our age, fasting can help strengthen the immune system because our immune system becomes weaker as we age.

The tip is that we should fast if we feel we are becoming sick. Fasting switches the body to repair mode, turns on autophagy, and cleanses the body. If fasting makes the illness unbearable, we break the fast prematurely. Usually, our bodies tell us what to do. We typically stop eating when sick, forcing us to fast.

Fasting could trigger ghost infections and ghost injuries. Some doctors called this phenomenon retracing <sup>[119]</sup>. For example, we occasionally suffer from an ear infection or sprained shoulder. As we fast, this infection returns, or the old injury begins hurting and throbbing again. Nevertheless, we continue periodic fasting, which causes these ghost infections and injuries to disappear over time.

## ***Brain Function***

The brain requires massive amounts of energy to function, which creates oxidative stress. Oxidation is derived from the word oxygen. Oxygen reacts with many chemicals and molecules. For example, iron that is wet and exposed to oxygen turns into rust. Another common reaction is burning wood. Oxidation causes the burning wood to emit light, heat, and carbon dioxide.

Our brain cells' energy comes from mitochondria, which convert glucose, fatty acids, and ketones into energy. However, this energy creation creates charged particles known as oxidative reactive

species. These charged molecules can damage proteins, DNA, and cell parts. Since the brain requires massive amounts of energy, it also creates high levels of oxidative reactive species.

Both intermittent fasting and exercise have a powerful effect on the brain and its network of neuron connections. They both boost brain-derived neurotrophic factor (BDNF), which is a unique protein <sup>[40, 52, 106, 120-122]</sup>. BDNF is like a super vitamin for the brain because it helps new neurons grow and helps neurons survive diseases and injuries <sup>[106, 121]</sup>. Thus, BDNF is critical for brain health and helps boost higher-level thinking, learning, and long-term memory formation.

We examine rodent studies because mice and rats age quickly, and researchers can dissect and study rodents' brain slices under a microscope. They found that intermittent fasting reduced the oxidative stress in the rodents' brains, boosted BDNF levels, and enhanced their learning and memory <sup>[106, 123-125]</sup>. Scientists also discovered that fasted rats created new neurons in the hippocampus <sup>[106, 125]</sup>, the deep region in the brain responsible for learning and memory.

In other experiments, fasted rats recovered more quickly from spinal cord injuries than non-fasted rats <sup>[126]</sup>. Furthermore, young and middle-aged mice on an intermittent fasting regime survived more artificially induced strokes than non-fasting mice. The young fasting mice had the highest concentrations of BDNF <sup>[127]</sup>. However, the old, fasting mice and the non-fasted mice were more likely to die from the artificially induced stroke <sup>[127]</sup>. The older, fasted mice showed increased markers for chronic inflammation <sup>[127]</sup>. As we age, the efficacy of fasting decreases and becomes less effective. Otherwise, fasting could allow us to live forever.

Scientists believe fasting can help alleviate the symptoms of the following brain diseases:

- **Alzheimer's Disease:** The symptoms of Alzheimer's start with patients becoming forgetful, taking more time to complete tasks, and exercising poor judgment <sup>[128]</sup>. As the disease progresses, patients with Alzheimer's cannot perform simple tasks <sup>[128]</sup>. Some refer to Alzheimer's as Type III diabetes

because amyloid beta proteins build up in the brain and disrupt communication between neurons <sup>[40, 120, 128-130]</sup>.

Autophagy should recycle and remove the amyloid plaques. However, scientists believe autophagy slows down or stops working in Alzheimer's patients <sup>[128, 131]</sup>. Fasting may help Alzheimer's patients as fasting turns on autophagy, which recycles these amyloid beta proteins <sup>[40, 128]</sup>. Fasting also causes the body to switch from glucose to ketone energy. Ketones help protect the brain's neurons and prevent the neurons from dying <sup>[64, 120, 130]</sup>. Researchers used genetically modified, elderly mice that are prone to Alzheimer's. The fasting and non-fasting mice showed the buildup of amyloid beta proteins in the brain <sup>[129]</sup>. However, the elderly, fasted mice showed no signs of Alzheimer's because intermittent fasting helped the mice's neurons become more stress-resistant and strengthened the neurons <sup>[129]</sup>.

- **Huntington's Disease:** Patients, unfortunately, can inherit Huntington's disease from their parents. Patients show a decline in reasoning, thinking, memory recall, and planning with uncontrollable movements in the face, head, arms, and legs. Scientists think autophagy stops working in the brain's neurons, which kills the neurons <sup>[131]</sup>. In one study, fasting mice susceptible to Huntington's Disease lived longer and retained their motor skills than the non-fasted mice <sup>[132]</sup>. Intermittent fasting may lessen the symptoms of Huntington's disease because of autophagy <sup>[40, 120]</sup>.
  
- **Parkinson's Disease:** Unfortunately, some families can pass down genes that make some members susceptible of Parkinson's disease. People with Parkinson's have uncontrollable movements like shaking and stiffness, along with balance and coordination difficulties. The symptoms of Parkinson's tend to worsen over time. Intermittent fasting helps reduce the symptoms of Parkinson's disease <sup>[40, 120]</sup>.

## **Cancer**

The second leading death in the United States is cancer, with heart disease coming first. Any cell within the body can malfunction and become cancerous. The mutated cells divide uncontrollably and can spread to any part of the body, forming abnormal tissues and tumors. Cancer can form on one tissue, metastasize, and spread to other tissues or organs. For example, brain cancer can metastasize and spread to the liver, lungs, and bones if the patient is not treated.

Intermittent and prolonged fasting may help reduce the incidence of cancer. Fasting switches the cells' energy from glucose to fatty acids and ketones. Most cells in the body can switch their energy source away from glucose. About 25% of the brain cells, red blood cells, and liver cells still require glucose, which the liver can manufacture from fatty acids and protein. Switching the cells' fuel source to fatty acids and ketones works because cancer and tumor cells have a defect; they require glucose and cannot switch to fatty acids and ketones, which we call the Warburg effect. Otto Warburg, a German biochemist, discovered cancer's hunger for glucose <sup>[133]</sup>. Consequently, fasting starves the cancer cells of their glucose energy source.

Cancer has several triggers. One trigger is chronic inflammation, which helps encourage cancer growth <sup>[134]</sup>. The immune system attacks healthy cells, tissues, and organs. Then some damaged and defective cells turn cancerous. The second trigger is high levels of glucose in the bloodstream. Consequently, people who are obese or have Type II diabetes are more likely to die from cancer <sup>[135-137]</sup>. The third factor comes from the pancreas producing insulin and the liver producing insulin growth factor (IGF). The insulin and IGF signal the cells to start burning glucose for energy. Cancer cells also receive that message, start consuming glucose, and rapidly grow <sup>[135, 136, 138, 139]</sup>.

Many studies show the effect of fasting on rodents, i.e., mice and rats. The rodents showed large drops in both glucose and insulin while blood ketone levels rose <sup>[124, 132, 140]</sup>. The rodent studies are ambiguous on IGF. Some studies showed IGF increasing, remaining the same, or decreasing <sup>[124, 138, 140, 141]</sup>. The ambiguous results may

come from selective breeding and the genetic lineage of the rodents. Although IGF was ambiguous, fasting rodents showed declines in blood sugar and insulin levels, which stifled cancer and tumor formation. Lower blood insulin and glucose levels slow cancer's growth <sup>[106, 142-144]</sup>.

Suppressing IGF may be vital for health and longevity. In rodents, lowering the IGF may activate longevity genes, which extends life <sup>[45, 145]</sup> and helps the rodents rebuild new, healthy cells during refeeding <sup>[95]</sup>. The good news is that many research studies show IGF decreases for humans doing short or long fasts <sup>[35, 36, 52, 146, 147]</sup>.

Fasting clinics and sanatoriums were common in the United States and are returning. Patients with health problems or cancer would check in and fast for two days to two weeks <sup>[139, 148]</sup> while doctors and nurses monitored their progress. The cancer remission rate depended on the patient's age, fitness level, and cancer type <sup>[148]</sup>. Some cancer patients reported complete recovery and remission from cancer <sup>[38, 99, 142, 148]</sup>.

Obese people may have trouble using fasting to combat cancer or eliminate tumors <sup>[38]</sup>. They suffer from persistently elevated blood glucose and insulin levels, hindering their bodies' switch from glucose to fatty acids and ketones. Another problem is that the body goes for the easiest cells and tissues first for energy, which would be the fat cells in obese people. They would need to slim down. Then fasting can go for cancer and tumors as the body searches for protein and damaged tissues to recycle. We know fasting works because many fasters report that bumps, moles, and scars have disappeared or faded after regular bouts of intermittent fasting.

Fasting can help cancer patients deal with chemotherapy. Medical doctors treat patients with poisonous chemicals that kill both cancer and healthy cells. Patients lose their hair and appetite; they could experience mental fatigue, suffer from poor memory recall, and are at a higher risk of infections since chemotherapy damages the immune system. Nevertheless, fasting switches the healthy cells' energy source to ketones and puts the healthy cells into protection and cleansing mode, while cancerous cells take the full force of the poisonous chemicals because cancer cells are stuck

in the glucose energy mode <sup>[139]</sup>. Thus, fasting helps lessen the damaging effects of chemotherapy <sup>[41, 106, 139, 143]</sup>. Mice studies demonstrate this effect when fasting helps alleviate the sickness from chemotherapy while the poisonous chemicals target the starving cancer cells <sup>[106, 143, 149]</sup>.

Prolonged fasting was common in the United States to treat cancer, while the Soviet Union prohibited fasting treatment for cancer patients <sup>[150]</sup>. We must remember the power of autophagy, which turns on the cells' cleanup and recycling of defective parts within the cells. Cancer cells may also use autophagy to toughen and extend the cancer cells' life <sup>[46, 151, 152]</sup>. Furthermore, prolonged fasting may cause cancer cells to send out fewer chemical messengers, hiding the cancer from the immune system <sup>[139]</sup>. For example, one mouse study showed that fasting for 24 hours twice per week did not cure the mice's prostate cancer <sup>[153]</sup>.

### ***The Digestive System***

We need our digestive system to function optimally. It must sort, process, and absorb the food that we eat. The digestive system has a tough job because our food contains additives, artificial colors, bacteria, preservatives, toxins, and viruses <sup>[38]</sup>. Over 70% of our immune system is located along the digestive system since it is a significant entry point for bacteria, viruses, and foreign substances. Consequently, the digestive system is energy-intensive and consumes roughly 25% of the body's energy.

Fasting is critical for digestive system health since this system takes a rest during a fast. The stomach and the small and large intestines finish processing the food and then shut down during a fast. Blood glucose begins to fall during a fast, so the pancreas takes a break and does not need to produce insulin. Fasting heals livers with alcoholic liver damage or fatty liver disease <sup>[38]</sup>.

Fasting for a minimum of 24 hours helps activate stem cells in the digestive system. The body burns more fatty acids and ketones during a fast. As the body metabolizes fatty acids, it awakens the stem cells <sup>[93, 94]</sup>. Stem cells come in various types. Embryonic stem cells are plentiful as a fetus develops and can transform into any cell.

The other stem cells are restricted in what they can transform into. For example, adult stem cells reside in tissues throughout the body. They can only turn into cells that comprise the tissue where they reside. For example, the adult stem cells in bone marrow can only transform into bone or heart muscle cells <sup>[90, 91]</sup>.

The digestive system needs frequent repairs because the breaking down and processing of food damages the cells along the digestive system. Fasting gives the digestive system a rest and allows the stem cells to replace the damaged cells when the person resumes feasting. Researchers showed that fasting helps activate the stem cells in both old and young mice, even though the stem cells functioned poorly in old mice <sup>[93, 94]</sup>. The old mice also had trouble metabolizing fatty acids <sup>[93, 94]</sup>. Furthermore, a two-day fast helps regenerate liver cells in mice <sup>[95]</sup>. Mice have a faster metabolism than humans, so mice would experience a stronger fast than humans.

We know fasting heals the following ailments:

- **Duodenal Ulcers:** Fasting can help heal duodenal ulcers, sores forming along the upper portion of the small intestines <sup>[104]</sup>.
- **Intestinal Parasites:** Fasting helps clear parasites from the digestive system <sup>[104]</sup>. We catch parasites from drinking contaminated water, eating partially cooked meat, or poorly washed fruits and vegetables. Parasites like intestinal worms feed on sugar, while protozoans, one-cell organisms, feast on gut bacteria.
- **Neurogenic Bladder:** Fasting helps alleviate the symptoms of neurogenic bladder, where the bladder has a nerve problem <sup>[104]</sup>. People with this condition experience problems with urinating, urinating too frequently, or having leakage.
- **Bacterial Infections:** Fasting helps clear bacteria from the digestive system. A study showed that mice that fasted intermittently eliminated *Salmonella Typhimurium* from their intestines, while nonfasted mice did not. <sup>[154]</sup>. People infected

with Salmonella get diarrhea, fever, stomach pains and cramps. They also may need antibiotics and hospitalization.

## **Heart Health**

Fasting has immense benefits for the heart. Ketone blood levels rise when we fast, and the heart cells perform better. The heart prefers ketones rather than glucose. In addition, the mitochondria in the cells require less oxygen to convert ketones into energy than glucose. Thus, ketones are a more efficient energy source for powering our cells and bodies.

Fasting has the following effects on the heart:

- **Blood Pressure:** Fasting lowers blood pressure, which puts less stress on the heart <sup>[32, 34, 35, 38, 40, 99, 100, 106, 147, 155, 156]</sup>
- **Heartbeat:** The heart beats slower during fasting, which allows the heart to rest more between beats <sup>[32, 106, 148, 155]</sup>. The fasting benefits accumulate over time. For example, let us say our hearts beat 75 times per minute. That translates to 108,000 beats per day. However, if we fast for 24 hours and our heartbeat slows to 65, our hearts beat 93,600 daily. Therefore, we save 14,400 beats per day.
- **Weight Loss:** Fasting helps people lose weight, with most weight loss being fat. Fasters may slim down, lose body fat, and decrease their body mass index <sup>[35, 100, 122, 147, 155-158]</sup>. Thus, fasters may see their risk of heart disease drop.
- **Blood Composition:** Fasting changes the blood composition, possibly making healthier blood <sup>[148]</sup>. The blood supplies nutrients to all the cells in the body.

The blood composition depends on which components are in the blood. Our blood comprises about 50% of plasma, which is mostly water, while lipoproteins transport fats to the cells via the blood. Fats and water do not mix, but the lipoproteins allow water and fats

to mix. The lipoproteins come in two types: High-density lipoprotein (HDL) and low-density lipoprotein (LDL). Medical doctors view HDL as beneficial, while LDL is harmful. They differ in function because LDL carries fats to the cells while HDL carries fat to the liver, which the liver disposes of <sup>[159]</sup>.

Medical doctors view high LDL cholesterol as bad, which leads to cardiovascular disease <sup>[40]</sup>, because LDL cholesterol forms plaques along the artery walls, making the arteries stiffer and narrower. A blocked heart artery causes a heart attack, while a blocked artery in the brain causes a stroke.

Doctors and scientists believe chronic inflammation is responsible for plaque buildup along the artery walls <sup>[34, 160-162]</sup>. The LDL cholesterol slips under the wall accidentally, and the immune system sends macrophages to gobble and eat this cholesterol <sup>[49, 54]</sup>. The cholesterol turns the macrophages into foam cells, which look like foam viewed under a microscope. The high LDL cholesterol keeps getting trapped in the artery walls, causing more foam cells to stick to the walls and forming deposits and plaques <sup>[162]</sup>.

Another problematic component in our blood is triglycerides. A high triglyceride level can cause heart disease <sup>[40]</sup>. The liver makes triglycerides from excess glucose in the diet, which the body can store in fat cells <sup>[40]</sup>. As we fast, our bodies break down triglycerides into fatty acids and glycerol. Then the liver converts some fatty acids into ketones and glycerol into glucose.

Fasting studies on humans are unclear. Some studies show that LDL and triglycerides fall while HDL stays the same <sup>[35, 100, 122, 147, 155, 157, 158]</sup>. Meanwhile, other studies show that LDL and triglycerides are rising and HDL is dropping <sup>[122, 147]</sup>. Studies also show that men and women differ in fasting effects <sup>[163]</sup>.

Rodent studies are just as ambiguous as human studies. Rodents lost, maintained, or gained weight from intermittent fasting <sup>[123, 144]</sup> because fasting is a stressor; the rodents' bodies, in some studies, may anticipate fasting and feasting cycles and build up extra stores of energy and fat. Their blood chemistry is similar to humans. Rodents showed LDL and HDL stayed the same, or LDL decreased while HDL increased <sup>[123, 124]</sup>. In other studies, researchers damaged rats' hearts. The alternate-day fasting rats survived better than the

non-fasting rats <sup>[164, 165]</sup>. Thus, fasting helps protect and strengthen damaged hearts in rats.

LDL has another problem – atherosclerosis. Cholesterol is critical for the proper functioning of cells. The cells use cholesterol to repair and fix the cell walls and produce hormones. <sup>[40, 159]</sup>. For example, the body needs cholesterol to make Vitamin D, co-enzyme Q10, estrogen, testosterone, and bile acids. Bile helps the digestive system process and absorb fats and fat-soluble vitamins. Co-enzyme Q10 is a strong antioxidant and essential for heart health <sup>[166]</sup>. Ironically, the intestines and liver produce about 80% of the body's cholesterol, with the rest coming from diet. (Interestingly, doctors prescribe statins to lower blood cholesterol, a vital building block in our bodies, although our bodies produce most of the cholesterol).

The ambiguity with the various studies on blood chemistry is not troublesome. The human body needs cholesterol as a building block for cells and to create hormones. When we fast, our livers break down triglycerides into ketones, which become fuel. Furthermore, when we break our fasting, our bodies need that cholesterol to rebuild structures.

Fasting may reduce the symptoms of the following heart diseases:

- **Angina:** This condition occurs when the blood flow to the heart decreases and causes severe chest pain. Angina indicates that the person has coronary heart disease. Fasting may lower angina symptoms <sup>[38]</sup>.
- **Atherosclerosis:** Fasting reduces inflammation and may help soften the cholesterol, reversing atherosclerosis and deposits <sup>[34, 38, 162]</sup>. Removing the arterial plaques widens the arteries and allows a greater blood flow that nourishes cells, organs, and body tissues <sup>[38, 99]</sup>. Indirect evidence for fasting to remove plaques and deposits is that patients with atherosclerosis experience surges in cholesterol levels during a fast <sup>[38, 150]</sup>. Meat eaters also exhibit cholesterol surges during a fast compared to vegetarians <sup>[38]</sup>.

- **Congestive Heart Failure:** The heart experiences problems pumping blood, restricting blood flow to the rest of the body. High blood pressure and narrowing arteries contribute to a weaker heart. Consequently, fasting helps lower blood pressure and may help to remove arterial plaque <sup>[104]</sup>.
- **Thrombophlebitis:** Thrombus means blot clot, and phlebitis pertains to inflammation. A blood clot usually forms in the legs, provoking inflammation. Fasting may lessen the problems of thrombophlebitis <sup>[104]</sup>.
- **Varicose Ulcers:** Poor circulation causes varicose ulcers or sores along the legs. Fasting may reduce the severity of varicose ulcers <sup>[104]</sup>.

### ***Insulin and Diabetes***

Diabetes is the eighth killer of Americans, with about 11% having diabetes <sup>[167]</sup>. Close to one in three Americans are prediabetic <sup>[167]</sup>. Diabetes is a silent disease, and people with diabetes do not know they have it until their annual medical checkup.

Death from diabetes is associated with other diseases like atherosclerosis, coronary heart disease, high blood pressure, insulin resistance, obesity, kidney disease, and stroke <sup>[38, 40, 168]</sup>. Patients with diabetes are more likely to be diagnosed with cancer because we learned that cancer cells consume sugar for energy <sup>[169]</sup>. Sometimes, patients with diabetes have skin ulcers and wounds that do not heal, and doctors may amputate legs, feet, and toes as tissues become infected and die.

Diabetes are classified into Type I and Type II diabetes. Type I diabetes comprises 5 to 10% of people with diabetes. The immune system in Type I patients destroys the insulin-producing cells in the pancreas <sup>[38, 40, 170]</sup>. Thus, they have trouble utilizing carbohydrates and sugar for fuel. Insulin is a vital hormone and serves as a messenger that informs cells that glucose energy is available and to use it for energy <sup>[40, 170]</sup>. Type I diabetics experience spikes in blood glucose because cells do not get the message to use glucose. Once

Type I diabetics learn to control their blood sugar, they can minimize the complications from diabetes. In addition, the likelihood that they get cancer also drops <sup>[169]</sup>.

Type II diabetes differs from Type I. Type II comprises most patients with diabetes. The pancreas in patients with Type II still functions and produces insulin <sup>[38, 168, 170]</sup>. However, the problem is that the pancreas does not produce enough insulin, raising blood glucose to high levels. People with Type II diabetes require extra insulin to control and lower blood sugar.

Diabetes starts silently. People with Type II diabetes begin experiencing consistently high blood glucose and insulin levels <sup>[40, 170]</sup>. Over time, they become insulin resistant when their bodies do not respond to insulin <sup>[40, 170]</sup>. People with Type II diabetes also gain weight and become obese because persistently high insulin levels prevent their bodies from utilizing fats as energy <sup>[40]</sup>. Then high insulin levels tell fat cells to boost storage.

Dr. Frederick Allen discovered the link between diet and diabetes in 1915 <sup>[171, 172]</sup>. He found that sugar and carbohydrates raised blood glucose levels in Type I diabetics. Carbohydrates comprise starch, which are long chains of connected sugar molecules like links forming a chain. Our digestive system uses enzymes to break down starch into glucose. Thus, white carbs like bread potentially raise blood glucose levels higher than pure table sugar <sup>[170]</sup>. These white carbs and grains can spike our blood sugars as our digestive system breaks them down into glucose. Consequently, Dr. Allen recommended a high-fat, low-carb diet to help Type I diabetics control their blood sugar <sup>[171, 172]</sup>, which we discuss under the ketogenic diet.

Diabetes, unfortunately, is a progressive disease; the disease starts mildly and becomes worse over time. People with Type II diabetes experience rising blood glucose and insulin over time. They get pre-diabetes. Then most prediabetics will transition into full diabetes. The medication starts with patients taking metformin to control blood sugar <sup>[38]</sup>. However, as the disease advances, patients begin injecting insulin while their health deteriorates; other diseases associated with diabetes appear. Then they end up in this cycle where they must inject more insulin into their bodies over time <sup>[170]</sup>.

Unfortunately, insulin injections do not cure the disease; they maintain a diabetic's health until the next injection. As insulin levels rise, they also send signals to fat cells to store more fat; it becomes impossible to lose weight with elevated insulin levels as they gain weight.

Medical doctors tell their patients with diabetes to eat less and exercise more. Nevertheless, calorie-restricted diets have a low success rate, a less than 1% chance that a person with obesity can lose weight and keep it off<sup>[173]</sup>.

The doctor's recommendation does not work for the following reasons:

- Diets punish dieters, then they quit. Alas, caloric restriction slows metabolism as bodies consume less food and produce less energy<sup>[38, 40, 170, 174]</sup>. When dieters quit their diets, they quickly gain back the weight they lost and add some new weight. They return to eating the same amount of food but with a slower metabolism.
- The Western diet is loaded with white carbs, such as sugar, flour, bread, pasta, rice, and potatoes. Our bodies efficiently convert starches into glucose. Thus, the Western diet prevents people from stabilizing their blood glucose and insulin levels. The constant, massive inflow of white carbs causes people to gain weight from elevated blood glucose levels.
- Diabetes and insulin resistance result from a hormonal imbalance<sup>[40, 170]</sup>. Fasting can also help correct the hormonal imbalance and help people with Type II diabetes lose weight.

Fasting has a powerful impact on blood glucose levels and helps alleviate the symptoms of diabetes. Patients with diabetes require medical supervision because their blood sugar can swing too high or too low. Fasting may cause blood glucose levels to drop to dangerous levels.

One study showed the power of fasting. Three people with diabetics fasted one day, three times per week<sup>[175]</sup>. Although the

patients had been taking insulin injections for 25 years, all of them stopped taking insulin medication after three weeks of fasting <sup>[175]</sup>. They also lost weight because insulin levels fell allowing them to burn energy from their fat stores <sup>[175]</sup>.

Fasting is a reset switch for the body. We take a break from food and allow our bodies to rest. Blood glucose and insulin levels drop as fasting makes our cells more sensitive to insulin <sup>[40, 106, 168, 176-179]</sup>. We continue fasting over time. If our blood glucose and insulin levels rise as we age, we reduce or eliminate those naughty white carbs from our diets.

### ***Human Growth Hormone***

Fasting pumps up one of the body's significant hormones – the human growth hormone (GHG) <sup>[40, 41, 179, 180]</sup>. GHG is critical for children maturing into adults. GHG production peaks at puberty and declines every year afterward <sup>[40]</sup>. The body needs GHG to burn fat for energy, build muscles, increase bone density, accelerate healing, raise testosterone, and improve sleep quality <sup>[32, 39, 40, 181, 182]</sup>. The pituitary gland is located at the brain's base and produces GHG <sup>[182]</sup>.

GHG is one of those hormones that swings in the opposite direction of insulin. As insulin levels rise in the blood, GHG production drops, and vice versa <sup>[40, 180]</sup>. That is probably why GHG peaks during the late stages of sleep when sleepers have not eaten anything since dinner <sup>[40]</sup>. Furthermore, people with obesity have little GHG <sup>[182]</sup> because, most likely, obese people have elevated insulin levels that prevent GHG production.

GHG is one of the elixirs of youth for middle-aged men because GHG injections make them look youthful and more muscular. GHG injections cause men to gain weight, increase their waist size, and gain more strength <sup>[183]</sup>. The injections are costly and range between \$1,000 and \$5,000 per month <sup>[181]</sup>. The men could take GHG tablets, but they are less effective than injections since the digestive system has trouble assimilating GHG <sup>[181]</sup>.

We have a natural way to boost GHG by fasting for 24 hours. We would eat our last meal around noon and fast while asleep. GHG levels peak around 2 AM when insulin levels are low <sup>[180]</sup>.

## ***Psychological Problems***

Fasting has many benefits for brain health, which we have already discussed. We know fasting helps improve a faster's attention span, reasoning, and memory recall <sup>[148, 184]</sup>. Furthermore, all the world's religions incorporate fasting because fasting imparts spiritual properties. It may also help people develop a closer connection with religion and God. On the arduous road to enlightenment, body, mind, and spirituality are inherently connected, which we call the Trinity.

Fasting affects the psychological realm and may help with the following afflictions:

- **Addictions:** Fasting may help us control addictions like alcohol, cocaine, caffeine, and nicotine <sup>[38, 150]</sup>.
- **Anxiety:** People experience anxiety when they fear, worry, or feel uneasy. Intense fears can trigger anxiety or panic attacks, which cause shortness of breath, heart palpitations, and rapid heartbeat. Fasting also helps alleviate anxiety <sup>[38, 104]</sup>.
- **Depression:** Fasting helps people overcome depression when they view themselves inadequately or as a failure <sup>[38, 104]</sup>.
- **Neurosis:** Neurosis is when a person has a psychological disturbance out of proportion to reality, like an intense fear of enclosed spaces, heights, or snakes. Fasting helps alleviate the symptoms of neurosis <sup>[38, 104]</sup>.
- **Psychosomatic Disorder:** Some fasters experience fewer episodes of psychosomatic disorder. This disorder occurs when they think they are sick but are not <sup>[104]</sup>.
- **Schizophrenia:** Fasting helps people with schizophrenia <sup>[104, 148, 150]</sup>. Doctors in the Soviet Union would put people with

schizophrenia on extended water fasts that help remove protein buildup in their brains <sup>[150]</sup>. Fasting had a 64% cure rate <sup>[150]</sup>.

- **Insomnia:** Fasting helps people sleep better <sup>[104]</sup>.
- **Epilepsy and Seizures:** During a fast, people prone to epilepsy and seizures stopped having seizures, or the seizure frequency decreased <sup>[99, 130, 148]</sup>. Some fasters with epilepsy had seizures after they had resumed feasting <sup>[148]</sup>.

### ***Other Health Benefits***

This section includes ailments that do not fit neatly in the other sections. Fasting may improve the following illnesses.

- **Back and Neck Pain:** Fasting helps alleviate symptoms of chronic back and neck pain <sup>[38, 104]</sup>.
- **Osteoarthritis:** Cartilage is the cushion between bones in the joints and prevents bones from rubbing against each other. Osteoarthritis is the most common form of arthritis, and the cartilage breaks down, causing bones to grind against each other. Fasting may help reverse or slow osteoarthritis <sup>[104]</sup>.
- **Fibromyalgia:** Patients suffer from chronic aches, pain, and stiffness throughout the body and muscles. Fasting helps alleviate fibromyalgia symptoms <sup>[38, 102, 104]</sup>.
- **Gout:** Gout occurs when high uric acid levels form crystals in the joints, which trigger inflammation. Some have reported that fasting helps reduce gout symptoms <sup>[35, 99, 104]</sup>. However, fasting tends to raise uric acid in the body as fasting breaks down old cells. Our bodies convert purine, the building blocks of DNA and RNA, into uric acid. Uric acid is also an antioxidant that neutralizes charged molecules circulating in our blood, but this could aggravate gout <sup>[185]</sup>.

- **Impotence and Infertility:** Prolonged fasts help men overcome their impotence, while infertile women become pregnant <sup>[99, 148]</sup>.
- **Uterine Fibroids:** Fasting helps reduce the size and effects of uterine fibroids, where non-cancerous growths form along a woman's uterus walls <sup>[104]</sup>.
- **Sexually Transmitted Diseases:** Prolonged fasts may eliminate gonorrhea and syphilis via autophagy <sup>[99, 148]</sup>.

## ***Fasting Methods***

Fasting is simply abstaining from food for at least 12 hours. However, we have endless techniques to achieve this goal. We can fast for 16 hours, 24 hours, or 48 hours. A longer fast may click on longevity genes and activate the stem cells. We could also dry fast when we have no drink or food while fasting. Thus, nothing enters our mouths and digestive systems.

Fasting is a form of bio-hacking that activates stem cells, triggers longevity genes, and turns on autophagy. Fasting puts us in the best health possible. We can exercise while fasting to strengthen the body and intensify the fast even more. Furthermore, we get a healthy mind when we boost BDNF, which cleans up the neurons, creates new neurons, and allows neurons to make new connections in the brain.

We are using fasting as a form of enlightenment. Fasting brings the Trinity of a healthy body, a healthy mind, and spirituality. First, fasting leads to spirituality, when we feel at peace with ourselves and the world. The author needs to fast for at least 24 hours to achieve this inner peace and feel one with nature. New fasters may experience this inner peace within 8 hours of starting a fast. Then fasting strengthens our bodies and boosts our health. A healthy body and spirituality help create a healthy mind.

## ***Who Should Not Fast?***

We pay attention to our bodies while we fast. If we feel terrible during a fast, we can end it. For example, fasting reduces both blood glucose and blood pressure [32, 34, 35, 100]. Thus, we may feel dizzy spells during a fast. We could end the fast prematurely and live to fast another day.

People with the following conditions should not fast:

- **Breastfeeding and Pregnant Mothers:** Pregnant and breastfeeding mothers need plenty of nutrients, minerals, and vitamins to support a growing baby or provide nutrient-enriched breast milk for breastfeeding [38, 40, 99, 104]. Fasting while pregnant could deprive a growing baby of nutrients while fasting can halt breast milk production [99].
- **Infants, Children, and Teenagers:** Children and teenagers are growing quickly and need all the nutrients, vitamins, and minerals to help sustain this growth [40, 104]. In the past, doctors fasted infants and children to help overcome severe infections or medical conditions [99, 148, 184].
- **Type I Diabetes:** People with Type 1 diabetes have a damaged pancreas that cannot produce insulin. Therefore, they may have trouble monitoring their blood sugar during a fast [38, 40, 104, 145, 186].
- **Type II Diabetes:** People with Type II diabetes still have an insulin-producing pancreas. However, they have trouble regulating blood sugar because it swings too high or too low. As people fast, their insulin starts dropping [34-36, 38, 40, 100, 106, 156, 170]. People should take their insulin during their last meal and not during a fast because the medication can cause a fatal drop in blood sugar levels [40, 145, 170].
- **High Blood Pressure:** People taking high blood pressure medications should be careful fasting because blood pressure

tends to drop during a fast [34-36, 38, 40, 100, 106, 156, 170]. People should not take high blood pressure medication since fasting and the medicine could drop blood pressure to fatal levels [40].

- **Medications:** Fasting can amplify the effects of some medications [99, 148]. Any person taking drugs should consult a medical doctor about fasting and any interactions between fasting and patients' medications.
- **Kidney and Liver Problems:** Fasting stresses the kidneys and liver [38, 104]. Some fasters discovered that they have liver or kidney problems during a fast.
- **Lacking MCAD:** Some people cannot fast because they lack the enzyme, medium-chain acyl-CoA dehydrogenase (MCAD) [38]. This enzyme helps the body oxidize fatty acids for fuel [38]. Thus, fasters cannot switch their glucose metabolism to fat metabolism while fasting.
- **Severe Anemia:** A person with anemia has few red blood cells, which carry oxygen to the cells. People with anemia must monitor themselves closely while fasting [38].
- **Advanced Cancer and AIDS:** A patient inflicted with advanced cancer has cancerous tissues and tumors spreading to different body organs and tissues. Meanwhile, someone afflicted with Acquired Immune Deficiency Syndrome (AIDS) has a severely weakened immune system and has trouble fighting bacterial and viral infections. People fasting with advanced cancer or AIDS have stopped eating and are losing weight. They could weaken their bodies further by fasting [38].
- **Gout:** People with gout may avoid fasting or be careful while fasting. Some believe fasters with gout can fast without problems [38, 40, 177]. Gout comes from excess uric acid in the blood and crystallizes in the joints, causing arthritis and joint pain [40]. Fasting could aggravate gout because uric acid rises

during a fast [32, 35, 40, 100, 170]. One human study showed that only one person experienced gout from fasting out of 1,422 healthy subjects [100]. They fasted between 4 and 21 days [100].

- **Malnourished and Underweight People:** People who are underweight or malnourished should avoid fasting [38, 40, 145, 148, 184, 186, 187]. Fasting causes people to lose weight and nutrients, aggravating underweight, malnourished bodies [38, 148, 184, 187]. Since people are deficient in nutrients and underweight, fasting may complicate conditions like anorexia or other eating disorders.

We discuss the various fasts, starting with the easiest fast, the juice fast. Then we progress to the more challenging fasts, with the dry fast being the strongest.

### ***The Juice Fast***

The juice fast, a practice dating back to ancient times, involves the consumption of juices from fruits and vegetables. The juice fast may not fit the traditional fasting definition as it involves the intake of liquids with calories. One of the earliest instances of the juice fast is found in the Old Testament, known as the Daniel fast (Daniel 1 [16]). This story revolves around the Babylon King, Nebuchadnezzar, who conquered Judah and took children from Judah's royal family to serve as his servants (Daniel 1 [16]). Among these servants were Daniel and his friends, who chose to abstain from the meat and wine provided by the king (Daniel 1 [16]). Instead, they opted for a diet of beans, lentils, and peas, which the Bible refers to as pulse (Daniel 1 [16]).

Juice fasting is not a traditional fast, where fasts abstain from food and drinks loaded with calories. If the juice or pulse contains carbohydrates or sugar, it creates an insulin response as blood glucose and insulin rise [38, 188]. The spike in insulin tells the cells that energy is available. Thus, the faster does not switch to ketones and fatty acids for fuel. Autophagy may not turn on either. At last, the rise and drop in blood glucose may trigger hunger. Many juice

fasters complain of hunger on the juice fast <sup>[187, 189]</sup>, whereas switching to ketones for fuel helps suppress appetite and hunger <sup>[190]</sup>.

Juice fasting may impart some health benefits to fasts. Advocates claim three days on a juice fast equals one day of water fasting. Freshly squeezed juices are crammed full of vitamins, minerals, and antioxidants and are easy on the digestive system. For example, the Hunza people in Pakistan have an apricot diet for several months annually <sup>[191]</sup>. The clean mountain air, a diet filled with plenty of fruits and vegetables, and the lack of processed food play a key role in their health and longevity <sup>[191]</sup>. They rarely experience any cancer and live well beyond 100 years old, whereas the average life expectancy in Pakistan is 67 years old <sup>[191]</sup>.

Several ayahuasca retreats encourage clients to follow a juice fast for several days to cleanse and heal the body before starting the ayahuasca ceremonies. We discuss ayahuasca in Chapter 7.

If we are fasting regularly, incorporating freshly squeezed juices into our diets is an excellent way to ensure we get plenty of vitamins and minerals. A juice fast may complement other fasting regimes.

## ***Intermittent Fasting***

Incorporating intermittent fasting into a weekly activity is easy. First, we impose a 12-hour eating window and a 12-hour fasting window. For example, if we finish dinner at 7 PM, we go without food until 7 AM the following day. We can drink water or zero-calorie beverages. However, we are at the lower end of the fasting benefits.

We compress the eating window once the 12-12 fasting regime becomes easy. We either finish our dinner 3 hours earlier or delay our breakfast by 3 hours. Now, we are fasting for 15 hours with a 9-hour eating window <sup>[186]</sup>. We keep compressing the eating window until we can get up to 18 or 24 hours of fasting. Then, fasting may switch on autophagy and activate our stem cells. That way, the stem cells start rebuilding cells we lose during fasting.

One key to fasting is to become fat-adapted, which means our bodies have the machinery to burn fat and ketones for fuel. If we spend our lives devouring sugar and white carbohydrates like flour,

potatoes, and rice, reaching the fat-adaptation phase can be painful. One method to quicken our transition to fat adaptation is to start a low carbohydrate diet like Adkins, Mediterranean, or Ketogenic.

The ketogenic diet is extreme, limiting carbohydrates from 5 to 10% of total, daily calories. Protein is limited to 25%, while fats comprise the remaining calories. We discuss the ketogenic diet in a later section. We can also eat a low-carb meal before fasting to help us transition into burning fats and ketones for fuel.

We can violate the fast a little the first several times. Sometimes, we get hungry, and we are used to feeding ourselves that our stomachs throw a fit, growl, and grumble a little. A couple of hard-boiled eggs or a keto chocolate fat bomb can help. Technically, we violated the fast by eating food. However, this is okay for the transition period to help our bodies build the machinery for fasting.

Once we attain the stage of fat adaption, fasting becomes easy. At this stage, we must know why and how long we are fasting. Hunger ceases once our bodies switch to ketones and fatty acids for fuel. We literally could waste away from fasting and not feel hungry.

We arrive at the psychological hurdle of fasting. It feels weird to not eat during the day, especially around our usual meal times. Fasting is like exercise; the more we fast, the easier it gets. Another thing is that we should drink plenty of water and stay hydrated <sup>[38, 186, 187]</sup> because we stop eating food that contains water. We also lose water and salts during a fast as our blood insulin levels drop. If we drink iced-cold water during the fast, our bodies must expend calories to heat that water to body temperature <sup>[192]</sup>.

Fasting includes these other benefits:

- **Flexibility:** Fasting is flexible. We can adjust our start and end times to coincide with our life. If we enjoy dinner with the family, we adapt our fasting to end at dinner time. If friends and coworkers invite us for drinks and dinner, we can break our fast prematurely. We just fast at another time and enjoy our evening. Fasting is about enjoying life.
- **Food Allergies:** If we fast for 16 hours or more, we have cleared the food from our digestive systems. Thus, we can

identify food allergies as we break our fast. For example, we suspect we are allergic to dairy products. We can drink a glass of milk to break our fast and see how the milk impacts our bodies.

- **Exercise:** Fasting complements exercise because exercise consumes the blood's glucose and helps us switch to ketones and fatty acids sooner <sup>[171]</sup>. However, if we are new to fasting, we should relax and not exercise until fasting becomes easy.
- **Fasting-feasting Ratio:** If we are fasting for at least 24 hours, we should maintain a ratio of 1 to 2 for the fasting-feasting ratio. That means we eat two days to one day of fasting. If we fast for 3 days, we should eat for 6 six days without fasting. We must ensure our bodies get the minimal nutritional requirements to maintain healthy bodies.
- **Fasting Trackers:** Fasters can download fasting trackers for their smartphones. The tracker records the fasting duration and retains historical data of past fasts.
- **Social Media:** We can join fasting groups on social media. We can also befriend a fasting buddy who will fast along with us.
- **Traveling:** Traveling is the perfect time to fast. We time our fast to coincide with the time in a car, bus, train, or plane. That way, we do not have to worry about paying exorbitant prices for food or getting traveler's diarrhea or food poisoning from the suspicious, overpriced burrito we bought at the airport vending machine. We sip water, black coffee, or unsweetened tea and enjoy our travels comfortably.

Fasting does not always come with benefits. Sometimes fasting causes several problems, which include the following:

- **Hunger Pangs:** We fasters may experience hunger waves. We focus on something else to get our minds off of food. However,

if we feel dizzy, fatigued, or nauseous, we can end our fast prematurely <sup>[40]</sup>. We use fasting to heal and repair our bodies, not to harm ourselves. It is no big deal to end a fast early.

- **Avoid People:** We become hypersensitive and can overreact to other people's emotions <sup>[119]</sup>. Fasting, especially prolonged fasting, could also make us angrier <sup>[193]</sup>. Thus, we avoid sending out irate emails while we are fasting. We can write that angry email but do not send it until after we break our fast.
- **Ghost Infections and Injuries:** People can experience ghost infections or injuries during a fast. For example, a person may suffer from a recurring ear infection. During a fast, that ear infection may return, or a faster's old sprained shoulder injury may start throbbing in pain. We should relax and drink plenty of fluids if we experience ghost infections or injuries.

Fasting's power is that we do not punish ourselves. Fasting restricts eating time. That is why diets fail. People on diets are not allowed to eat particular foods; thus, a diet punishes dieters. We do not have this punishment for fasting. For example, we can enjoy that ice cream bar as a treat after completing our fast. However, that does not mean we should eat a whole box of ice cream bars.

We do not want to go overboard with carbohydrates. For example, overweight women become less sensitive to insulin after fasting <sup>[163]</sup>. Thus, if they break their fast with massive quantities of white carbs, their bodies would have trouble using those white carbs for energy, and their blood glucose levels would rise. However, healthy men become more sensitive to insulin after fasting for 36 hours <sup>[194]</sup>. In their case, having some white carbs may not spike their blood glucose levels much.

### ***The Prolonged Fast***

Prolonged fasting is fasting beyond 24 hours. It becomes dangerous because we lose our appetite and the feeling of hunger. We can literally fast for days without hunger. Nevertheless,

prolonged fasts promote health more than shorter fasts, activating autophagy, triggering stem cell activity, and turning on longevity genes.

Prolonged fasting has the following health effects on fasters:

- **Improve Insulin Resistance:** People with elevated insulin levels should fast beyond 24 hours. High insulin levels prevent the body from switching the metabolism from glucose to fat <sup>[170]</sup>. Prolonged fasting helps restore our bodies' sensitivity to insulin.
- **Satiety:** Fasting helps restore our satiety and hunger signals so we eat the proper number of calories from each meal. Prolonged fasting restores insulin and ghrelin sensitivity <sup>[106]</sup> and shrinks the stomach. Our empty stomachs release ghrelin, a hormone that tells our brains it is time to eat. A properly working ghrelin signal tells the brain when we should stop eating <sup>[39, 170, 195]</sup>. However, a poor diet and lowered ghrelin sensitivity can cause overweight people to overeat.
- **Healthy Weight:** Prolonged fasting causes people to lose and keep the weight off. A person can lose a pound (or 0.5 kilograms) of weight per day from fasting, excluding water weight. The statistics are unfavorable for people taking the usual advice – eat less and move more. About 1% of people dieting and exercising can lose and keep the weight off. Meanwhile, fasting has a higher success rate. About 25% of fasters continue to lose weight; another 25% can maintain their weight loss, while about 50% regain their weight <sup>[177]</sup>. Another study has about 45% of obese fasters maintain a lower weight, while another 15% continue to lose weight <sup>[190]</sup>.
- **Natural Weight Loss:** Prolonged fasters can lose weight naturally. The long fast causes people to use part of their fat stores. When prolonged fasters break their fasts, they increase their first meal by about 30%, but then they resume normal

eating starting with their second meal <sup>[196]</sup>. Thus, the faster never makes up for the calorie deficit.

- **Metabolism:** Fasting does not slow metabolism for short fasts, unlike dieting <sup>[33]</sup>. Fasting may boost metabolism by 3% if we end the fast within two days <sup>[197]</sup>. The mitochondria, the cell's energy furnaces, change after a 24-hour fast since they switch from glucose to fatty acids and ketones <sup>[198]</sup>. That is the key. We cycle between fasting and feasting to keep that metabolism roaring, burning food and fat.
- **Fat Burning:** As we fast beyond 18 hours, our bodies switch from glucose to burning fatty acids and ketones <sup>[158]</sup>. Thus, we start burning fat from our fatty tissues and fat stores.

We may only need to fast up to 48 hours since two days of fasting can maximize the health benefits. The exception is cancer, where fasting sanatoriums and centers were popular in the early 20<sup>th</sup> century. Medical doctors commonly prescribe water fasts between three and 14 days to cure cancer patients <sup>[38, 148]</sup>. Long fasts cause the body to dissolve and consume cancer and tumors as the body assimilates unneeded tissues for nutrients and proteins. Remember, fasting switches on the body's housecleaning.

Many people want to fast for three days. The Longevity Institute's research found that mice fasting for three days renewed their immune system upon breaking their fasts <sup>[199]</sup>. The three-day fast helped the mice's immune system remove the old, malfunctioning white blood cells <sup>[199]</sup>. Breaking the fast activated the stem cells, which replaced the white blood cells <sup>[199]</sup>. The mice were on a fasting-mimicking diet, which permitted some food intake during the fast <sup>[199]</sup>.

Extended fasts can become dangerous. For example, fasting for 7 days or more may cause refeeding syndrome due to electrolyte imbalance <sup>[200]</sup>. Electrolytes are salts such as calcium, magnesium, phosphate, potassium, and sodium. They form charged particles when dissolved in water. Cell chemical reactions require electrolytes to function correctly <sup>[40, 200]</sup>. For example, unbalanced

electrolytes may cause dementia, heart arrhythmia, respiratory failure, seizures, and other serious problems <sup>[200]</sup>. Prolonged fasting causes a greater shock to underweight or malnourished people <sup>[40]</sup>. People with alcoholism, anorexia, cancer, diabetes, or bowel diseases are more likely to suffer from refeeding syndrome <sup>[40]</sup>.

A vital factor for extended fasts is how the fasts are broken. Fasters can break a two-day fast by eating normally. However, they should avoid sugary foods and white carbohydrates because of insulin sensitivity. When people fast for three days or more, their digestive systems may lack enzymes to process and break down food. Fasters should break these long fasts by gradually reintroducing food into their bodies.

The following examples show how we reintroduce food into your bodies:

- **Simple Foods:** Fasters can break a prolonged fast by drinking freshly squeezed juice or bone broth. For the second meal, fasters drink juice and broth and add steamed vegetables and fruit <sup>[38, 148, 150, 187, 201]</sup>.
- **Dairy:** Some people add dairy products to their second meal without problems, while others cannot <sup>[150, 187]</sup>.
- **Special Diets:** Some people break prolonged fasts with a juice fast or a Daniel diet. The Daniel diet excludes meat, animal products, processed foods, bread, caffeine, and alcohol.
- **Spices:** The fasters' stomachs are sensitive. Thus, they should avoid spicy and salty foods <sup>[38]</sup>.
- **Protein:** Some scientists recommend plenty of meat and proteins to help fasters replace lost cells and cell components, while others recommend avoiding meat and protein for the first couple of meals <sup>[148, 150]</sup>.

Extended fasts come with another problem: Fasters can suffer from bouts of diarrhea. During our fast, our digestive systems take

a break from processing food. However, our livers are still filtering the blood and removing debris and old blood cells. Then our livers pass these wastes into the small intestines via the gallbladder duct. Diarrhea is common on the first and second days after a person breaks a prolonged fast.

### ***The Dry Fast***

The dry fast is the strongest fast because fasters abstain from all food and drinks. Nothing enters their mouths during the fast. Hormesis shows the body tries to overcome adversity and preserve internal biological processes. The greater the stress, the greater the body's response to overcome this stress; thus, the more the body gains health benefits from this stress.

A dry fast places the largest stress on the body. As we urinate during the fast, water and waste products leave our bodies. Since we do not have any new fluids coming in, salts like sodium start concentrating in the blood. Water has the property where it flows in the direction of higher salinity. Thus, concentrated sodium in the blood forces water to leave the cells and enter the bloodstream, which stresses the cells<sup>[202]</sup>. The cells contain microtubules that hold cells together and maintain the cells' shape. These microtubules crisscross inside the cells like I-beams that support and hold a building together. The dehydration forces the cell to shrink and clicks on autophagy to preserve the cells, reorganize these microtubes, and recycle damaged cell parts<sup>[203]</sup>.

Muslims practice dry fasting as part of the teachings of the Prophet Muhammed. During the holy month of Ramadan, Muslims cannot eat or drink anything between sunrise and sunset for a whole month. Furthermore, Muslims also abstain from carnal pleasures because fasting brings Muslims closer to God<sup>[204]</sup>. The fasting duration depends on where Muslims live on earth and can vary between 11 and 22 hours per day<sup>[122]</sup>. The lunar calendar determines the start and finish of Ramadan. The Prophet also recommended that Muslims fast on Monday and Thursday for non-Ramadan months. We can view the Monday and Thursday fasts as periodic cleaning and repairing, while Ramadan is the annual super house cleaning.

The Ramadan fast is short. However, dry fasting lasts a whole month, which creates a compound effect. The health markers for Muslim men and women improve during Ramadan. Both genders experience decreased blood glucose levels, inflammation markers, insulin growth factor, and LDL cholesterol <sup>[103, 122, 146, 204]</sup>. Men lose weight and experience triglyceride drops, while women show HDL cholesterol increases. In addition, some people are exempted from Ramadan fasting, such as children, elderly, severely sick people, and women who are pregnant, breastfeeding, or menstruating <sup>[204]</sup>.

Many YouTubers claim that one day of dry fasting equates to a three-day water fast. Some also claim the dry fast is a virus killer since autophagy is stronger as the cells break down and recycle virus proteins.

We know the dry fast is stronger, and fasters can lose a lot of water weight. For example, people performing a water fast lose about one pound (or 0.45 kg) of weight per day <sup>[148, 201]</sup>, while dry fasting causes about a 3-pound (1.39 kg) weight loss <sup>[38, 99, 148]</sup>. We know the weight difference most likely comes from water loss and dehydration. At last, the human body can produce small quantities of water. A kilogram of fat could create about 1.07 kgs of water <sup>[205]</sup>, which is insufficient to overcome dehydration from a dry fast.

We can perform two types of dry fasting. The soft, dry fast allows contact with water, like brushing teeth, showering, and washing the dishes. Since we are in contact with water, we can absorb water through the skin, which weakens the dry fast. However, we can perform a hard, dry fast, where we eliminate all contact with water during the fast. That way, no water enters our bodies during the fast.

Fasting is flexible. We can start with a dry fast. Once we made it to 18 or more hours, we could switch to a water fast. That way, we start with a stronger fast but end in a water fast. We also do not have to worry about dehydration and taking the dry fast too hard.

Before we should embark on our first dry fast, we should pay attention to five rules:

- **Rule 1:** We clearly understand why we are dry fasting. A dry fast is a perfect time to lie in bed all day and catch up with our

favorite TV programs or read a book. We should be an avid and frequent water fasters before embarking on a dry fast.

- **Rule 2:** We do not dry fast for days. We should fast for no more than a day. We can switch to a water fast if we want to fast for an extended time. Some fasters claim the dry fast is the easiest to do because the faster drinks no water or eats no food while fasting.

Some claim that drinking water awakens hunger. One scientific study showed that healthy participants could dry fast for five days without adverse health effects <sup>[201]</sup>. The body quickly adapts to dry fasting as hormesis maintains the body at optimal conditions during adverse situations.

- **Rule 3:** We relax, limit our physical activity, and avoid exercise during a dry fast. Of course, our athletic performance declines during a dry fast <sup>[206]</sup>. We should minimize going outside during hot, humid weather since the heat dehydrates us quickly. If we must exercise, we exercise towards the beginning or end of a fast, when we can drink fluids.
- **Rule 4:** If we are heavy coffee and tea drinkers, we may experience headaches, mood swings, and withdrawal symptoms during a dry fast <sup>[205]</sup>. We could plan our dry fast in advance by limiting caffeinated drinks before our fasting day.
- **Rule 5:** We should not perform a dry fast if dehydration exacerbates a medical condition, such as dry eyes, cataracts, or glaucoma <sup>[205]</sup>. Glaucoma is excessive fluid pressure in the eyes that damages them.

During a dry fast, we will experience increased thirst while our urine darkens. We may also develop headaches, dizziness, and sleepiness while dry fasting <sup>[207]</sup>. We can end the dry fast by drinking fluids. We can even convert the dry fast to water fast by drinking water and abstaining from food.

Dry fasting is a stronger fast. Although it takes the author 24 hours to feel the euphoria and spirituality from a water fast, it shortens to 10 hours on a dry fast. Once we start dry fasting, it becomes easier.

## ***Fasting Regimes***

American culture is inundated with various diets, even though fasting is not a diet. Fasting is time-restricted eating, restricting the time when people eat and do not eat. Frequent fasting leads to calorie reduction as fasters cycle between fasting and feasting.

The standard fasting regimes are listed from the easiest to the hardest:

- **LeanGains (or 16:8):** We fast for 16 hours and eat our meals in an 8-hour window <sup>[208]</sup>. We could time our fasts so it ends at dinner time with the family. Martin Berkhan developed this regime for men to lose fat, gain muscle, and become ripped. The 18:6 is also popular when we fast for 18 hours with a 6-hour eating window.
  
- **Eat Stop Eat (or 5:2):** We fast for one whole day twice weekly. That averages two days of fasting to five days of eating <sup>[186, 208]</sup>. We would spread the fasting days evenly over the week. A British journalist, Michael Mosley, created a similar fasting regime by allowing women to eat up to 500 calories per day and men to eat up to 600 calories per day on fasting days <sup>[186]</sup>. Some fasters do not agree with calorie consumption and claim that any food on the fasting day violates the spirit of the fast.
  
- **The Warrior Diet (or 20:4):** For this regime, we shorten our eating window to four hours and extend the fasting window to 20 hours <sup>[208]</sup>. The theory of this fasting regime comes from Ori Hofmekler, who observed warriors' eating habits <sup>[208]</sup>. Warriors fight for 20 hours daily and eat all their calories in a short eating window at night between battles.

- **Alternate Day Fasting:** We fast for one whole day and feast the next day. Then we repeat the fasting and feasting days alternatively <sup>[208]</sup>. This fast is similar to the 5:2.
- **One Meal a Day (OMAD):** We narrow the eating window to one hour per day while extending the fasting window to 23 hours daily <sup>[209]</sup>. If we choose this fasting regime, we must eat balanced diets packed with vitamins, minerals, and nutrients because of the short eating window. Blake Horton recommends this diet as he shocks YouTube viewers. He gorges on a mountain of food during his eating hour as he gulps down 4,000 calories for a meal <sup>[210]</sup>. The power of intermittent fasting may be strong enough to overcome a bad diet. Some fasters gorge on fast food and do not gain weight or have health issues.
- **The Monk Fast:** We fast for 36 hours. Longer-duration fasts may boost autophagy and switch on longevity genes. Some call this an autophagy fast. For example, we could start fasting at 6 PM, fast for the entire next day, and promptly break the fast at 6 AM on the third day. We could adjust the start and end times for convenience.
- **The Weekly Super Cleanse:** We fast between 42 and 48 hours weekly. The weekly super cleanse should boost autophagy, activate stem cells, and switch on those longevity genes even more than the monk fast. The weekly super cleanse is two 24-hour fasts back to back with a four-day eating window. This fasting regime is powerful because fasting begins with the digestive system processing the food. After 12 hours into a fast, the body starts to burn the glycogen stores from the liver and muscles. Once the glycogen is depleted, the body switches over to ketones. Consequently, the super weekly cleanse would put us into a stronger state of ketosis as we would reap more health benefits than two 24-hour fasts per week.

We select one of the fasting regimes to fit our lifestyle and needs. Fasting embodies a dimension of spirituality, so we complement fasting with other techniques to further our growth along the path of enlightenment.

## ***Permitted Fasting Drinks***

Fasters can enjoy a variety of drinks and supplements during a fast. For a true fast, a person abstains from food and drinks except water. However, the faster has many options for non-caloric beverages. The beverages are free from sugar since sugar triggers an insulin response and pushes the body out of the fasting state. Unfortunately, sugar comes in many disguises.

Fasters can drink broth, coffee, flavored water, tea, soda water, vitamins, and minerals and not violate their fast. Although these drinks have a touch of calories, the calories are not enough to kick the faster out of the fasting state. It is like a speeder slowing down over a speed bump to protect a car's suspension. Once the speeder crosses the speed bump, he or she returns to violating all the traffic laws again with impunity.

### ***Bone Broth***

We should avoid bone broth for short fasts under 24 hours. The stress of fasting is important because the greater the stress, the more the body must preserve hormesis. Thus, the body must respond and handle this greater stress level.

Bone broth can help fasters endure longer fasts <sup>[40]</sup>. However, some fasters argue that any caloric intake during a fast violates a fast. Nevertheless, bone broth contains about 51 calories for a half cup and contains tiny quantities of carbohydrates, protein, and fat <sup>[211]</sup>. The bone broth contains essential minerals like calcium, magnesium, phosphorus, potassium, and sodium <sup>[40, 211]</sup>. These minerals provide the body with vital electrolytes and help prevent refeeding syndrome when we break prolonged fasts <sup>[40]</sup>. Bone broth also contains salt, and this salt can potentially dehydrate fasters.

Thus, we should drink plenty of water during a fast, which prevents dehydration.

We can make bone broth from beef, chicken, fish, lamb, or pork bones. We clean, wash the bones, and simmer in a covered pot with two bay leaves for four hours. Crock pots are ideal for controlling the simmering. Then we add Himalayan or sea salt to our broth during the last hour. We may need to add additional water as the broth evaporates. We pass the broth through a strainer to remove large particles and refrigerate. We reheat and drink as needed. We could also purchase premade bone broth from grocery and health stores.

Some people are vegans or vegetarians. They could make a broth from vegetables. Not only do vegetables add minerals and vitamins to the broth, but they also add trace amounts of carbohydrates. The easier we make our fasts, the less stress we place on the body, meaning we can derive fewer benefits from fasting.

Some fasters avoid going through the trouble of making broth. Dropping a bouillon cube into a mug of hot water is simpler. Unfortunately, bouillon cubes contain artificial colors, flavors, and monosodium glutamate (MSG) <sup>[40]</sup>. MSG enhances flavor, which many food companies add to prepackaged foods and snacks. MSG encourages people to eat more.

### ***Coffee***

Coffee is an excellent addition to any fasting regime, especially for fasters addicted to their warm cup of coffee in the morning. We fasters should drink black coffee, whether hot, cold, or iced coffee. However, we should avoid adding cream, milk, or sugar to our coffee. Sugar kicks us out of the fasting state. Furthermore, cream and milk contain lactose and protein, which could also kick us out of the fasting state. However, adding a tablespoon of heavy cream to our coffee is not the end of the world, but it could temporarily halt the fasting state.

One teaspoon of black coffee contains about 4 calories and comes with a touch of minerals like calcium, magnesium, phosphorus, and potassium and traces of vitamins like niacin <sup>[211]</sup>.

The coffee's taste and nutrient level depend on where the coffee is grown, roasted, and packaged. Darker roasts are usually more bitter than lightly roasted coffees.

For the fasters who cannot handle dark, strong coffee, or it is summer with temperatures climbing to scorching levels, a cup of iced coffee hits the spot. One method to lower coffee's bitterness is to cold brew coffee. For example, we add three tablespoons of ground coffee and cold water to a water bottle. Then we shake and refrigerate the coffee for a couple of days. Finally, we filter the coffee, add ice, and enjoy a refreshing drink on a scorching summer day.

Coffee can enhance a fast because both fasting and coffee switch on AMPK and switch off mTOR. Thus, both work together to boost autophagy<sup>[55]</sup>. Scientists found that decaffeinated and regular coffee turn on AMPK and turn off mTOR in mice. The scientists witnessed increased autophagy in the mice's heart, liver, and muscle cells<sup>[55]</sup>. Autophagy helps the starving cells recycle the broken, defective parts within a cell. Then the cells rebuild these lost structures with new parts when fasters break their fasts.

It's no wonder regular coffee drinkers experience lower risk rates for diabetes, heart disease, and cancer, such as liver and colorectal cancers and melanomas<sup>[212, 213]</sup>. Coffee drinkers also have lower rates of Alzheimer's disease, multiple sclerosis, and Parkinson's disease<sup>[212]</sup>. Nevertheless, coffee is a mild diuretic, which causes frequent urination and water loss. We should also drink plenty of water with our coffee.

### ***Drinks with Sugar and Sugar Substitutes***

Fasters must avoid anything containing sugar. Sugar goes by many names. For example, table sugar is sucrose, composed of one part glucose and one part fructose. Honey and agave nectar are also sugars, with honey being a combination of glucose and fructose and agave nectar being mostly fructose<sup>[40]</sup>. Many products contain a form of sugar. Fruits contain fructose, which gives fruits their sweetness. Cheese, milk, and dairy products contain galactose and lactose, while barley contains maltose. The digestive system uses

enzymes to break down these sugars into glucose, except for fructose. The liver breaks fructose down into fat. Thus, these sugars kick the faster out of ketosis and the fasting state.

Many people are addicted to carbonated, sweetened drinks and sodas, and these drinks would also violate a fast. Beverage companies use table sugar or high-fructose corn syrup to sweeten their drinks. Ironically, corn contains little sugar, so manufacturers extract the starch from corn and use a chemical process to break down the sugar into fructose. Although fructose may cause a small insulin response, the liver converts this fructose into fat.

The beverage industry makes a variety of zero-calorie drinks from artificial and natural sugar substitutes. In theory, these drinks may not elicit an insulin response and not violate a fast. The six commonly used sugar substitutes include:

- **Aspartame:** Manufacturers artificially make aspartame from two amino acids: Phenylalanine and aspartic acid. Some people are sensitive to aspartame as it raises phenylalanine levels in the brain.
- **Saccharin:** Manufacturers artificially make saccharin, available as Sweet’N Low.
- **Sucralose:** Manufacturers alter table sugar by replacing oxygen and hydrogen at three places with chlorine atoms. The digestive system cannot break down this sugar.
- **Stevia:** Manufacturers extract stevia from the plant, *Stevia rebaudiana*. Stevia comes from a natural source.
- **Erythritol:** Manufacturers ferment dextrose, a corn sugar, with a special microorganism. Erythritol is a sugar alcohol, found naturally in some foods and fermented products like cheese, beer, and wine. Our digestive systems do not have the enzymes to break down erythritol.

- **Monk Fruit:** Manufacturers extract a sweetener from monk fruit, which comes from natural sources and is becoming a popular sugar substitute.

The research is unclear whether these sugar substitutes would illicit an insulin response. However, we fasters should avoid sugar substitutes. First, drinking something sweet-tasting during a fast may awaken our hunger and encourage us to break our fasts prematurely. Second, the research is unclear, but these sugar substitutes may disrupt the microorganisms in our guts, affecting our gut health.

Another question is whether we should use these sugar substitutes when not fasting. Many people drink these zero-calorie sodas because they think they are reducing their calories. However, one study showed no difference between participants drinking a sweet, strawberry-flavored drink sweetened with aspartame, monk fruit, stevia, or table sugar <sup>[214]</sup>. All participants consumed the same calories and exhibited the same blood sugar and insulin spikes after eating <sup>[214]</sup>. Since we know we use a sugar substitute with zero calories, we may increase our caloric food intake.

## ***Exogenous Ketones***

Fasting causes the body to switch its primary fuel source from glucose to ketones and fatty acids. Ketones also signal the cells that energy is scarce and tell them to search for damaged components and debris inside a cell that could be recycled. Ketones also inform the cells to switch on autophagy and longevity genes <sup>[58, 64, 215]</sup>.

Periodic fasting, like exercise, causes the body to adapt quickly. For example, healthy women showed a drop in blood ketone levels during their second fasts <sup>[216]</sup> because their bodies adapted to fasting.

Taking exogenous ketones is one trick to keep our fasts intense and strong. They are a supplement and come in the form of ketone salts. These supplements also supply the body with calcium, magnesium, and sodium. The exogenous ketones may strengthen ketosis, which means we can fast for a shorter duration to get the

same health benefits as a longer fast while taking exogenous ketones.

The trick is to take the exogenous ketones after fasting for 16 or more hours. Taking exogenous ketones at the beginning of a fast may have little effect because we are burning glucose primarily for our energy. That is probably why some people rate exogenous ketones poorly: because of their little effect. We could also induce ketoacidosis if glucose and ketone levels are high in our blood at the same time <sup>[37]</sup>. High blood levels of glucose and ketones lower the blood's pH and make the blood more acidic.

### ***Carbonated and Flavored Water***

Water is the drink of choice for water fasting, whether we drink it from the faucet, bottle, or dispenser. We normally drink water with minerals, such as calcium, magnesium, potassium, and sodium. These minerals give water its taste, although water seems to be tasteless. For a comparison, just drink a glass of distilled water with no minerals.

We can expand our repertoire and add carbonated water and flavored water. The key is that the water must contain zero calories. For instance, carbonated water is effervescent and refreshing, especially for people addicted to sodas. Carbonated water goes by club soda, seltzer, and sparkling water. We could also add freshly squeezed lemon or lime juice to our water. These juices contain roughly 25 calories for one lemon or lime and contain Vitamin C, calcium, magnesium, phosphorus, and potassium.

We could add cucumber slices, fresh berries, orange slices, or pineapple to make flavored water. However, this practice becomes dangerous because berries, oranges, and pineapple can add sugar, kicking fasters out of ketosis.

We could go to the gas station or store and pick up vitamin or flavored water. However, beverage companies add sugar or artificial sugar substitutes to the water. Therefore, we would drink a concoction made in a laboratory and not from nature. The science is unclear whether artificial sugar and sugar substitutes kick fasters out of ketosis <sup>[217]</sup>. It is better to side with caution and avoid these

concoctions. We could also avoid zero-calorie soft drinks because of the excessive artificial colors and flavorings.

## **Tea**

Tea without cream and sugar is another wonderful drink fasters can consume because it contains nearly zero calories. Furthermore, tea contains tiny quantities of calcium, magnesium, phosphorus, potassium, sodium, and zinc <sup>[211]</sup>.

Tea comes from the *Camellia sinensis* and contains various polyphenols like catechins, flavonoids, and theaflavins. Polyphenols are antioxidants. Free radicals are produced as a byproduct as our bodies generate energy and heat from food and oxygen. Free radicals are charged molecules that damage cells, cell parts, and proteins. We also call free radicals reactive oxygen species. Accordingly, tea antioxidants neutralize these charged molecules. We also can get free radicals from smoking cigarettes and excessive sun exposure.

Tea comes in various flavors, prices, and quality. Laborers handpick high-priced teas, usually the top three leaves of new bush growth. The most popular tea is black tea that comes from the *Camellia sinensis*. Producers pick the new leaf growth of this bush and allow complete oxidation to turn the tea black <sup>[218]</sup>. Oxidation is when atmospheric oxygen darkens the tea and alters its chemical composition and flavor.

Another good choice is green tea, which comes from the same plant as black tea. Growers quickly dry the leaves to prevent oxidation, so green tea is slightly oxidized <sup>[218]</sup>. Green tea contains a polyphenol, epigallocatechin gallate (EGCG). Researchers found that EGCG turns on autophagy in mice's liver cells <sup>[219]</sup>. Polyphenols can help suppress appetite, boost metabolism, and weight loss <sup>[40]</sup>, which is why many supplements add green tea extract.

Steeping tea in water dissolves some of the chemicals from the tea leaves. Accordingly, Japan makes matcha tea, where the green tea leaves are pulverized into a fine powder, and matcha drinkers consume all antioxidants and nutrients from the leaves. Making

matcha tea is tricky. We place the matcha powder in a cup or bowl, add a little hot water, and use a special whisk to get the powder to dissolve completely. Then we gradually add hot water while whisking until we reach the desired concentration. We must be careful when buying matcha tea since some brands add sugar. Coffeeshops also make matcha smoothies, which violate a fast.

We can also get white and oolong teas from the *Camellia sinensis*. Producers do not allow the leaves to oxidize for white tea, while oolong tea is partially oxidized between green and black teas [218].

We can also buy black and green teas with mixed herbs or make herbs into tea. The herbs may depart some health benefits and include chamomile, dried fruit, ginger, hibiscus, jasmine, lavender, or mint. For example, ginger has antibacterial, antifungal, and antiviral properties and makes a great tea while sick.

### ***Vitamins and Minerals***

Taking vitamins and minerals while fasting is a contentious issue. Some fasters believe that taking vitamins and minerals makes the fast easier and weakens the fasting benefits. They also believe the digestive system needs complete rest from processing nutrients [38]. The body performs miraculously during a fast, maintaining calcium, magnesium, phosphorus, potassium, protein, and vitamin levels [32, 38].

During a fast, we shed excess water and lose sodium as we lose water [32, 100, 190]. Some fasters may add table salt, i.e., sodium chloride to their water. Some opt for Himalayan or sea salt because it contains traces of minerals.

One of the things we should be careful about is not restricting our sodium intake during our feasting cycles. We lose sodium as we fast. Thus, we need to replenish sodium during our feasting cycle, or we can become sodium deficient. Some sodium deficiency symptoms include irritability, fatigue, headaches, appetite loss, and muscle pain.

People fasting for more than two days may take spirulina or yeast extracts. Both contain traces of natural proteins, vitamins, and

minerals. Prolonged fasters believe these supplements can help them prevent refeeding syndrome as they end their fasts and start feasting again.

Some people avoid taking vitamins and minerals in pill form. The supplement industry creates vitamins from artificial sources or processes and extracts them from natural sources. For example, Vitamin E comes as one molecule in pill form but has 8 related molecules in natural form. Thus, natural sources are better than artificial ones.

### ***Smoking and Vaping***

Some people smoke or vape tobacco. Since they do not eat the tobacco, the digestive system does not process it. In theory, smoking and vaping do not violate a fast. However, smoking or vaping breaks the spirit of a fast because tobacco introduces harmful chemicals into the body during a fast. For example, tobacco smoke contains roughly 4,000 chemicals that create free radicals in the body <sup>[59]</sup>. Charged molecules can harm cells and damage the mitochondria and proteins within the cell <sup>[59]</sup>. Mitochondria convert glucose, ketones, and fatty acids into energy for the cells.

Smoking tobacco ironically turns on autophagy to remove damaged mitochondria in mice. However, this autophagy cleans and removes damaged parts in the cell from smoking and not from living life. Smokers could prevent damaging their mitochondria by not smoking.

The active chemical in tobacco products is nicotine, a stimulant at low doses and a poison at high doses. Nicotine use can lead to insulin resistance <sup>[89]</sup>, a complication that people with diabetes are familiar with. Insulin resistance causes the body to have trouble utilizing glucose for energy. Thus, blood glucose levels and insulin rise. High insulin levels encourage fat cells to increase fat storage. Hence, insulin resistance leads to metabolic syndrome when people have diabetes, heart disease, high blood pressure, and obesity.

The one habit that can rapidly age us is tobacco. We should avoid tobacco products, whether during feasting or fasting, because

of the harmful effects on the body. However, Chapter 5 discusses utilizing nicotine patches to encourage lucid dreaming.

## ***Low-Carbohydrate Diets***

We turn our discussion to low-carbohydrate diets since they share similarities with fasting. These diets restrict carbohydrates, which forces the body to switch from burning glucose to ketones and fatty acids. These diets complement fasting and work in conjunction with fasting.

### ***The Ketogenic Diet***

Medical doctors introduced the ketogenic diet in the 1920s as a treatment for childhood epilepsy. The term ‘keto’ in ketogenic is derived from ‘ketone,’ which becomes the body’s primary fuel source during fasts. By switching the body’s fuel to ketones, the ketogenic diet complements fasting. This diet has gained popularity recently as celebrities use it to shed pounds and improve their health, a testament to its effectiveness.

Contrary to fasting, people on the ketogenic diet do not abstain from food. They consume limited carbohydrates and proteins, which still elicit an insulin response <sup>[170]</sup>. However, the high consumption of fats and limited carbohydrates induce a state of ketosis. When the body burns fats from the diet or fat stores, this metabolic state is the key to the diet’s effectiveness. The ketones produced in this process send a starvation signal to the body’s cells, activating some of the same pathways as fasting, yielding similar health benefits <sup>[37, 215]</sup>.

Table 1 compares the dietary recommendations of the US Department of Agriculture and the ketogenic diet. We see the first major difference. The US government recommends that 45 to 65% of the daily calories come from carbohydrates, while the keto diet has a maximum of 10%. Women need around 2,000 calories a day, while men require 2,500 calories, which translates to a maximum carb consumption of 200 calories for a woman and 250 for a man. Those would be net calories after deducting the fiber calories because our bodies do not break down fiber. In addition, the protein

requirements are similar for both diets. Thus, the keto diet replaces carbohydrates with fat. The US government also recommends a severe fat restriction, especially saturated fats.

**Table 1.** Comparing the USDA and Ketogenic Recommendations

Macronutrient	USDA Recommendation	Ketogenic Diet
Carbohydrates (%)	45 – 65	5 – 10
Sugar (%)	< 10	
Protein (%)	10 – 35	25
Fat (%)	20 – 35	70
Saturated fat (%)	< 10	-

Source: US Department of Agriculture and US Department of Health and Human Services <sup>[167]</sup>.

Many keto dieters restrict carbohydrates to 100 or fewer calories daily. Table 2 shows what keto dieters can consume daily for food loaded with carbohydrates. People on the keto diet can have a small portion of fruit daily. Strawberries are slightly better than pineapple. Unfortunately, bread and pastries pose problems. A little bit of bread can easily exceed the daily carb requirement for the keto diet. At last, the premier sandwiches at fast food places are loaded with carbs.

Some people follow the dirty keto diet and eat a Big Mac or Whopper but throw away half of the bun. The bun raises the carb calories. For Starbucks fans, Starbucks offers heavy cream and almond milk to avoid carbs. Finally, once keto dieters have attained their maximum daily carbs, they must consume protein and fats for the remaining day.

The US government advocates a carbohydrate diet, which shows in America's health. Roughly 11% of Americans have diabetes, and 35% have pre-diabetes <sup>[167]</sup>. Remember, diabetes is a person's trouble utilizing glucose for fuel, and the US government recommends a diet high in carbs, which our bodies break down into glucose. Thus, these statistics should not shock anyone.

**Table 2.** Foods with About 100 Calories or less in Net Carbs

Fresh Fruit	
One medium apple with skin	One cup of pineapple
One cup of cherries	Two small peaches
One small banana	Two cups of strawberries
One large orange	One wedge of watermelon
Bread and Pastries	
Two slices white bread	½ plain bagel
Two slices wheat bread	One medium croissant
Fast Food	
½ Big Mac	Small French Fry
½ Whopper	½ Chicken sandwich

Source: Calorie King <sup>[220]</sup>.

The body requires an adjustment period to switch from burning glucose to ketones and fatty acids. Some people experience the keto flu when switching from a carb-loaded diet to a keto diet with little carbohydrates. People with keto flu experience diarrhea, dizziness, headaches, nausea, vomiting, and weakness for about a week <sup>[221]</sup>. Furthermore, the change from glucose to ketones and fatty acids alters the bacteria on our skin and inside our bodies and gut. Thus, a person’s smell can change by switching to the ketogenic diet.

Many medical doctors and researchers debate the health benefits of the ketogenic diet. For example, high-fat diets raise LDL cholesterol in mice <sup>[123]</sup>, i.e., the bad cholesterol. However, the ketogenic diet turns on autophagy in the mice’s brain and liver cells <sup>[51]</sup>. The reason is that the ketogenic diet switches the body’s fuel to ketones and fatty acids, which tells the body’s cells that food is scarce. Thus, the cells search for cell parts that can be broken down and recycled. However, we should be cautious about rodent studies because humans and rodents differ in metabolisms; thus, the rodent results may not translate to humans.

Researchers performed a human trial with the ketogenic diet. US soldiers on the keto diet lost an average of 16.9 pounds (or 7.7 kg) <sup>[222]</sup>. They also lost visceral fat and became more sensitive to insulin

compared to the control group <sup>[222]</sup>. Both the keto and control groups performed similarly in athletic performance <sup>[222]</sup>. This study also confirmed that soldiers on the keto diet needed three days to enter the ketosis state.

Researchers performed another human study that split the subjects into high-fat and low-fat diets <sup>[223]</sup>. The high-fat diet comprised 39% of fat calories, while the low-fat diet was restricted to 22% of fats <sup>[223]</sup>. Although the high-fat diet is lower than the ketogenic diet, the LDL and HDL cholesterol levels were similar for both the high-fat and low-fat dieters <sup>[223]</sup>. The only difference was that the low-fat group exhibited higher triglycerides. The theory is that high blood glucose elevates insulin levels, which tell the body's cells to consume glucose for energy. Furthermore, the high insulin levels tell the fat cells to store more fat, which is triglycerides. Thus, the triglycerides come from the high carb consumption.

High triglycerides have another sweet source. People consuming too much table sugar, fruit, or products sweetened by high fructose corn syrup may increase triglyceride levels. Table sugar is half glucose and half fructose. Our bodies' cells can utilize glucose for energy; however, the liver breaks down fructose into triglycerides and stores them <sup>[224]</sup>. People consuming too much fructose may have a fatty liver with high triglyceride levels, which lead to insulin resistance, diabetes, heart disease, and obesity <sup>[170, 224]</sup>.

The ketogenic diet may not be strong enough to overcome a lifetime of bad eating and insulin resistance <sup>[40]</sup>. People could complement fasting with the ketogenic diet. For example, a faster eats a ketogenic diet for breakfast and lunch and then starts his or her fast. That way, the faster enters ketosis much sooner with little transition period. The two keto meals lack carbs and help transition to ketosis much sooner. At last, a person can break a fast with the ketogenic diet to maintain high blood ketone levels.

### ***Keto Diet Health Benefits***

The ketogenic diet packs several health benefits. Researchers surveyed about 135,000 subjects across 18 countries. They found that people eating the most carbohydrates had higher mortality rates

[225]. The high-carb group also suffered the most heart attacks, strokes, and cardiovascular diseases [225]. The people consuming the largest amounts of fat in their diets experienced the lowest stroke rate [225]. The fat type, whether saturated or unsaturated, did not change the results [225]. Remember, the US Department of Agriculture recommends a diet with a maximum of 10% saturated fat [167]. We must be careful of this research's results because a survey depends on people remembering and truthfully answering the survey's questions.

The ketogenic diet switches the body from burning glucose as its primary energy to ketones, which has the following effect on people's health:

- **Autophagy:** Ketones inform the body's cells that food is scarce. Thus, the cells switch on autophagy and start searching for bad or defective cell parts to recycle [37].
- **Cancer:** We discussed the Warburg effect, in which the primary food source for cancer is glucose, i.e., sugar. The ketogenic diet switches the body's fuel source from glucose to ketones, possibly starving the cancer.

A mice study shows ketones can starve glioma, a nasty cancer cell forming tumors along the spinal cord and inside the brain. The glioma mutates from glial cells whose purpose is to help, maintain, and support the neurons. The glioma can metastasize into any cancer type [226], which makes them particularly dangerous. The glioma is also difficult to treat. However, the glioma depends on sugar for energy and growth [226]. People on the keto diet could starve this cancer and possibly starve and kill these cancer cells, i.e., via apoptosis [226].

- **Insulin:** A keto diet lowers insulin levels since the diet is low in carbohydrates [37]. We have already learned from diabetes that high insulin levels can lead to insulin resistance and inflammation. Ketones may directly lower inflammation [227].

- **Heart Health:** A healthy heart prefers ketones for energy. A keto diet raises blood ketones naturally <sup>[37]</sup>.
- **Longevity:** Cells get their energy from mitochondria. The mitochondria supply energy more efficiently when burning ketones rather than glucose <sup>[228]</sup>. The NAD<sup>+</sup> in the mitochondria rises, which stimulates the longevity genes called sirtuins. Thus, the ketogenic diet may turn on and activate the sirtuins, which we discuss at the beginning of this chapter <sup>[37]</sup>. The sirtuins can lower inflammation, repair DNA, improve the mitochondria's energy efficiency, and prevent some cancers <sup>[66]</sup>.

The ketogenic diet is not without its critics. Some researchers published studies showing that the ketogenic diet is harmful to dieters.

### ***Bulletproof Coffee or Tea***

Drinking bulletproof coffee or tea has become popular with keto dieters, fasters, and diabetics. Technically, bulletproof coffee or tea would violate a fast since this drink packs in calories, primarily fat calories.

Dave Asprey invented bulletproof coffee in 2009 after traveling to Tibet and drinking yak butter tea. The butter comes from a yak and not a cow. The Tibetan monks drink butter tea to keep them warm, cure them from altitude sickness, and heighten the mind's clarity.

Many internet influencers and bloggers have their favorite recipes. The recipes may add two or more of the following ingredients:

- **Strong coffee or tea:** The coffee or black tea can be freshly brewed or instant. We have already learned that coffee and tea have health benefits that complement the ketogenic diet.

- **MCT Oil:** MCT stands for medium-chain triglycerides (MCT), which are fatty acids. MCT oil is small fatty acid molecules that our bodies can quickly break down into energy. We can substitute coconut oil or coconut milk since half the fats are MCT.
- **Butter:** Butter is primarily saturated fat that is broken down into triglycerides. It contains fat-soluble vitamins like A, D, and E and the mineral calcium. Many keto dieters and fasters prefer grass-fed butter.
- **Heavy Dairy Cream:** Our bodies can break down another source of saturated fat into triglycerides. Heavy cream may have fat-soluble vitamins like A, D, E, and K.

We combine all ingredients into one cup of rich, delicious joe. The heavy dairy cream has emulsifiers that allow the MCT oil and butter to mix with the water in the coffee.

We can find many recipes on the internet for bulletproof coffee and add chocolate, cinnamon, nutmeg, or pumpkin flavor. We could also add stevia and/or erythritol for a touch of sweetness.

We can estimate the calories of bulletproof coffee or tea. One teaspoon of fat is four grams, while a gram of fat has 9 calories. Thus, a teaspoon is 36 calories. Furthermore, one tablespoon is three teaspoons, which means a tablespoon of fat equals 108 calories. Thus, one tablespoon of butter, MCT oil, or heavy cream is approximately 100 calories.

Some fasters, keto dieters, and diabetics drink a large cup of bulletproof coffee or tea for breakfast. That drink serves as their breakfast and a quick energy boost, keeping the drinkers satiated until lunch.

### ***The Fasting-mimicking Diet***

The fast-mimicking diet, a unique approach to fasting, was developed by Valter Longo, the director of the Longevity Institute, a renowned department at the University of Southern California <sup>[229]</sup>.

This five-day diet allows fasters to not completely abstain from food but still reap the benefits of fasting <sup>[230]</sup>.

The diet's protocol is the following:

- **First Day:** The diet restricts total daily calories to 1,090, comprising 34% carbohydrates, 10% protein, and 56% fat <sup>[230, 231]</sup>. The first day is the transition day, with the highest calorie and fat composition.
  
- **Remaining Days:** The diet restricts total daily calories to 725 calories, comprising 47% carbohydrates, 9% protein, and 44% fat <sup>[230, 231]</sup>. Although carbohydrates are high, researchers suggest this diet is ketogenic because of the calorie restriction <sup>[139]</sup>.

Some fasters need help to become used to fasting. New fasters experience extreme hunger as it is a new experience to go 12 or more hours without eating. The fast-mimicking diet can help with this transition. Valter Longo started the company L-Nutra, which sells meal kits that comply with the fasting-mimicking diet <sup>[229]</sup>. The five-day meal kits start at \$170.

The fasting-mimicking diet restricts food intake enough to trigger the benefits of fasting. For example, scientists found that the fasting-mimicking diet increased the number of stem cells once the faster has ended the diet <sup>[230]</sup>. The body uses stem cells to replace damaged cells in organs and tissues since fasting destroys damaged cells during the fast to recycle them into proteins. Stem cells have no identity and can transform into any cell type in the body. Furthermore, the body removes senescent white blood cells in mice <sup>[95, 199]</sup>. Senescent means the cells can no longer divide. Scientists view senescent cells as zombie cells because they create protein messages that interfere with the surrounding healthy cells. The mice's immune system uses stem cells to make new white blood cells <sup>[199]</sup>.

The faster should eat healthy food during refeeding and avoid carcinogenic food and chemicals. These chemicals could damage new cells and turn them cancerous <sup>[106, 143]</sup>.

## ***Extreme Fasting and Enlightenment***

Gautama Buddha was a prince searching for enlightenment <sup>[17]</sup>. He studied under several ascetics and sages and mastered their techniques <sup>[17]</sup>. Buddha also studied meditation, mind control, breathing techniques, and sensory deprivation <sup>[17]</sup>. However, he felt he was missing something. He did not find the ultimate mental state <sup>[17]</sup>.

Buddha practiced extreme fasting, eating a cup of vegetable soup daily and wasting away from the lack of calories <sup>[17]</sup>. Ironically, all the Buddha statues portray him as a large, plump man. As we can imagine, Buddha wasted away from extreme calorie deprivation <sup>[17]</sup>. He lost substantial fat tissue and muscle mass and suffered from vitamin and mineral deficiencies, which caused diarrhea, hair loss, itching, and cracked skin <sup>[17]</sup>.

On the verge of death, Buddha decided to stop fasting <sup>[17]</sup>. A person walked by and offered Buddha rice pudding made with milk, rice, and sugar <sup>[17]</sup>. The rice pudding sent Buddha on a 9-hour trip where he witnessed and watched his past lives, deaths, and rebirths. He also passed through heaven and hell <sup>[17]</sup>.

We know that extreme fasting and rice pudding affected Buddha's brain. The rice pudding contained milk, which is rich in tryptophan. Thus, tryptophan raises the serotonin and tryptamine levels in the brain <sup>[17]</sup>. In Chapter 7, we will learn about psychedelic drugs that stimulate the serotonin levels in the brain, such as LSD, psilocybin, ayahuasca, and mescaline. Psychedelics induce hallucinations, dissolve the ego, and enhance spiritual experiences. Essentially, Buddha went on a natural, hallucinogenic trip induced by extreme fasting and breaking the fast with rice pudding.

Buddha established Buddhism in the 4th century BC. The Jain religion is an offshoot of Buddhism and was founded around the same time. Lord Mahavira, the Great Hero, founded Jain or Jainism in northern India <sup>[30]</sup>. The Jains emphasize asceticism as the path to enlightenment and spirituality <sup>[30]</sup>. Teachers show the path to enlightenment, while students must traverse this path on their own. Ascetism includes living as a monk or hermit with few necessities

and denying oneself any pleasures. They do not eat meat and engage in chastity, fasting, and prayer. The Jain monks or nuns set daily times for confessions, prayers, meditations, fasting, and yoga <sup>[10, 30]</sup>. They do not believe in divine power and do not worship and revere gods and goddesses.

Jains believe favorable, tasty food is addictive, dulls the senses, and wastes one's energy <sup>[30]</sup>. Austerity and restrictions are a way to cleanse, strengthen, and purify the body and soul <sup>[30]</sup>. Thus, their bodies become stronger, less likely to become ill, lack sexual desire, and feel indifferent to cold and heat <sup>[30]</sup>.

Jain sounds like other religions, but it has several significant differences. First, a soul begins in a primitive, primordial state. The soul can evolve into a higher state or regress to a lower state, which karma determines. Thus, Jains cannot harm any life since life represents a soul. Therefore, Jains avoid all forms of violence <sup>[30]</sup>. Second, a soul can be good or evil. Fourth, the cycle of rebirths and deaths has a beginning and an end. Every soul is reborn 8.4 million times, going through various human and non-human bodies. They achieve perfect knowledge and become free from hate and love <sup>[10]</sup>. Finally, a soul transcends reincarnation and becomes eternally omniscient <sup>[10]</sup>.

The Jains use fasting to wither away desire and volition and remove the karma from the soul. The soul becomes free and omniscient after the body releases it <sup>[30]</sup>. That means Jains fast until attaining death. For example, Rajcandra and Amarchand-ji fasted until they died, which is called samadhi-maran – death while meditating <sup>[30]</sup>. Rajcandra fasted for 36 days. In the end, he said, “Now I will die.” People claimed saffron fell to the earth like rain while a wound appeared on his head with a cracking sound, i.e., he freed himself from the cycle of reincarnation and became free <sup>[30]</sup>. Essentially, his son did not need to crack his father's head to release his soul since he performed his own death ritual by cracking his own head <sup>[30]</sup>.

## ***Conclusion***

It is amazing how fast Americans have forgotten the fasting cure. Just imagine if a pharmaceutical company could take the benefits of fasting and condense it compactly into a pill. It would be the most sought-after pill in the history of humankind. Of course, we do not need to wait for the pill. We can begin fasting with 16 hours being the sweet spot.

In this book, we advocate fasting as another tool to help people traverse the path to enlightenment. Fasting helps us in the following ways:

- Fasting is not just a spiritual practice; it's a biological reset. It activates the body's repair and cleansing mechanisms, switches on longevity genes, and even reverses inflammatory diseases. By fasting, we cleanse and repair our bodies, leading to improved mental clarity and heightened sensitivity to spirituality. This, in turn, enhances our meditation and self-reflection practices.
- Fasting helps to reinforce discipline and self-control, which helps us gain control over our Freudian ids, that little demon who is always naughty. The ego is the one imposing discipline and self-control, while the superego contains the religious and societal norms of fasting. Thus, we transcend our desires and impulses and gain mastery over our minds and bodies. We do not become stuck at the bottom level of Maslow's Pyramid.
- Some believe fasting can heighten our sensitivity to spirituality. Since our bodies process less sensory information from food processing, we can turn inward and focus on our thoughts, emotions, and spirituality.
- Since fasting is associated with the world's religions, we become more connected to our cultural and religious heritages via fasting. Religion can become our source of inspiration and spirituality.

- We can develop compassion, empathy, and humility for starving people who lack access to food. Spiritual growth requires compassion, kindness, and humility.
- Fasting could evoke Jung's archetypes for symbols and themes of purification, sacrifice, spirituality, and transformation. Prophets have used fasting to communicate with the divine.
- Fasting may trigger profound psychological and spiritual insights that are imbued with religious and symbolic significance.

We see that fasting affects the trinity of enlightenment—a healthy body, a healthy mind, and spirituality. To compound the effects, we combine fasting with meditation, sensory deprivation, and drug-assisted enlightenment. Thus, we fast and allow that inner peace to sweep and gain a foothold in our minds. Thus, fasting becomes another tool to help us achieve enlightenment.

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## Chapter 4. Meditation

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“You should sit in meditation for twenty minutes every day – unless you're too busy; then you should sit for an hour.”

– Eric Rodenbeck

Thoughts require energy. We allow our thoughts to rush back and forth like a wind blowing through a wheat field. In contemporary life, we occupy ourselves with consumption that keeps us grounded at the lower levels of Maslow's pyramid <sup>[29]</sup>. We use meditation to elevate ourselves above consumption and study how our thoughts as energy interact and ricochet in our minds <sup>[29]</sup>. We learn how this energy works against each other as we learn how to focus our minds <sup>[29]</sup>.

Meditators relax and practice on focusing their awareness on an activity, an object, a thought, or a sound <sup>[8]</sup>. They use meditation to clear and focus their minds and quiet their emotions <sup>[8]</sup>. They direct all their thought energy to one task. Thus, we gain power <sup>[8]</sup>. Meditation helps increase our concentration and focus, which improves our performance in learning, sports, and activities <sup>[8]</sup>. Some Buddhist teachers recommend that people meditate, incorporating spiritual practices and strengthening their compassion, empathy, and wisdom, along with the increased power of meditation <sup>[8]</sup>.

We use meditation to enhance our senses. We focus on daily activities like enjoying food, appreciating art, or listening to music <sup>[8]</sup>. Intercourse, massages, and other types of pleasure become heightened and enjoyable <sup>[8]</sup>.

Meditation is a form of medicine. The words meditation and medication are similar since they differ by one letter. Medication helps sick people heal themselves from an illness, while meditation helps people heal their minds <sup>[232]</sup>. Our modern world is stressful. We live in a busy, chaotic world filled with deadlines, obligations, and due dates, where life pulls us in multiple directions. Meditation

helps us find calmness, harmony, and inner peace <sup>[8, 232]</sup>. We strive for clarity of mind and experience the essence of everyday life <sup>[232]</sup>.

We use meditation to help us achieve enlightenment. In Hinduism, enlightenment means recognizing that everything in life is related and connected <sup>[233]</sup>. We reach a state called samadhi, where we focus our attention and concentration like a laser beam on our daily activities <sup>[8]</sup>. Time stops; our internal dialogue stops and melts away as we become one with our activity <sup>[8]</sup>. Then meditation helps us achieve nirvana, as we lack a self, a state without an ego <sup>[233]</sup>. We have no desires; we eliminate our suffering. We are at peace.

## ***History of Meditation***

Historians trace the history of meditation to the shamans in hunter-gatherer societies before Hinduism and Buddhism <sup>[8]</sup>. Shamanism was widespread in Africa, Asia, Australia, Mexico, and South America <sup>[8]</sup>. Hunter-gatherer societies had shamans, who entered into trances or altered states of consciousness while the tribe tapped on drums, chanted, and danced in slow, repetitive motions <sup>[8]</sup>. The shamans guided the dead as they were the link between the real and spirit worlds <sup>[8]</sup>. They sometimes used hallucinogenic plants, where they traveled to the spiritual worlds to learn wisdom, gain healing abilities and magical powers, and return with blessings for the tribe <sup>[8]</sup>.

Carlos Castaneda wrote several books under the tutelage of a Mexican shaman, Don Juan. Carlos Castaneda wrote his first book from his Ph.D. dissertation for UCLA in 1970. Don Juan used hallucinogenic drugs like peyote, Jimson weed, and magic mushrooms to access other worlds and induce altered states of consciousness. Peyote comes from a cactus with mescaline as the hallucinogen, while magic mushrooms are known as psilocybin. We discuss these two hallucinogens in Chapter 7. We do not discuss Jimson weed because every plant part is poisonous. Furthermore, Carlos Castaneda's books are not referenced in this book because some researchers believe Castaneda's works as fictional, although the books make interesting readings.

We can trace meditation's roots to India, where sadhus and yogis cultivated and practiced meditation for over 5,000 years <sup>[8]</sup>. Sadhus are monks and holy people. Sadhus and yogis practiced breath control while focusing their minds on the Divine. Yogis strive for the state called samadhi when they detach themselves from the self or ego and become one with their consciousness <sup>[8]</sup>. They view samadhi as not a final destination or goal; they simply return to our natural, original state.

Meditation appeared in the Hindu tradition of Vedantism in 1,500 BC <sup>[233]</sup>. Vedantism is based on the Vedas, the sacred scriptures of India. The Sanskrit word, dhyana or jhana, refers to sitting down cross-legged and engaging in mindfulness, or training of the mind, which is a form of meditation <sup>[233]</sup>. The Vedantism established meditation as one of the paths to spiritual enlightenment <sup>[233]</sup>.

Religions share some commonalities. For example, Hinduism introduced the world to prayer beads, which are common in Buddhism, Christianity, and Islam. The Hindu japa mala has 108 beads because the number 108 has spiritual significance and is similar to the Jainism and Buddhist prayer beads. A person counts each bead once as he or she recites a mantra until that person has gone all the way around the mala. The counting and focusing of the mind becomes a form of meditation.

Meditation has roots in ancient China. Laozi, an ancient Chinese philosopher in the 6<sup>th</sup> century BC, established Taoism (or Daoism) <sup>[233]</sup>. He taught believers how to live in harmony with the universe under several deities. The order of the universe is referred to as the Dao. He also believed the spirit lived on after a person's death. Taoism embraced the three pillars - compassion, patience, and simplicity. Taoists use concentration, contemplation, mindfulness, and visualization meditation techniques to bring them in harmony with Dao.

Western religions established meditation practices. For example, Judaism has meditation practices from the Kabbalah and the Tora. The Tora establishes the law and is the first five books of the Bible – Genesis, Exodus, Leviticus, Numbers, and Deuteronomy, which Moses wrote. Moses is also a major prophet in

Christianity, Islam, and Judaism. Religious followers are directed to meditate on the teachings of the Tora. From the Bible, Joshua 1:8<sup>[16]</sup>, “Keep this Book of the Law (i.e., Torah) always on your lips, meditate on it day and night, so that you may be careful to do everything written in it. Then you will prosper and successful.” The Psalms also reference meditation several times.

Prayer is a form of meditation. Christians trace prayer to Jesus, who fasted and prayed in the desert for 40 days (Matthew 4:1-11<sup>[16]</sup>). The devil tried to tempt Jesus but failed. As Jesus left the desert, he established his ministry. Believers pray (meditate) to open their minds and hearts to God<sup>[8]</sup>. In addition, Christians use prayer to approach God with devotion and humility and invite God into their hearts<sup>[8]</sup>. Some believers may include complaints and requests, which may defeat the purpose of prayer<sup>[8]</sup>.

The desert fathers of Egypt and Palestine were the first Christian meditators in the 3<sup>rd</sup> and 4<sup>th</sup> centuries<sup>[8]</sup>. They lived in solitude and constantly repeated a sacred phrase to become aware of the Divine presence<sup>[8]</sup>. Medieval Europe's monks, mystics, and nuns are descendants of the desert fathers<sup>[8]</sup>. They also lived in solitude in the monasteries and practiced repeating and contemplating a scripture passage until its deeper meaning revealed itself in their minds<sup>[8]</sup>. Some quote the passage, “When you pray, go into your closet, your innermost being, and bolt the door (Mathew 6:6<sup>[16]</sup>).” Some interpret this verse as isolating themselves and contemplating on scriptures.

The Roman Catholics adopted the rosary, a string of beads with sets of 10 beads called Hail Marys or decades. The rosary is similar to the Buddhist and Hindu prayer beads. Catholics use the beads to count and track their prayers. They usually cite five decades or sets in one prayer session. The rosary helps Catholics venerate Mary, Jesus's mother, and meditate on Jesus's life.

Meditation is intertwined with Islam and Sufism. Prophet Mohammed established Islam in 613 AD. Islam means submission to God. The Prophet wrote the Quran under the guidance of the Angel Gabriel and is similar to the Tora, which established the law for Muslims. Sufism has earlier roots than Islam and possibly evolved from Persian and Indian sources<sup>[7, 8]</sup>. Sufism focuses on

spiritual development and avoids legalism <sup>[6, 7]</sup>. However, some Muslims reject Sufism and claim it violates the teachings of the Prophet Muhammed <sup>[6]</sup>. Sufis' sole purpose is to bring God into their hearts through self-reflection and contemplation and merge with Him <sup>[6-8, 233]</sup>. Sufism strives for human perfection <sup>[6, 7]</sup> while shunning materialism and materialistic goods <sup>[233]</sup>. Sufism varies from teacher to teacher, from country to country, and from century to century <sup>[7, 8]</sup>.

The Sufis practice meditation, where they chant mantras, sacred phrases or words out loud, or silently in their heads while breathing rhythmically and deeply <sup>[233]</sup>. This meditation technique is called "Remembrance of the Divine <sup>[8]</sup>." The Sufis cultivate and refine this meditation technique to surrender to God in each moment, with each breath <sup>[8]</sup>. The Muslims have prayer beads with 99 beads strung together, called a misbaha. They count and call out the 99 beautiful names of God while praying.

The religions that are discussed in Chapter 2 have various forms of meditation. Western religious beliefs and traditions are one of the paths to enlightenment and self-realization <sup>[233]</sup>. Meanwhile, Eastern philosophies arrived in the United States in the 19<sup>th</sup> century with their meditation practices. We learn many of these religious meditation techniques without focusing on the lens of religion and religious laws, rules, and traditions.

### ***Meditation Health Benefits***

In the United States, 9.3 million people have meditated in the past year <sup>[234]</sup>. People use meditation to improve their general health and wellness, gain more energy, improve their concentration and memory, and reduce stress, anxiety, and depression <sup>[234-236]</sup>. The most common meditation techniques are mantra, mindfulness, and spiritual meditations, which we describe in detail <sup>[234]</sup>.

The demographics of American meditators are interesting. Participants are most likely female, 40 – 64 years old, white, non-Hispanic, and college-educated, living in the Western United States <sup>[234]</sup>. The participants are not in a relationship; they smoke tobacco,

drink alcohol, and suffer from one or several chronic health problems <sup>[234]</sup>.

The health benefits of meditation include the following:

- **Improved Brain Health:** Meditation helps people maintain cognition and protects the neurons in the brain <sup>[237, 238]</sup>. It can also help alleviate the symptoms of Alzheimer's and Parkinson's diseases and dementia <sup>[239]</sup>.
- **Better Sleep:** Meditation improves sleep quality and helps sleepers overcome insomnia <sup>[236, 239, 240]</sup>. Better-quality sleep carries over into our health and well-being. Meditation causes the brain to slow brain wave activity during deep sleep <sup>[241]</sup>. Deep sleep is necessary since the brain and body undergo repairs and cleansing. The meditator's brain switches from deep sleep to higher brain wave activity during rapid eye movement (REM) sleep when dreaming <sup>[241]</sup>.
- **Improved Heart Health:** Meditation can improve a person's heart health, such as lowering a person's systolic and diastolic blood pressures <sup>[8, 237, 239, 242-244]</sup>. Systolic is the maximum blood pressure of a heartbeat, while diastolic is the lower pressure when the heart rests. A healthy blood pressure is 120 mmHg or less for systolic and 80 mmHg or less for diastolic. Furthermore, people suffering from hypertension can use meditation to help naturally reduce their blood pressure and slow their heart rate <sup>[8]</sup>. Thus, the heart does not work as hard to pump blood through the body. At last, meditation may help lower cholesterol <sup>[8, 245]</sup>.
- **Boosting the Immune System:** Meditation enhances a person's immune system, particularly B-cells and natural killer cells <sup>[244]</sup>. B-cells, a type of white blood cells, make antibodies that attach and neutralize pathogens in the body, whereas natural killer cells kill cancer cells or virus-infected cells.

- **Reduced Inflammation:** Meditation reduces inflammation [237, 243]. As a foreign substance, such as a bacteria, fungi, or virus, enters the body, the immune system goes into hyperdrive to remove and destroy that threat. In this case, inflammation is healthy and good for the body. However, chronic inflammation causes the immune system to be on high alert and attack healthy cells, tissues, and organs. The following conditions lead to chronic inflammation: Asthma, fatty liver disease, diabetes, inflammatory bowel disease, Rheumatoid arthritis, and obesity.
  
- **Psoriasis Improvement:** People with severe psoriasis significantly improve after meditation sessions [246]. Psoriasis is a person's skin becomes inflamed and flakes away. Researchers believe the immune system attacks the skin, a side effect of chronic inflammation.
  
- **Healthy Aging:** Meditators age more healthy [239, 247]. Meditation can slow the shortening of the telomeres [237, 247]. Telomeres are the caps at the end of our DNA, like the aglet at the end of a shoestring. Telomeres stop the ends of the DNA from fraying. When a cell divides, the telomere becomes shorter. Once the telomere becomes too short, the cell stops dividing. Then the cell becomes senescent and sends protein messengers that disturb the surrounding healthy cells. Some age-related diseases are associated with shortened telomeres and senescent cells.
  
- **Greater Energy and Metabolism:** Every cell contains mitochondria that produce energy from the cell. Energy comes from glucose (i.e., sugar), fatty acids, and ketones. Meditation helps improve the genes for mitochondrial function, energy metabolism, and insulin secretion [237, 243]. Meditation may help people with Type II diabetes improve their insulin sensitivity [248]. The pancreas produces insulin that allows cells to consume glucose for energy.

- **Alleviate Chronic Pain:** Meditation may help alleviate chronic pain [8, 239, 249, 250].
- **Exercise Improvement:** Meditation helps people boost exercise duration and intensity [243]. People suffering from coronary heart disease showed improvement in exercise and health [243].

The body and mind are inseparable [8, 237]. A stressed-out, turbulent mind leads to a stressed-out, unhealthy body [8]. Many meditation benefits carry over to our minds, the trinity of enlightenment – healthy body, healthy mind, and spirituality. The mental benefits of meditation include the following:

- **Stress Reduction:** Modern life is stressful, filled with angry, toxic bosses, frequent deadlines and overtime, never-ending projects, long commutes between job and home, toxic relationships, and screaming children. Stress leads to anger, anxiety, depression, and fear [244]. Thus, meditation can help reduce stress and stress's associated problems [8, 235, 236, 239, 248, 251, 252]. Meditation lowers cortisol levels, a hormone released during stressful times [237, 243]. Meditators learn to breathe slower and deeper and relax their muscles [8, 253]. They gain more concentration and focus, which help them recover from acute and chronic anxiety, stress, and depression [8, 235, 236, 239, 250, 251, 253]. They experience more happiness and peace of mind in a stressful world. Finally, meditation helps people improve their moods and emotions and reduce aggression [8, 239]. For example, meditation helps teachers and staff deal with stress when working with students with behavioral problems [244].
- **Healing Trauma:** Some people use meditation to heal trauma. The trauma could originate from political violence, war, painful childhood memories, rape, or a dying or deceased relative [254]. The meditators learn to accept the trauma and pain without judgment or malice instead of repressing those experiences [254]. People repressing traumatic memories can

suffer from flashbacks <sup>[254]</sup>. People can also sit and meditate with a dying relative in the hospital as a way to commune with their relative and gain peace <sup>[254]</sup>. At last, meditation is effective in helping veterans reduce symptoms of post-traumatic stress disorder (PTSD) <sup>[235, 236]</sup>.

- **Kicking Bad Habits and Addictions:** Meditation can help people overcome bad habits and addictions like using tobacco products <sup>[8, 236]</sup>. Meditation helps smokers overcome cravings, lower urge intensity, and improve self-control, which helps them stop using tobacco products <sup>[243]</sup>. Meditation can complement psychotherapy to help people overcome addictions <sup>[8, 236]</sup>.
- **Emotional Well-being:** Meditation activates brain areas corresponding to attention and emotions <sup>[237, 243]</sup>. Consequently, meditators are more adaptable, self-accepting, self-understanding, and empathetic <sup>[8, 239]</sup>. They experience greater love, joy, and spontaneity with higher intimacy with family and friends <sup>[8]</sup>.
- **Greater Spiritual Connection:** Meditation gives users a greater spiritual connection. Spirituality gives people a sense of life's meaning and purpose <sup>[8]</sup>, which is why the major religions have incorporated meditation. Finally, meditation gives users heightened clarity and sensitivity <sup>[8]</sup>.
- **Greater Creativity:** Meditation enhances creativity <sup>[8]</sup>. It synchronizes the left and right hemispheres of the brain, allowing the two halves to communicate better <sup>[8]</sup>.
- **Improved Cognition:** Researchers found that students could improve their attention, cognitive performance, and memory after a semester of virtual reality meditation <sup>[255]</sup>. Furthermore, the students performed better on exams, even for students skeptical of meditation <sup>[255]</sup>. Participants wore virtual reality goggles, which immersed the meditators into a peaceful,

tranquil place like a forest or isolated beach, but the meditators remained in the comfort of their room <sup>[255]</sup>. Virtual reality makes the scenery appear natural and real <sup>[255]</sup>.

As we can see, meditation can improve the quality of our lives because it positively affects our health and mental well-being <sup>[236, 238, 251, 253]</sup>. We become more productive at work, make better lifestyles and healthy choices, and keep our bodies healthy to fight infections and diseases like the COVID-19 pandemic <sup>[253]</sup>. In addition, meditation leads to the trinity of enlightenment as it leads to a healthier body, a tranquil mind, and greater spiritual awareness.

## ***Meditation Preparation***

When we meditate, we want to become as comfortable and relaxed as possible. We should wear baggy, loose clothes that do not constrict our breathing or restrict blood circulation <sup>[8]</sup>. For example, the Buddhists wear loose-fitting robes. We do not want to wear tight jeans and a compression shirt, which hinders our breathing while restricting blood circulation.

We avoid eating a large meal before meditation since it could make us sleepy <sup>[8]</sup>. Eating a meal high in carbohydrates can make us drowsy as the carbohydrates rise and then crash our blood sugar levels. We could fast and meditate. Another alternative is to eat a ketogenic or Mediterranean diet low in refined carbohydrates. White carbohydrates such as sugar, flour, potatoes, and rice can cause blood sugar spikes and crashes, which awakens hunger.

We abstain from substances that alter our minds, such as alcohol, coffee, marijuana, tobacco, and other recreational drugs <sup>[8]</sup>. We discuss marijuana and meditation in Chapter 7. A cup of joe is not the end of the world for meditation since coffee imparts health benefits and helps boost the health effects of a fast.

Fasting complements meditation. Fasting causes our bodies to switch from glucose to fat metabolism. Consequently, Tibetans drink bulletproof tea, which has become popular in the West. We take a strong black tea and add two tablespoons of heavy cream, two tablespoons of coconut milk, and two tablespoons of butter. A

tablespoon of fat clocks in about 100 calories, so that this bulletproof tea could add 600 calories to one's diet, a meal in and of itself. Since Americans are coffee drinkers, we can substitute strong black coffee for black tea.

We meditate in a place with a pleasant ambiance, environment, and vibes <sup>[8]</sup>. We can make this spot special, so we only meditate there. We also clean this place to create a warm, inviting ambiance. We could sit at a desk with a view of a garden, grass field, or forest. Our special place can be in our dark, cool bedroom. A bed could pose problems since we associate the bed with sleeping.

Buddhists and meditators tend to sit in a full lotus <sup>[8, 240]</sup>. They sit on a pillow, cushion, or thick blanket with legs crossed and folded and their feet on top of the opposite thigh <sup>[8, 240]</sup>. The back is straight, with the vertebrae stacked like bricks <sup>[8, 240]</sup>. The hands lie in the lap, facing up <sup>[8]</sup>.

Figure 2 shows a person sitting on the full lotus. People tend to experience discomfort and pain by sitting in this position for a while <sup>[8, 240]</sup>. Buddhists and meditators can incorporate this discomfort and pain into their meditation <sup>[8]</sup>. They learn to sit like a rock or tree, not too tight but not loose, and not fidgeting and moving around <sup>[8]</sup>.



**Figure 2:** A person sitting in a full lotus.

The full lotus is a difficult sitting position for beginners. We can use a half lotus, where we rest one leg cross-legged in front with the other cross-over and placed on top of the thigh<sup>[8, 240]</sup>. Figure 3 shows the half lotus.

The full and half lotus sitting positions are difficult for new meditators. We could sit on a cushion on the floor, like in elementary school with our legs crossed. In addition, we could also sit in a wooden chair with a seat cushion<sup>[8]</sup>. Recliners may not be a good choice since we can sink, become too relaxed, and fall asleep. Our feet should be flat on the floor, while our backs are straight<sup>[8]</sup>. We do not lean against the chair's back while our hands rest on our laps<sup>[8]</sup>. Finally, we can lie on the bed, with legs and arms spread out as we stare at the ceiling.



**Figure 3.** A person is sitting in a half lotus.

Buddhists and meditators develop other sitting positions. Some of these sitting positions are hard on the knees, such as the kneeling sitting position. The meditator sits with the shins facing down and the instep opened all the way, serving as an anchor to the floor with the butt lying on top of the ankles<sup>[8]</sup>.

The key is to relax and be comfortable during the meditation session.

## ***Meditation Techniques***

Buddhists view the human mind like a naughty monkey. A monkey is constantly chattering and in constant motion, leaping from tree branch to tree branch, much like the human mind <sup>[8]</sup>. The human mind rushes from one idea to another. Consequently, we utilize meditation to quiet the mind and quiet this inner, naughty monkey.

Meditators need not master all meditation techniques in this section. Mastering two or more meditation techniques will suffice. The different techniques impart different neurological and psychological effects. We can also blend and combine several of these meditation techniques.

### ***Mindfulness Meditation***

We start with mindfulness meditation because it is the simplest technique to learn <sup>[8]</sup>. We practice mindfulness meditation alone and do not need a teacher to guide us <sup>[239]</sup>. Mindfulness meditation is the most common and comes from Buddhist teachings <sup>[239]</sup>. Mindfulness meditation is also referred to as open monitoring or focused attention <sup>[243, 256]</sup>.

Mindfulness meditation helps us create awareness and insight by observing our thoughts. It allows us to assess our current mental state <sup>[256]</sup>. We allow our attention to move freely without judging any thoughts or becoming attached to those thoughts <sup>[8, 243, 256, 257]</sup>.

Mindfulness meditation starts with the following steps:

- **Step 1:** We sit comfortably with our backs straight and look straight ahead <sup>[8, 18]</sup>. We can sit on a pillow or thick blanket, or if sitting is too difficult, we can sit in a chair <sup>[18]</sup>. Our backs are not perfectly straight because of the lower and upper curvatures in our backs. We sit straight with our vertebrae stacked like bricks <sup>[18]</sup>. If we sit in a chair, we do not lean against the chair's back <sup>[18]</sup>.

- **Step 2:** We breathe slowly and deeply and observe our breath <sup>[8]</sup>. We sit still and sit in contentment <sup>[29]</sup>. We do not need anything and sit there happy with our lives <sup>[29]</sup>. We learn to watch without acting and enter a time of stillness <sup>[29]</sup>. We focus on our breath or an object and observe our thoughts, feelings, and body sensations <sup>[239, 243]</sup>.
  
- **Step 3:** We feel a warmth moving around our bodies <sup>[29]</sup>. This warmth starts in the shoulders and moves to the chest and then to the stomach <sup>[29]</sup>. We allow this warmth to surround and engulf us as we sit in contentment <sup>[29]</sup>. We let the warmth move down to the legs <sup>[29]</sup>. We allow this warmth to soothe and comfort us.

Thoughts will pass through our minds, and some thoughts will fight with other thoughts <sup>[29]</sup>. Thoughts require energy, and conflicting thoughts turn energy against each other <sup>[29]</sup>. As thoughts pass through our minds, we observe them <sup>[239]</sup>. We do not judge these thoughts. Instead, we look for patterns <sup>[239]</sup>.

We use mindfulness meditation to align our energy and focus and untangle energy blockages <sup>[29]</sup>. We observe how energies from anxiety, pressure, and worry work against us and how we lose energy in arguments <sup>[29]</sup>. We learn that self-conflict weakens our strength and makes us weaker than our true strength <sup>[29]</sup>. Then we come to our natural state and bring our energies to a single point of contentment <sup>[29]</sup>.

Mindfulness meditation helps us practice sitting still, not arguing with our internal thoughts, and becoming complacent with our conflicts <sup>[29]</sup>. It allows us to become aware of our bodies, feelings, thoughts, and minds and the relationship between what we think, feel, and experience without judgment <sup>[8, 257]</sup>. Thus, mindfulness meditation helps us relax <sup>[29]</sup> and accept memories and thoughts without judgment, i.e., no Freudian ego.

## ***Spiritual Meditation***

We use spiritual meditation to strengthen our understanding of spiritual and religious meanings and our connection with a higher power <sup>[239]</sup>. For example, Christians pray contemplatively <sup>[239]</sup>; the Sufis contemplate the remembrance of God (or dhikr) <sup>[6, 7, 239]</sup>, while the Jews practice the esoteric tradition of Judaism, called kabbalistic practices <sup>[239]</sup>. Kabbalistic practices are a form of white magic.

We practice spiritual meditation in the comfort of our homes or at a church, mosque, or synagogue <sup>[239]</sup>. The steps of spiritual meditation include:

- **Step 1:** We select a sacred symbol or word to commune with God's presence or higher power <sup>[8]</sup>. We sit silently and comfortably and meditate on this sacred symbol or word <sup>[8]</sup>.
- **Step 2:** When our minds and thoughts wander, we return our attention to the sacred symbol or word <sup>[8]</sup>. We stick with the same sacred symbol or word for our time spent in contemplation <sup>[8]</sup>.
- **Step 3:** Instead of the sacred symbol or word, we can reflect inward toward God as we gaze upon him <sup>[8]</sup>. We bring God closer by our breathing and closer in our thinking <sup>[8]</sup>.

Sufis practice a more advanced meditation. They coordinate their breath as they recite a sacred phrase called the Darood <sup>[8]</sup>. Sufis' goal is to attain human perfection and merge with God <sup>[6, 7]</sup>. The Sufi's meditation includes movement meditation. Samuel Lewis, an American Sufi master, taught the following meditation practice.

- **Step 1:** We start walking rhythmically while simultaneously synchronizing our breathing with our walking pace <sup>[8]</sup>. We walk four steps for each inhalation and another four for each exhalation <sup>[8]</sup>.

- **Step 2:** We repeat the phrase, “toward the one <sup>[8]</sup>.” We synchronize each syllable for one step <sup>[8]</sup>. Since the phrase has three syllables, we are silent on the fourth step <sup>[8]</sup>.
- **Step 3:** We continue walking and chanting as long as we like <sup>[8]</sup>. The Sufis practice the living in breath every day <sup>[8]</sup>. Walking helps strengthen and develop the breath’s rhythm <sup>[8]</sup>.

Spiritual meditation has elements of mantra and focused meditation. We discuss mantra meditation next.

### ***Mantra Meditation***

The Buddhist and Hindu traditions use mantra meditation in their teachings <sup>[239]</sup>. A mantra is a phrase, word, syllable, or sound that meditators repeat softly, which helps them focus and clear their mind <sup>[232, 236, 239, 243, 256]</sup>. The common mantras include “om” and “ham” <sup>[239, 244]</sup>, whereas Tibetan Buddhists connect particular sound combinations to divine associations <sup>[11]</sup>.

Some people prefer mantra meditation because they can easily focus on the mantra instead of focusing on their breath <sup>[239]</sup>. They cannot sit silently, but they enjoy how the mantra resonates through their body and enjoy the repetitive nature of the mantra <sup>[239]</sup>. Meditators can utter the mantra under their breath or quietly in their minds <sup>[239, 256]</sup>. The mantra meditation could help us experience more profound levels of awareness and deeper depths of our minds <sup>[239]</sup>.

People choosing a meaningful mantra can relax the body and promote healing <sup>[8]</sup>. By incorporating a particular deity or using spirituality in our meditation, we can awaken the healing powers of the mind <sup>[8]</sup>. Various religions incorporate mantra meditation. For example, the Sufis say the phrase, “La ila’ha, il’alahu,” or in English, “There is nothing but God <sup>[7, 8]</sup>.” Christians repeat, “Our Father,” or “Jesus, have mercy on me <sup>[8]</sup>.” Buddhists chant invocations, like “m mani padme hum or namu amida butsu,” while Hindus intone praises to the names of Gods <sup>[8]</sup>.

The mantra does not need to be affiliated with a religion. We can chant “pain” repeatedly if we feel pain. We do not judge the pain or

get upset over it <sup>[232]</sup>. We observe pain for what it is <sup>[232]</sup>. We could chant “happy” repeatedly. We observe happiness for what it is. If happiness leaves us one day, we do not become depressed and sad <sup>[232]</sup>. We are replacing our chaotic, judgmental thoughts with focused, clear thoughts <sup>[232]</sup>.

The steps of mantra meditation begin with the following:

- **Step 1:** We sit on the ground with our legs crossed and one hand placed on top of the other in the lap with the palms facing up <sup>[232]</sup>. If sitting on the floor crossed-legged is uncomfortable, we can sit on a chair or bench <sup>[232]</sup>. Our backs should be straight, but our main position is for comfort <sup>[232]</sup>.
- **Step 2:** We remove ourselves from the world by closing our eyes and eliminating distractions <sup>[232]</sup>. Then we sit and observe our bodies’ movements. We also focus on breathing and observe how our chest expands and contracts as our lungs fill with the air of life <sup>[232]</sup>.
- **Step 3:** We repeat our mantra as we exhale while our chests contract <sup>[232]</sup>. Then we inhale slowly <sup>[232]</sup>. We can choose to whisper our mantra or repeat it in our minds <sup>[232]</sup>. The goal of mantra meditation is to clear our thoughts and focus solely on one thing – the mantra <sup>[232]</sup>.
- **Step 4:** We meditate as long as we feel comfortable <sup>[232]</sup>. As our thoughts drift, we return our minds to our bodies and the mantra <sup>[232]</sup>. We can also focus on the expanding and contracting of our chest as we breath <sup>[232]</sup>.

People dealing with significant stress levels may have trouble quieting their minds with mantra meditation <sup>[232]</sup>.

### ***Focused Meditation***

We use focused meditation to concentrate on one of our five senses – seeing, hearing, touching, tasting, and smelling <sup>[239]</sup>. We

use our minds to focus on this one sense and not allow our minds to wander <sup>[233]</sup>. We force the mind to hold onto this one object of contemplation and train the mind to concentrate and focus <sup>[18]</sup>. Thus, we can use focused meditation to sharpen our concentration and attention <sup>[239]</sup>. Focused meditation is also called Samatha meditation, which means calm or tranquility <sup>[233, 243]</sup>.

We practice focused meditation by the following steps:

- **Step 1:** We sit in a quiet place with our backs straight <sup>[8]</sup>. We close our eyes, take several deep breaths, and relax our bodies <sup>[8]</sup>.
- **Step 2:** We choose the object that we focus our one sense on. For example, we can repeat a word or phrase to quiet our minds, such as “Do not worry, be happy, Trust in God, or There is only love <sup>[8]</sup>”. We can repeat this word or phrase quietly in our minds or whisper it softly <sup>[8]</sup>. We can focus on other senses, such as breathing <sup>[8]</sup>. For example, we can concentrate on the elapsed time between breaths <sup>[258]</sup>.
- **Step 3:** If our minds wander or we become distracted, we return our focus and concentrate on the object that we were meditating on <sup>[8, 239]</sup>. Thus, we repeat our keywords or phrases or focus on breathing.
- **Step 4:** We meditated for five or more minutes. Then we can continue with our day <sup>[8]</sup>.

We can use focus meditation on breathing <sup>[8, 239, 243]</sup>. The one great thing about our breathing is that it is always available, and the rate we constantly breathe in and out is fairly constant <sup>[8]</sup>.

- **Step 1:** We sit comfortably for at least 10 minutes. We take several deep breaths, inhaling and exhaling slowly through our noses <sup>[8]</sup>. We do not try to control our breath. Instead, we try to find a natural rhythm <sup>[8]</sup>. The breath can be fast, slow, deep, or shallow <sup>[18]</sup>.

- **Step 2:** We start the count with “one” for the first inhalation <sup>[8]</sup>. We count “two” as we exhale <sup>[8]</sup>.” When we inhale again, we count “three,” while the next exhalation is “four <sup>[8]</sup>.” We continue counting until we reach ten <sup>[8]</sup>. Then we reset our count to one again <sup>[8]</sup>.
- **Step 3:** We could visualize the numbers in our minds for the full inhalation and exhalation <sup>[8]</sup>.

Focused meditation is flexible, and we can focus on any object. We can count the number of mala (rosary) beads, listen to Tibetan singing bowls or gong, stare at a flickering candle flame, gaze at the moon, stare at an image, or repeat a chant or prayer <sup>[8, 233, 239, 243, 256]</sup>. We can light an incense and focus on the aroma as it fills the room. The key is to exclude other ideas and thoughts and just focus one sense on that object <sup>[233]</sup>.

We could also focus on the vibrations of our bodies. We allow these vibrations to envelop us <sup>[258]</sup>. The vibration technique helps meditators experience an out-of-body experience.

Focused meditation appears to be simple. Nevertheless, beginners may have trouble focusing on an object for several minutes <sup>[239]</sup>. Some Buddhists take years to master focused meditation <sup>[8]</sup>.

## ***Movement Meditation***

Movement meditation allows us to connect better with our bodies and focus on our movement <sup>[239]</sup>. Movement meditation includes walking, gardening, qi gong, tai chi, or other gentle, slow-movement activities <sup>[239]</sup>. We could even extend movement meditation to the activity of eating <sup>[8]</sup>. People who want better body awareness and to find peace in action use movement meditation <sup>[239]</sup>.

We perform movement meditation by the following steps:

- **Step 1:** We walk at our usual pace and coordinate our breathing with our steps <sup>[8]</sup>. For example, we inhale slowly over three steps and exhale slowly for the next three steps <sup>[8]</sup>.
- **Step 2:** We can adjust our walking speed and change the number of steps per inhalation and exhalation <sup>[8]</sup>. It is easier to keep the same ratio of inhalation and exhalation to the number of steps, but they could differ. We need to synchronize our breathing to our walking <sup>[8]</sup>.
- **Step 3:** We gaze ahead with our eyes lowered to a 45-degree angle <sup>[8]</sup>. We feel relaxed and comfortable while walking <sup>[8]</sup>. We also become aware of our feet and legs as we raise and lower them while walking <sup>[8]</sup>.
- **Step 4:** We can walk as long as we want <sup>[8]</sup>. If our attention wanders, we return our focus to walking <sup>[8]</sup>.

We can adapt movement meditation to any slow, habitual activity, such as yoga, tai chi, gardening, or cleaning the house.

### ***Healing Meditation***

Healing meditation shares some characteristics with spiritual meditation. We search for a pure, white energy source to heal us. We must remember that our body, our mind, and our spirituality are interwoven, and each affects the other.

We practice healing meditation using the following steps.

- **Step 1:** We sit comfortably, close our eyes, and meditate for several minutes <sup>[8]</sup>. We choose our favorite meditation to begin with. We want to enter a state of deep relaxation <sup>[8]</sup>.
- **Step 2:** We visualize a white, luminous sphere floating in front of us about a foot higher than our heads <sup>[8]</sup>. We can feel this white sphere radiate warmth and positive healing energy, much like the sun bathing us in warmth on a cool spring day <sup>[8]</sup>.

- **Step 3:** To strengthen our connection with religion, we can visualize Buddha or Jesus in this sphere of white light. We visualize this white sphere giving us positive qualities in life, such as clarity, love, peace, or strength.
- **Step 4:** We visualize this white light shining in all directions to the farthest corners of the universe <sup>[8]</sup>. This white light absorbs all the positive, benevolent energy while bringing it to us <sup>[8]</sup>. We soak up this positive energy from the white sphere like sunbathing <sup>[8]</sup>. We imagine this white light shines on every cell in our bodies and eliminates anxiety, stress, tension, and darkness <sup>[8]</sup>. The white light melts this negative energy away as the white light cleanses, calms, and heals us <sup>[8]</sup>.
- **Step 5:** We can visualize this white light shining positive energy in our hearts. Then our hearts radiate clarity, calmness, peace, and purity <sup>[8]</sup>. We can visualize this white light shining on other organs and body parts.
- **Step 6:** If we are holding onto negative emotions, doubt, or pain from the past, we let this go <sup>[13]</sup>. Our minds, our bodies, and our spirituality are linked. It is difficult to have a healthy body if our mind is not healthy by embracing past grievances, bitter resentment, and traumatic experiences <sup>[13]</sup>.

We can combine healing meditation to energize and charge our chakras, which we explain in the next section.

### ***Progressive Relaxation Meditation***

We use progressive relaxation meditation to reduce body tension and enhance relaxation <sup>[239]</sup>. We also use this meditation to alleviate stress and tension and unwind before sleeping <sup>[239]</sup>. We could use progressive relaxation meditation to put us in a relaxed state and perform another meditation afterward <sup>[8]</sup>. Progressive meditation is also referred to as Vipassana meditation <sup>[259]</sup>.

We perform progressive relaxation meditation with the following steps:

- **Step 1:** We lie down in a comfortable place <sup>[8]</sup>. We wear loose clothing, remove our belts, and remove our shoes <sup>[8]</sup>. We rest our arms at our sides with the back straight and relax with our legs opened slightly <sup>[8]</sup>.
- **Step 2:** We close our eyes and take a minute to sense our bodies, including where our bodies touch the surface of the bed, floor, or other surface <sup>[8]</sup>. We first breathe deeply and slowly; then we wiggle our toes and feel the tension release from them <sup>[8]</sup>. Then we flex our feet and feel the tension leave <sup>[8]</sup>. We shift our attention and focus along our bodies <sup>[8]</sup>. We tense and flex our lower legs, thighs, and hips and feel the tension melt away <sup>[8]</sup>. We keep moving upward. We feel our abdomen and let the tension and stress melt away <sup>[8]</sup>. We keep moving upward as we tense and relax our chest, neck, and throat <sup>[8]</sup>. We feel our whole bodies become relaxed.
- **Step 3:** We continue this meditation. We tense and flex each finger <sup>[8]</sup>. We feel the tension melt away. Then we progress to our hands, arms, and shoulders <sup>[8]</sup>. We move upward to our head and face. We feel the tension and stress melt away <sup>[8]</sup>. Then we scan our bodies. Are there any muscles or parts that are not relaxed? Then we tense and flex that muscle or body part and feel that tension melt away <sup>[8]</sup>.
- **Step 4:** While performing this meditation, we feel the stress melt away. If we feel vertigo or slight dizziness, we replace the melting sensation with a sensation of disappearing, dissolving, or sinking <sup>[8]</sup>. We can also visualize a soft wave flowing back and forth through each body part to relax us <sup>[239]</sup>. The key is to tense and flex each body part and each muscle and feel the stress and tension melt away <sup>[239, 259]</sup>.

- **Step 5:** We perform this meditation for 15 to 20 minutes <sup>[8]</sup>. Since we are relaxed, we could start another meditation technique afterward <sup>[8]</sup>.

### ***Loving-kindness Meditation***

We use loving-kindness meditation to enhance our compassion, empathy, and kindness and learn to accept and love ourselves and others <sup>[239, 240, 256]</sup>. We learn empathy and love for people and things we do not like <sup>[240, 256]</sup>. We become benevolent when we first send loving kindness to ourselves and to relatives, friends, and acquaintances <sup>[240, 256]</sup>. Then we can send loving kindness to difficult people, enemies, and all life in the universe <sup>[256]</sup>.

We perform loving-kindness meditation by the following steps:

- **Step 1:** We begin by closing our eyes, taking a few deep breaths, and relaxing our body <sup>[8]</sup>. We recall a time when we felt deeply loved <sup>[8]</sup>. We spend a few minutes dwelling on these memories, allowing our hearts to open to these feelings <sup>[8]</sup>. We feel love and gratitude towards the person who loved us <sup>[8]</sup>.
- **Step 2:** We allow this love to immerse our whole bodies in its warmth and overflow us until this love is overflowing <sup>[8]</sup>. We say to ourselves, “May I be happy?” “May I find peace?” or “May I be free from suffering <sup>[8]</sup>?”
- **Step 3:** Once satisfied and complete, we visualize sending this loving kindness to a friend or loved one, expressing our intentions similarly <sup>[8, 239]</sup>. We do not rush this step <sup>[8]</sup>. We do not want to focus on someone we are attracted to; we do not want to become sexually aroused <sup>[240]</sup>.
- **Step 4:** We expand our loving kindness to all our friends and loved ones <sup>[8, 239]</sup>. We do not rush this step. Then we send this loving kindness to everyone everywhere <sup>[8, 239]</sup>. We want all life to be happy and peaceful, free from suffering <sup>[8]</sup>.

Loving-kindness meditation, a practice that complements religions, is akin to a group prayer in Christianity. Just as a Christian group prays and sends compassion and hope to suffering people, this meditation is a universal tool for cultivating peace of mind and is beneficial for those struggling with anger and resentment <sup>[239, 240]</sup>.

### ***Purpose of Life Meditation***

Life meditation aims to help us clarify our life's priorities and the importance of meditation <sup>[8]</sup>. Buddhist monks in some Asian countries meditate in cemeteries to heighten their awareness of life's shortness and impermanence <sup>[8]</sup>.

We start the purpose of life meditation as follows:

- **Step 1:** We sit down, close our eyes, take several deep breaths, and become relaxed <sup>[8]</sup>.
- **Step 2:** We visualize and imagine that we have come to the end of our lives while death approaches quickly <sup>[8]</sup>. We imagine that we can die within any minute <sup>[8]</sup>. We reflect on our lives and observe our lives replay like a video. Advanced meditators can induce a near-death experience <sup>[260]</sup>, which is something we do not want to explore.
- **Step 3:** We can reflect on things that made us feel good <sup>[8]</sup>. These things do not have to be life-changing; they can be simple, unimportant events <sup>[8]</sup>. We examine these memories to find which qualities made them important to us <sup>[8]</sup>. We notice how these memories affect us and which feelings and other memories they bring up <sup>[8]</sup>.
- **Step 4:** We can think how we could have lived life differently if we could live life again <sup>[8]</sup>. Which activities would we do now if given a second chance <sup>[8]</sup>? Which people would we focus on and accept in our lives <sup>[8]</sup>?

- **Step 5:** After we finish meditating, we start our day. We should notice that our attitude toward life has changed <sup>[8]</sup>.

A great quote that sums up this meditation is:

“By meditating on death, we paradoxically become conscious of life. How extraordinary it is to be here at all. Awareness of death can jolt us awake to the sensuality of existence. – Stephen Batchelor, 1998 <sup>[261]</sup>.”

### ***Binaural Beat Meditation***

We can meditate on sound and use this sound to slow and relax our minds using binaural beats. For example, we hear a 200-hertz sound in the left ear and a 205-hertz wave in the right ear <sup>[258, 262]</sup>. The hertz is the number of times a wave oscillates per second. Since sounds are waves, they react with each other to create beats <sup>[262]</sup>. In our minds, the brain responds to the difference of these sound waves, which is 5 hertz. This 5-hertz wave helps our minds to slow to that frequency <sup>[258, 262]</sup>.

Our brain's neurons communicate through waves, firing in clusters. We utilize sound to induce the brain's neurons to communicate at specific frequencies. These frequencies correspond to different brain wave states, which we classify from the slowest to the highest brain wave activity. We delve into and explain these brain waves in the Introduction and Chapter 5 on lucid dreaming.

- **Delta waves:** The brain wave activity oscillates between 0.5 and 4 Hz <sup>[4, 5]</sup>. We experience these brain waves nightly during deep sleep <sup>[4, 5]</sup>. Our brains operate at their slowest activity, and researchers believe the brain and body are cleansing and cleaning during this time as our brains are put on standby. We also do not dream during this state <sup>[4, 5]</sup>. We can use binaural beats at this frequency to help us fall into a deep sleep.
- **Theta waves:** Theta brain waves oscillate between 4 and 7 hertz, indicating that we are deeply relaxed and meditating <sup>[4,</sup>

<sup>5]</sup>. This brain wave activity may contribute to creativity <sup>[4, 5]</sup>. We can select our binaural beats to coincide with this frequency to slow our minds for deep meditation.

- **Alpha waves:** The brain wave activity oscillates between 8 and 12 hertz. We are conscious, calm, and relaxed in this state <sup>[4, 5]</sup>. We can use meditation and binaural beats to attain this state <sup>[4]</sup>.
- **Beta waves:** The brain waves oscillate between 13 and 30 hertz as we concentrate, think, or solve problems <sup>[4, 5]</sup>. Our brain neurons must communicate quickly to solve problems.
- **Gamma waves:** The brain waves oscillate between 30 and 50 hertz <sup>[4, 5]</sup>. We are awake and performing high-level processing <sup>[4]</sup>. The study suggests that these frequencies promote the maintenance of arousal while awake and conscious.

We can combine binaural beats with other meditation techniques in this section. We wear ear or headphones and play a soundtrack with binaural beats. We select the binaural beat to put us in either the alpha or theta brain wave state because these states coincide with meditation. However, binaural beats can influence any brain wave states – delta, theta, alpha, beta, and gamma <sup>[262]</sup>.

We can go to YouTube or Google's Play Store to find relaxing music or apps incorporating binaural beats, which are more enjoyable than simple sounds and tones. The studies suggest that the sound should be 1,000 hertz or less for the binaural beats to be effective <sup>[5]</sup>. The binaural beats for a smartphone have the beats mixed in with relaxing sounds of nature, like rain, seashore, rainforest, or thunder storm.

YouTube has many binaural beats to heal, repair DNA, become more youthful, et cetera.

## ***Visualization and Virtual Reality Meditation***

Visualization meditation helps improve mood, relieve stress, and enhance inner peace <sup>[239]</sup>. We can visualize positive figures, images, and scenes to enhance calmness, peace, and relaxation <sup>[239]</sup>. For example, we can visualize ourselves walking barefoot on a beach. We incorporate all five senses of this beach scene. We can see and hear the waves roll back and forth along the shore; we feel the warm, soft sand brush across our toes and feet; we smell the fresh, cool air pass over the water and into our noses and taste the saltiness of the air on our tongues. We bring this relaxing beach scene to life in our minds.

Visualization meditation is not limited to scenery. We can apply it to various aspects of our lives, such as envisioning academic success, career advancements, or acing a job interview <sup>[239]</sup>. This practice is a powerful tool for boosting our drive, focus, and motivation <sup>[239]</sup>.

We can extend visualization meditation to include modern technology, such as virtual reality. We sit down, relax, and wear a headset covering our eyes and ears <sup>[255]</sup>. Then we stream a video of nature, such as a forest or seashore <sup>[255]</sup>. YouTube has many good videos to choose from. The video immerses the person in the peaceful scenery and minimizes distractions from the outside world <sup>[255]</sup>. Virtual reality technology allows people to meditate in a natural setting but remain in the comfort of their homes.

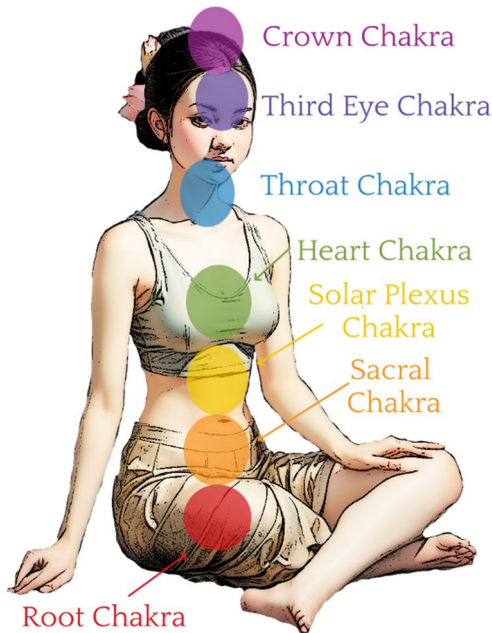
## ***Chakras***

A chakra means a disk or wheel, but in meditation, it is an energy center. Chakra comes from the Indian text of the Vedas. The body has seven chakras, or in Sanskrit – “wheels of light.” The chakra could have a physical location, such as a nerve bundle or organ. The chakras can assimilate or transmit the life force to other body parts, which is why meditators keep these chakras healthy. (Chinese philosophy calls the life force chi or qi). We can use one of the meditation techniques to focus on one chakra at a time and become

familiar with it [8, 243, 259]. Then we familiarize ourselves with all our chakras.

We describe and locate each chakra from the first to the seventh. Figure 4 shows the chakra locations.

- **The First Chakra (or Root Chakra):** The first chakra is located at the base of the spinal cord [8]. The first chakra corresponds to safety and survival [8]. If the first chakra is closed, we would feel insecure and think we cannot survive [8].
- **The Second Chakra (or Sacral Chakra):** The second chakra is roughly 2 inches below the navel, in the lower abdomen [8]. It is connected to creativity, sexuality, and emotional attachment [8]. If this chakra is closed, we feel ashamed of our bodies, emotionally distant, and sexually inhibited [8]. When we open this chakra, we feel a rush of euphoria, playfulness, potency, or sexual feelings [8].



**Figure 4.** The locations of the seven chakras.

- **The Third Chakra (or Solar Plexus Chakra):** The third chakra is near the solar plexus and below the diaphragm <sup>[8]</sup>. This chakra is associated with authenticity and interpersonal power <sup>[8]</sup>. If this chakra is closed, we would have difficulties trusting others, acknowledging our anger and vulnerability, or setting interpersonal boundaries <sup>[8]</sup>. Once we open this chakra, we release anger or shame and gain feelings of personal power and vitality <sup>[8]</sup>.
  
- **The Fourth Chakra (or Heart Chakra):** The fourth chakra is located in the chest's center, near the heart, which is why it is often referred to as the heart chakra <sup>[8]</sup>. This chakra is associated with love and self-esteem. If this chakra is closed, we feel alienated from others and feel self-hatred and resentment <sup>[8]</sup>. We could have trouble forming loving relationships <sup>[8]</sup>. When we open this chakra, we feel love and joy overtake the grief and pain <sup>[8]</sup>.
  
- **The Fifth Chakra (or Throat Chakra):** The fifth chakra is located in the throat's center and is also called the throat chakra <sup>[8]</sup>. This chakra is associated with honesty, directness, and responsibility <sup>[8]</sup>. If this chakra is closed, we would have difficulties sharing our concerns, feelings, and thoughts or distort them to make them more palatable <sup>[8]</sup>. When we open this chakra, we feel a surge in what we want to say and have more confidence and creativity <sup>[8]</sup>.
  
- **The Sixth Chakra (Third Eye Chakra):** The sixth chakra is located in the center, slightly above the eyebrows and is referred to as the third eye <sup>[8]</sup>. This chakra is associated with intellect, intuition, and personal vision <sup>[8]</sup>. If this chakra is closed, we experience trouble planning for the future and have difficulties thinking and expressing strong personal beliefs, opinions, and prejudices <sup>[8]</sup>. Opening this chakra expands and enhances our intellect, intuition, and spirituality <sup>[8]</sup>. Enhanced psychic abilities and seeing visions become possible, supposedly <sup>[8]</sup>.

- **The Seventh Chakra (or Crown Chakra):** The seventh chakra is found at the top of the head and is referred to as the crown chakra <sup>[8]</sup>. This chakra is associated with freedom and spiritual transcendence <sup>[8]</sup>. Remember the Jains who would fast and meditate to their deaths. At the moment of death, the head's crown cracks open and frees the meditator from reincarnation; they become free from endless cycles of deaths and rebirths. If this chakra is closed, we feel detached from spiritualism <sup>[8]</sup>. When we open this chakra, we feel blessings, grace, illumination, and peace <sup>[8]</sup>. We also may feel our identities and egos dissolve as we integrate our minds <sup>[8]</sup>.

We meditate on each chakra in sequential order to open them up.

- **Step 1:** We sit quietly, close our eyes, and take several deep, slow breaths <sup>[8]</sup>. We relax more with each passing breath <sup>[8]</sup>. We focus on the area deep within the pelvis, the location of the first chakra, without any thoughts or feelings <sup>[8]</sup>. We visualize our breath caressing this area <sup>[8]</sup>. We perceive whether this area feels agitated, closed, or tight or whether this area feels energized.
- **Step 2:** We focus our awareness about two inches below our navel, the location of the second chakra <sup>[8]</sup>. Like the first chakra, we visualize our vitalizing breath, immersing this area and feeling whether it is close, tight, or energized <sup>[8]</sup>.
- **Step 3:** We continue meditating and focus on the third chakra, around the solar plexus <sup>[8]</sup>. We use our breath to immerse and feel this area <sup>[8]</sup>. We continue to the fourth chakra, the fifth chakra, the sixth chakra, and the seventh chakra <sup>[8]</sup>. We allow our breath to immerse each area and try to feel each chakra's state <sup>[8]</sup>.
- **Step 4:** After we have breathed and felt each chakra, we return to the chakra that feels tight, uncomfortable, or uneasy <sup>[8]</sup>. We

use our breath to immerse this chakra again and feel its state <sup>[8]</sup>. Then we repeat the breathing and feeling for the second tight chakra until we energize each chakra <sup>[8]</sup>.

- **Step 5:** Instead of allowing our breath to energize the chakra, we try to speak to it and listen to what it says <sup>[8]</sup>. Furthermore, we can visualize if a particular chakra is an animal and ponder why that particular animal <sup>[8]</sup>. We keep practicing chakra meditation until we are in tune with our chakras, and each chakra brims with energy <sup>[8]</sup>.

### **Conclusion**

Some meditators have experienced disturbing thoughts like apprehension, fear, and terror while meditating <sup>[263]</sup>. These meditators are usually men who meditate at retreats <sup>[263]</sup>. They are also more likely to experience repetitive negative thinking, which means they have focused on negative thoughts, feelings, and ideals of their lives <sup>[263]</sup>. The retreat setting could also contribute to participants being pressured into meditating too much or feeling they need to escape their stressful lives by going to a retreat. Nevertheless, meditation is beneficial.

Meditation relates to Freud's theory of personality. Meditation, especially mindful meditation, helps us understand the conflict between our ids, superegos, and egos. Remember, the id is the little devil that wants gratification; the superego imposes our morality, societal values, and religious beliefs, while the ego moderates the two. Meditation may also cause repressed memories and feelings to rise to our conscious minds, which we view without judgment. Thereby, we can become psychologically healthy by balancing our ids, superegos, and egos and accepting our traumatic, painful memories and experiences without judgment.

Meditation relates to Jung's theory of personality. We may encounter archetypes through meditation through images, symbols, and themes. These archetypes are part of our collective unconscious that all humans share. We explore these archetypes through introspection and self-awareness. Similar to Freud's theory, we

observe our emotions, thoughts, and sensations without judgment. Meditation may also connect us to something greater than us, such as the divine. Thus, we become whole by becoming more spiritual and integrating our unconscious and conscious minds. Thus, we become more self-realized as we progress further along the road to enlightenment.

We see meditation as another pillar of the trinity of enlightenment. By practicing techniques to focus and quiet the mind, we again open the door to better health, a better mind, and spirituality. Meditation lowers stress and anxiety, reduces hypertension, and improves health and immunity. Thus, our quality of life improves <sup>[235, 244]</sup>. We can also combine meditation with fasting, sensory deprivation, and drug-assisted enlightenment to amplify and strengthen the meditation effects.

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## Chapter 5. Lucid Dreaming

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“All that we see or seem is but a dream within a dream.”

– Edgar Allan Poe

Dreaming is a part of life. We spend about a third of our life sleeping, and during sleep, we go through cycles of dreaming and non-dreaming. Scientists and researchers believe animals also dream. Many people ignore their dreams and quickly forget them as they awaken. However, dreams are another tool to help us gain enlightenment.

Dreams are bizarre. A dream is a mixture of a person’s experience but with distorted objects and places. Some dream scenery has no connection to a person’s experience. It is a film where the dreamer could be an active or passive character <sup>[258]</sup>. Occasionally, some people can become conscious during a dream, which we call lucid dreaming <sup>[258, 264]</sup>. They can interact with their characters or even alter the dream’s scenery. On one occasion, the author thought flying in the sky like Neo in the Matrix would be cool. As the author propelled himself into the sky, he awakened in another dream. Then he woke up. Yes, the author is a lucid dreamer, which is why the author included this chapter in this book.

The intriguing question arises – can anyone learn to lucid dream? A German study of 919 adults revealed that 51% of the participants had experienced a lucid dream at least once in their lifetime <sup>[265]</sup>. Interestingly, this study also found that women and young people are more likely to experience lucid dreams. The researchers noted that lucid dreamers had better dream recall than non-lucid dreamers <sup>[265]</sup>. This suggests that perhaps, with practice and attention to dream recall, anyone can unlock the potential of lucid dreaming. The study also found that factors like education, income level, and marital status had no influence on lucid dreaming frequency <sup>[265]</sup>.

Researchers identified several personality characteristics of lucid dreamers. The dreamers can self-reflect, possess good memories, exert greater levels of control, and have positive emotions <sup>[266]</sup>. A lucid dreamer does require better control, possesses a clear mind, and has positive emotions and outlook on life <sup>[267]</sup>. Otherwise, how could someone gain control over their dreams, especially if they are incredibly negative and impulsive? They are more likely to wake up or be disturbed by the dream landscape.

Narcolepsy patients are likelier to report being conscious during their dreams <sup>[268]</sup>. Narcolepsy occurs when some people lack a brain chemical, hypocretin, which keeps people awake. It causes a person to be drowsy during the day and have trouble staying awake. Narcoleptics also experience false awakenings and sleep paralysis <sup>[269]</sup>. Sleep paralysis is when a person feels paralyzed as they are trapped between sleeping and wakefulness.

We explore lucid dreaming in this chapter, starting with the history, characteristics of lucid dreaming, the theories of why we dream, and finally, techniques to increase the likelihood of lucid dreaming. Lucid dreaming is another method to integrate our conscious and unconscious minds better, which aids us in traversing the difficult path to enlightenment.

## ***History of Lucid Dreaming***

The ancient Greeks wrote about dreaming in the 5<sup>th</sup> century BC. They constructed many temples dedicated to dreaming and healing and engaged in incubating dreams <sup>[264]</sup>. In his short writing, *On Dreams*, Aristotle [270] wrote about dreaming. He said, “for often, when one is asleep, there is something in consciousness which declares that what then presents itself is but a dream <sup>[270]</sup>.”

The early Christians embraced dreaming and lucid dreaming. The coming of the Savior, Jesus Christ, is enshrouded in dreams. Joseph had four dreams before the birth of his son, Jesus. For the first dream, an angel encouraged Joseph to marry Mary, the mother of Jesus (Matthew 1:19-25 <sup>[16]</sup>). In the second dream, an angel told Joseph to take his family and flee to Egypt because Herod, the ruler of Judea, would search for the child to kill him (Matthew 1:2:13.

<sup>[16]</sup>). The third dream told Joseph to return to Israel, the land of Canaan (Matthew 2:19–20 <sup>[16]</sup>). Then God told Joseph in his fourth dream to settle in Nazareth, not Judea (Matthew 2:22–23. <sup>[16]</sup>). In this case, dreams protected Jesus and kept him safe. The early Christians were open to dreaming because of their association with Jesus Christ.

The Christians viewed dreaming favorably until the fifth century AD. Lucid dreaming was a way to unite with God. Greek bishops told followers that a dream could take the soul to a superior region, a place to encounter true things. After the fifth century, dreaming and lucid dreaming became tools of the devil.

Saint Jerome, a Latin Christian priest, was fascinated with pagan literature. One night, he had a dream that informed him to stop studying pagan literature, which references dream work. Thus, he took his dream to mean to stop studying dream work. St. Jerome also translated the Bible into Latin. He translated incorrectly many Bible passages that equated dream work with witchcraft. Thus, dreams and dream work became wrong, a sin against the church.

During Medieval times, dreams became the work of the devil. In the 13<sup>th</sup> century, the Christian philosopher, Thomas Aquinas, proposed that some dreams come from demons. Priests in the 16<sup>th</sup> century suggested that the devil was associated with dreams.

The Europeans started to change their perception of dreams when Marquis d’Hervey de Saint Denys wrote his book, *Dreams and How to Guide Them* in 1867 <sup>[271]</sup>. The Marquis’ was an avid lucid dreamer who recorded almost 2,000 nights of lucid dreaming <sup>[271]</sup>. He suggested boosting dream recall, becoming lucid, and interacting with the dream’s narrative <sup>[271]</sup>. Ironically, Sigmund Freud heard of the book and tried to find a copy. This book could have influenced Freud and his work in psychoanalysis, especially in dream work. With the modern age of the internet, this book is available for purchase on Amazon or any other publisher.

The Dutch psychiatrist Frederik Willems van Eden presented research on lucid dreams to the Society for Psychical Research in 1913. He popularized the term “lucid dream.” He documented 352 lucid dreams. He also referred to lucid dreams as “half-dreams” and “guided dreams.”

Lucid dreaming influenced other religions other than Christianity. The religion Islam has a close connection to dreaming. The Prophet Muhammad founded Islam about 1,400 years ago. The Prophet used dreams to consult himself on military and religious issues, and he wrote the Quran, which came to him in dreams. In his dreams, he talked to God. He also asked his disciples about their dreams in the morning and their interpretations of their dreams. A close disciple shared his dream with the Prophet Muhammad, where he dreamt of the idea for the call to prayer when a devout Muslim must pray five times a day while facing Mecca.

The Prophet recognized the idea of Sufism, a form of mysticism that encourages followers to self-reflect and become spiritually closer to God <sup>[6, 7]</sup>. Sufism believes dreams come from God, and followers must control their thoughts during dreams. Thus, controlling one's dreams is another term for lucid dreaming. Consequently, Muslims learn to control their dreams and become spiritually closer to God.

Other cultures embraced lucid dreaming. The Toltecs dominated Mexico between the 9th and 12th centuries. The Aztecs claimed they were descendants of the Toltecs, who were warrior-militant people. To win battles, they learned discipline, became courageous, and conquered their fears. Controlling and mastering their dreams was another form of traversing the warrior's path.

Many Toltec themes are embedded in Carlos Castaneda's writings, where he met a Mexican man of knowledge, Don Juan. Don Juan became Carlos' teacher and taught him how to use psychedelic plants like Jimson weed, peyote (i.e., mescaline), and psilocybin (magic mushrooms) to open new worlds and experience new realities. Carlos' first book, *The Teachings of Don Juan: A Yaqui Way of Knowledge*, came from his Ph.D. dissertation at UCLA. Although the second book, *A Separate Reality*, is one of the author's favorite books, critics question the stories, accounts, and the existence of Don Juan. The author does not cite Carlos Castaneda's works in this book. However, the books are enjoyable to read.

## ***Why Encourage Lucid Dreaming?***

The rise of social media and the internet gave people the means to discuss the phenomenon of lucid dreaming <sup>[272]</sup>. The internet gives people fast access to information, perhaps not always accurate. The author experienced lucid dreaming several times and turned to the internet for answers. He didn't know what it was or if it was harmful at that time.

On one occasion, the author became lucid during a dream. He walked out the glass exit doors of a mall into a prairie with high grass to explore this world. He scanned the horizon around him and saw five tornados surrounding him and converging toward him. He ran to this cone-shaped rock, jutting out of the ground and wrapped his arms around it as the winds of one of the tornados lifted his legs vertically into the air. Then he awakened.

On another occasion, the author became lucid during a dream. He could feel that he was on the verge of awakening. He deliberately forced himself to stay in the dream while this shock or pain shot through his head. Then he awakened. The author started to research lucid dreaming, mainly to determine whether lucid dreaming had any application.

Lucid dreaming has been around for centuries. Tibetan Buddhists practice dream yoga, when they learn to lucid dream and practice conscious sleeping <sup>[264]</sup>. They use lucid dreams to reflect on life choices and ask for guidance from their subconscious minds <sup>[264]</sup>. Lucid dreaming aims to train the mind and spur spiritual growth <sup>[264]</sup>. We can use dream yoga to control our minds, whether awake in reality or dreaming <sup>[258]</sup>. Thus, we master our minds <sup>[258]</sup> and become closer to our enlightened nature <sup>[264]</sup>. Therefore, lucid dreaming helps us traverse along the path of enlightenment.

The Tibetan Buddhists have six stages of mastering yoga, which are listed below:

- **Tummo:** The yoga of inner heat <sup>[258]</sup>. It is a meditation technique to hold a deep breath for extended periods and visualize fire entering the navel. Meditators visualize vital winds entering this channel, cooling this energy, and departing

extreme bliss. Buddhists claim this bliss is a hundred times stronger than an orgasm.

- **Gyulu:** The yoga of the illusory body <sup>[258]</sup>. This one is difficult to understand. A person meditates as he or she gazes at a mirror. The meditator realizes the process of dying and being born again time after time. They realize that dying and rebirth are illusions or just empty natures in the realm of duality.
- **Osel:** The yoga of the clear light <sup>[258]</sup>. Buddhists develop their minds through meditation. This development is referred to as luminosity or radiance. Thus, a Buddhist's mind becomes endowed with luminescence.
- **Milam:** The yoga of the dream state <sup>[258]</sup>. The Milam includes lucid dreaming. Buddhist monks learn to become conscious while dreaming.
- **Bardo:** The yoga of the intermediate state <sup>[258]</sup>. This stage is complex and depends on which religion and denomination. The Tibetan Buddhists view the bardo as six types: Birth until the moment of death, dreams, concentration or meditation, the moment of death, the luminosity of the true nature, and the transmigration or karmic becoming.
- **Phowa:** The yoga of the transference of consciousness to a pure Buddha-field <sup>[258]</sup>. At the time of death, Buddhists transfer their consciousness through the top of their heads to the Buddha-field, the celestial realm of enlightened Buddhists. We assume that the reincarnation cycle stops.

Putting Tibetan Buddhism aside, lucid dreaming has other benefits. Lucid dreamers have more reasons to control their dreams. They may be interested in psychology and want to self-reflect or improve themselves psychologically <sup>[264]</sup>. Lucid dreaming may allow dreamers access to the deepest depths of their minds <sup>[264]</sup>.

We can connect lucid dreaming to Freud's and Jung's theories of personality. According to Sigmund Freud, dreams may represent symbols and images of repressed desires, conflicts, and wishes. Through lucid dreams, we can confront or explore these desires, conflicts, and wishes and integrate these repressed thoughts into our conscious minds. According to Carl Jung, dreams may represent archetypes of the collective unconscious mind. Like Freud, lucid dreamers can explore and interact with these archetypes to gain deeper insight into their own psyches. They can use the process of individuation to incorporate and integrate archetypes by connecting the conscious and unconscious minds. Lucid dreamers can move closer to self-realization as they gain greater self-awareness and wholeness. At last, both theories suggest that lucid dreamers can solve problems and devise creative solutions.

We use lucid dreaming to open the doors to creativity. It is not just lucid dreaming but dreaming in general. As we fall asleep, we pass through a hypnagogic state, where images, scenery, and hallucinations flash in our minds before we fall asleep <sup>[273]</sup>. Creative people can use the hypnagogic state to solve problems and create new works of art <sup>[273]</sup>. Furthermore, dreaming and REM sleep may help us to become more creative <sup>[273, 274]</sup>. Artists, musicians, and writers use lucid dreaming to create new works of art <sup>[258]</sup>. Many famous people like Albert Einstein said his ideas came from dreams <sup>[258]</sup>.

Creativity comes from the theory of how our brains specialize by the hemisphere. The brain is split into two hemispheres. Left-handed people tend to have dominant right hemisphere brains, which are more creative, imaginative, and intuitive, while right-handed people tend to have dominant left hemisphere brains. The left hemisphere processes logic, language, mathematics, and science. Ironically, the lucid dream is the place to become more creative because the right hemisphere is more active during REM sleep <sup>[264]</sup>.

We can use lucid dreaming to connect with our inner Einstein or that rebellious, brilliant artist within us. A lucid dream can help us connect associations, solve problems, or create new ideas. We can ask our unconscious mind questions and wait to get an answer.

Perhaps that answer is waiting behind a closed door. Lucid dreamers ask for help writing computer programs, designing video games, addressing health issues, or creating new works of art <sup>[264]</sup>.

One example is Dr. Clare Johnson. She wrote her Ph.D. dissertation on the connection between lucid dreaming and the creative process. Not only did she use lucid dreaming to create characters in her novel, but she also used lucid dreaming to experience the thoughts and feelings of her characters.

Other writers have used dreams and lucid dreams to create their masterpieces. The Scottish writer, Robert Louis Stevenson, found a novel way to circumvent writer's block. When he became lucid during a dream, he asked his dream to show him the essentials of a new story. One night, he came up with the famous character Dr. Jekyll and Mr. Hyde during a dream <sup>[264]</sup>.

The writer, Charles Dickens, used dreams to write his memorable stories, *A Christmas Carol*, and *Oliver Twist*. It is uncertain whether Charles Dickens was a lucid dreamer, but he was plagued with insomnia. He used hypnagogic state, when a person transitions from consciousness to sleep and experiences visual and auditory hallucinations <sup>[273]</sup>. Ironically, many of the characters in his stories suffered from sleep disturbances <sup>[273]</sup>.

Lucid dreaming has the potential to help dreamers do the following:

- Use the lucid dream to discover hidden talents and abilities in the unconscious mind <sup>[258]</sup>.
- The last dream we remember when waking up sets the day's mood. Lucid dreams have a more powerful effect on us. We can use lucid dreams to uplift our mood or awaken our spirituality <sup>[258]</sup>.
- We can activate and relive pleasant memories <sup>[258]</sup>.
- We can ask our unconscious mind why we are here. What is our purpose <sup>[258]</sup>?

- Perhaps we do not have enough time during the day to play sports, or we are tired after work. We can lucid dream of playing sports and find time for more activities. We do not have to worry about risks, injuries, or accidents. There are claims that lucid dreamers can train for sports during their dreams. This helps the dreamers improve their sensory-motor skills because the brain does not distinguish this training between reality and lucid dreams <sup>[264]</sup>. Thus, athletes can improve their athletic performance as they sleep <sup>[264]</sup>.
- A creative dieter uses lucid dreaming to eat unhealthy, fatty food during dreams but adheres to a strict diet while awake. The brain cannot distinguish between the satisfaction of eating the forbidden food during a lucid dream and the healthy food while awake <sup>[264]</sup>. However, the calories only count from healthy food while awake.
- We use lucid dreaming to cause an out of body experience <sup>[258]</sup>. Buddhists experience out-of-body experiences, where they can separate their energy bodies from their physical bodies. The author has not experienced an out-of-body experience. However, the information on lucid dreaming has many references to out-of-body experiences.

## ***Characteristics of Dreams and Lucid Dreaming***

Explaining the characteristics of dreaming can help the readers understand why we dream and the stages of dreaming and lucid dreaming.

### ***Why We Dream?***

We do not know why we dream, but dreaming is necessary for our psychological development. Sleep deprivation affects our

cognition and health. We know our brain oscillates between high and low activity periods as we sleep <sup>[275]</sup>.

Scientists measure this activity using an electroencephalogram (EEG). They connect a machine with a mass of electrodes to a dreamer's head to record the brain's activity. The brain activity is electrical impulses that rise and fall, which a machine records. For example, music ranges in frequency between 20 hertz and 20,000 hertz, which means the wave rises and falls 20 times per second for the 20-hertz wave and 20,000 times per second for the high-frequency wave. The low frequency is the bass that thumps our bodies when standing near a speaker, while the high frequency is the high-pitch sound that ruptures our eardrums or shatters a glass.

The brain experiences five different frequency levels.

- **Delta waves:** The brain experiences the slowest activity. We experience delta waves in a deep, dreamless sleep <sup>[4, 5]</sup>. The brain waves oscillate between 0.1 and 4 hertz <sup>[4, 5]</sup>.
- **Theta waves:** The brain experiences the second slowest state, theta waves. Our brains slow their activity when daydreaming, fantasizing, or being creative and intuitive <sup>[4]</sup>. Theta brain waves oscillate between 4 and 8 hertz <sup>[4, 5]</sup>. We can slow our brains' activity by meditating, praying, or self-reflecting <sup>[4, 5]</sup>.
- **Alpha waves:** The person is awake and active, but this person is relaxed and calm <sup>[4, 5]</sup>. Alpha brain waves oscillate between 8 and 12 hertz <sup>[4]</sup>. Meditators can slow their minds to the alpha state and become relaxed <sup>[4, 8, 259]</sup>.
- **Beta waves:** The brain is active and alert during the beta-wave state, which is normal when we are conscious <sup>[4]</sup>. The electrical activity in the brain oscillates between 13 and 30 hertz <sup>[4, 5]</sup>. We are awake and thinking. We enter this state to solve analytical or math problems <sup>[4, 5]</sup>.
- **Gamma waves:** The brain is in overdrive as the brain waves oscillate above 30 hertz <sup>[4, 5]</sup>. We are performing high-level

processing during this state <sup>[4]</sup>. Lucid dreaming awakens the frontal lobe of the brain as neurons in this part start switching at 40 hertz <sup>[276]</sup>. Some forms of meditation may raise brain waves to gamma in the parieto-occipital brain regions <sup>[259]</sup>. This brain region handles language, writing, reading, calculating, face, object, visuo-spatial recognitions, and memory.

We know our brains slow to their lowest activity level during delta sleep. Scientists think during this low-activity state, the body and brain are doing house cleaning <sup>[275]</sup>. The brain consumes about 20% of the energy we put into our bodies. As our bodies and brains break down glucose into energy, we produce and accumulate waste products. Thus, our brains shut down to perform their daily maintenance and cleaning.

The complexity of our brains does not stop here. As we sleep, our brains alternate between periods of slow activity, i.e., delta waves, and rapid activity, called rapid eye movement (REM). The brain is active during REM and inactive during non-REM sleep <sup>[275, 277]</sup>. The REM stage of sleep is when we are likely to dream <sup>[275]</sup>.

What is the purpose of dreams? We must experience REM sleep for our psychological well-being. Scientists devised several theories to explain the process of dreaming. The first hypothesis is that dreaming helps consolidate memories <sup>[275, 277]</sup>. A dream recalls memories and integrates new memories with old ones <sup>[275]</sup>. The integration helps strengthen and shape memories and strengthen the connections between neurons <sup>[275, 277]</sup>. The hippocampus is a region deep within our brains responsible for memories and learning. The hippocampus becomes active during dreams <sup>[276, 277]</sup>.

The problem is that the author remembers some of his dreams. Several times, the author dreamt that he had to use the toilet but couldn't figure out how to unbutton his pants. On other occasions, the author dreamt he walked around with no clothes, completely naked as a jaybird, but the author does not even walk around his house naked. Other times, the dreams are entirely bizarre, where the dreams possess little logic or reasoning. Another theory hypothesizes that the brain does not remember events and

experiences as they happen <sup>[274]</sup>. Instead, the brain encodes patterns between experiences and events <sup>[274]</sup>. Although the encoding looks bizarre to us while awake and recalling a dream, the brain uses associations during REM to connect and link memories <sup>[274]</sup>. We do not understand the association in our conscious state.

The last theory relates dreaming to computer machine learning. Data scientists build neuronal networks, where a computer program emulates a network of brain neurons. The data scientists set up a neuronal network to learn patterns of data. One problem is that a neuronal network will overlearn the data. They call this overfitting the data. That means when scientists use a neuronal network to predict an outcome, the network predicts poorly and does not recognize new patterns <sup>[275]</sup>.

One trick to overcome the over-learning in a neuronal network is to add noise to the neurons <sup>[275]</sup>. The noise helps the neuronal network improve forecasts and discover new patterns. Thus, our brains overlearn the experiences and events we encounter. Dreams add noise to our memories and help us overcome overlearning <sup>[275]</sup>. As we awaken the next day, we are better at solving cognitive tasks or gaining more insight or creativity into problems we are working on <sup>[275]</sup>.

## ***Stages of Sleep***

When we lay down, put our heads on the pillow, and fall asleep, we embark on a mysterious journey through five intriguing stages of sleep. Each stage, shrouded in its unique purpose, holds the key to a deeper understanding on how we sleep.

- **Stage 1:** The first stage of sleep is hypnagogic. We are lightly sleeping or drowsy. Our brain waves slow to alpha waves. During this stage, we see images, scenery, and hallucinations that flash through our minds <sup>[264]</sup>.
  
- **Stage 2:** We are in a light, dreamless sleep. We have left the hypnagogic stage and entered into a blackout. We do not

experience any dreams in this stage <sup>[264]</sup>, or at least we do not think we do.

- **Stage 3:** We fall into a deep sleep as our brain activity slows to delta waves, the slowest brain waves. Theories suggest that our brains and bodies undergo a repair and cleansing process <sup>[264, 278]</sup>. For example, the human growth hormone (HGH) rises as we sleep. The pituitary gland, which is located at the brain's base, begins releasing HGH. This hormone helps maintain muscles, tissues, and organs. This hormone is also responsible for the rapid growth of children into adults. Our hormones and processes go through a circadian rhythm that follows a 24-hour cycle.
- **Stage 4: Rapid Eye Movement (REM):** Our bodies enter a state of temporary paralysis as we start dreaming <sup>[264, 278]</sup>. Otherwise, we would act out our activities in the real world as we perform actions in our dreams. Dreaming in the other stages may be possible, but dreams dominate the REM stage <sup>[264, 279]</sup>.

A sleep cycle lasts between 70 and 110 minutes when we complete all four stages of sleep <sup>[264, 278]</sup>. That means we complete about four, five, or six sleep cycles every night <sup>[264, 278]</sup>. We spend most of our time in the first three stages of sleep and little time in the REM stage. That gives us about four or five times we experience the REM stage and four or five opportunities to become lucid during the night.

Lucid dreams occur more often in the late sleep cycle and during the REM stage when we are dreaming <sup>[267]</sup>. The REM stage becomes longer, while the non-REM stages become shorter as we progress through the sleep cycle <sup>[278]</sup>. We may become lucid in the other stages of sleep or the non-REM <sup>[280]</sup>. Usually, when we sleep, the occipital lobe and brain stem become active during REM, while the frontal region of the brain (i.e., the front area) is dormant or quiet <sup>[278]</sup>. The occipital lobe is in the back of the brain and handles vision, color, and motion, while the brain stem controls our breathing and heart and routes signals from the spinal column to the brain. The

frontal region becomes active when we start lucid dreaming <sup>[280, 281]</sup>. Scientists believe our sense of self and personality reside in the brain's frontal region <sup>[282]</sup>, which becomes active as we lucid dream.

Lucid dreaming may cause the brain to become more active and exhibit high-frequency gamma waves as the brain's frontal cortex becomes active. We know the brain is not resting during the REM stage of sleep <sup>[279]</sup>. We covered some of the theories explaining why we dream. Lucid dreaming may benefit us more than regular dreaming <sup>[264, 276]</sup>. After we wake up from a lucid dream, we feel more refreshed.

### ***Levels of Lucid Dreaming***

We experience different levels of lucidity during dreams.

- **Level 1: Pre-lucid:** We are dreaming and begin questioning what we are seeing. Dreams are bizarre and arouse our suspicions about what we are witnessing <sup>[264]</sup>.
- **Level 2: Semi-lucid:** We realize we are dreaming <sup>[258]</sup>. However, we may slip back into a dream and lose that lucidity <sup>[264]</sup>. Other times, that “aha” moment strengthens, and we reach a higher level of lucidity <sup>[264]</sup>.
- **Level 3: Fully Lucid:** We realize we are dreaming and take action <sup>[258]</sup>. We have our conscious minds in the dream <sup>[264]</sup>. We can interact with the characters and the dream scenery <sup>[264]</sup>. We can open doors or fly like Neo in the Matrix movies. We possess our will and memories.
- **Level 4: Super Lucid:** We realize we are dreaming and change our dream environment <sup>[258]</sup>. Level 4 differs from the previous level by degree. In Level 3, we can interact with our dream environment and the characters. In Level 4, we realize our mind is creating this dream world, and we can alter and change this world.

- **Level 5: Becoming a Master:** We neither participate nor create a story or scene <sup>[258]</sup>. This state can induce an out-of-body experience, or at least in theory <sup>[258]</sup>.

## ***Techniques to Induce Lucid Dreaming***

Dreamers can utilize a variety of techniques to become lucid. One indirect technique is gaming, probably every parent's worst fear. Gaming may help people to become lucid in their dreams. Players handle the game controls and integrate and focus their thoughts on a video game. Game players learn to control the game environment. Thus, they may experience lucid dreams more frequently and have better control over their dream environment <sup>[264]</sup>.

### ***Meditation***

The first technique uses meditation to quiet the mind <sup>[258, 267]</sup>. We discussed this previously when we discussed the six stages of mastering yoga. Buddhists spend part of their day in meditation and self-reflection. Please refer to Chapter 4 on meditation. We must quiet our minds for at least 10 minutes <sup>[258]</sup>. Meditation quiets the mind, enhancing our perceptions <sup>[258]</sup>.

We find a special place to meditate but should refrain from meditating in our beds. Over time, we have conditioned ourselves to sleep while lying in bed <sup>[258]</sup>. Furthermore, if we fall asleep on our side, we do not lie down to meditate on our side <sup>[258]</sup>. It is the same issue as with our beds. We conditioned ourselves to fall asleep on our side <sup>[258]</sup>. On the other hand, we can lie on a yoga mat in the living room in front of the fireplace or another favorite spot in the home.

When we meditate, we allow ourselves to observe hypnagogic images <sup>[258]</sup>. Hypnagogic images appear as kaleidoscopes of moving images, colors, and shapes. We impose no judgments, feelings, or thoughts onto these flashing images. We observe them. We want to remain between sleep and wakefulness and allow thoughts and

images to blend, melt, and transform <sup>[258]</sup>. We are performing a mindful meditation.

Peter Torok created a meditation type, which he recommends 90% of the time <sup>[258]</sup>. Peter believes this technique helps meditators experience an out-of-body experience by assisting them to move beyond their physical bodies <sup>[258]</sup>. The meditator lies down, relaxed, and waits for a vibration. We feel the cells in our bodies begin to vibrate. Some people experience extreme vibrations, which come in waves. Others feel little. As meditators feel the vibrations transition to a higher state, they sometimes hear the vibrations. Then they surrender to these vibrations until they feel their energy bodies separate from their physical bodies <sup>[258]</sup>.

Other techniques that help dreamers become lucid include the following:

- Daydreaming during meditation can help us transition into a wakeful dreaming state <sup>[258]</sup>.
- Reading before bedtime can help induce lucid dreams <sup>[267]</sup>. Although reading focuses the mind on ideas, it most likely puts the brain into high brain wave mode.
- Sexual intercourse before bedtime may help dreamers become lucid <sup>[267]</sup>. Like reading, the participants focus on other matters, such as hedonistic pleasures.
- Yoga, exercise, and a hot bath enhance meditation <sup>[258]</sup>. These techniques help silence the mind <sup>[258]</sup>.

### ***Dream Recall***

For dreamers to know they experienced lucid dreams, they need to remember them. We should not be surprised that researchers found a relationship between dream recall and the occurrence of lucid dreams <sup>[265]</sup>. To lucid dream, we must remember our dreams.

The steps to remember our dreams are:

- **Step 1:** Setting a strong intention for dream recall is crucial. Before we drift off to sleep, we make a conscious effort to affirm our desire to remember our dreams <sup>[264]</sup>. This simple act can significantly enhance our dream recall abilities.
- **Step 2:** When we dream, we try to wake ourselves up during the dream <sup>[264]</sup>. When the dream is fresh in our minds, we are more likely to remember it.
- **Step 3:** The dreams may have occurred in our bodies, not our minds <sup>[264]</sup>. When we wake up, we explore our body's feelings. For example, we were walking in our dream. Thus, focus on our legs to bring back that walking motion, which helps trigger recall.

We try to associate our feelings with dream recall. If we can remember one piece or fact from our dreams, we can work backward to recollect those dreams. Can we ask ourselves questions? What was I doing in the dream? Did I recognize the location? Did I know anyone in my dream?

We do not give up on our dreams. We can shower, have breakfast, and drink coffee or tea. We relax as we sip our coffee or tea and try recollecting <sup>[264]</sup>. Sometimes, those dream memories return. We can also take a break at work. We pause, relax, close our eyes, and think about the dream. We must give ourselves time to remember <sup>[264]</sup>. Saint-Denys (1867) would reflect on his dreams during the day <sup>[271]</sup>. Because he kept reflecting on his dreams, his dream recall improved <sup>[271]</sup>. He viewed dream recall as exercising. The more exercise a person does, the faster and stronger that person gets.

- **Step 4:** We keep a dream diary. We get into the habit that when we awaken, we try to recall our dreams and then write down the main facts <sup>[264, 271]</sup>. We do not need to focus on every tiny detail. We can spend 10 minutes recording the prominent features of our dreams <sup>[264]</sup>. Then we add details after breakfast <sup>[264]</sup>. Saint-Denys recorded 1,946 nights of dreams in 22

notebooks <sup>[271]</sup>. We also record our dreams to become familiar with the landscape and territory of our dreams. This can help us become more lucid if we can recognize that we are in a dream and have seen this area before <sup>[264]</sup>.

We could perform psychotherapy on ourselves. Dr. Sigmund Freud and Dr. Carl Jung believe our dreams give us access to our unconscious minds, whether they are repressed memories, desires, wishes, or access to our archetypes. We document our dreams to help our unconscious and conscious minds integrate <sup>[264]</sup>.

### ***Reality Checks or Sensory Cues***

An important technique is to recognize whether we are dreaming or not. Periodically during the day, we ask ourselves – are we dreaming <sup>[264]</sup>? Then we do a reality check. We also ask ourselves if we experience déjà vu or witness something strange <sup>[264]</sup>. We want to make this question a habit that we carry into our dreams <sup>[264]</sup>.

We can extend this technique to repetitive tasks. For example, we drive all day to visit family for the holidays. Driving long hours on a highway is boring and repetitive. However, we periodically ask ourselves – are we dreaming? It is common for people to carry that long, monotonous driving experience into their dreams, where we are in a car going somewhere. If we ask ourselves if we are dreaming, we may be in a dream, and we ask that question to make us lucid.

We try to recognize anomalies <sup>[267]</sup>. Then we ask ourselves – are we dreaming? Some cues and reality checks include the following:

- We see a talking fish or ninja babies <sup>[264]</sup>.
- We find ourselves back at school, or childhood home, or walking naked in public <sup>[264]</sup>. The author found himself walking naked through an alley near a building. He was returning to get some clothes. Then he asked if he was dreaming and looked at his hands. His hands appeared shiny and blocky as if a slow graphics card could not render the

picture fast enough. Thus, the author became lucid within his dream.

- We look at our hands. Then we look at our hands again <sup>[264]</sup>. Dreams are ephemeral, constantly changing, constantly in flux. When we look at the same object again, it could change. Thus, we know we are dreaming. It does not have to be our hands. We can look at an electronic device or read words. It changes when we look at it again <sup>[264]</sup>.
- We keep appearing at a familiar place where we have never been <sup>[264]</sup>. Sometimes, we dream of these familiar places.
- We can also dream of interacting with deceased relatives and friends. If we remember they are deceased, then we know we must be dreaming.

The brain works hard to maintain the elaborate projection of our dream world. Once we become lucid, the brain struggles to replicate images. That is how we know we are lucid and dreaming. The brain cannot reproduce the image precisely as we study it <sup>[264]</sup>. That is why looking at our hands or another object is essential. Then we become aware that we are dreaming, and thus, we become conscious within our dreams.

Dreamers may use external cues to become lucid in dreams. For example, a dreamer wears a mask over the eyes during sleep. As the dreamer enters the REM stage, the mask contains lights that start flashing <sup>[267]</sup>. The dreamer may incorporate these flashing lights into his or her dreams. The dreamer needs to recognize the flashing lights as a sensory cue that he or she is dreaming <sup>[267]</sup>.

### ***Mnemonic Induction of Lucid Dreams (MILD)***

LaBerge, a dream researcher, developed the mnemonic induction of lucid dreams (MILD) <sup>[267]</sup>. The MILD technique helps increase the frequency of lucid dreams <sup>[267]</sup>. The first step in MILD is to have good dream recall. We remember a dream we had the

previous night or a dream we had awakened. We search for an anomaly in our dreams, something that is characteristic of our dreams, which we call a dream sign. Then we visualize that we return to this dream and keep recognizing this dream sign. We keep rehearsing this visualization until we realize that the dream sign is part of our dream. We can also rehearse an action we want to accomplish when we become lucid.

Rehearsing is a form of meditation. We let go of distracting thoughts and keep returning to the visualization of the dream sign. We want to recognize the dream sign as part of our dreams, so we can become lucid. We also rehearse the action we want to accomplish. LaBerge found that MILD was 800% more effective than autosuggestion, which helped dreamers become lucid <sup>[267]</sup>.

### ***Wake Induced Lucid Dreams (WILD)***

The Wake-Induced Lucid Dreams (WILD) method is an advanced lucid dreaming method. WILD entails being conscious and awake as we transition into a dream without losing consciousness <sup>[278]</sup>. The dreamer may experience intense sensations, such as rapid acceleration<sup>2</sup>, the feeling of floating, or strong vibrations <sup>[278]</sup>. The dreamer may also experience an out-of-body experience <sup>[278]</sup>.

The WILD method stands out from ordinary lucid dreaming. While regular dreamers must realize they are dreaming, the WILD technique allows the sleeper to transition directly from wakefulness into a lucid dream without losing consciousness <sup>[278]</sup>. This unique approach is what sets WILD apart from other techniques.

The WILD technique has two requirements:

- **Supplements:** The sleeper takes supplements, like galantamine or a combination of galantamine and choline, to help induce a WILD <sup>[278]</sup>. We discuss supplements in a later section on lucid dreaming.

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<sup>2</sup> The acceleration through a tunnel is characteristic of a near-death experience.

- **Late Stage of Sleep:** The dreamer has already slept 4 to 5 hours before taking the supplements <sup>[278]</sup>. The beginning stages of sleep are required for the body and brain to rejuvenate and cleanse, while the later stages of sleep are spent in REM. Taking the supplements before bedtime could interfere with the early sleep cycles.

### ***The Rules of Lucid Dreaming***

This section is not about a technique to boost the frequency of lucid dreaming. This section concerns rules on how we conduct ourselves in the dream world.

- **Acceptance:** When we see, find, or experience something unpleasant in our dreams, we do not try to change or modify it <sup>[264]</sup>. The dream we experience reflects our unconscious <sup>[264]</sup>. We want our conscious and unconscious minds to integrate so we possess an integrated psyche <sup>[264]</sup>. We may create an internal conflict or struggle if we reject the material in the dream <sup>[264]</sup>. We start fighting ourselves. Thus, the goal is to accept what our dreams show us and make peace with it, similar to mindful meditation.
- **Friendliness:** The things we experience in our lucid dreams are part of us, our psyche. We are friendly to the characters within the dream, whether good or bad <sup>[264]</sup>. Remaining friendly can open parts of the dream hidden in the background <sup>[264]</sup>. Remember, our dream world reflects us and our unconscious minds.
- **Kindness:** We are kind to the people and things in our dreams <sup>[264]</sup>. Remember – everything in the dream is our reflection. The dream world manifests itself from deep within our minds. We should show kindness to ourselves.

We can do activities in lucid dreams that we could not do in the real world, or if we did in the real world, it would land us in a court in front of a judge. Since we are in our dream world, we can seduce that beautiful vixen standing before us or participate in other hedonistic activities. The problem with participating in these activities is that we may develop and reinforce neural pathways in our brains <sup>[264]</sup>. These activities grow into bad habits that carry over into the real world <sup>[264]</sup>.

Saint-Denys (1867) became an avid lucid dreamer and started experimenting. During several lucid dreams, he tried committing suicide, like jumping off a high building rooftop, stabbing himself, or using a pistol <sup>[271]</sup>. He was not successful. Saint-Denys did not have the guts to stab himself or jump off a rooftop, whether in the real world or the dream world <sup>[271]</sup>. He found locating the cabinet key and loading and preparing the gun too complicated and was unsuccessful in shooting himself <sup>[271]</sup>. The author can sympathize with him. During one lucid dream, the author led this young vixen to a bedroom, but he could not figure out how to undress.

Saint-Denys tried to show that the unconscious mind and memories came from experience. Since he never committed suicide in real life, he would not have those memories in his dreams <sup>[271]</sup>. We can say he violated the rules on friendliness and kindness.

## ***Lucid Dreaming as Therapy***

We need several definitions before discussing the levels of consciousness and the dream state. These definitions come from Sigmund Freud. The first level is consciousness, when we are awake, when we can act, think, and are aware. The second level is the subconscious, which is below consciousness. We are unaware of it, but it can influence our actions by remembering, hearing, or seeing it. The last and deep level is the unconscious mind. We are not conscious of it. This part of the mind includes ideas, desires, and wishes that are not socially acceptable. It can also include repressed memories, such as traumatic experiences and painful emotions. We use defense mechanisms to protect ourselves from harmful, painful memories.

Lucid dreaming can be used as therapy. Sigmund Freud wrote his book, *The Interpretation of Dreams* in 1900. Freud wrote that dreams are beneficial. We should become aware of dreams and strive to understand them <sup>[264]</sup>. We should not focus on Freud's theories that dreams express taboos and sexual symbolism. However, dreams may help us process emotions <sup>[275]</sup>. Dreams reveal information from our unconscious minds.

Sigmund Freud tried to find a copy of *Dreams and How to Guide Them* by Marquis d'Hervey de Saint Denys. Hervey wrote this book in 1867 <sup>[271]</sup>. If Freud had succeeded in getting this book and trained himself in lucid dreaming, we could be 60 years ahead in lucid dreaming. Perhaps we could have moved in a new direction of psychotherapy.

Dr. Carl Jung believed we only brushed along the surface of the dream world. Dr. Jung was also influenced by a near-death experience after suffering a heart attack. Jung sensed dreams were more than sexual symbolism. Dreams may express non-sexual, spiritual meanings. Jung believed we possess a collective unconscious and introduced the ideas of archetypes.

We must distinguish between the personal unconscious mind and the collective unconscious. The personal unconscious mind consists of memories and experiences that were once conscious, but we forget or repress those memories <sup>[1]</sup>. The collective unconscious does not come from personal experiences <sup>[1]</sup>. We inherited it <sup>[1]</sup>.

The archetype represents motifs or themes in the collective unconscious <sup>[1]</sup>. These themes have recurred countless times in our history and have become embedded deep within our personalities. Thus, archetypes are the treasured and tragic memories of all human cultures and history. Archetypes are universal and transcend all cultures <sup>[1]</sup>.

Archetypes rise to the surface when we dream or fantasize. In theory, we can question ourselves to ascertain which archetype appears in our dreams, if we can identify an archetype, and if we find a common phenomenon with all human communities.

Jung defined the four archetypes:

- **The Persona:** We wear a mask or persona when interacting with a group. For example, we act differently, whether with families, work, or friends. Our persona comes from our culture and upbringing. We use our persona to adapt to our environment and to protect ourselves from the outside world.
- **The Shadow:** We humans possess a light and dark side. Through culture and religion, we repress our dark side to the shadow, and it takes refuge in our unconscious mind. The shadow can arise from the unconscious and influence our conscious minds.
- **The Animus and Anima:** Women form the notions of masculinity in their minds, called the animus, while men form the concepts of femininity, called anima. Tarzan would represent the animus, and Eve would be an anima in the Garden of Eden. Animus and anima may explain the feelings of attraction to the opposite sex.
- **The Self:** Our ego unifies the conscious and unconscious minds that give us our identity or self. Jung called this individuation. Our experiences and lives shape us, which makes us unique and different. No two people share identical personalities.

We can use lucid dreaming to integrate and merge the conscious and unconscious mind. We become whole. Jung called this self-realization. Self-realization differs from nirvana (or samadhi). Instead, we realize our full potential and utilize all our God-given talents and use these talents to the fullest.

We can utilize lucid dreaming to achieve self-realization. Lucid dreamers can alleviate the following psychological problems.

- **Break Bad Habits:** One lucid dreamer delved into his sexual behavior. He conversed with a dream character who told him he feared commitment.

- **Heal Traumatic Memories:** People can use lucid dreaming to heal anxiety, depression, and post-traumatic stress disorder (PTSD) <sup>[283]</sup>. A young woman used lucid dreaming to forgive a childhood abuser <sup>[264]</sup>. Lucid dreaming helped her heal and overcome her trauma <sup>[264]</sup>.
- **Self-inception:** During lucid dreaming, we plant beneficial ideas and suggestions in our subconscious mind like seeds <sup>[264]</sup>. These seeds take root and grow and carry over to our conscious minds while awake <sup>[264]</sup>,
- **Overcome Nightmares:** Nightmares prematurely awaken us and lower our quality of sleep <sup>[283]</sup>. Lucid dreaming can decrease the frequency of nightmares <sup>[264]</sup>. When we become lucid in a nightmare, we stop being afraid because we know it is only a dream <sup>[283]</sup>. That nightmare cannot harm us. Saint-Denys used lucid dreaming to cure his nightmares in the 19<sup>th</sup> century <sup>[271]</sup>.
- **Quiet Those Inner Voices:** A young man used lucid dreaming to quiet those voices in his head <sup>[264]</sup>. He befriended and integrated those voices into the psyche <sup>[264]</sup>. The negative tone and frequency of the voices decreased <sup>[264]</sup>.
- **Prepare for Imminent Death:** Lucid dreamers dying from cancer prepare their selves for an impending death <sup>[264]</sup>. They make peace with themselves.
- **Do Extraordinary Things:** Lucid dreamers with disabilities can enjoy activities they cannot normally do. For example, a person with quadriplegia can run, swim, and climb mountains in lucid dreams <sup>[264]</sup>.

## ***Supplements to Enhance Lucid Dreaming***

Various foods, supplements, and drugs influence the brain and affect sleep quality and sleep cycles. This section only discusses a

handful of supplements and medications. A complete discussion would warrant a book.

We break down substances into four classes based on a substance's impact on neurotransmitters. A neurotransmitter is a chemical that allows one nerve cell to communicate with another nerve cell. Synapses are gaps between nerve cells, and a neurotransmitter enables a connection between two nerve cells. The four classes of neurotransmitters are acetylcholine, serotonin, dopamine, and norepinephrine.

- **Acetylcholine:** Scientists identified acetylcholine in the early 1900s. This neurotransmitter is vital in learning, memory, thinking, and regulating emotions <sup>[278]</sup>. This neurotransmitter is vital for our brains to form, store, and recall memories <sup>[278]</sup>.
- **Serotonin:** This transmitter is vital in wakefulness and sleep as it helps regulate appetite, mood, and pain <sup>[278]</sup>. People suffering from serotonin deficiency experience anxiety, bipolar disorder, depression, and migraine headaches <sup>[278]</sup>. They also have trouble focusing their thoughts, controlling their appetite and diet, and experiencing insomnia <sup>[278]</sup>.

A person having high serotonin levels would experience the opposite of serotonin deficiencies. They experience less anxiety, less depression, and higher levels of relaxation <sup>[278, 284]</sup>. They also may have a lower sex drive, frequent drowsiness, and longer time in non-REM sleep and shorter time in REM sleep <sup>[278, 284]</sup>.

Serotonin and acetylcholine work in conjunction in the sleep cycle <sup>[278]</sup>. When we fall asleep, our serotonin level rises while acetylcholine levels fall <sup>[278]</sup>. Serotonin allows us to drift into a deep, restorative non-REM sleep <sup>[278]</sup>. As we approach the REM stage of sleep, the serotonin level falls while the acetylcholine level rises <sup>[275, 278, 279, 285]</sup>. Acetylcholine may also be responsible for the dreams' bizarre and illogical nature <sup>[279]</sup>.

The interplay between serotonin and acetylcholine makes the timing of taking supplements crucial. If we want to boost the vividness and duration of REM sleep, we wake ourselves up around

4 AM to take an acetylcholine supplement <sup>[278]</sup>. That way, the supplement boosts our dreaming state. If we take the acetylcholine booster before going to bed, the supplement may prevent us from going into deep sleep at the beginning of our sleep cycle <sup>[278]</sup>. Not interfering with the early sleep cycle ensures a refreshing, restorative sleep.

The next neurotransmitters are:

- **Dopamine:** Dopamine is critical in learning, motivation, and controlling our body's balance and movement <sup>[278]</sup>. Increasing dopamine levels give us positive feelings and serves as the reward center for motivation <sup>[278]</sup>. Many recreational drugs, like alcohol, amphetamines, cocaine, heroin, nicotine, and opiates, elevate dopamine levels, which gives the users a “high” and euphoria. Increasing dopamine levels enhance creativity and verbal fluency <sup>[278]</sup>. Meanwhile, low dopamine levels make people feel more tired and forgetful <sup>[278]</sup>. They also lack drive, vitality, low libido, and poor self-esteem <sup>[278]</sup>. Scientists believe abnormally high levels of dopamine lead to schizophrenia, while Parkinson's disease is linked to significant dopamine deficiencies.
- **Norepinephrine:** It is both a neurotransmitter and hormone, also called noradrenaline. When noradrenalin surges through our bloodstream, it triggers the “fight or flight” response. Our hearts are pounding; we are breathing rapidly, and we are filled with energy. When noradrenaline is in our brain, it helps us focus and aids in memory <sup>[278]</sup>. We are not easily distracted. People with attention deficit hyperactive disorder (ADHD) take Ritalin, which boosts noradrenalin in the brain. Ritalin helps ADHD children sit still at their desks and focus on school work.

We should follow three guidelines to make supplements effective for lucid dreaming.

- **Tolerance:** When we repeatedly take the same supplement over time, our bodies become used to it <sup>[278]</sup>. Then we must take higher doses to obtain the same effect because of the higher tolerance <sup>[278]</sup>. We should use supplements occasionally, not daily, which keeps our tolerance low.
- **Mixing Supplements:** We should avoid mixing supplements. We should start with one supplement to determine its impact on us and our dreams. Once we become proficient, we can experiment with combinations. Supplements from different classes can interact with each other.
- **Dosage:** We start the supplement dosage low so we can determine how effective it is.

We use supplements to aid us on the path to enlightenment via lucid dreaming, but we should not depend on them. Supplements are not a crutch or wheelchair to help us along the path; they are just tools to help light the path to enlightenment.

## ***Acetylcholine***

We can quickly boost acetylcholine in our brains by taking a complete vitamin complex with choline. Other supplements and herbs are available to encourage lucid dreams, such as the following:

- **Vitamin B5:** Vitamin B5 is a precursor of acetylcholine. The brain's biochemistry takes an acetyl group from Vitamin B5 and adds choline to make acetylcholine <sup>[264, 278]</sup>. We discuss Vitamins B3 and B6 under the Serotonin section.
- **Choline Salts:** The brain needs choline to make acetylcholine <sup>[264, 278]</sup>. Several multivitamin and mineral supplements contain choline.
- **Galantamine:** Galantamine is an acetylcholinesterase inhibitor, which prevents the breakdown of acetylcholine in the

brain. Thus, galantamine would increase acetylcholine levels. Galantamine comes in 4 mg and 8 mg doses and increases the occurrences of lucid dreaming<sup>[280]</sup>. Galantamine helps sleepers in dream recall and increases the complexity and vividness of dreams by intensifying REM activity<sup>[267, 280]</sup>. Researchers are studying galantamine because it boosts memory and improves the symptoms of Alzheimer's disease.

As we already discussed, we would take galantamine after sleeping for 4 or 5 hours since it counteracts the effects of serotonin<sup>[278]</sup>. We must enter deep sleep first to obtain quality sleep when serotonin levels rise. The ideal scenario is to set the alarm or wake ourselves up around 4 AM, usually after 4.5 hours of sleep<sup>[267]</sup>. Then we take galantamine. The dosage peaks in 60 minutes after ingesting it<sup>[278]</sup>. It takes our bodies 48 hours to flush out galantamine. We may not want to keep taking this supplement. Galantamine is combined with choline to enhance dreaming and lucid dreams<sup>[258, 264]</sup>.

Other supplements include:

- **Huperzine A:** Chinese medicine has long used this herb, which could substitute for galantamine. Huperzine A is derived from the herb *Huperzia serrata* and is being investigated for treating Alzheimer's disease<sup>[272]</sup>. People taking 400 micrograms reported intense dreams<sup>[286]</sup>. Although scientists have not studied Huperzine A extensively, it is a potentially powerful supplement to induce and enhance lucid dreaming<sup>[272]</sup>.
- **Nicotine:** The active chemical in cigarettes, cigars, patches, and tobacco products can reduce the frequency of REM sleep<sup>[285]</sup>. Nicotine passes through the blood-brain barrier easily and helps boost acetylcholine<sup>[278]</sup>. However, nicotine has little effect on non-REM sleep but can increase the quality and vividness of dreams and people's recall of their dreams<sup>[285]</sup>. Chronic use of nicotine has serious drawbacks, such as nicotine addiction. We could use nicotine in the same manner as

galantamine. We would wake up after 4 to 5 hours of sleep, apply a nicotine patch, and return to bed.

- **L-Alpha Glycerylphosphorylcholine:** It is a precursor to acetylcholine and helps improve acetylcholine levels <sup>[272]</sup>.

## ***Serotonin***

To combat insomnia, we can travel to any store or pharmacy and select various supplements. Many of these supplements help boost serotonin. However, we should be careful when taking these supplements because they encourage deep sleep and not REM sleep. If these supplements remain in our bodies at later stages of sleep, they can prevent us from entering a healthy REM state, where we would not lucid dream <sup>[278]</sup>.

Serotonin-boosting supplements can induce the REM stage of sleep through the REM rebound effect <sup>[278]</sup>. When people take substances and drugs, they suppress REM during sleep. However, once the people stop taking the substance or drug, they may experience prolonged REM sleep <sup>[278]</sup>. Prolonged REM sleep can help people prone to lucid dreaming to increase the frequency of lucid dreams <sup>[278, 280]</sup>.

The first supplement should not be a surprise. We should take a good multivitamin with choline, calcium, and magnesium. Some of the supplements that boost serotonin are listed below, starting with the Vitamin Bs:

- **Vitamin B3:** Insomniacs taking Vitamin B3 help improve sleep quality and increase REM sleep <sup>[287]</sup>. Scientists believe increasing B3 makes more tryptophan available for synthesizing into melatonin and serotonin <sup>[287]</sup>.
- **Vitamin B6:** The brain needs Vitamin B6 to convert tryptophan into serotonin <sup>[287]</sup>. People taking Vitamin B6 reported bizarre, vivid, and emotional dreams with a higher intensity of colors <sup>[264, 288]</sup>. Vitamin B6 may intensify dreams

by improving dream recall since B6 may improve memory recall <sup>[264, 288]</sup>.

- **Vitamin B12:** The brain uses Vitamin B12 to synthesize melatonin, a hormone produced during sleep <sup>[287]</sup>.
- **Calcium:** The brain requires calcium to synthesize melatonin from tryptophan <sup>[264]</sup>. A calcium deficiency can cause sleep disturbances and low-quality sleep, such as the absence of deep sleep and REM sleep <sup>[264]</sup>.
- **Magnesium:** This mineral is involved in several critical chemical reactions in the body. It helps relax the muscles, hydrate the body, produce energy, and deactivate adrenaline <sup>[264]</sup>. The brain uses magnesium to switch off a network of neurons to induce sleep <sup>[264]</sup>. Magnesium may help enhance lucid dreaming by promoting sleep, falling asleep faster, and boosting sleep quality <sup>[287]</sup>.
- **5-hydroxytryptophan (5-HTP):** The body uses 5-HTP to convert to serotonin. A person taking 5-HTP supplements can boost the serotonin in their brain. Boosting serotonin helps to promote and prolong sleep <sup>[278, 289]</sup>. Elevated serotonin levels may suppress REM sleep <sup>[272, 278]</sup>. It may increase the chance of having a lucid dream via the rebound effect <sup>[278]</sup>.
- **Tryptophan:** The brain converts the amino acid tryptophan into serotonin. Cheese, eggs, milk, and turkey are natural sources of tryptophan. We all remember feeling drowsy after eating roasted turkey and all the fixings on Thanksgiving Day. How can we forget mom's warm milk before bed to help us sleep? 5-HTP may be better than tryptophan since it easily crosses the blood-brain barrier <sup>[278]</sup>.
- **Melatonin:** The brain metabolizes serotonin into melatonin <sup>[278]</sup>. The pineal gland produces melatonin, which helps regulate the sleep-wake cycle <sup>[287, 290]</sup>. This hormone is

involved with the circadian rhythm <sup>[290]</sup> and helps encourage sleep, including sleep quality <sup>[291]</sup>. Taking 5 mg of melatonin before bedtime can help us reach the REM stage quicker without altering the REM stage's duration <sup>[292]</sup>.

## ***Dopamine***

If we boost dopamine levels during sleep, we have more vivid and prolonged dreams <sup>[278]</sup>. Dopamine may also induce more nightmares. Some claim dopamine boosters cause dreams where the dreamer must overcome or defeat an adversary <sup>[278]</sup>. Dopamine may not trigger lucid dreams but could create high-level lucid dreams <sup>[278]</sup>.

Only one supplement is recommended to boost dopamine levels:

- **Mucuna Pruriens:** Ayurveda (or Indian medicine) has used mucuna prurians for over 4500 years. The plant produces a bean that contains L-dopa, which the brain converts to dopamine <sup>[278]</sup>. Unlike L-dopa, dopamine cannot cross the blood-brain barrier <sup>[278]</sup>.

Yuschak recommends 400 mg of L-dopa to initiate a dopamine dream <sup>[278]</sup>. He claims his dreams are packed with action and engage his full participation <sup>[278]</sup>. In contrast, the dreamer is usually an observer or passive participant in a dream. Unfortunately, Mucuna Pruriens do not trigger lucid dreams <sup>[278]</sup>. The blood concentration of Mucuna Pruriens peaks around 90 minutes, and the body eliminates it after 12 hours <sup>[278]</sup>. Yuschak recommends taking Carbidopa with Mucuna Pruriens because Carbidopa prevents the chemical conversion of L-dopa into dopamine in the digestive system. Otherwise, the dopamine cannot pass through the blood-brain barrier <sup>[278]</sup>.

## ***Norepinephrine***

Substances that boost norepinephrine levels in the brain are similar to boosting acetylcholine <sup>[278]</sup>. Norepinephrine boosters can

create highly vivid and prolonged dreams <sup>[278]</sup>. The only difference is that norepinephrine does not activate the REM stage of sleep; it just supports and prolongs it <sup>[278]</sup>.

- **Yohimbine:** Yohimbine comes from an African tree bark. Weightlifters use Yohimbine to increase blood flow during workouts, while males use Yohimbine to overcome impotence <sup>[278]</sup>. Yohimbine blocks the breakdown of norepinephrine, which means norepinephrine levels rise in the brain <sup>[278]</sup>. Blood plasma levels peak in an hour after taking Yohimbine, and the body eliminates it in 5 hours from the body.

Yohimbine can trigger lucid dreams, but we must take it under the right conditions <sup>[278]</sup>. We would take Yohimbine in the final sleep cycles since it acts as a stimulant and can cause insomnia <sup>[278]</sup>. We would wake up after 4 or 5 hours of sleep, take Yohimbine, and return to sleep (if possible) <sup>[278]</sup>.

### ***The Rebound Effect***

Some recreational drugs cause a rebound effect. These drugs suppress the REM stage of sleep while taking these drugs. When users abstain from these drugs, they spend a longer time in the REM stage of sleep.

The following recreational drugs cause a rebound effect.

- **Marijuana:** The active chemical in marijuana is tetrahydrocannabinol (THC). Marijuana can help people fall asleep easily and quickly <sup>[293]</sup>. Marijuana helps suppress the REM stage of sleep but may result in a rebound effect, which helps trigger lucid dreams <sup>[278, 293, 294]</sup>. We discuss marijuana further in Chapter 7.
- **Alcohol:** The active chemical in alcohol is ethanol, which is in beer, wine, and liquor. Alcohol stimulates the neurotransmitter gamma-aminobutyric acid (GABA), which slows a drinker's actions. It also raises dopamine, which causes alcohol

addiction. Alcohol may cause a rebound effect, triggering lucid dreams <sup>[278, 293, 294]</sup>.

Alcohol's effects depend on whether the drinker is a non-alcoholic or alcoholic. Non-alcoholics improve their sleep during the first half of the night but experience disturbances in the second half <sup>[294]</sup>. On the other hand, alcoholics experience disturbances in their sleep, even for months after abstinence <sup>[294]</sup>. Heavy drinkers experience mostly non-REM stages of sleep <sup>[294]</sup>. Sometimes, alcoholics abstaining from drinking see hallucinations as withdrawal symptoms. Scientists hypothesize that these hallucinations originate from the rebound effect as the REM sleep intrudes into the alcoholics' waking state <sup>[294]</sup>.

- **Cocaine:** The “high” comes from cocaine’s ability to prevent the breakdown of norepinephrine, serotonin, dopamine, and other neurotransmitters in the brain. Users taking cocaine take longer to fall asleep <sup>[293]</sup>. They also sleep for a shorter time with less time spent in REM sleep <sup>[293, 294]</sup>. Cocaine is a stimulant that users take to get high and experience an energy boost. Amphetamines would impact sleep similarly to cocaine <sup>[293]</sup>.
  
- **Ecstasy (MDMA):** Drug users take Methylene-dioxymethamphetamine (MDMA) to boost energy, increase empathy, enhance pleasure, and experience altered sensations. Users feel more intimate or connected with people. Their positive feelings increase while negative feelings decrease with reduced inhibitions. Prolonged MDMA use causes poor memory recall, slow learning, anxiety, depression, and sleep disturbances <sup>[293]</sup>. Users abstaining from MDMA experience the rebound effect with longer time spent in the REM stage of sleep with stranger dreams <sup>[293]</sup>. The last part of the chemical name of MDMA contains amphetamine. Most likely, many amphetamines would cause a rebound effect when abstaining from them.

## ***Remaining Herbs and Supplements***

The remaining herbs and supplements are eccentric and unusual. We mention them in case the reader wants additional information on these supplements.

- **Calea Zacatechichi:** The dreamer would smoke the herb or drink it as a tea to induce or intensify a lucid dream <sup>[295]</sup>. Unfortunately, *Calea Zacatechnichi* could be harmful to one's health. Researchers have found this herb to contain cytotoxic substances, which kill cells <sup>[295]</sup>.
- **Mugwort:** Indians have used mugwort in Ayurveda medicine for centuries. They call the herb nagadamni in Sanskrit. Shamans use this herb to treat anxiety, depression, feelings of uneasiness, and heart conditions <sup>[264]</sup>. Mugwort enhances dreams by boosting vividness and dream recall <sup>[264]</sup>.

## ***Conclusion***

We avoided the esoteric and arcane areas of lucid dreaming. For example, we mention out-of-body experiences (OBE). However, the author has never experienced one and has no way to confirm whether OBEs occur. However, Saint-Denys wrote his book on dreaming in 1867, and he does describe an OBE, even though he did not call it an OBE <sup>[271]</sup>. He wrote his experience as:

- “Last night I dreamed that my soul had left my body, and that I was travelling through vast spaces with the rapidity of thought. I found myself back in my bedroom. For a moment I had the strange sensation of looking at my sleeping body, before taking possession of it again <sup>[271]</sup>.”

There is a widely held belief that most of our dreams, about 99%, reflect our own experiences. However, a potential 1% may stem from archetypes, themes, and motifs inherited from our ancestors

<sup>[264]</sup>. When they surface, this small fraction of our dreams offers a glimpse into our unconscious minds.

There is a widely held belief that the majority of our dreams, about 99%, are a reflection of our own experiences. However, there is a potential 1% that may stem from archetypes, themes, and motifs inherited from our ancestors <sup>[264]</sup>. This small fraction of our dreams, when they surface, offer a glimpse into our unconscious minds.

Sometimes, we see dead relatives when we are dreaming. Our minds project these dead relatives from our memories. However, 1% of our dreams may come from external sources <sup>[264]</sup>. Some Buddhists believe that dead people may leave traces of their energy <sup>[264]</sup>. We cannot sense this energy during the waking state, but during a lucid dream, we can pick up their energy <sup>[264]</sup>.

Another aspect of lucid dreaming, which is not verified, is that some native shamans are dream walkers who can enter people's dreams and heal them <sup>[264]</sup>. The Shamans and medicine men used lucid dreaming to identify herbs to cure sick people or locate doors and portals to other worlds <sup>[264]</sup>.

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## Chapter 6. Restricted Environmental Stimulation Technique (REST)

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“The irony of sensory deprivation tanks is that in order to think outside the box, you must first go inside one.”

– Ryan Lilly

Dr. Jay Shurley and Dr. John Lilly started the Restricted Environmental Stimulation Technique (REST). They studied how the human brain would react if completely isolated from external input. They constructed the first immersive floatation tank at the Oklahoma City Veterans Administration hospital in 1957. To the scientists’ surprise, participants did not fall asleep or lose consciousness; instead, they maintained full awareness.

Sensory deprivation and isolation tanks go by many names, but these names have negative connotations. The negative connotations came from some militaries, secret police, and rogue states using sensory deprivation to brainwash, interrogate, and punish suspects and people critical of their governments. Thus, we refer to this technique as REST, which has a positive connotation <sup>[296]</sup>.

Governments and rogue states used sensory deprivation in harmful ways. Isolating a person from external stimuli for long periods of time causes this person to lose the distinction between dreams and reality and between the self and the environment <sup>[297]</sup>. Furthermore, brainwashing requires prolonged stretches in solitary confinement and the complete submission of the person, including mental, physical, and sexual abuse and violence. The police substitute a strict system of rewards and punishment to force suspects to accept new ideas or propaganda <sup>[298]</sup>. The police tear down suspects' egos, making it easier for them to confess, plant ideas, support the interrogator's story, or sign false confessions.

American prisons practiced prolonged sensory deprivation. They confined prisoners to the “hole,” a place devoid of people, light, and sound. The prisoners would lose initiative, became

uncertain about their identity, and could experience hallucinations [297, 299]. The “hole” served as a punishment and the idea would terrify the prisoners, i.e., so they would be more obedient and comply with the prison’s rules and regulations.

Hollywood did not help with sensory deprivation. One movie made sensory deprivation tanks infamous, *Altered States* (1980). A professor uses isolation tanks with hallucinogenic drugs. He eventually regresses to an early human that savagely attacks and kills a university guard. A recent TV series, *Stranger Things* (2016 – 2021), has a dark op government agency that uses isolation tanks to enhance a young girl’s psychic powers. She punches a hole to another world, unleashing an evil creature. You get the point. No wonder why sensory deprivation tanks get a bad rap, which is why we will refer to this as REST for the remaining chapter.

REST were popular in the 1980s and are making a comeback in the last decade [296]. With our modern world, life pulls and chews use in all directions like a doggie chew toy. We are perpetually connected to our jobs, families, and friends via social media, cell phones, and computers. Sometimes, it is good to disconnect from the modern world with all the stresses and demands it places on us and completely isolate ourselves for an hour or two.

REST is a way to get away from the modern-day world. REST completely disconnect ours sense from the world. We see nothing. We hear nothing. We smell nothing. We do not feel temperature changes or even the pull of gravity. All senses are disconnected from the world, while REST forces us to think inward. REST forces us to meditate and self-reflect.

## ***REST Health Benefits***

People have used medicines, massages, physiotherapy, and yoga to lower stress, tension, and muscle pain but to no avail [300]. However, participants reported many benefits by using REST.

REST has many health benefits, which include the following:

- **Deep Relaxation:** REST induces a deep relaxation that helps lowers stress; relaxes our muscles, which lowers muscle pain

and tension <sup>[300-302]</sup>. The pain could come from overly tensed muscles <sup>[300]</sup>. REST helps relax those tense muscles while alleviating pain <sup>[300]</sup>.

- **Reduces Anxiety:** REST helps to reduce anxiety <sup>[301]</sup>. People afflicted with the most anxiety show the greatest improvement from REST <sup>[301]</sup>. Participants with the largest anxiety experience greater benefits <sup>[301]</sup>.
- **Sleep Quality:** Poor sleep leads to many health problems and can worsen ailments, such as diabetes, heart disease, and high blood pressure <sup>[300]</sup>. The poor sleep carries over to our psychological wellbeing, making us more likely to be depressed or suffer from other mental health diseases <sup>[300]</sup>. Lack of sleep can also make us more susceptible to infections, since poor sleep reduces the effectiveness of our immune system. Thus, we become sick more often and miss work <sup>[300]</sup>. Consequently, REST helps people sleep better and improve their sleep quality <sup>[300]</sup>.
- **Enhance Learning:** REST carries over to our daily lives and can help us improve learning of words, recall previous learned material, enhance visual concentration, and discern patterns and characteristics from external stimuli <sup>[303]</sup>.
- **Decline in Smoking:** Participants experiencing 24 hours of sensory deprivation smoke fewer cigarettes <sup>[303]</sup>. After three months, people smoke 38% fewer cigarettes <sup>[303]</sup>.
- **Heightened Creativity:** People using REST are likely to daydream, fantasize, or open themselves to new ideas and experiences. Artists utilize REST to experience creative ideas and see visual images as a way to enhance creativity or explore new ideas <sup>[303]</sup>.
- **Well-Being:** Participants felt happier and healthier with more energy; they also felt refreshed with more serenity and peace

[300, 301]. Participants experiencing greater degrees of altered states have more mindfulness throughout their daily life [300].

Most researchers focus on the short-term benefits of REST. Some, however, evaluated participants for 6 months to a year. They found that the health benefits of REST can persist over time [301]. REST can become a powerful tool for psychologists and psychiatrists to help alleviate symptoms like anxiety and depression [301]. That way, people can reduce anxiety and depression without enriching pharmaceutical companies.

## ***REST and Meditation***

REST is a powerful tool to help us enhance our meditation and mindfulness while facilitating higher states of heightened awareness [300]. The goal is to maximize the effects of REST and achieve a higher level of altered states. REST requires that we completely disconnect our brains from our daily senses, which forces us to go internally.

We perform rest by following through these steps.

- **Preparation:** We must prepare ourselves mentally and physically. We set a clear goal of what we want to accomplish from the session, whether to strengthen meditation, explore our consciousness, or simply relax and disconnect our brains from the busy world.
- **Entering the Tank:** We slowly step into the tank and become acclimated to the environment. We take a moment to adjust to floating on the buoyant, salt-saturated water. We close the tank door slowly and gently. We focus on our breath, noticing how we inhale and exhale. We use our breath rhythm to keep our minds centered and focused.
- **Heated Pool:** We float in a pool of heated water. The water temperature is maintained around 35<sup>0</sup> Celsius (or 95<sup>0</sup> Fahrenheit), which is the temperature of our skin [300, 301]. Thus,

we disconnect our bodies from feeling temperature differences with our environment. We float on water with dissolved magnesium sulfate, which removes the sensation of gravity [300]. Each liter (roughly a quart) of water has about 0.6 kilograms (1.32 pounds) of magnesium sulfate dissolved in it [300].

- **Controlled Environment:** The room is sound and light proofed with air temperature being kept constant [300, 301]. Our eyes and ears cannot pick up any external input.
- **Sensory Deprivation:** We embrace the elimination of sensory input as we disconnect ourselves from sight, sound, gravity, and touch. We turn our thoughts inward and explore the depths of our minds and consciousness. We concentrate and focus on mindful meditation, where we observe our emotions, sensations, and thoughts. Once we get used to the REST, we can try other meditation techniques like loving-kindness, mantra, or visualization to explore our awareness.
- **Remain Open to Insights:** We trust the REST and allow ourselves to experience emotions, memories, and thoughts without expectations and judgements. We open our minds to whatever comes up during the session.
- **Sanitation:** We have to choose a facility that sanitizes the water. The warm water could contain fecal matter and become a breeding ground for bacteria and parasites. Some facilities periodically clean the water using filters, hydrogen peroxide, or ultraviolet rays [300, 301]. The hydrogen peroxide and ultraviolet lights kill microorganisms while the filter removes the matter. Clinics could use bromine, chlorine, or ozone, but they have pungent odors, which stimulate our smell senses.

We select how long we want to stay in the REST. Although this study is from the 1960s, three hours of sensory deprivation had no effect on college students taking the Wechsler Adult Intelligence

Test <sup>[304]</sup>. In another experiment, participants ended a sensory deprivation within 6 and 8 hours <sup>[303]</sup>. Subjects depriving their senses for two or three days suffered mental declines in anagrams, arithmetic, concept formation, digit symbol substitution, and verbal fluency <sup>[303]</sup>. The subjects also had trouble concentrating and focusing on cognitive tasks <sup>[303]</sup>. Participants also found the sensory deprivation unpleasant and experienced auditory and visual hallucinations, moodiness, and alterations of their brainwaves <sup>[303]</sup>.

As long as we do not plan to spend days or weeks in sensory deprivation, we are not likely to suffer from the long-term effects of sensory deprivation. Many clinics in the Las Vegas area charge about \$80 per hour. We can derive many benefits from a periodic hour or two-hour session in REST.

The key for long-term benefits is to integrate the experience. We reflect on insights or revelations that arose during our REST session and learn how to integrate those experiences into our daily lives and spiritual journeys. REST can create unique opportunities to deepen our awareness, explore our consciousness, and help us become more self-realized. We can move in the direction of more enlightenment.

## ***Conclusion***

Our brains are wired to receive signals from our senses. Psychologists have shown that rodents living in a stimulus-rich environment develop brains with thicker and heavier cortexes than rats raised in non-stimulus-enriched environments <sup>[298]</sup>. Thus, our brains are like muscles. The more we exercise our brains by feeding them information, the more complex our brains become.

The problem is that we live in the 21st century. We are constantly bombarded by information, whether we turn on our TVs, radios, smartphones, or computers. Information is coming from all directions. Consequently, REST and meditation give our senses a break and turn off that highway of information being fed into our brains. REST, combined with meditation, can allow us to become better versions of ourselves and help us move farther along the path of enlightenment.

REST shows that we humans not only have physiological needs, but how we interact with our environment is also important for our psychological well-being <sup>[303]</sup>. We are more than large computer systems that need to process and store large quantities of information all the time.

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## Chapter 7. Drug-assisted Enlightenment

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“Through psychedelics we are learning that God is not an idea, God is a lost continent in the human mind...”

– Terrence McKenna

This chapter is one of the more controversial chapters in this book. However, we can combine sensory deprivation, fasting, and meditation with psychedelic drugs and marijuana. We use psychedelic drugs and marijuana as a crutch or tool to help strengthen meditation and traverse down that enlightenment path at a quicker pace.

Man has used marijuana and psychedelics for millennia for religious and spiritual ceremonies to heal the body and mind and connect with the spirit world. For example, we utilize marijuana occasionally to help enhance meditation. It helps relax our minds, alters our world’s perception, and could mildly dissolve our egos. Advanced meditators can meditate for hours on a marijuana “high,” and the effects of the enhanced meditation can last days. We can also fast or lie in sensory deprivation tanks (REST) while “high.” to strengthen the meditation.

Psychedelics, on the other hand, are potent drugs. Users will hallucinate, experience mystical and religious experiences, and temporarily dissolve the ego. Once we quiet that ego, psychedelics can give users access to repressed memories and traumatic experiences. Thus, psychedelics can shed months and years off psychotherapy as past trauma rises to the surface. Then we use mindful meditation to assimilate and accept that past trauma and heal our minds.

Since psychedelics are powerful, we cannot meditate while on them. A sensory deprivation tank may not be a good idea, either. However, we can meditate a day before we take the psychedelic drug. This meditation helps us prepare our minds for the extreme

altered states of consciousness, handle the shock of ego dissolution, and help us interpret any mystical experiences <sup>[257]</sup>. Then we meditate and self-reflect the day after the “trip.” The reflection day is essential because we integrate that experience into our minds, especially if the psychedelics dredged up painful and traumatic memories. Psychedelics can also rewire the connections between brain neurons and create new neurons. Mindful meditation is ideal in this case and helps integrate that “psychedelic experience” into our consciousness.

The point of psychedelics and meditation is to take a shortcut to Samadhi, a mental state where we do not focus on anything. We experience no pleasure, aversion, or mindfulness, i.e., our thoughts do not concentrate on anything. We are at full mental alertness and awareness while we become at peace with ourselves and achieve the highest state of consciousness.

## **Marijuana**

Marijuana originally grew in Central Asia and has been around for 12,000 years. People smoke marijuana to get “high,” which is a mixture of altered awareness, euphoria, happiness, relaxation, and time distortion <sup>[305, 306]</sup>. Marijuana also impairs cognition and memory and reduces pain perception. Marijuana in a high dosage may cause a slight dissolution of the ego. Some people take medicinal marijuana to lessen chronic pain.

In this book, we utilize marijuana for spiritual and meditation purposes. The key is to use marijuana as a temporary crutch to help us push through boundaries and plateaus on our path to enlightenment. The author does not advocate daily marijuana use – just occasionally, to give us that extra push along the path of enlightenment.

Marijuana consists of three flowering species and is known by the name cannabis. The three groups are *Cannabis indica*, *Cannabis sativa*, and *Cannabis ruderalis* <sup>[307]</sup>. Farmers and growers cultivate the female plants and discard the males. Growers remove male plants to prevent the males from pollinating the females. Otherwise, the female plants produce an abundance of seeds, which are not

smokable and are considered lower-quality marijuana. The seeds are packed with protein and healthy omega-3 fatty acids, which means they have some nutritional applications.

Researchers have identified over 554 compounds in *Cannabis sativa* [308]. Each species contains at least 60 chemicals that influence chemical reactions in a person's body. We are interested in three active components that include:

- **Δ9-tetrahydro-cannabinol (THC):** THC is responsible for the psychoactive properties of marijuana and gives users the “high” [306, 309, 310]. The “high” causes about 10% of users to develop cannabis use disorder when users cannot stop consuming marijuana [311].
- **Cannabidiol (CBD):** CBD is an oil extract or tincture. Users do not get “high” from CBD oil. Instead, CBD oil offers health benefits that lessen anxiety, convulsions, inflammation, and stress [307]. As we learned from Chapter 3 on fasting, a person's immune system can become overactive and attack healthy tissues and organs.
- **Terpenes:** These chemicals give marijuana its aroma and scent. Researchers have identified over 120 terpenes in *Cannabis sativa* [308]. Terpenes counter and reduce inflammation in the body.

CBD oil, terpenes, and THC are phytocannabinoids. Researchers have identified over 113 phytocannabinoids [308]. *Cannabis sativa* generally has more THC than CBD, giving users a sense of energy and a mentally uplifting high. *Cannabis indica* has an equal amount of THC and CBD and helps users feel more relaxed, lethargic and less energetic. Finally, *Cannabis ruderalis* has low THC levels and high CBD levels. We could consume ruderalis for the health properties of CBD oil without getting the “high.”

Marijuana dispensaries in countries that decriminalize marijuana offer creative products using chemicals found or resemble marijuana. Some products include:

- **Synthetic THC:** Some sellers used a loophole to sell synthetic THC under the name spice, K2, and AK47. Some claim that chronic use of synthetic THC can lead to severe medical and psychiatric conditions <sup>[312]</sup>. Synthetic THC is a cocktail of various chemicals and drugs to amplify and enhance the “high” and or conceal ingredients <sup>[312]</sup>.
- **Hexahydrocannabinol (HHC):** Marijuana users in Spain must join clubs to enjoy smoking marijuana, whereas the dispensaries can sell CBD and non-THC products. Portuguese and Spanish dispensaries offer edibles and e-cigs using HHC, which is similar to the chemical composition of THC. HHC has a less intense high and longer self-life than THC. We can think THC is an unsaturated oil while HHC is a saturated, trans-fat of THC.
- **Cannabinol (CBN):** CBN comes from the breakdown of THC. CBN is mild compared to THC and may cause drowsiness in users.
- **Cannabigerol (CBG):** CBG is similar to CBD and may help users focus and concentrate without the “high” from THC.

One of the problems of marijuana is the variability in the chemical composition of the various species and strains. Not only do the effects of marijuana on the body and mind differ between species, but they also differ in their effects within a species. Unfortunately, many dispensaries and growers breed strains to maximize THC content. The other hundreds of chemicals in marijuana can alter, influence, and shape the “high.”

### ***Marijuana Health Benefits and Problems***

Marijuana was made for our bodies. Our endocannabinoid system serves as a natural communications network for many physiological processes <sup>[305, 307, 313]</sup>. These processes are widespread

and involve appetite, digestive, immune systems, inflammation, metabolism, memory, and pain <sup>[309, 313]</sup>.

The endocannabinoid system consists of two protein receptors – cannabinoid receptor 1 (CB1) and cannabinoid receptor 2 (CB2). THC has an affinity for CB1 receptors, which are located throughout the brain and central nervous system <sup>[305, 309-311, 313]</sup>. THC also increases the brain's dopamine levels, which causes THC's euphoria <sup>[305, 311]</sup>. Dopamine is the brain's neural transmitter that affects motivation, pleasure, and satisfaction. On the other hand, CBD tends to bind with CB2 receptors, which explains why CBD oil can help manage and treat neuropathic pain <sup>[305, 313]</sup>.

Various species of marijuana affect the endocannabinoid system differently. *Cannabis sativa* affects the CB1 receptors because of the high THC content, while *Cannabis indica* affects both the CB1 and CB2 receptors because of the equal ratio of THC and CBD. Finally, *Cannabis ruderalis* affects the CB2 receptors because of the high CBD and low THC contents. Thus, the species determine how marijuana affects our bodies and minds.

Researchers discovered the following health benefits of marijuana:

- **Acute and Chronic Pain:** The endocannabinoid system controls pain, which THC and CBD oil would affect. Marijuana can reduce acute and chronic pain associated with cancer, inflammation, and damaged nerves <sup>[306, 309, 313, 314]</sup>. About 70% of patients using medical marijuana reported an improvement in their pain <sup>[313, 315]</sup>.
- **Epilepsy:** The US Food and Drug Administration approved CBD oil to treat rare forms of epilepsy <sup>[316]</sup>. One form of epilepsy comes from tuberous sclerosis <sup>[316]</sup>, where benign tumors grow throughout the brain and nervous system.
- **Multiple Sclerosis (MS):** People afflicted with MS use marijuana to overcome the symptoms of spasticity when their stiff muscles cause discomfort and pain or interfere with movement and speech <sup>[306, 309, 313, 314]</sup>. The immune system

attacks the myelin sheath that covers the nerve cells in the brain and spinal cord. The neurons do not function correctly without this sheath, like removing the electrical wires' insulation. Exposed wires can short and cause a fire. Marijuana does not appear to lower inflammation; it just helps the sufferers cope with the discomfort and pain.

- **Parkinson's Disease:** People with Parkinson's Disease start losing brain neurons. The symptoms include shaky movements and difficulties with balance and coordination. As the disease progresses, sufferers have trouble talking and walking. Sufferers taking CBD oil improve their quality of life and well-being <sup>[313]</sup>. They also sleep better with less pain <sup>[313]</sup>.
- **Post-Traumatic Stress Disorder (PTSD):** Marijuana can help people suffering from PTSD. About two-thirds of PTSD patients reported a reduction or cessation of nightmares and lower anxiety <sup>[305, 309, 313, 317]</sup>. About one-third of the participants quit marijuana because they experienced adverse events <sup>[313]</sup>.
- **Tourette's Syndrome:** Users smoking marijuana showed improvement in Tourette's Syndrome <sup>[313]</sup>. Tourette's Syndrome occurs when sufferers experience unexpected movements, sounds, and twitches.
- **Gastrointestinal Disorders:** The endocannabinoid system is immensely intertwined with the digestive system. Epithelial cells have many CB1 receptors, while the immune cells in the digestive system have many CB2 receptors <sup>[306, 313]</sup>. Epithelial cells line the stomach, intestines, organs, and blood vessels <sup>[313]</sup>. The effects of marijuana on gastrointestinal disorders are not known, but marijuana would affect this system.
- **Weight Loss:** People suffering from certain types of cancer, HIV, or AIDS can take marijuana to counter appetite loss <sup>[306, 309]</sup>. The US Food and Drug Administration approved Marinol

and Syndros medications to treat weight loss from AIDS <sup>[306, 316]</sup>. Both medicines contain synthetic THC <sup>[316]</sup>.

- **Nausea and Vomiting:** Cancer patients take marijuana to reduce nausea and vomiting from chemotherapy <sup>[306, 309, 313, 314]</sup>. Doctors use chemotherapy to treat and kill cancer cells. Chemotherapy is also harmful to healthy, normal cells. Marijuana activates the CB1 receptors to prevent nausea and vomiting <sup>[306]</sup>.
- **Sleep:** Some users take marijuana to help them sleep <sup>[315]</sup>. Although marijuana helps some people sleep, it is not clear whether users are getting high-quality sleep. We have the duration versus the quality. Some allergy and cold medicines also induce drowsiness but reduce sleep quality.
- **Brain Cancer:** Researchers are studying THC's effect on brain cancer, specifically glioma cancer cells. Glioma comes from glial cells, which help and support the brain and spinal cord's neurons. Glioma is a particularly nasty cancer and can quickly metastasize and spread cancer to other parts of the body. THC may activate autophagy in glioma cells and induce apoptosis, where the cancer cells trigger their death <sup>[318]</sup>.
- **Addictions:** Cannabis use could lower the use of other dangerous drugs and medications. As of 2024, 24 states in the United States have legalized recreational marijuana, while another 12 have legalized medicinal marijuana. Some cannabis users substitute marijuana for pain medication, antidepressants, and arthritis medication <sup>[315]</sup>. Most users use CBD oil and claim fewer side effects than their prescription medications <sup>[315]</sup>. Some pain medications, such as opiates, create a strong addiction. Fentanyl, a synthetic opiate, is 50 times stronger than heroin and has sparked an overdose crisis in many developed countries.

Researchers know marijuana adversely affects people's health, mind, and body. The adverse marijuana effects include:

- **Mild Side Effects:** Marijuana can make people dizzy, drowsy, sleepy, confused, and nauseous [306, 307, 314]. Marijuana also causes dry mouth and impairs short-term memory [306, 307, 309, 314].
- **Infertility:** In men, marijuana causes lower sperm count with poor sperm quality [309]. Furthermore, it lowers men's testosterone and sex drive [309]. In women, marijuana may make it more difficult to conceive and alter their ovulation cycle [309].
- **Mild Psychological Disturbances:** Marijuana users may experience hallucinations, paranoia, and psychosis [305, 307, 311]. About 6% of users reported paranoia, and around 2% reported psychosis [305, 307]. The researchers did not report whether these disturbances were permanent or temporary. Furthermore, users taking a massive dosage of THC are more likely to suffer from psychological disturbances [306].

Habitual users may suffer from psychotic episodes. Furthermore, marijuana suppresses the REM stage of sleep when we are likely to dream [278, 293, 294]. Dreaming is necessary for our psychological health. The psychotic episodes or hallucinations may be dreams intruding during the waking state. We discuss the rebound effect in Chapter 5 on lucid dreaming.

- **Psychosis:** Marijuana users who smoked marijuana as a teenager or smoked it daily and heavily experienced a psychotic episode earlier than nonusers [305, 306, 310, 311, 313]. Marijuana users experienced their first psychotic episode about three years earlier than nonusers [313]. It is unclear whether people susceptible of psychosis are more likely to try marijuana. For example, schizophrenia patients were 10 times more likely to try marijuana than the general population [313].

At last, CBD oil may help treat symptoms of schizophrenia, while THC seems to worsen symptoms <sup>[305, 309-311, 313]</sup>.

- **Heart Disease:** Marijuana users are three times more likely to die if they have coronary heart disease <sup>[306]</sup>. Marijuana causes the heart to beat faster while blood pressure drops <sup>[309]</sup>, compounding the problems of heart disease.
- **Depression and Bipolar Disorder:** Chronic users are more likely to suffer from depression, chronic depression, and bipolar disorder <sup>[305, 306]</sup>. Users taking CBD oil showed improvement in depression and bipolar disorder <sup>[309]</sup>.
- **Bad Habits:** We do not know whether using marijuana leads to other bad habits like smoking cigarettes or whether these bad habits lead to marijuana use <sup>[316]</sup>. For example, about two-thirds of marijuana users use nicotine, and about a third consume alcohol <sup>[307, 311]</sup>. The good news is that marijuana does not appear to be a gateway drug, where marijuana use leads down the dark path to heavier, stronger drug use. Less than 12% of marijuana users use cocaine, opioids, sedatives, and tranquilizers <sup>[307]</sup>.

Marijuana has ambiguous effects on users. Some users report benefits, while others report problems. The marijuana effects include:

- **Anxiety and Stress:** Some users smoke or vape marijuana to reduce anxiety and stress <sup>[305, 315, 316]</sup>. In some cases, marijuana consumption increases anxiety, stress, and panic attacks, while in other cases, it reduces anxiety and stress <sup>[305-307, 316]</sup>. Sometimes, people have bad days, and marijuana amplifies the negativity of those bad days. Furthermore, marijuana strains differ in chemical composition, which impacts anxiety and stress. Usually, *Cannabis sativa* gives a cerebral, energetic high, while *Cannabis indica* gives a calm, relaxing high.

- **Cognition:** The research is ambiguous on long-term marijuana use and its effect on cognition. Since THC and other cannabinoids have an affinity for fatty tissues, these cannabinoids accumulate in the neurons in the brain and nervous system <sup>[309]</sup>. Although marijuana users and nonusers show no difference in cognitive performance, marijuana users exhibit slightly different brain activity than nonusers <sup>[313]</sup>. However, cannabinoids may interfere with neurons' functioning, and the brain and nervous system develop compensatory mechanisms, so marijuana users show no cognitive decline <sup>[313]</sup>.

### ***Taking Marijuana***

We can incorporate marijuana into our meditation rituals. However, the following people should not consume marijuana with high THC content.

- **Young People:** People 25 and younger should not consume marijuana products, especially the strains with high THC content <sup>[313]</sup>. The brains of young people are still developing, and high levels of THC may impact development.
- **Pregnant and Breastfeeding Mothers:** THC in the pregnant mother's blood can cross the placenta and diffuse into the fetus's blood. THC and cannabinoids can affect the fetus's development <sup>[313]</sup>. In addition, THC and cannabinoids are fat soluble and end up in a mother's breast milk, which could be fed to a breastfeeding infant <sup>[310, 313]</sup>.
- **Psychological Problems:** People with a history of psychosis, schizophrenia, and other mental illnesses should not consume marijuana with high THC levels <sup>[313]</sup>.
- **Driving and Operating Machinery:** Marijuana impairs cognition, driving ability, and sleep <sup>[305, 316]</sup>. We do not want to

use marijuana if we plan to drive a vehicle or use heavy machinery <sup>[305, 313, 316]</sup>.

- **Health Problems:** People with a history of lung, heart, and kidney disease should not consume marijuana. Marijuana use may exacerbate these health conditions.
- **Diabetes:** Users who have diabetes must be careful consuming marijuana because they have trouble stabilizing their blood glucose levels. Cannabinoids cause the body to consume more glucose and encourage lipogenesis as the body uses more fats and triglycerides <sup>[313]</sup>. This is not a bad thing for healthy people.
- **Past Substance Abuse:** People with past substance abuse problems should not consume marijuana with high THC levels <sup>[313]</sup>. The “high” may lead to cannabis use disorder, when users cannot stop using marijuana and become chronic users.
- **Legality:** We ensure that our marijuana use complies with local laws and regulations concerning consumption, cultivation, and possession. Jails and prisons are not ideal places to pursue enlightenment because of the hostile surroundings and ambiance.

The standard methods of taking marijuana are smoking and oral ingestion <sup>[306]</sup>. Many companies are developing sprays, vaporization devices, and rectal suppositories for medicines and medical marijuana. The different forms affect how fast cannabinoids enter the body, the intensity, and the duration. We cover the two popular forms, which are smoking or ingesting.

Smokable marijuana is the dried, crushed leaves, flowers, and tops of the marijuana plant without seeds. Some growers process marijuana into hash or hashish, where the resins of the marijuana plant are removed and compressed into bricks. Hashish is more potent than marijuana and concentrates the THC.

The user smokes the marijuana in a pipe, cigarette, or bong. A bong is a smoking pipe that filters the marijuana smoke through

water to remove some of the water-soluble compounds. Users can feel the effects of marijuana within minutes of inhaling it. Users can easily adjust the dosage level by determining how much to inhale [313]. The marijuana effects last from 1 to 3 hours after smoking it. Companies developed vaporization devices that turn cannabinoids into vapor instead of burning them. Vaporization could deliver fewer toxic byproducts to the users [313].

Chronic marijuana smokers can develop bronchitis and emphysema [306, 309]. Marijuana smoke also alters the epithelium cells of the lungs, which does not necessarily mean they are cancerous [306, 309]. The epithelium cells line the outer tissues of the lungs. Furthermore, marijuana-only smokers develop more health problems than tobacco-only smokers [306]. The claim is that one marijuana cigarette is the equivalent to 7 tobacco cigarettes [309] because marijuana cigarettes do not have filters to remove the tar. Furthermore, marijuana smokers tend to hold their breath longer to absorb more of marijuana's chemicals, exacerbating marijuana's lung damage as compared to tobacco [309]. Smoking both marijuana and tobacco exacerbates lung problems even more [306, 309].

Marijuana users can digest marijuana-laden products, like brownies, cookies, candies, chewable gummies, and other edible products. Users may feel the "high" after 30 minutes and the entire effect within two hours. Cannabinoids are fat soluble [309, 310, 319]. Our body's digestive system takes time to break down fats and assimilate into our bodies. Users must be careful on how much to ingest because of the delayed effects. Oral ingestion is preferred to smoking because it overcomes the harmful effects of smoking marijuana [316], but it could change the feel and "high" of the marijuana. Some claim that edible marijuana is a whole new beast since edibles can be much more potent.

We cannot grind up marijuana and put it into our food and edibles. The marijuana is cut up and crushed into small pieces, placed on parchment paper on a cookie sheet, and heated at 121<sup>0</sup> C (or 250° F) in an oven for 34 minutes [308]. The cannabinoids, such as CBD and THC, are acids that do not affect the CB1 and CB2 receptors. However, when cannabinoids are heated, they release carbon dioxide and convert cannabinoids into their active, non-acid

form <sup>[308]</sup>. The process is called decarboxylation. (Air, light, and time also decarboxylate cannabinoid acids <sup>[308]</sup>). When we ingest THC-laden edibles, the liver converts THC into a more potent form, which is why edibles produce a longer, stronger “high” that lasts two to three times longer than smoking.

Users consuming marijuana products can suffer withdrawal symptoms. The withdrawal symptoms are less severe than those of alcohol, cocaine, heroin, and opiates <sup>[313]</sup>. The active components of marijuana have an affinity for fatty tissues and cells <sup>[309, 310, 319]</sup>. When users stop consuming marijuana, the fatty tissues and cells release traces of these marijuana components into the bloodstream, lessening the withdrawal effects. Marijuana withdrawal symptoms include anger, anxiety, depression, disturbing dreams, insomnia, irritability, restlessness, and loss of appetite <sup>[311, 313]</sup>. Frequent and heavy marijuana users may experience stronger withdrawal symptoms while abstaining from marijuana.

The cannabinoids and their byproducts can remain in the body for a long time. Users subject to random drug tests may not want to consume marijuana. Drug detection depends on the test type. Users can test positive for marijuana use up to 30 days for urine drug tests and up to 90 days for hair tests <sup>[319]</sup>. Urine tests are the cheapest and most common <sup>[310, 319]</sup>. Whether a drug test detects a person’s marijuana use depends on that person’s THC use, the number of days abstaining from marijuana, dosage levels, metabolism, physical activity level, diet, and epigenetics. Some users take synthetic cannabinoids to evade detection since cannabinoids break down into metabolites the drug tests do not check for <sup>[312]</sup>.

Some users consume CBD oil for its health benefits. However, CBD oil may contain traces of THC. If these users must take drug tests, they could also experience problems. Daily consumption of CBD oil can cause THC to accumulate in the body’s fatty tissues, like charging a battery. Long-term, daily CBD oil consumption could cause problems with drug testing. Some manufacturers purify CBD oil and remove the THC, but these products cost more.

## ***Meditating Under Marijuana's Influence***

Users wanting to incorporate marijuana into their meditation ritual have a large selection to choose from. Different species and strains differ in their THC and CBD ratio. Other cannabinoids can also influence the feeling and the “high.” Users selecting the strongest strain with the highest THC content may not benefit because CBD and other cannabinoids affect the “high.” However, if we aim to get “higher,” we want a strain with more THC than CBD. However, we do not want to use a strain that makes us edgy, paranoid, or sleepy. Meanwhile, a strain with a lower THC relative to CBD may create a sedative effect <sup>[313]</sup>. Thus, we want to select the strain that relaxes us, which may not be the highest THC content.

We should buy our marijuana from reputable sources, such as dispensaries. That way, we know what we buy and may even know the chemical composition, such as the THC, CBD, and terpene content. Furthermore, the salespeople may offer good recommendations and advice for which strains and variants to try.

If we buy from street drug dealers, we do not know what we are buying. Dealers may add adulterants and other drugs to enhance the high. Dealers can take low-quality marijuana, add a mysterious chemical, and turn it into something that appears better. This adulterant could be poisonous and make marijuana more addicting. Some drug users lace marijuana with fentanyl, a synthetic opiate that is highly addicting and 50 times more potent than heroin.

We select the method of how we want to consume our medicine. We can feel the full marijuana effects if we smoke it within 15 minutes. Then we can take small breaks between inhalations to determine how “high” we want to soar.

We must be careful if we decide to ingest it as an edible. We should divide our edibles into 5-milligram (mg) pieces, which is why the dispensary is essential. A laboratory tests and lists the chemical composition of THC, CBD, and terpenes. Then we take each piece every hour, on the hour. Beginners should stop at 10 or 20 mg of THC. Ingesting too much marijuana at once can create a powerful “high” that causes anxiety, paranoia, and possible psychosis. Users experienced with edibles can raise their dosage, but

we must be careful not to ingest too much. Edibles create a “high” that lasts a day and is easy to overdo.

The steps of meditation include the following:

- **Step 1:** The environment, setting, and mindset are important. We meditate in a comfortable, peaceful, and safe setting where we feel at ease and relaxed. We clean our meditation place before the session and light scented candles and incense that add to the ambiance.
- **Step 2:** We establish our goals and intentions for this experience, whether we want to strengthen our meditation, explore our minds with mindfulness meditation, or gain insight into spiritual matters. We wait until the effects of marijuana kick in, which is 15 to 30 minutes for inhalation and an hour to 2 hours for edibles. We use marijuana to achieve a state of contentment as we sit or lie down to meditate. We must sit still and need nothing as we start the process of contentment. We let go of the rules of proper sitting and breathing. We feel we do not need anything <sup>[29]</sup>.
- **Step 3:** Many meditations work well while “high.” We could use mindful meditation, where we sit in contentment. We learn to watch and observe our thoughts without doing anything. We try to bring the energies of our minds to a single point of contentment <sup>[29]</sup>.
- **Step 4:** Other meditations work well. We could sit on a park bench and watch nature around us. We could listen to a soundtrack with soft synthesizer music, such as Tangerine Dream, Vangelis, or singing Tibetan bowls. The author likes the soundtracks to Blade Runner and Blade Runner 2049 AD. We focus on each sound in the soundtrack. Other favorite meditations include meditating on each chakra or listening to binaural beats available on YouTube and smartphone apps. Binaural beats slow the brain waves to help put us in the alpha (8 – 12 Hz) or theta (4 – 7 Hz) brain wave state. Alpha waves

indicate we are relaxed, while theta waves place us in a deeper relaxation.

- **Step 4:** We meditate for an hour. Meditating while “high” can be intense, and we would not want to overdo it. After meditation, we can do other relaxing activities. Once we become experienced, we can meditate for hours.

Meditating while “high” is flexible. We can also fast or deprive our senses in a deprivation tank. Meditating while fasting and “high” changes the “high.” The “high” is more relaxing and lasts longer. It could be the body’s switching to ketones and fatty acids, which transport THC better. The key is not to overdo it. We occasionally use marijuana to relax and focus our minds. Advanced users can meditate for hours with no adverse effects.

We use the following rules to use marijuana to enhance our meditation.

- **Moderation:** We use marijuana in moderation and how it affects our minds and bodies. The fatty tissues of our bodies absorb and retain THC. We use a half-life of 5 days; thus, our bodies get rid of half the THC in five days. After ten days of abstinence, 25% ( $=0.5^2$ ) of the THC remains, while after two weeks, residual THC drops to 12.5% ( $=0.5^3$ ). Technically, the half-life varies and depends on a person’s fitness level, body mass index, level of physical activity, etc.
- **Reflection:** After our marijuana meditation session, we reflect and integrate the experience, especially if we have gained insights and revelations. Although marijuana is not as potent as psychedelics, it has the potential to uncover repressed emotions, memories, and archetypes in our conscious minds. We should also meditate after our marijuana session to continue our progress along the path of enlightenment since the effects of marijuana meditation can last days.

- **Spirituality:** We incorporate marijuana into our spiritual practices, such as meditation, yoga, or ritual ceremonies. These practices should align and complement our beliefs. Marijuana has the potential to induce mystical and transcendental experiences. Marijuana could also cause a small dissolution of the ego, which is discussed further under psychedelics.

### ***Meditation Chocolates***

Marijuana and hash lend themselves to some long and intense meditation sessions. Marijuana edibles are more potent and intense, with a longer-lasting “high” than smoking or vaping marijuana. Some users claim marijuana edibles are a different beast, but they do not wreak havoc on the lungs like smoking.

Below is a recipe for low-calorie meditation chocolates that would not disrupt a fast too severely. The ingredients are simple and include:

- **Decarboxylated Marijuana:** The first and most important ingredient is marijuana or hash. We must decarboxylate marijuana to convert the THC acid into regular THC. Decarboxylation also converts the CBD acid into regular CBD. Some users call this activating the THC and CBD.
- **Cocoa Butter:** THC and CBD are fat-soluble and require a carrier. We can substitute butter or coconut oil for cocoa butter. Chocolate made with butter will be soft at room temperature, like fudge. Coconut oil may intensify the chocolate since our digestive systems can absorb the medium-chain triglycerides more quickly.
- **Dark Chocolate:** We use cooking chocolate with at least 70% cocoa.
- **Cocoa Powder:** The cocoa powder helps balance out the cocoa butter, so we make a firm, dark chocolate.

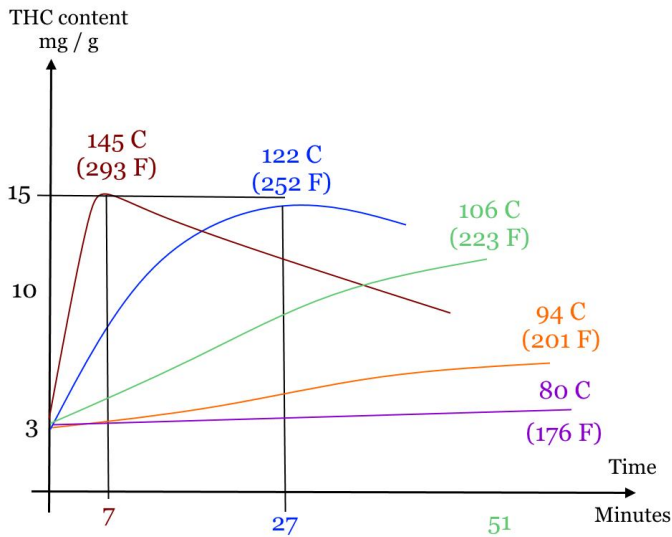
- **Sugar:** We use powdered white sugar. If we are fasting during our meditation, we can substitute stevia, erythritol, or monk fruit, which do not spike blood glucose levels and do not violate our fast too severely. Other sugars also work, but the sugar needs to be a fine powder. Granulated sugar gives chocolate a grainy texture.
- **Lecithin:** Lecithin is an emulsifier that allows water and oil to mix. Egg yolks, soybeans, and sunflowers contain lecithin. Not only does lecithin help the body absorb fat and fat-soluble THC and CBD better, but the brain uses lecithin to make acetylcholine, a brain neurotransmitter. Some claim lecithin makes marijuana edibles stronger. From Chapter 5 on lucid dreaming, acetylcholine rises during the REM stage of sleep by exciting our neurons and contributing to the scenery and imagery in our dreams.

The recipe begins by decarboxylating the marijuana or hash. We finely grind 14 grams of marijuana or 12.5 grams of hash into small pieces and place them on parchment paper on a cookie sheet. Then we bake in an oven for 27 minutes at 122<sup>0</sup> Celsius (or 252<sup>0</sup> Fahrenheit) <sup>[320]</sup>. We can decarboxylate at a lower temperature, but decarboxylation takes longer. A higher temperature quickens decarboxylation but may degrade the THC and CBD. We could break down some of the THC into CBN. If our edibles make us sleepy, we inadvertently converted some THC into CBN. Refer to Figure 5 for decarboxylation times. The graph shows different temperatures cause different decarboxylation rates, which are not in straight lines.

We bring a large pot of water to a soft, roiling boil where the water does not splash much. We place a smaller pot or Pyrex bowl on the hot water. We turn off the stove since the heat from boiling the water is still hot. If the water cools too much, remove the Pyrex bowl and bring the pot to boil again. The trick is not to cook the chocolate but just melt it.

We add a cup of cocoa butter, butter, or coconut oil to the bowl. We use a whisk to mix and melt the butter. Then, we add our

decarboxylated hash. The cocoa butter will turn dark green or dark brown, and the hash dissolves in the butter.



**Figure 5.** Decarboxylation of acid THC into neutral THC  
Source: Veress, Szanto, & Leisztner (1990) <sup>[320]</sup>

Marijuana requires a different step since the leaves do not dissolve. We put the oil and marijuana in a warm place like a crock pot and stir occasionally for three hours. We must ensure the oil absorbs the THC and CBD. Then we strain the oil through a mesh to remove the parts that did not dissolve. The marijuana leaves contain a substance that can hurt our gut. It is okay to allow some leaf particles to remain in the oil. Then return the marijuana-infused oil to the bowl.

We whisk in a teaspoon of lecithin and ensure it completely dissolves in the oil. We could adjust the amount of lecithin by adding more. Many chocolates already have lecithin in them. Then we add a cup of cocoa powder. We gradually add the cocoa powder and continue mixing and whisking the mixture. The cocoa powder should be in an equal ratio to the oil by volume that we started with.

We break up six bars of dark-cooking chocolate, each around 200 grams. We hold back several small pieces of the last chocolate

bar. We add pieces of the chocolate to our bowl and whisk it with the mixture until it melts. We keep mixing until the cooking chocolate is completely dissolved. We could turn the stove back on to boil the water again, keeping the water hot. We remove the chocolate as we bring the water to boil. We are not cooking the chocolate.

We add a teaspoon of sugar or sugar substitute for each chocolate bar. We can add more sugar if we want sweeter chocolate. We can add nuts, flavoring, or powdered milk to make milk chocolate. Powdered milk adds more fat and lecithin. We are only limited by our creativity, but orange-flavored, dark chocolates are nice.

We must temper the chocolate. We remove the bowl or pan of chocolate from the hot water. We let it cool for five minutes and add the remaining chocolate. We allow the chocolate to dissolve and keep mixing gradually, so we thoroughly mix the THC and CBD in the chocolate. Tempering is an important step that crystalizes the chocolate as it cools. If the chocolates are tempered correctly, they remain solid at room temperature. Poorly tempered chocolate has a soft fudge-like consistency at room temperature.

We use a rubber spatula to transfer the chocolate into a pouring cup. We let the chocolate cool for 30 minutes or more; otherwise, our dark chocolate can develop streaks. Then we carefully pour the chocolate into silicon molds. Once we fill a whole mold, we slightly shake the mold on the counter several times to shake out the gas bubbles. Then we place it in the refrigerator to set. If we do not have chocolate molds, we can pour the chocolate on grease-proof parchment on a cookie sheet and use a spatula to spread it into a large bar. Then we refrigerate the chocolate.

Once the chocolate has hardened, we place the chocolates into a glass jar and place in the freezer. Using the cookie sheet method, we cut the chocolate into bite-size pieces. That's it!

We can estimate the amount of THC or CBD in our chocolates. For example, we buy 14 grams of hemp with 15% CBD. We cut the hemp up and decarboxylated it in an oven. Then we infuse the hemp in one cup of coconut oil for 3 hours, using a crock pot on low heat. We stir at least every 30 minutes for three hours. Then we strain the

hemp and make chocolates with the infused coconut oil. Theoretically, we could infuse 2,100 mg of CBD in the coconut oil, where we take 14 grams x 1,000 x 0.15 = 2,100 mg. If we use six 200-gram bars of dark chocolate, we get about 115 chocolates. Thus, each chocolate will have, on average, 18.3 mg of CBD (or 2,100 mg / 115 = 18,3 mg). These numbers provide an upper limit to our CBD or THC content.

We should not waste anything. We make sure we extract as much oil from the hemp as much as possible. Then we can add this leftover hemp to a vodka or other spirit to allow the ethanol to dissolve the THC and CBD. Every day we shake this bottle at least 5 times a day. Then a week later, we strain the hemp from the alcohol.

Since we cannot accurately measure the THC content of the chocolates, we try small portions for the first time to gauge how strong the chocolates are. Be careful when licking the whisk, spatula, and bowl since the chocolate is infused with THC.

**Note:** Adding water or alcoholic-based flavoring to the chocolate can cause it to seize. Although still edible, the seized chocolate has the consistency of hot, road asphalt.

## ***Psychedelic Drugs***

Humphry Osmond, a British psychiatrist, coined the word psychedelic in 1957. Psyche stands for the mind or soul, while deloun means to manifest. The hippies or counterculture popularized psychedelics during the 1960s and 1970s and combined them with drugs, music, and spirituality. The 1960s is one of the best decades for rock music, with smash hits from the Beatles, Rolling Stones, Jimi Hendrix, Bob Dylan, and many others dominating the billboards.

The hippies and counterculture shocked mainstream America. Then the hippie generation ended with the grisly murders by Charles Manson and his family in 1969. Anyone looking like a hippie was demonized. The US government cracked down on psychedelic drugs in 1970 by classifying them as Schedule 1 <sup>[321]</sup>. Many countries followed suit.

During the 1980s, psychotherapists used MDMA to help couples and patients make breakthroughs in therapy and treatment <sup>[322, 323]</sup>. MDMA is referred to by its street name – ecstasy. MDMA became a party drug, where teenagers and young people attended rave parties with rampant drug use. Then the US government added MDMA to the Schedule 1 ban list in 1985 <sup>[317, 323]</sup>. Subsequently, research and scientific studies of psychedelics came to a halt. Nevertheless, renewed interest in psychedelics has surged in the last two decades.

Users taking a full dosage of psychedelic drugs experience the following characteristics:

- **Hallucinations:** Users experience images and sensations that are not real. A user could taste a color or hear a smell. Furthermore, users can experience delusions or emotional detachment <sup>[324, 325]</sup>. The psychedelic drugs may elicit archetypes and bring repressed emotions, memories, and other aspects into consciousness. Some users developed the meter test, where they wave a hand back and forth. A stronger “trip” caused the hand motion to blur more. Finally, MDMA does not cause hallucinations.
- **Ego Dissolution:** Psychedelic drugs temporarily cause users to lose their sense of self <sup>[256, 257, 326, 327]</sup>. Users' boundaries between themselves and the world erode <sup>[256]</sup>. The ego dissolution may cause temporary amnesia when users forget their gender, where they live, and whether they are human <sup>[256]</sup>. MDMA has a lower ego dissolution <sup>[317]</sup>. However, the dissolution of the ego can remove the constraints from the id and superego and allow us to explore them. With ego dissolution, we can develop more compassion, humility, and love, enabling us to move closer to God in terms of Sufism.
- **Mimicking Psychosis:** Users taking a psychedelic drug experience a full, acute psychosis <sup>[322]</sup>. The breakdown of a user's personality may unblock repressed memories and offer the user a breakthrough in psychotherapy <sup>[322, 328]</sup>.

- **Mystical Experiences:** Tribes in Central and South America have used psychedelics for religious, spiritual, and tribal rituals for thousands of years <sup>[324, 325, 329, 330]</sup>. Psychedelics make the users feel one with the universe, and that humans are all interconnected, or users have a profound spiritual and religious experience or epiphany <sup>[256, 325, 327, 331, 332]</sup>. Psychedelic drugs may help a person with individuation and help them along the path to self-realization or enlightenment.

The setting of taking psychedelic drugs is vital. For example, therapists treat patients in a clean, tranquil room with soft ambient lighting and a relaxing soundtrack playing in the background <sup>[322, 326]</sup>. Male and female therapists oversee and reassure the patient and provide medical care as needed <sup>[322]</sup>. The therapists do not provide direction, and the patient does not need to talk to the therapist <sup>[322]</sup>. The next day, the patient discusses and interprets their “trip” with the therapists and helps integrate their experience <sup>[322, 333]</sup>. The patients can also use mindful meditation to reflect on their psychedelic experiences to incorporate that experience into their personalities better <sup>[333]</sup>.

The ayahuasca and psilocybin resorts are similar to a therapist’s office. The resorts are located in the countryside or rainforests, secluded from the noise and traffic of a city. The resorts may mimic indigenous ceremonies and administer psychedelic drugs, giving the setting a mystical tribal awe. The users can relax in a room on floor cushions and experience their “trip” while attendees monitor the users so no harm comes to them. The next day, users can reflect and integrate their experiences at the resort in a peaceful, tranquil setting.

### ***Health Benefits and Problems of Psychedelics***

Several health benefits of ayahuasca, MDMA, LSD, and psilocybin include:

- **Anxiety:** Psychedelics can lower anxiety <sup>[317, 322, 324, 328, 330, 331, 334-338]</sup>, at least after the trip is over. Sometimes, users experience distressing, bad “trips,” which raises anxiety. After the “trip,” users experience lower anxiety that persists for at least six months after the experience <sup>[322, 339]</sup>.
- **Depression:** Depressed patients taking psychedelics show significant improvement in their depression <sup>[317, 322, 326, 329-331, 334, 335, 337, 338, 340-344]</sup>. The anti-depressive characteristics of psychedelics last more than 6 months <sup>[322, 326, 329, 335, 339, 342, 344]</sup> and are effective for patients afflicted with cancer-related depression <sup>[324, 335, 338, 339]</sup>. Usually, chronically depressed people take an antidepressant daily, while a person could take a psychedelic every six to nine months to improve depression. Patients respond to psychedelics quicker than the traditional anti-depressive medications <sup>[326, 343]</sup>.
- **Posttraumatic Stress Disorder (PTSD):** Some people experience trauma, such as rape, military combat, murder, natural disaster, or violent crime, which affects their mental health. Psychedelic drugs can help patients with PTSD <sup>[317, 322-324, 328, 334, 336, 345-347]</sup>. The psychedelic MDMA shines in this area and helps in therapy by reducing the patient’s fear of reflecting on traumatic memories <sup>[317, 334]</sup>. Similar to depression, the effects of psychedelics persist for months <sup>[323, 336, 345, 346]</sup>.
- **Stress:** Psychedelics may reduce stress after the experience <sup>[326, 329, 330, 341]</sup>. A bad “trip” could quickly raise stress.
- **Addictions:** Psychedelics can help people overcome alcohol, caffeine, cannabis, and tobacco addictions and lower their cravings for these substances <sup>[322, 324, 328, 330, 337, 338, 340, 348]</sup>. Bill Wilson, founder of Alcoholics Anonymous, used LSD to overcome his alcohol addiction <sup>[322, 330, 338]</sup>. He wrote to Carl Jung to explore LSD as a potential drug to use in psychotherapy <sup>[322]</sup>. However, Jung believed dreams were

enough for psychotherapy <sup>[322]</sup>. Dr. Jung was influenced by a near-death experience, which is why he focused on dreams.

- **Anti-Inflammatory:** We already learned in Chapter 3 that fasting reduces inflammation when the immune system goes into overdrive and attacks healthy cells, organs, and tissues. Psychedelics such as ayahuasca and psilocybin reduce inflammation <sup>[328, 330, 332]</sup>. Inflammation is linked to addictions, depression, and brain diseases like Alzheimer's and Parkinson's <sup>[330, 332]</sup>.
- **Creativity:** Users claim enhanced creativity and divergent thinking, where users come up with many ideas, solutions, and strategies <sup>[330]</sup>. At this point, we are not sure if psychedelics enhance creativity or if psychedelics attract creative people to try psychedelics <sup>[330]</sup>.
- **Spirituality:** Users claim they experienced better quality of life, greater spiritual well-being, and a better appreciation of life after their "trip" <sup>[257, 326, 328-330, 335, 339, 341, 344, 345, 349]</sup>. They also improved their attitudes toward death <sup>[335, 339, 349]</sup>.

Psychedelic drugs do not always come with benefits. Two potential problems include the following:

- **Psychosis:** Psychedelics may precipitate or worsen patients diagnosed with psychosis and schizophrenia or people who are susceptible to psychosis but have not exhibited symptoms yet <sup>[322, 324, 330, 337]</sup>.
- **Suicide:** The scientific evidence is unclear whether using psychedelics leads to suicide <sup>[350]</sup>. A person dying during a "trip" is difficult to classify because the person is experiencing severe impairment, such as walking out in front of a car, leaping from a window in a tall building, or swimming in a lake or ocean <sup>[350, 351]</sup>. This person is not in a controlled environment while experiencing extremely impaired judgment

[350]. That is why therapists and resorts monitor their patients closely to prevent accidental deaths. However, patients with suicidal thoughts should also avoid psychedelics [324].

### ***Types and Usage of Psychedelic Drugs***

Psychedelic drugs are classified into two types. The first type is dissociative, where a piece of a person's personality is separated from this person. The common drugs include dextromethorphan (DXM), ketamine, and phencyclidine (PCP). We do not discuss these drugs in this book. The other type comprises the classic psychedelic drugs that stimulate the serotonin and dopamine receptors. The classic psychedelics include ecstasy (MDMA), mescaline (peyote), ayahuasca (DMT), magic mushrooms (psilocin), and lysergic acid diethylamide (LSD), which we discuss in this section [321].

Ayahuasca, mescaline, and psilocybin come from natural sources, while LSD and MDMA are synthetically made in a laboratory. Psychedelic drugs target and stimulate the serotonin 5-HT2A receptors [256, 321, 322, 328, 333, 336, 340, 343, 351-353]. Ayahuasca and MDMA differ from other psychedelics and boost dopamine and serotonin neurotransmitters in the brain [322, 352]. Furthermore, ayahuasca and psilocybin resemble the chemical structure of serotonin [324, 340], while MDMA has a chemical structure similar to amphetamine (i.e., stimulant) and mescaline [323, 336].

Boosts in dopamine make users feel good, while serotonin affects appetite, digestion, emotions, and mood and helps users feel happy while contributing to well-being. MDMA also slows the activity in the amygdala and hippocampus [322]. The amygdala processes fearful and threatening responses, while the hippocampus plays a critical role in learning and memory.

Researchers know DMT, MDMA, and psilocybin stimulate neural plasticity in animal brains because the scientists observed a reduction in animals' fear [317, 336]. Neural plasticity means the brain creates new neurons, helps old neurons survive, and establishes new connections between neurons. Psychedelics may increase the cross-talk between neurons, helping to forge new pathways, which

explains why the psychological benefits of psychedelics persist for months <sup>[342]</sup>. The psychedelics also help boost brain-derived neurotrophic factor (BDNF) <sup>[324, 328, 333]</sup>, which helps the brain create new neurons, especially in the brain's hippocampus area, where the brain stores our memories. We have already learned in Chapter 3 that fasting helps to boost BDNF. Thus, psychedelics can help users rewire their brains after their experience <sup>[321, 322, 328, 332, 336]</sup>. Therefore, we see how psychedelics aid in therapy. Getting patients to relive and accept painful, traumatic memories aids in the healing process.

Depression affects about 4.4% of the world's population, and current treatment options are partially effective <sup>[333]</sup>. Patients with depression have abnormally low levels of BDNF <sup>[333]</sup>. Thus, we see the importance of psychedelics to boost BDNF and help patients rewire their brains' neurons. Furthermore, patients with depression may tackle and integrate painful, traumatic memories that triggered their depression. Ironically, antidepressants affect the same brain receptors as psychedelics and can block the effects of psychedelics <sup>[322, 340]</sup>.

A benefit of psychedelics is that users do not develop a dependency on psychedelics <sup>[328, 354]</sup>. Unlike alcohol, cannabis, and tobacco, users must abstain from psychedelics to experience a "trip." If users try to take psychedelics daily or too frequently, they may experience weak effects as the body's tolerance quickly rises <sup>[332, 351]</sup>. Furthermore, users do not suffer from withdrawal symptoms or become dependent on them once they stop taking psychedelics <sup>[340, 354]</sup>, unlike alcohol, cannabis, and tobacco. Thus, users are not likely to become addicted to psychedelics <sup>[332]</sup>. Nevertheless, the effects of a "trip" can persist and last for weeks and even months, which means users do not need to take psychedelics frequently <sup>[326, 335]</sup>. Thus, users are not likely to become addicted to psychedelics.

Some users micro-dose psychedelics, where they purposefully take a small dosage. Thus, they do not experience the full effects, such as hallucinations and ego dissolution. Users of micro-dosing tend to work in creative occupations, believing the low doses of psychedelics aid with their creative process <sup>[322, 348]</sup>. Micro-dosing psychedelics improve users' energy, focus, and mood and lower the

symptoms of anxiety and depression [322, 348, 355]. Users also report a lower consumption of alcohol, caffeine, cannabis, tobacco, and psychiatric medications [348].

Users can micro-dose twice weekly [322] since the body quickly builds a tolerance for psychedelics. Users experience better results micro-dosing with magic mushrooms than LSD [348]. Unfortunately, users micro-dose by buying from unregulated and illegal markets. Thus, the quality, purity, price, and supply availability can vary considerably [348]. In addition, psilocybin-containing mushrooms vary in chemical composition, and users of micro-dosing may accidentally take too much [332].

The author does not recommend taking psychedelic drugs unsupervised. Readers should contact therapists or resorts if interested in this area of enlightenment. The resorts are good for users who want a mystical and spiritual experience, especially when reaching a crossroads in life, desiring an epiphany, or searching for life's answers. Users needing help with harmful addictions, depression, and traumatic memories should consult with therapists. Trained therapists help patients break through and help with the healing process. Thus, the healed users step toward self-realization and enlightenment.

### ***Ayahuasca (DMT)***

People coming to a crossroads in their lives head to South America for ayahuasca, searching for religious and spiritual answers or for therapeutic purposes to heal past trauma. Many ayahuasca retreats and healing centers are located around the world, in countries where ayahuasca is legal, or the government looks the other way as tourists bring in purses and wallets stuffed with cash.

Indigenous tribes in the Amazonian jungles of South America have used ayahuasca for millennia for medicinal and religious ceremonies [325, 328-330, 341, 342, 349, 351]. A shaman offers spiritual support to participants and leads the ceremonies during the night [326, 340]. Many ayahuasca retreats mimic these rituals and ceremonies, which enhances the users' mystical, spiritual, and religious experiences. Ayahuasca gives users unique, vivid hallucinations,

which they call the Ayahuasca world. Users may experience their death, view beautiful scenery, and interact with spirits, guides, and ayahuasca beings from other worlds [327, 328, 330, 349]. These hallucinations could be symbolic projections of Jung's archetypes, but some scientists find associations between the Ayahuasca world and near-death experiences, which we cover in Chapter 8 [327].

Ayahuasca comes from *aya*, which means ancestor, a dead person, or soul, and *huasca*, which means vine or rope. Ayahuasca is created from a mixture of two plants: The ayahuasca vine (*Banisteriopsis caapi*) and chacruna (*Psychotria viridis*) [256, 264, 328, 330, 340, 341, 349, 351, 352]. The shrub chacruna contains dimethyl tryptamine (DMT), while the ayahuasca vine contains harmaline, the inhibitor [322, 349, 352]. DMT is psychoactive, while harmaline prevents the digestive system and liver from breaking down DMT in the digestive system [322, 340, 352]. The harmaline protects DMT and ensures it reaches the brain.

Scientists have found that DMT activates neuron stem cells, which are blank cells that can develop into any cell within the brain and nervous system. We learned in Chapter 3 that fasting stimulates stem cell activity once a faster breaks a fast and begins eating again. DMT has the same impact on neuron stem cells in mice, which develop into new neurons in the brain's hippocampus region [351]. The hippocampus is responsible for memory; thus, DMT improves mice's memory and recognition [351].

Using magnetic resonance imaging, scientists studied how ayahuasca affects users' brains [276]. The participants first viewed images of animals, people, and nature [276]. Then they closed their eyes. Scientists found that ayahuasca simulates the part of the brain responsible for vision and mental imagery, i.e., the place for imagination [276, 328]. Thus, what the participants imagined in their minds became equivalent to seeing it with their own eyes [276, 328, 330]. Ayahuasca users could not distinguish between mental images and actual perception of reality. Ayahuasca may also dredge up old, repressed, traumatic memories, which become therapeutic if users self-reflect and accept these old, painful memories [330].

Ayahuasca has another side effect. Participants had a substantial reduction in judgment after 24 hours [256]. Thus, ayahuasca silenced

that critical voice in people's heads, which could not question or criticize thoughts and feelings <sup>[256]</sup>. Therefore, ayahuasca helps in self-healing as people examine thoughts and feelings without judgment, which is the first step towards healing painful and traumatic memories <sup>[325]</sup>. Scientists also determined that a stronger ego dissolution leads to more mindfulness and greater life satisfaction <sup>[326, 329]</sup>. Furthermore, the ego dissolution mirrors the effect of dying and may indicate that we return to our original state <sup>[327]</sup>. Thus, ayahuasca has a more intense effect than mindful meditation, which we learned in Chapter 4.

Ayahuasca has another effect that other psychedelics do not have. Users report the “purge,” or, in Spanish, “la purga,” when users experience violent diarrhea, nausea, or vomiting <sup>[325, 328, 330, 340]</sup>. The indigenous culture views the “purge” as a regular cleansing process as the body expels harmful substances <sup>[325, 340]</sup>.

Some people compare the dreams of ayahuasca to lucid dreams <sup>[264]</sup>, which we discussed in Chapter 5. Others claim that participants experience more lucid dreams after their ayahuasca experience <sup>[264]</sup>. However, the evidence is anecdotal.

### ***Ecstasy (MDMA)***

Chemists first synthesized methylene dioxymethamphetamine (MDMA) in 1912, but MDMA did not become popular until the 1970s after people discovered its psychoactive properties. Psychologists and therapists used MDMA in psychotherapy until the US government banned it in the 1980s.

MDMA has the following benefits for psychotherapy:

- **Fear and Shame:** MDMA does not fog consciousness. However, it reduces a patient's anxiety, depression, fear, and shame associated with painful and traumatic memories <sup>[317, 334]</sup>. It also heightens introspection so that users can recall their painful and traumatic memories clearly and gain insight into their experiences <sup>[317, 334]</sup>. That was why psychologists and therapists used it in psychotherapy.

- **Empathy and Closeness:** MDMA causes the users to have more emotional empathy, closeness, and trust with others and heightens touch sensations <sup>[317]</sup>. The therapist and patient must have trust to help a patient progress in psychotherapy under MDMA <sup>[317]</sup>. MDMA is also attractive for couples engaging in intimacy and enhancing sexual encounters <sup>[334]</sup> because it strengthens a couple's love and bond <sup>[336]</sup>.
- **Lasting Effects:** Similar to psychedelics, the effects of MDMA persist and cause lasting personality changes <sup>[317, 336]</sup>.
- **Alcoholism:** Researchers are conducting studies for MDMA to treat alcoholism. Some alcoholics drink excessively to drown and quiet painful and traumatic memories <sup>[322]</sup>. Thus, alcoholics accept and deal with these painful memories and could stop or reduce their drinking <sup>[322]</sup>.

MDMA comes with several problems, which include:

- **Teeth Grinding:** One particular adverse effect of MDMA is bruxism when users constantly grind their teeth <sup>[354]</sup>. Users may continue grinding their teeth even after they stop using MDMA <sup>[354]</sup>. The constant grinding damages teeth.
- **Cardiovascular Disease:** Patients and users with cardiovascular disease should avoid taking MDMA since it raises blood pressure and heart rate <sup>[353]</sup>.
- **Unsupervised Use:** Some users take MDMA to overcome and cope with negative life situations and get temporary relief from depression, hopelessness, and suicidal thoughts <sup>[334]</sup>. The users are not using MDMA to heal their trauma. Instead, they use MDMA to numb and forget the pain temporarily <sup>[334]</sup>. Unfortunately, they are not utilizing MDMA to heal past trauma.

- **Addiction:** Taking high levels of MDMA may cause addiction and amnesia <sup>[356]</sup>.

The unsupervised users take MDMA to cope with negative family relationships, domestic violence, rape, beatings, false accusations, and intimidation or deal with the loss of a deceased family member or friend <sup>[334]</sup>. The painful memories and abuse could originate from childhood or adolescence, which continue plaguing users during their adult lives <sup>[334]</sup>. MDMA temporarily allows users to escape poverty, household financial problems, childcare, and employment problems <sup>[334]</sup>. Unfortunately, users are not using MDMA to heal trauma and resolve and accept painful memories and experiences. Instead, they use MDMA as a temporary break from reality, but the problems return once MDMA wears off.

### ***Lysergic Acid Diethylamide (LSD)***

Albert Hoffman, working for Sandoz Laboratories in Basel, Switzerland, synthesized lysergic acid diethylamide (LSD) in 1938 <sup>[324]</sup>. He created LSD from the ergot fungus, which grows on rye grains <sup>[324]</sup>. On April 16, 1943, Hoffman accidentally splashed some LSD on his hand. The LSD assimilated through his skin because micrograms of LSD can trigger a “trip.” He saw a kaleidoscope of colors while fantastic images flashed in his mind. Three days later, he purposely tried LSD again and rode his bicycle home, which became the famous bicycle “trip.”

Researchers studied LSD, while the National Institutes of Health supported this LSD research and awarded over 130 grants <sup>[322]</sup>. Therapists experimented with LSD for psychotherapy, while the US Army and Central Intelligence Agency experimented with LSD as a truth serum <sup>[337]</sup>. However, the US government banned LSD in 1967, stopping all scientific research on LSD <sup>[322]</sup>. Since 2000, research has resumed for LSD and psilocybin <sup>[331]</sup>.

Users with cardiovascular disease should be careful taking LSD. Similar to psilocybin, LSD raises blood pressure and heart rate <sup>[337]</sup>.

## ***Magic Mushrooms (Psilocybin)***

Over 200 species of mushrooms contain psilocybin, the active psychedelic ingredient <sup>[351]</sup>. The wide variety of mushroom species causes variations in psilocybin concentrations and contains other compounds that influence the “trip” <sup>[321]</sup>. Indigenous people of Mexico and Central America used psilocybin in religious and spiritual ceremonies for thousands of years <sup>[321, 351]</sup>.

After a user takes psilocybin, the user feels the effects within 30 to 60 minutes. The “trip” peaks around 1.5 and 2 hours <sup>[257, 321, 333]</sup> with the “trip” lasting about 6 hours <sup>[333]</sup>. In addition, psilocybin causes a user’s heart rate and blood pressure to increase and peak around two hours into the “trip” <sup>[335, 339]</sup>. Users with cardiovascular disease should be careful taking psilocybin. At last, psilocybin may cause headaches, migraines, and nausea <sup>[335]</sup>.

The user’s emotional state profoundly impacts a user’s “trip.” Users taking psilocybin in a comfortable, safe setting with social support are more likely to have a less difficult experience <sup>[357]</sup>. A guide or therapist also makes the experience more pleasant and helps shorten the duration of challenging “trips” <sup>[357]</sup>. Although a user can experience a bad and difficult “trip” under ideal settings with a supportive guide, the setting and guide help shorten the bad “trip’s” duration <sup>[357]</sup>.

Sober guides, sitters, resorts, and therapists can help users manage a bad “trip.” About 25% of the users had a guide or sitter when taking psilocybin <sup>[357]</sup>. Only 3% of the users had a sober and trusted guide supervising the users’ “trip” <sup>[357]</sup>. About half the users mix alcohol or cannabis with psilocybin <sup>[357]</sup>, boosting and aggravating the chance of challenging trips.

High doses of psilocybin have a profound impact on people’s well-being. A user taking a high dose is more likely to have a more challenging experience <sup>[357]</sup>. Around 30% of users experience extreme fear during their “trip,” even though about 80% of users describe improvements in life satisfaction and well-being regardless of a bad or challenging “trip” <sup>[351, 357]</sup>. Furthermore, between a half and two-thirds of users consider their “trip” in the top 10 challenging but positive and rewarding experiences of their lives <sup>[257, 322, 346, 357]</sup>.

The experience and insight gained from the psilocybin experience lasted for years after the trip <sup>[322]</sup>. Meanwhile, approximately half of the users would repeat their sessions with psilocybin even if they experienced a bad “trip” <sup>[357]</sup>.

Combining meditation with psilocybin creates stronger shifts of consciousness without users losing control of their cognition or minimizing anxiety <sup>[257]</sup>. The combination also ensures that the ego dissolution becomes a positive experience even under high doses of psilocybin <sup>[257]</sup>. High doses give users hallucinations with complex, vivid scenery. The high doses may contribute to spiritual and mystical experiences <sup>[332]</sup>, which could elicit archetypes from the unconscious mind. Users should meditate and self-reflect the next day to integrate that experience into their psyches.

Other benefits of psilocybin include the following:

- **Lengthened Telomeres:** Researchers found that psilocybin can lengthen telomeres in leucocyte cells <sup>[351]</sup>. Leucocytes are one of the body’s defenses against foreign invaders. They resemble tiny Pac-Man traveling around the body, gobbling and digesting bacteria and viruses. Possessing longer telomeres is critical for our longevity. Each time a cell divides, the telomeres shorten until these cells stop dividing.
  
- **Postpartum Depression:** Women recently giving birth may suffer from postpartum depression, such as a bad mood, sleeping disturbances, loss of appetite, suicidal thoughts, and a detachment from the infant. Mothers taking psilocybin show an immediate improvement in depression and reestablish a connection with their infants, improving the mother-infant relationship <sup>[331]</sup>. The psilocybin effects can reduce depression symptoms for up to four weeks <sup>[331]</sup>. Currently, researchers do not know whether infants can absorb psilocybin from their mother’s breast milk <sup>[331]</sup>.
  
- **Bipolar Disorder:** People with bipolar disorder shift between moods, going from extreme depression to mania and vice versa. Psilocybin helps bipolar patients with depression and

anxiety <sup>[358]</sup>. However, it may increase episodes of mania <sup>[358]</sup>. Bipolar patients who experience bad and challenging “trips” can develop better-coping skills <sup>[358]</sup>.

- **Adverse Cases:** Researchers administering psilocybin reported few adverse events. One potential problem is a psychotic break. Accordingly, researchers screen and remove participants from a study with a predisposition for suicide, schizophrenia, and psychosis.

Other psychedelic drugs may produce similar effects, but researchers have not studied these benefits.

### ***Mescaline (or Peyote)***

Indigenous tribes used peyote in religious ceremonies for at least 5700 years <sup>[351]</sup>. The peyote cactus is known as the *Lophophora williamsii*. Arthur Heffter extracted natural mescaline from the peyote cactus in 1896 <sup>[351]</sup>. Although Aldous Huxley wrote about mescaline in *The Doors of Perception* in 1954, mescaline is not as popular as LSD and psilocybin. The most likely reason is mescaline has a lower potency than LSD and psilocybin <sup>[351]</sup>.

### ***Other Non-useful Drugs***

Researchers have used dissociative drugs for psychotherapy. Dissociation separates a user’s thoughts, ideas, and actions from their personality. Thus, we can view dissociation as a division or split of one’s personality. The common dissociative drugs are used as analgesics because they numb pain and include the following:

- **Ketamine:** Medical doctors prescribe ketamine for analgesics and pain <sup>[322]</sup>. Therapists use ketamine to treat depression, alcoholism, and heroin addiction <sup>[317, 322]</sup>. Scientists believe ketamine works identically to psychedelics because it disrupts the abnormal brain connections underpinning depression <sup>[322]</sup>.

- **Phencyclidine (PCP):** PCP causes a dreamlike reality and is used as an animal analgesic. Users taking PCP or “Angel dust” can hallucinate, perceive sound distortions, or commit violent acts and behavior.

Dissociative drugs are not encouraged for enlightenment as they divide and split user’s personalities. Another drug class used for pain is:

- **Opioids:** They relax users and help them meditate, but users can quickly become addicted to opioids. The common opioids are codeine, morphine, heroin, and fentanyl. Opioids are pain relievers and give users a euphoric feeling. Addicts quickly become addicted to opioids, and overdoses are frequent. For example, fentanyl<sup>3</sup>, a synthetic opioid, is 50 times more potent than heroin and has sparked a wave of overdose deaths in many countries.

This chapter emphasizes marijuana and classical psychedelic drugs. The key is to integrate our personalities and further our journey along the path of enlightenment.

## **Conclusion**

We come to the end of the controversial chapter in this book. We can use marijuana and psychedelic drugs as a crutch to help overcome obstacles and blockages in our minds and help further us along the path of enlightenment. Enlightenment has many paths. However, marijuana and psychedelics may allow us to cross over to shorter paths to enlightenment, where we attain the state of samadhi – a state of no thinking, no mindfulness, and no desires.

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<sup>3</sup>A new class of drugs is appearing on the streets – nitazenes, which are 20 times more potent than fentanyl. The pharmaceutical company that invented nitazenes stopped developing these new synthetic opioids because they are way too powerful.

Marijuana is the least potent drug in this chapter. We could take it alone, but we should not take it daily, perhaps weekly, biweekly, or monthly at most. The marijuana “high” helps relax us and prepares our minds for hours of meditation. Marijuana in high doses could also cause a mild ego dissolution. Nevertheless, the effects of marijuana-induced meditation can last for days. We can also combine marijuana and meditation with fasting and sensory deprivation tanks to enhance and strengthen the meditation experience.

Psychedelics, on the other hand, are powerful. We should always have a sober guide or therapist to watch us and prevent accidents. That is why recipes and dosages are excluded from this chapter, as not to encourage readers to take psychedelics alone. Furthermore, the environment and people we surround ourselves with are important and contribute to whether we have a good “trip” or an adverse “trip.” Thus, the environment should have a positive ambiance while guides, sitters, and therapists are helpful, optimistic, and understanding. Psychedelic drugs could potentially rewire the connections between neurons in our brains and help create new neurons. Thus, a positive setting is crucial to ensure the healthy wiring of our brains’ neurons.

Another crucial factor is that we should meditate the day before the psychedelic “trip.” The day-before meditation helps us deal with the ego dissolution and manage the “trip” better. The ego dissolution is necessary to remove the conflict between the id and superego and eliminate the boundary between the self and the world. That way, we feel more connected with the world, and it could help us gain insight into how our egos shape our personalities.

We meditate the day after the “trip,” allowing us to self-reflect and integrate that experience into our psyches, especially if the trip uncovered painful, traumatic memories. Some unconscious conflicts and motivations could be expressed as vivid imagery and symbolic patterns like dreams. These images and patterns could reflect archetypes and mythological themes that rise to the surface of our conscious minds. We interpret, self-reflect, and integrate this imagery and archetypes into our unconscious minds, possibly gaining profound insights. We perform individuation by integrating

our brains' conscious and unconscious parts as we head toward self-realization and enlightenment.

We also use psychedelic drugs once or twice a year at most since the effects of the “trip” last months. If we are interested in a mystical and spiritual experience, we should head to South America to one of the numerous ayahuasca or psilocybin resorts. If we have unresolved traumatic memories, addictions, or depression, we should find a licensed therapist who uses psychedelics to help clients overcome these problems and integrate them into their personalities. That way, we integrate our conscious and unconscious minds.

Psychedelics have one last possibility. Psychedelics and several meditation styles allow users to become aware of their bodies and sensitive to their bodies' sensations <sup>[256]</sup>. Psychedelics could induce “bodiless” dreams, hallucinations of seeing oneself outside the body, and out-of-body experiences <sup>[256]</sup>, which was referred to in Chapter 5 on Lucid Dreaming. Researchers believe these psychedelic hallucinations cause users to shift their visual-spatial perspective <sup>[256]</sup>. However, something can leave the physical body, which we discuss in the next chapter on near-death experiences and how the soul survives and transcends death.

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## Chapter 8. Near-Death Experiences

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“No one wants to die. Even people who want to go to heaven do not want to die to get there. And yet, death is the destination we all share...”

– Steve Jobs

The near-death experience (NDE) suggests that a part of us, i.e., the soul, survives and transcends death and that death is a transition from one world into the next, similar to the description in the *Tibetan Book of the Dead* <sup>[14]</sup>.

What is death? Medical doctors claim clinical death is when the heart stops beating, the lungs stop breathing, and the brain is deprived of oxygen. Is this death or super close to death? People experiencing NDEs return to the living. Thus, they were not completely and utterly dead. The NDE is when a person brushes close to death.

About 30% of people coming close to death report a NDE <sup>[19, 23, 359]</sup>. It is possible that some people experience NDEs but repress their memories, or they are too embarrassed or think people would make fun of them if they told others <sup>[23, 359]</sup>. People who were clinically dead and people who came really close to death reported NDEs <sup>[19, 23]</sup>. For example, a person fell off from a tall building. This event could trigger a NDE before that person hits the ground <sup>[19, 23]</sup>.

Advanced Buddhist meditators can initiate NDEs <sup>[260]</sup>. Meditators use practices to help them prepare and gain insight into death. The NDEs also help the monks overcome their attachment to their bodies and thus eliminate the suffering that comes from this attachment. The monks have complete control over their NDEs and voluntarily return to their bodies <sup>[260]</sup>. Three books describe how the consciousness progresses at, during, and after death. *The Tibetan Book of the Dead* is the most famous book, written in the 8<sup>th</sup> AD by Padmasambhava <sup>[14]</sup>.

Some people are more sensitive to NDEs. For example, children may be sensitive to alternate realities and experiences since they are

not entirely developed <sup>[19]</sup>. Some factors that trigger NDEs in children include child abuse, illnesses, trauma, and stressful childhoods <sup>[19]</sup>. Adult men and women share similar NDE experiences <sup>[19, 23]</sup>, but women are more likely to talk about NDEs than men <sup>[19, 23]</sup>. However, there is no difference in the mode of death, whether the NDE is triggered by an accident, illness, or suicide attempt <sup>[19, 23]</sup>.

NDEs strike all people regardless of faith or religious beliefs. People who are agnostic, atheist, or skeptical all experience NDEs just as religious people who believe in life after death <sup>[19, 23, 359]</sup>. The belief is people experiencing NDEs cross over into a transcendental world, structured similarly to our current physical world <sup>[19, 23]</sup>. Thus, the NDE transcends all genders, ages, races, cultures, and religious affiliations. We all die in the same way, and the NDE, a brush with death, is the same for everybody.

## ***The Near-Death Experience***

Medical doctors and scientists have gathered testimonies of people experiencing near death. Their testimonies share the following characteristics; however, they did not necessarily experience all of them. Some ayahuasca users report identical experiences to the NDE <sup>[327]</sup>. We refer to a person experiencing a near-death experience (NDE) as an experiencer.

### ***An Out-of-body Experience***

The people experiencing the NDE leave their bodies. They can see their physical body, like lying down in a bed in a hospital emergency room or an intensive care unit, while their consciousness becomes detached <sup>[19-21, 23, 24]</sup>. They have the sensation of not possessing a body, or they possess a different type of body <sup>[19-21, 23]</sup>. Sometimes, people feel disoriented and briefly distressed <sup>[19-21, 23]</sup>, while people who have been blind since birth can see the world around them for the first time <sup>[23, 24]</sup>.

What gives the NDE validity is the experiencer can describe the doctors and nurses surrounding their bodies as they hover nearby <sup>[19,</sup>

<sup>21, 23, 24]</sup>. They remember reading the medical instruments and seeing the medical procedures from afar <sup>[19, 21, 23]</sup>. Some doctors and researchers have looked into this and found these observations were accurate, which the experiencers had no way of knowing from normal perceptions <sup>[19, 21, 23]</sup>. Finally, some doctors have noticed that patients with dementia become lucid before the moment of death <sup>[20, 22]</sup> as they prepare for their journey to the afterlife.

People experiencing an out-of-body experience share one similarity with people having an NDE. Only a few experiencers turned around, looked, and saw a cord or thread connecting their spiritual body to their physical body <sup>[19]</sup>. Advanced meditators initiating NDEs use this cord to return to their bodies <sup>[260]</sup>.

We experience five senses – sight, hearing, smell, taste, and touch. People having NDEs retain sight and hearing but lose the senses of smell, taste, and touch. Researchers reported cases when the experiencer tried to grab the arm of someone alive, and their hand passed through this person's body <sup>[19, 23]</sup>. For the sense of hearing, the experiencer may not be hearing sounds. Instead, they may be reading living people's thoughts <sup>[19, 23]</sup>.

The experiencers retain their self-identity <sup>[19, 23]</sup>. They keep their character, their life experiences, and their personalities <sup>[19, 23]</sup>. They feel entirely themselves and contain their authentic and deepest essence of self <sup>[19, 23]</sup>.

The NDE out-of-body experience is similar to people having an out-of-body experience during a lucid dream or under the heavy influence of psychedelic drugs.

### ***The Tunnel***

People experiencing NDEs feel weightless and travel at a dizzying speed through a tunnel <sup>[19, 23]</sup>. Sometimes, they hear harmonious, pleasant sounds, or disturbing sounds <sup>[19, 23]</sup>. They see a brilliant light at the tunnel's end <sup>[19, 23]</sup>. Thus, they are transported or beamed into another world, the world of the afterlife, as described in the *Tibetan Book of the Dead* <sup>[14]</sup>.

## ***The Alternative World***

The experiencers meet a being of light who personifies pure love and total understanding <sup>[19-23]</sup>. This being emits a powerful but not blinding light <sup>[19-23]</sup>. The experiencers feel pure happiness, profound understanding, and absolute peace <sup>[19-23]</sup>. The people and the being of light communicate without words as the exchange of thoughts occurs instantaneously <sup>[19-23]</sup>. This being of light is a powerful symbol, such as being in the presence of God as described in the *Tibetan Book of the Dead* <sup>[14]</sup> or the transfiguration of Gautama Buddha <sup>[15]</sup> and Jesus (Luke 9:28-36, Mark 9:2-13, and Mathew 17:1-13 <sup>[16]</sup>). People taking hallucinogens, especially ayahuasca, reported meeting God-like entities <sup>[360]</sup>.

The experiencers also include meeting deceased loved ones, guardian angels, and mysterious guides <sup>[22-24]</sup>. They come to accompany and comfort the experiencers <sup>[19, 22-24]</sup>. The deceased relatives always recognize the experiencer, and the experiencer most of the time recognizes the deceased relative. Several cases show experiencers meeting a deceased relative or friend and not knowing this person had died <sup>[19, 23, 24]</sup>. The experiencers later found out upon their return to our world <sup>[19, 23]</sup>.

Experiencers reported seeing a city of light or a field of flowers with such bright colors and intensity that they had never seen before <sup>[19, 22, 23]</sup>. In this world, time is different <sup>[19, 23]</sup>; one referred to it as “deep time” <sup>[22]</sup>. One theory comes out of quantum physics <sup>[19, 23]</sup>. Some say this world exists in another dimension with no time, where particles exist in multiple places at the same time. This world also has a different type of gravity <sup>[19, 23]</sup>. Experiencers reported lacking a body or possessing an extremely light body <sup>[19, 23]</sup>. They could travel to different places, even faraway places, instantaneously just by wishing or willing it <sup>[19, 23]</sup>.

Some experiencers reported that they went to hell or met demons <sup>[19, 23, 359]</sup>. Once medical doctors have resuscitated them and they have awakened, they beg not to return to this hellish world <sup>[19, 23]</sup>. In some cases, the experiencers completely forget the experience two weeks later <sup>[19, 23]</sup>. Most likely, the hectic, hellish experience caused them to repress these hellish, traumatic memories. Unfortunately,

they may not grow and improve themselves if they forget their visit to hell. About 15% of experiencers claimed their NDEs were horrible and traumatic, which does not necessarily mean they are evil <sup>[359]</sup>. However, they were granted a second chance to improve themselves.

Dr. Carl Jung, the famous psychologist and philosopher, experienced an NDE. In 1944, Dr. Jung broke his foot and suffered a heart attack in Switzerland. During his NDE, Dr. Jung saw the Earth, described in his own words:

“It seemed to me that I was high up in space. Far below I saw the globe of the Earth, bathed in a gloriously blue light. I saw the deep blue sea and the continents. Far below my feet lay Ceylon, and in the distance ahead of me the subcontinent of India. My field of vision did not include the whole Earth, but its global shape was plainly distinguishable and its outlines shone with a silvery gleam through that wonderful blue light <sup>[23, 361]</sup>.”

Dr. Jung also talked about the time dimension of this world. He said:

“We shy away from the word “eternal,” but I can describe the experience only as the ecstasy of a non-temporal state in which present, past, and future are one <sup>[23, 361]</sup>.”

### ***The Life Review***

People experiencing an NDE report a life review. They observe a three-dimensional vision of their life’s significant events and how they affected others <sup>[19, 21, 23, 24]</sup>. The life review includes significant and non-significant events <sup>[19, 21, 23]</sup>.

The life events have two features, which include:

- Children experiencing NDEs are not likely to report life events <sup>[19, 23]</sup>. The reason may be that their lives are relatively short, and they have few life experiences to review <sup>[19, 23]</sup>.

- The life review goes beyond the past. Some experiencers reported viewing future events in 10 to 20% of the cases <sup>[19, 23]</sup>. For example, one woman experiencing an NDE saw her son, who was not born yet <sup>[19, 23]</sup>. Thus, they return to their physical bodies and live out their remaining lives <sup>[19, 23]</sup>.

The life review is referred to in many religions, where the deceased person is judged by their actions on Earth. The being of light is not judgmental and confrontational, as religions portray. The being of light helps the experiencer realize and understand actions and behaviors that they have had on other people, both good and bad <sup>[19, 23]</sup>.

### ***Access to Absolute Knowledge***

The experiencers gain access to absolute knowledge <sup>[19, 23]</sup>. They also experience enhanced intellectual abilities during the NDE. They think and reason much quicker and sharper <sup>[19, 23]</sup>. Nevertheless, they lose access to this knowledge upon their return to the physical world <sup>[19, 23]</sup>. After the experiencers return, they gain a hunger for learning, understanding, and knowledge.

### ***Belonging to a Harmonious Universe***

The people experiencing NDEs feel they are part of a harmonious universe and have a definite place in it <sup>[19, 23]</sup>. When they return to their physical bodies in the normal world, traces of these feelings of harmony and clarity remain, but it is unclear why <sup>[19, 23]</sup>. Upon returning to the normal world, the experiencers become ecologically sensitive and concerned about this planet's welfare <sup>[19, 23]</sup>. They also develop a reverence and appreciation for life <sup>[19, 23]</sup>. According to Christianity, Islam, and Judaism in Chapter 2, God put humans on the planet to take care of it along with the planet's life.

## ***A Boundary and Return to Life***

The experiencers approach a boundary or limit that, if crossed, they cannot return to life <sup>[19, 23]</sup>. Some describe this boundary as a field or river that cannot be crossed <sup>[19, 23]</sup>. In some cases, the experiencer is given a choice to return to life, while in other cases, the experiencer is requested to return because they have unfinished business in life, a problem to solve, or some task to accomplish <sup>[19, 23]</sup>.

The unusual part of NDEs is the experiencers cannot describe how they had re-entered their physical bodies <sup>[19, 23]</sup>. In one instance, they are in this heavenly world; in the next instance, they are in their bodies <sup>[19, 23]</sup>. They do not recall travelling backwards through that tunnel.

*The Tibetan Book of the Dead* suggests that much more happens after death, including encounters with blood-thirsty demons <sup>[14]</sup>. Some claim these demons represent our dark, repressed memories, thoughts, and feelings that we refuse to do with <sup>[23]</sup>. Since the experiencers ended their journey prematurely by returning to their bodies, there may be more to the journey of the afterlife.

## ***The After-effects of Near-Death Experiences***

After a person experiences an NDE, the effects of the NDE endure for a long time <sup>[19, 23]</sup>. The NDE is not a transitory experience as it profoundly affects people and their lives; the effects of NDE persist for decades <sup>[19, 23]</sup>.

The first after-effect is that the experiencers start loving themselves and others unconditionally <sup>[23, 24]</sup>. They know God, the being of light, accepts them as they are, with all their imperfections. Self-acceptance is therapeutic and helps people open up to others. This self-acceptance gives experiencers inner peace <sup>[19, 23]</sup>.

The second after-effect is that the experiencers feel that everything is holy and sacred. However, they do not look for God in

a church, mosque, or synagogue <sup>[19, 23]</sup>. They know they have met God and can commune with him anywhere <sup>[19, 23]</sup>; a holy place of worship is unnecessary. However, they still believe in religious charity <sup>[19, 23]</sup>. They know it is the right thing to help others because that is how things should be <sup>[19, 23]</sup>.

The third after-effect is that experiencers gain brief access to universal knowledge, which gives them a hunger and a thirst for knowledge upon their return <sup>[19]</sup>. They become avid readers and may return to school or college to satisfy their desire for knowledge <sup>[19]</sup>. One of the popular subjects is quantum physics, which theorizes a dimension of no time. Past, present, and future events occur simultaneously <sup>[19]</sup>. They could also study science, how the universe functions, and how it is organized <sup>[19]</sup>.

The fourth after-effect is people gain an appreciation for their life. For example, people who experienced an NDE because they tried to commit suicide develop an appreciation of life <sup>[19, 23]</sup>. Their close brush with death made them realize that their life has meaning; they have a purpose <sup>[19, 23, 24]</sup>. They learn life is a gift, and they know another world is waiting for them at death <sup>[19, 23, 24]</sup>. Consequently, they lose their fear of death <sup>[19, 23, 24]</sup>. Finally, they may exit the rat race because they know working hard to gather material possessions is trivial because something bigger and better is waiting for them at death <sup>[23]</sup>.

The fifth after-effect is that 78% of the people experiencing NDE believe in reincarnation <sup>[19, 23]</sup>. Reincarnation is associated with Hinduism and Buddhism, not Christianity, Islam, and Judaism. That means Christians, Muslims, and Jews could become more open-minded to reincarnation as more followers experience NDEs <sup>[19, 23]</sup>. However, NDEs do not prove reincarnation; they alter people's beliefs.

The sixth after-effect is that experiencers appear to become younger <sup>[23]</sup>. This may not be a direct result of the NDE. The experiencers return with a new outlook on life. They discover spirituality. They lower their stress by avoiding demanding jobs while reducing their drive for material possessions. They enjoy the little things in life. However, the NDE experiencer has changed, which causes a high divorce rate <sup>[23]</sup>.

The last after-effect is some experiencers stated that the NDE heightened and strengthened their psychic abilities <sup>[19, 23]</sup>. They claim they experience out-of-body experiences and possess classical psychic abilities such as precognition, remote vision, telepathy, and reading other people's thoughts <sup>[19, 23]</sup>. The premonitions usually manifest in the experiencer's dreams, and they often predict an accident or a loved one's death <sup>[19, 23]</sup>. In addition, they could also diagnose and heal people <sup>[19, 23]</sup>. Some also said that they could see ghostlike figures of loved ones at the exact time of their deaths <sup>[19, 23]</sup>. Nevertheless, scientists and researchers have not substantiated these claims <sup>[19]</sup>.

## **Conclusion**

The impetus of this chapter is that something may survive our death, such as our soul. The three observations of NDEs make it unlikely that these are not fantasies, hallucinations, or dreams:

- Experiencers describe in detail the medical staff and medical procedures used as they lie unconscious on the hospital bed.
- Some experiencers witness future events of their life review which they had not yet experienced.
- Several experiencers met deceased friends or relatives whom they did not know were deceased.

Thus, they have gained knowledge that was impossible to get.

Our consciousness may not reside in our brains. Sir John Eccles, an Australian neurophysiologist who was awarded the Nobel Prize in medicine in 1963, theorized that our brains are not the center of our memories, thoughts, and consciousness. Instead, the brain serves as an interface between our physical bodies and some type of mind field, which is currently not detectable <sup>[19, 22, 23]</sup>, like another vessel like the soul, which retains our essence.

Advances in medical technology allow people to survive near death, and thus, more people are experiencing NDEs. Some view the

increasing frequency of NDEs as an evolutionary step for humanity. Perhaps NDEs can help humanity attain higher levels of consciousness and functioning <sup>[19]</sup>.

A BBC News reporter asked Dr. Carl Jung if he believed life continues after death. Dr. Jung replied emphatically, “I don’t believe. I know!”

A great quote to end this chapter is from Abdu’l-Baha.

“The bestowals of God which are manifest in all phenomenal life are sometimes hidden by intervening veils of mental and mortal vision which render man spiritually blind and incapable, but when those scales are removed and the veils rent asunder, then the great signs of God will become visible, and he will witness the eternal light filling the world. The bestowals of God are all and always manifest. The promises of heaven are ever present <sup>[362]</sup>.”

The NDE is one path to this alternative world, where the being of light inhabits. The ultimate form of enlightenment could be to open that door to this other world a little and gain access to those heightened abilities, inner peace, and access to total knowledge. The next question is whether the techniques in this book, such as fasting, meditation, lucid dreams, and drug-induced states, help people occasionally peek through the keyhole into this other world.

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## Chapter 9. Final Thoughts

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“Enlightenment is the complete flowering of body, mind and the soul.”

– Amit Ray

We are meant to suffer hardships, trials, and tribulations of life. They define who we are and make us stronger and more complete as we overcome them. Of course, to become more complete, we need to practice the holy trinity of enlightenment, a healthy body, a healthy mind, and spirituality. We also need to find our purpose in life, which Calhoun’s rodent studies suggest.

John Calhoun studied rodents in the 1960s at the National Institute of Mental Health. Calhoun picked rodents because of their relatively short lives and high fertility rate. He chose the healthiest and best mice from the National Institute of Mental Health for his Adams and Eves. He started with four pairs of healthy mice to start the population <sup>[363]</sup>. The mice lived in an enclosure that they could not escape from. The main enclosure measured by 101 inches (2.57 m) <sup>[363]</sup>. Each enclosure wall led to 16 meshed tunnels connecting to nesting boxes <sup>[363]</sup>. The mice had access to 256 nesting boxes that could house 15 mice each <sup>[363]</sup>. Thus, the enclosure could comfortably house 3,840 mice <sup>[363]</sup>.

The mice lived in a utopian society. They experienced no bad weather, no wind, no rain, and no snow <sup>[363]</sup>. Calhoun housed the entire enclosure in a building at room temperature throughout the year; temperatures ranged from 21 to 32<sup>0</sup> Celsius (or 70 to 90<sup>0</sup> Fahrenheit <sup>[363]</sup>. The mice were free from disease and had unlimited food and water supplies <sup>[363]</sup>. Finally, the enclosure was cleaned regularly <sup>[363]</sup>.

After the mice acclimated to the enclosure, the mice population exploded. The population doubled every 55 days. Then the population growth rate slowed on Day 315 and doubled every 145 days <sup>[363]</sup>. The mice population stopped growing by Day 560, and the last male mouse died on the 1,780th day <sup>[363]</sup>. Although the

population kept declining, the mice never recovered their population growth rate. The mice population never reached the enclosure's maximum capacity of 3,840 mice.

The mice living in utopia disrupted their social bonding and interaction, which led to their population collapse <sup>[363]</sup>. Calhoun called this the behavioral sink <sup>[363]</sup>, which we define as a collapse in socially accepted behavior.

The following highlights the breakdown in the mice's social structure.

- Mice lived to 800 days, equivalent to 80 years for humans <sup>[363]</sup>. Males had no territory to defend, and males lived a long life with plentiful food and resources. The younger males did not replace the older males <sup>[363]</sup>. About 1/3 of the male mice became dominant, while the remaining males had no place in that society. The younger male mice avoided mating with the females, formed cliques, and attacked each other <sup>[363]</sup>.
- The mice crowded together in nesting boxes, well more than 15 mice per nest <sup>[363]</sup>. The mice did not occupy about 20% of the nesting boxes <sup>[363]</sup>.
- The male mice stopped protecting the females. The female mice assumed the role of protecting their territory and became aggressive. The females became aggressive with their young. The female mice attacked and wounded their offspring and even stopped weaning their young prematurely. As the mouse population declined, female mice abandoned or wounded their young during childbirth.
- Some male mice isolated themselves to the upper levels of the enclosure. Calhoun called these mice the beautiful ones. They did not fight with the other mice and had no injuries. They did not compete for females, territory, or status <sup>[364]</sup>. Instead, they ate, drank, slept, and constantly groomed themselves. They completely abstained from procreation and interacting with the other mice.

- Young mice who survived their abusive mothers joined the mouse society prematurely. They could not bond or interact with other mice. The mouse society began breaking down as the mice could no longer perform complex behaviors to sustain their society. The female mice stopped delivering and weening the young while all mice stopped procreating, leading to their extinction.

Calhoun tried to relocate some of the mice to another mouse colony. However, the move was unsuccessful because the mice could not adapt and unlearn the social behavior that they had learned in the original colony.

Calhoun experimented with rats earlier with identical results. The rat population flourished in the beginning and went into decline similar to the mouse experiment <sup>[365]</sup>. Although the behavioral sink was similar to the rats, the rats had several differences. Some of lower-status male rats would chase after and mate with both male and female rats <sup>[364-366]</sup>. Some rats became cannibals and ate other rats despite having access to unlimited food and water <sup>[365, 366]</sup>.

What happened? The mice lost their purpose for life. They experienced no trials and tribulations as everything was provided to them. They had no common threat to stand against. The rodents had no life challenges and literally started making problems for themselves.

Many pundits and experts point to Calhoun's experiments as the problem of overcrowding and overpopulation. However, the mice and rats never came close to the maximum population capacity of their enclosures. However, the mice and rats experienced a high population density, similar to high apartment densities in many countries worldwide <sup>[366]</sup>.

We see the same problems in our modern society. Everyone is migrating to cities with high population densities, where city dwellers are overwhelmed with crime, noise, and pollution. No matter where one is in a city, urban blight, ghettos, and poverty are a block or two away. Furthermore, many cities are plagued with

riots, unrest, and gangs, and law-abiding citizens must remain cautious and vigilant over their safety.

Science has extended our longevity. The older dominant men control companies, industries, and governments. Leadership is not passed on to the younger generation, and the younger generation is not taught how to take over and manage these industries. Some youth are forming bands to create mischief or have abandoned the system altogether.

Many young people are avoiding marriage and the creation of families. We have witnessed the breakdown of the traditional family as single-parent households, high divorce rates, and child poverty have taken over. All the developed countries are experiencing precipitous drops in fertility rates. South Korea had the lowest fertility rate of 0.84 in 2020. United States, Canada, and European Union were 1.64, 1.40, and 1.53, respectively. Each woman must bear at least two children to replace each man and woman. No government or nation has reversed this trend. Humans are mimicking the behavioral sink identical to Calhoun's rodents.

Technology has made our lives way too easy. For example, refrigerators and freezers store our food; stoves and microwave ovens cook and heat our food, while dishwashers wash the dishes. Cars and trucks allow us to travel large distances, and the internet provides any movie, song, or information at our fingertips. However, we still had to use our brains to think and perform complex tasks until artificial intelligence (AI) arrived.

AI has the potential to disrupt our communities and societies. It can perform higher-level functions, such as writing books, creating art, creating videos, and writing complex legal documents by typing several words into a prompt. AI and machines can do everything humans can but much faster and more efficiently. Where does that leave humans? (How would humans earn income if machines and AI do all the human work?) AI has the potential to amplify and exacerbate Calhoun's Behavioral Sink.

Of course, we are not rodents. With conscious effort, we can avoid Calhoun's Behavioral Sink. First, we should design our cities and communities better by incorporating green spaces, parks, and recreational areas. Some doctors recommend exercising and

enjoying green spaces to improve health. The Chinese have an ancient art, feng shui, of laying out buildings and green spaces to create balance and harmony in the environment.

We bring back the notion of community. We build strong social networks with our families, friends, and communities. A sense of family and community helps foster a sense of belonging, provides emotional support, and engenders a sense of belonging. Religion is also part of that community. Churches, mosques, and tabernacles serve as anchors in a community.

We help strengthen our communities through acts of altruism, generosity, and service, whether volunteering at community centers, donating to our places of worship, or helping feed and clothe the less fortunate. By helping others, we cultivate a sense of fulfillment and purpose. Our altruism, generosity, and service will encourage others to do the same.

We learn to become better humans by fostering compassion and loving-kindness. We embrace compassion, empathy, and kindness as we interact with others and ourselves. Remember, Hinduism and Buddhism believe all living things are connected. We practice accepting, forgiving, and tolerating other people. If we harbor bad intent, ill will, and meanness toward others, we also harm ourselves since we are all connected.

We learn materialism is empty. Consumers feel happy and content while shopping and purchasing things they do not need. However, this contentment is fleeting and rapidly dissipates after playing with the new toy for several days. We learn to let go of materialism and the negative emotions these possessions generate. It is no coincidence that monks and nuns possess almost no possessions at the monasteries. Their focus is on spiritual enlightenment. Being a minimalist, we cultivate a sense of inner freedom and detachment, which can help us transform ourselves spiritually and gain deeper insights into ourselves and others.

Education is another key to giving us meaning in life. We constantly upgrade our education, knowledge, and skills. We do not have to go for that second Master's degree. We can take an art or cooking class. We can take courses in spirituality, lucid dreaming, or making homemade herbal elixirs, tinctures, and tonics. We read

philosophy, religious texts, and literature. We remain open-minded as we explore different ideas, perspectives, and cultures.

We should expose ourselves to foreign countries, cultures, and people. We can learn French, Spanish, or Portuguese, travel to Latin America, Europe, or Northern Africa, and enroll in a language immersion program. Visiting foreign countries and learning languages are methods to gain respect for foreign cultures and communities. Visiting foreign countries helps us become more patient, adaptable, and resilient since countries do things differently.

We use techniques in this book to improve our bodies and minds. We should adopt a fasting regime, whether we fast for health or to help bring us spiritually closer to God. We meditate regularly to help quiet our minds, cultivate inner peace, and gain a greater awareness of the present moment. Lucid dreaming, psychedelic drugs, marijuana, and restricted environmental stimulation techniques are optional techniques, but they complement fasting and meditation.

Buddha, Siddhartha Gautama, experimented with all the techniques in this book except for lucid dreaming, psychedelic drugs, and marijuana. Some Tibetan Buddhist teachings refer to lucid dreaming as one of the techniques to achieve enlightenment by mastering our consciousness, whether awake or asleep. Although Buddha did not encourage the taking of intoxicating substances, Buddha may have experienced something identical to a psychedelic trip as he broke an extended fast with milk-rice pudding. The extended fast compounded with tryptophan in the milk may have triggered something similar to a psychedelic experience by boosting serotonin production, the same neurotransmitter that LSD activates.

Our minds, bodies, and spirituality are interconnected. If we fix our bodies by eating nutritious, healthy food, we make our bodies healthier, and this health carries over to our minds. Furthermore, meditation helps to lower our stress, which wreaks havoc on our bodies.

We explore our minds through introspection, meditation, and self-reflection. If we uncover painful, traumatic memories, we use mindful meditation to examine these memories. We learn to accept them and incorporate them into our minds. We can even jot down our emotions every day in a journal as a way to self-reflect. When

the author wrote his first novel, he put the crap that he called his life. The writing became a catharsis, and the author could feel an emotional weight lift from his heart. (That fictional work was the only author's successful book).

The goal is to end personal suffering and improve ourselves. We accept all our experiences, whether they are positive or negative, and integrate them into our personality. We become what Carl Jung called self-realization. We remove or weaken our ego and let our identity come out. We become complete and enjoy a happier, more harmonious life filled with self-love and self-acceptance<sup>[8]</sup>. We can seek help from spiritual teachers and mentors who offer wisdom, encouragement, and support for our spiritual journey.

We must remember that attaining enlightenment is a continuous process and not a final destination, or at least until the moment of our deaths. We should constantly grow, self-reflect, remain true to ourselves, and open ourselves to more profound truths. We must remember we may have bad days, days when we feel we are moving backwards and everyone and everything is against us. Nevertheless, we forge ahead along the path of enlightenment while persevering and remaining resilient and patient. We commit ourselves to the holy trinity of enlightenment – a healthy body, a healthy mind, and spirituality.

I believe God loves us; He gave us a second chance. He didn't have to re-populate the earth after the Great Flood. Accordingly, I end this book with the Bible verse, "Draw near to God, and he will draw near to you (James 4: 8<sup>[16]</sup>)."

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## About the Author

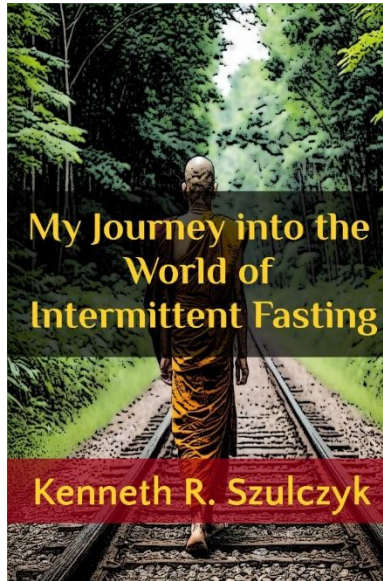
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I was born in a small town in Michigan, filled with the noises of factories. While growing up, I witnessed factory closures, which brought high unemployment and few economic prospects. I left the town to pursue my dreams and enrolled in a university. My education opened the door to the world, where I graduated with a Ph.D. in environmental and natural resource economics from Texas A&M University. With my degree, I traveled and lived in Bosnia and Herzegovina, the Republic of Kazakhstan, Morocco, Malaysia, and the United States. Currently, I teach economics and finance at a small university in Morocco. Despite my humble beginnings as a poor boy from Michigan, I am doing alright. I am living life to the fullest.

Other books from the author:

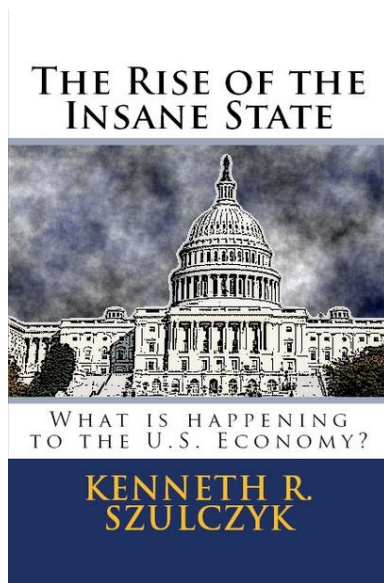
### ***My Journey into the World of Intermittent Fasting***

Intermittent fasting is a journey with many twists and turns. Perhaps we are not exploring ancient stone ruins in the jungles of Cambodia, or savoring the exotic flavors of spicy Thai cuisine from the food carts on the streets of Bangkok. However, fasting is a journey to a healthier body. So, I take readers on the journey with me as we explore all aspects of fasting. I teach the reader everything I know about fasting and summarize everything I have read into an easy to follow book. I also give readers 56 tips on fasting, exercise, and nutrition that help them improve their health. Thus, I hope my book can help readers discover the power of intermittent fasting and unlock the doors to a healthy, long life.



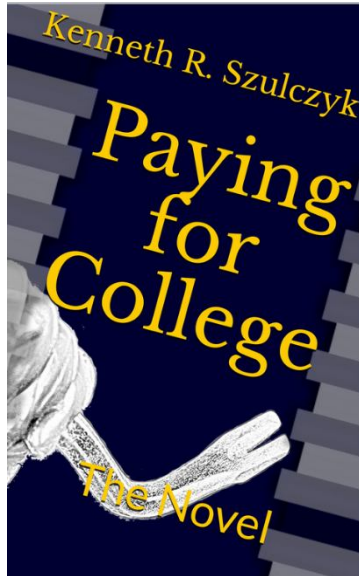
## ***The Rise of the Insane State – What is Happening...***

This book offers a comprehensive view of the U.S. legal system, explaining the relationships between the people, businesses, and their government. It's not filled with complicated statistics or high-level economic jargon. It's written for any intelligent person who wants to understand why a government takes over its economy. The book uses numerous examples and cases from the United States, but these ideas can apply to any country. It's a book that makes complex concepts accessible and understandable.



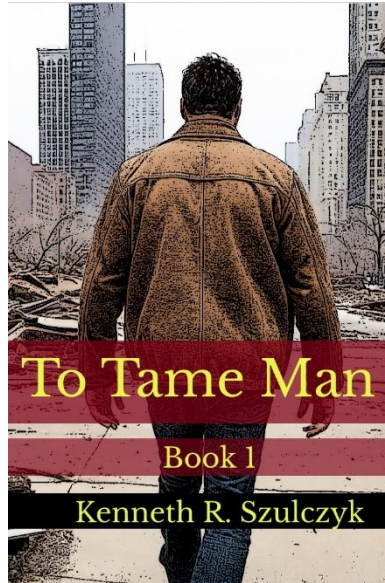
### ***Paying for College – The Novel***

Brothers, all I wanted to do was attend a university and escape a small town with no job prospects or future. But it seems every time I opened my mailbox at the dorm, I pulled out another tuition bill with a looming due date. So I had to do the unthinkable. Break a few rules. Do some insane things. Then everything just became crazy.



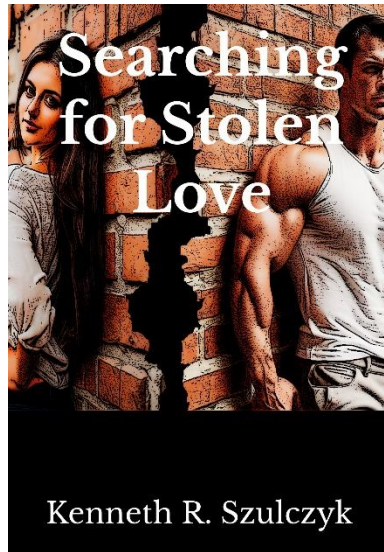
## ***To Tame Man***

The United Federation of Cities has been at peace since the Great War, and one of its great cities, Chicago, has experienced no violence, no crime, and no murders in 68 years. Then Susan, the director of the Male Processing Unit, ran out of Growth Inhibitor 37, and several males, including Brown 447 didn't get their treatment. Unfortunately, Brown 447 shows an uncanny intelligence and rises up and challenges the society of Chicago. Mayor Lilith and the Mayor's Guards must restore the social order and return law and order to Chicago.



## ***Searching for Stolen Love***

Fox is an American finance professor. He is thrilled to teach at the Bosnian University of Management, a place, where he hopes to make a difference. His future is bright, and he fell in love with a Serbian woman. Having just completed his first semester, he is looking forward to a peaceful winter. But one night, his girlfriend disappeared without a trace, and he is left with a growing sense of unease. Determined to find her, Fox embarks on a search that would lead him to uncover a mystery in the land of blood and honey.



## ***The Second American Revolution – The Building of an Empire***

As a child, Jerrick Ray Davis dreamed of delivering powerful speeches to the people. He also dreams of building an Empire across the North and South Americas. These are not simple daydreams but ideas that map out Jerrick's destiny. Jerrick rises out of the wreckage and devastation of the Michigan economy and turns his dreams into reality. Jerrick Davis and his political party, the National Workers' Party, takes over the United States government and the rest of the Americas. Jerrick Ray Davis becomes the most powerful man in the 21st century, and the world trembles at his sight. Jerrick Ray Davis also makes a promise to the people. After the 2008 Financial Crisis, he will put all Americans back to work. Good-paying jobs will be plentiful again. Of course, Jerrick Davis puts everyone back to work, building his Empire. This story is about Jerrick Ray Davis' life from early childhood to rising in power. Please read this story with caution; we may be all toiling hard on Jerrick Ray Davis' Empire. As Jerrick Ray Davis says, "All Americans will be united under one flag."



Kenneth R. Szulczyk

## The Second American Revolution

The Building of an Empire