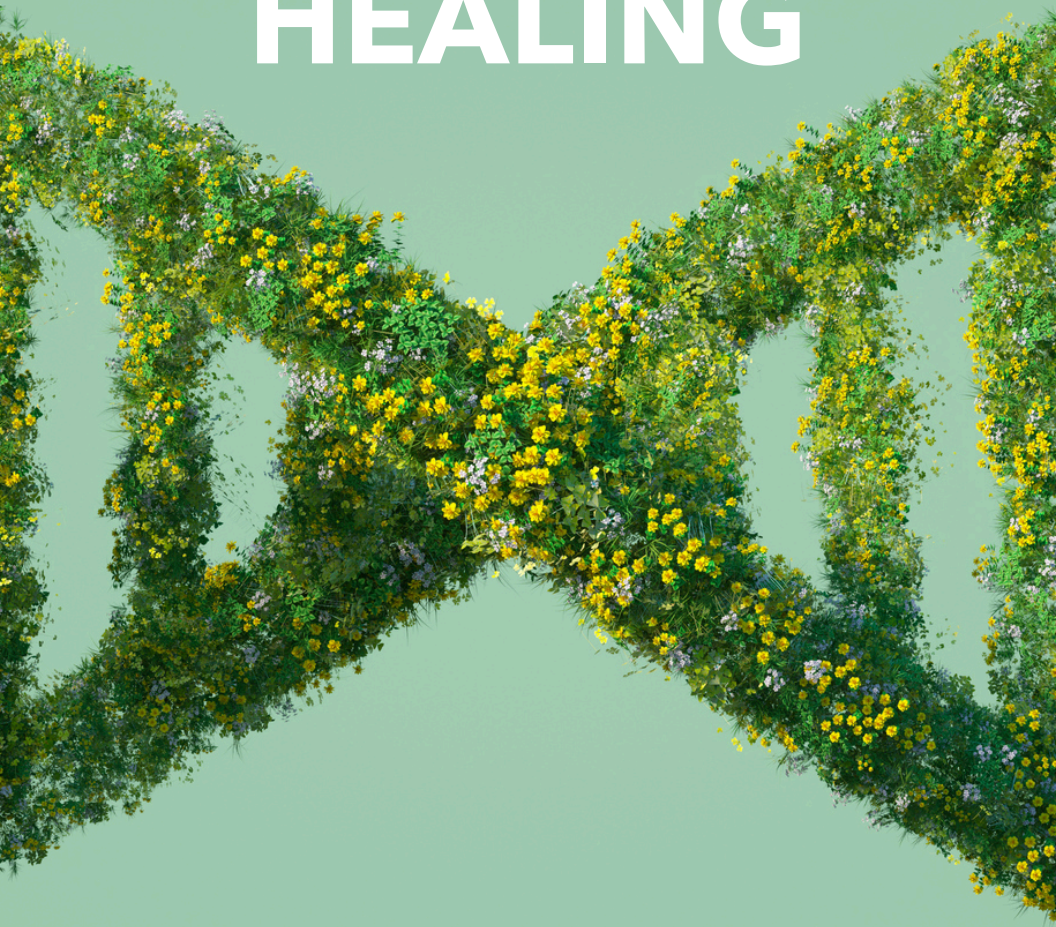


*Time to Explore*

# ALTERNATIVE HEALING



A QUICK REFERENCE GUIDE

*Time to Explore*

# **ALTERNATIVE HEALING**

**A QUICK REFERENCE GUIDE**

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# SOUND HEALING



## HEALING WITH SOUND, FREQUENCIES & VIBRATION

*“If you want to find the secrets to the universe, think in terms of energy, frequency, and vibration” - Nikola Tesla*

Many associate illness and disease with prescriptions and interventions such as surgery. Allopathic medicine and science have traveled a narrow path built on chemical substances and sharp instruments rather than energy.

But the ancients recognized sound, vibration, and frequency as powerful forces that influence life all the way down to the cellular level. The gifted Greek philosopher Pythagoras prescribed music as medicine, asserting that the musical

intervals he discovered are clear expressions of sacred geometry. He stated that music is the phenomena of numbers in time, reflecting the structures of nature, and has the power to restore balance in an organism.

## **Sound Healing Research**

According to a study published by the National Institute of Health, “Music effectively reduces anxiety for medical and surgical patients and often reduces surgical and chronic pain. [Also,] Providing music to caregivers may be a strategy to improve empathy, compassion, and care.” In other words, music is not only good for patients; it’s good for those who care for them.

A 2010 Finnish study observed that stroke patients who were given access to music as cognitive therapy had improved recovery. Other research has shown that patients suffering from the loss of speech due to brain injury or stroke regain it more quickly by learning to sing before trying to speak. The phenomenon of music facilitating healing in the brain after a stroke is called the “Kenny Rogers Effect.”

For those struggling with addiction and substance dependencies, learning to play an instrument may play an important role in recovery. A study at the University of Wisconsin showed that exposure to the right music, tones, and frequencies produces dopamine, which is in short supply for the nervous system during the withdrawal process.

Singing bowl bathing is gaining popularity as a method to reduce stress and anxiety and to promote well-being. Laying down with eyes closed, participants listen while different bowls are struck and toned by a practitioner. Studies show that this practice, called “sound bathing,” directly reduces anxiety and depression; both are related to increases in disease. According to one study, “Sixty-two women and men with an average age of 50 reported significantly less tension, anger, fatigue, and depressed mood after sound sessions. Tibetan singing bowl meditation may be a feasible low-cost low technology intervention for reducing feelings of tension, anxiety, and depression, and increasing spiritual well-being.”

A study published in the Southern Medical Journal (2005) demonstrated the beneficial effects of music in hospital settings. Researchers reported that “For children and adults, music effectively reduces anxiety and improves mood for medical and surgical patients, and for patients in intensive care units.” Researchers also noted that ambient music increased empathy in caregivers without interfering with the technical aspects of treatment.

## **Can Sound Fight Cancer?**

In 1981, biologist Helene Grimal partnered with composer Fabien Maman to study the relationship of sound waves to living cells. Maman was also an acupuncturist and had previously discovered that by using tuning forks and colored light on acupuncture points he could achieve equal and even greater results than he could with needles.



For 18 months, Grimal and Maman worked with the effects of 30-40 decibel sounds on human cells. With a camera mounted on a microscope, the researchers observed uterine cancer cells exposed to different acoustic instruments (guitar, gong, xylophone) as well as the human voice for 20-minute sessions.

Using the nine-note Ionian Scale (C-D-E-F-G-A-B-C-D), Grimal and Maman observed that when exposed to sound, cancer cells lost structural integrity until they exploded at the 14-minute mark. Far more dramatic was the sound of a human voice — the cells were destroyed at the nine-minute mark.

Next, Maman and Grimal worked with two women with breast cancer. For one month, the women devoted three-and-a-half hours a day to “toning,” or singing the scale. One woman’s tumor became undetectable, meaning it simply disappeared. The other woman underwent surgery. Her surgeon reported that her tumor had shrunk dramatically and “dried up.” It was removed and the woman had a complete recovery and remission.

Maman said, “Cancer cells cannot maintain their structure when specific sound wave frequencies attack the cytoplasmic and nuclear membranes. When the vibratory rate increases, the cells cannot adapt or stabilize themselves and die by disintegrating and exploding.”

# Sound Healing Technology

According to a paper published on the Institute of Noetic Science website, “Since its development as a therapy in Australia over 40,000 years ago, sound healing has been used to aid in the treatment of mental and physical illnesses and injuries, as well as to assist in the dying process. Though originally performed using only the yidaki, or didgeridoo, sound healing now involves a wide array of instruments (tuning forks, crystal bowls, drums, ultrasonic devices) as well as human and animal vocalizations.”

One elegant piece of sound healing technology was the inspiration of alternative health practitioner Lilly Whitehawk. Combining her observations of the beneficial effects of specific sound frequencies with her knowledge of quantum physics and physiology, Whitehawk envisioned a healing tool combining ancient knowledge and modern technology. Confirming Maman’s findings, Whitehawk observed that the human voice is the most effective for sound healing, followed by singing bowls and tuning forks.

Partnering with a friend and client Larry Doochin, Whitehawk began the process of bringing her vision to life. “Larry had the faith in the project to go all in and help me make it happen,” she said. After working with a studio engineer, software, and hardware developers, the partners created the HUSO — a small box that delivers “uniquely enhanced human toning sounds” to the body via headphones and pads placed on acupuncture meridians.

Whitehawk believes that the body's fascia, a network of fibrous tissue that wraps around organs and muscles, can carry toned frequencies throughout the body. The partners also discovered that digital recording technology eliminated essential subtle frequency ranges needed for optimal benefits and results, so they recorded in a "lossless" non-digital mode.

Their clients report improved general health and well-being, better sleep and mental focus, and enhanced performance. Parents of children with high sensitivity and ADD say that their children have better sleep and focus as well as enhanced self-regulation skills. "HUSO utilizes the scientific principles of resonance and entrainment to return an out-of-balance body system to health and harmony. It is non-invasive, safe, and effective," Whitehawk said.

"The effect is similar to what happens when you experience authentic indigenous shamanic healing using sounds of chanting, toning, drums, rattles, whistles, flutes, and bells. You are hearing the sounds, but also feeling the vibrations from those sounds in your body. These are very powerful transformative experiences. I have seen miraculous things occur that modern science would say are impossible. Yet they happen... again and again," Whitehawk said.

## **The Future of Sound and Medicine**

Quoting British physicist Colin McClare, Dr. Bruce Lipton said, "Information can be carried by chemistry, and information can be carried by vibration. The question is whether one is better than the other." Lipton explains that

chemical reactions transfer only about two percent of information — 98 percent dissipates as heat loss. Information transmitted by frequency and vibration (energy) passes nearly 100 percent of the information. Lipton added that chemical signals travel through fluids at a speed of about one foot per second; vibration, resonance, and frequency (sound) travel at 186,000 miles per second.

The visionary Rudolf Steiner said that “Pure tones will be used for healing before the end of the [20th] century.” Indeed, that has happened, but there is much work to be done in identifying how specific sound and energy frequencies affect the body in specific ways. But with the number of studies underway today, it should not be long before sound therapy technology is embraced by mainstream medicine as a powerful complementary therapy.

# SOUND HEALING



## SCIENTISTS ARE NOW USING SOUND WAVES TO REGROW BONE TISSUE

*“We can use the sound waves to apply just the right amount of pressure in the right places to the stem cells, to trigger the change process.”*

The future of regenerative medicine could be found within sound healing by regrowing bone cells with sound waves.

The use of sound as a healing modality has an ancient tradition all over the world. The ancient Greeks used sound to cure mental disorders; Australian Aborigines reportedly use the didgeridoo to heal; and Tibetan or Himalayan singing

bowls were, and still are, used for spiritual healing ceremonies.

Recently, a study showed an hour-long sound bowl meditation reduced anger, fatigue, anxiety, and depression, which is great news for mental health. But now, a new study out of the Royal Melbourne Institute of Technology in Australia, showed physical healing using sound waves.

Scientists used high-frequency sound waves to turn stem cells into bone cells in a medical discipline called 'tissue engineering,' where the goal is to rebuild tissue and bone by helping the body to heal itself.

The researchers shot sound waves at tissue cells for 10 minutes a day over the course of five days. This magnified image shows stem cells turning into bone cells after being treated with high-frequency sound waves.

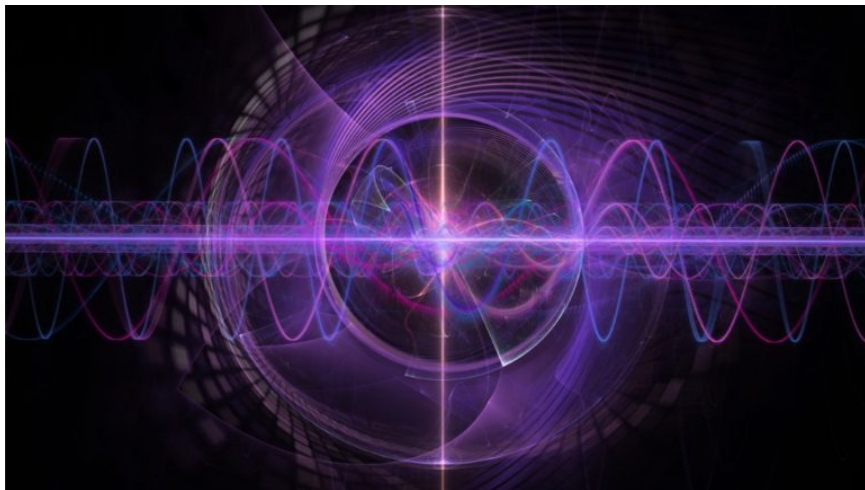
Co-lead researcher Leslie Yeo explained, "[W]e can use the sound waves to apply just the right amount of pressure in the right places to the stem cells, to trigger the change process."

Professor Yeo and his team have spent over a decade studying sound wave effects on different materials, and have learned to use sound waves above 10 megahertz for the best results. In the past, the researchers point out, experiments to turn stem cells into bone cells were cost-prohibitive to scale up, and as cells had to be harvested from patients' bone marrow, it could be extremely painful. But in this experiment, they

used multiple types of cells, even fat cells that are much easier to extract from a patient.

They further argue that since the sound waves created in this experiment were generated by a low-cost microchip, their process will be quicker, easier, and less expensive than other methods. The next major challenge ahead: scaling the process so it can be put into medical use.

# SOUND HEALING



## HI-TECH SOUND HEALING FOR URBAN SHAMANS

*“Rooted in quantum physics is the principle that intentions can influence reality.”*

The ancient art of sound healing spans cross-cultural traditions and history. From shamans to Benedictine monks, sound healing practitioners have long relied upon particular musical notes, vocal techniques, and instruments to affect the emotional, spiritual, and physical conditions of those around them.

Those ancient healers were in tune with the power of vibrational frequencies — but it is only within the last 100



years that modern science has been able to validate sonic healing modalities through technology, finding that particular frequencies are indeed responsible for triggering healing responses in mind and body.

Myriad styles of music and sounds that were thought to influence healing have been revisited and examined with leading-edge instrumentation, to determine why they so affect the human condition. For instance, classical music has long been regarded as relaxing and revitalizing — even stimulating growth in plants — and, in 2016, a German study found that recorded music composed by either W.A. Mozart or J. Strauss Jr. markedly lowered the blood pressure and heart rate of subjects compared to subjects who either sat in silence or listened to pop group ABBA.

Scientists have also discovered the profound healing benefits that Gregorian chants have on those who perform them. Among researchers' findings, performers experience the lowest heart rates and blood pressure while singing, and their fatigue and depression is reportedly lifted. The therapeutic properties of Gregorian chants also extends to those who listen to them, with some entering trance states that alleviate disease symptoms and chronic pain.

## **How does it work?**

It is fundamental to understand that a “pitch” is a sound wave that vibrates at a particular frequency. The faster a frequency vibrates, the higher the pitch; the slower the frequency vibrates, the lower. Brain waves work much the

same way: The more they are sped up, the more alert and tuned into fight or flight the mental state becomes, and the slower the brain waves, the more relaxed one becomes.

Scientists discovered that the frequency of sound a person hears influences his/her brain waves, which actively work to align, or “entrain,” themselves with the sound frequency. Research has shown that because there is a cranial nerve connecting the eardrum to every bodily organ (except the spleen), sound frequencies affect not only mental states but also physical ones.

Around the 1930s, researchers began experimenting with sound frequencies outside the range of normal human hearing, using ultrasound to image, diagnose, and treat numerous conditions. Since then, sonic science has picked up steam. Numerous modern sound-healing methods have been incorporated into alternative and western medical practices, often blending technology with ancient practices to address specific physical and mental ailments — in both clinical and informal settings.

## **HUSO**

HUSO stands as a prime example of a sound-healing system that uses acupuncture meridians to balance and harmonize the body with a resonance that counteracts stress, toxins, and EMFs (toxic electromagnetic fields). A session consists of wearing headphones and placing special pads on your wrists and ankles for a vibrational experiences that has been shown to give sound-therapy patients a clear head, improved overall

health and well-being, better sleep, and a sense of deep relaxation.

While numerous sound therapies work to send frequencies to various parts of the body, HUSO sets itself apart by using “human toning.” Human toning is literally a human-generated sound — the human voice — rather than one that’s produced digitally or by an object. The experts behind HUSO have concluded that human toning is the most effective at evoking a physiological and emotional response because this human element contains the secret ingredient that no object or machine could produce: intention.

Rooted in quantum physics is the principle that intentions can influence reality. The human toning HUSO uses is infused with with very strong intention to provide support and health to those who listen to it.

## **Biosound Healing Therapy**

Created largely for institutional purposes, Biosound Healing Therapy offers a new approach to four main problems: staff burnout prevention, addiction detoxification, crisis intervention, and reduction of early discharges at addiction treatment centers. The therapy uses sound vibrations to relax and reduce stress in patients and staff, often being the pivotal tool that takes the edge off and puts them in a state of improved well-being, more receptive to other therapies.

The Biosound Therapy System works by having the patient lie down on a vibrational platform while wearing headphones

and goggles that provide an audio-visual experience. Integrating binaural beats to induce a theta-level meditative state and low-frequency vibrations to soothe the body, patients are led through affirmations and a guided meditation that works to uplift them by changing their mental states from a negative frame of mind to a positive one.

## **Brain Sync's "Sound Healing"**

An example of sound therapy made simple is Brain Sync's "Sound Healing" audio track, which focuses on the vibrational ability to dramatically affect the body's regenerative abilities, using a combination of delta-wave technology and relaxing meditation music.

Research shows that delta waves stimulate the release of human growth hormones, which are responsible for physical healing and relaxation. Brain Sync lists accelerated healing, pain relief, and better sleep as some of the benefits of this technology.

Patients who listen to the "Sound Healing" track before, throughout, and after any kind of surgery, experience reduced anxiety and resultant physical and emotional trauma, as well as a speedier recovery.

## **Sound Baths**

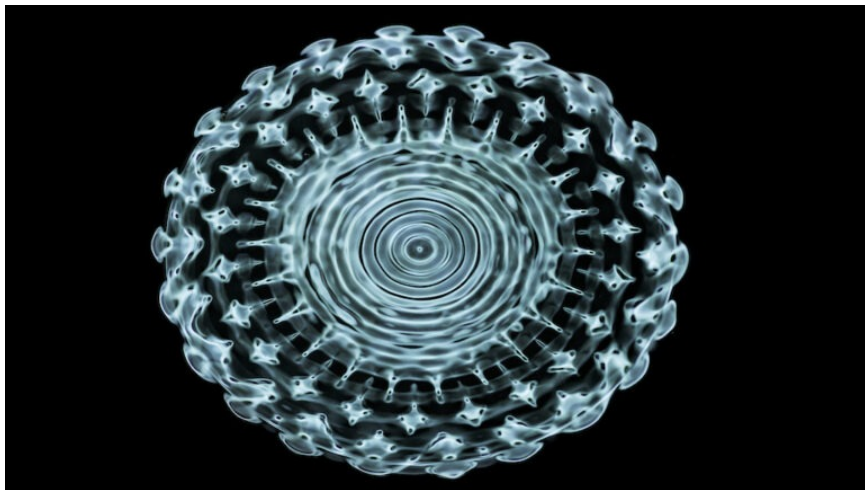
Sound baths are a lower-tech therapy, often used to cope with the stresses of modern life. Sound baths have become a

communal practice growing in popularity the world over. Sound baths provide an opportunity to relax and emotionally rebalance to the deep resonance of either acoustic instruments or synthesizers.

In many sound bath events, attendees find a space to lie on the floor and close their eyes while listening to instrumentalists, sound gongs, didgeridoos, Tibetan singing bowls, and heartbeat drums. Often, the effects reported are spiritual in nature, and participants emerge feeling a heightened state of awareness and “more alive,” as well as deeply relaxed and rejuvenated. Some also report out-of-body experiences.

Countless new and innovative sound therapies have emerged in recent years, bringing comfort to those afflicted with physical and/or emotional maladies. As modern medicine further merges sound healing with prescriptive therapies, patients may find themselves with a healing methodology free of side effects that not only rebalance their bodies physically, but also harmonize them with the outside world. Ironically, as researchers improve their ultra-modern methodologies and instrumentation, they continue to discover the secrets of the world’s most ancient healing modalities involving sound and vibrational healing.

# SOUND HEALING



## SOUND SHOWS EVIDENCE OF A HIDDEN STRUCTURE THROUGHOUT UNIVERSE

*“Sound - acoustic vibrations resonating as waves through  
some medium”*

Sound is a powerful force, and as humans, we know this intuitively from the day we’re born. Even for those born deaf, sound can be felt physically, such that it can still evoke a response.

When we think about sound at its most basic definition, it seems relatively simple — acoustic vibrations resonating as

waves through some medium. But the way sound makes us feel is more complex, nuanced, and often ineffable.

Sound can elicit chemical changes in our brain and take us into transcendent states of euphoria; it alerts us to impending dangers or opportunities in our environment; it can distract or focus our minds on a task at hand, and it can even drive us to the brink of insanity if used nefariously.

Sound is also one of the major tools we use to manifest material reality and bring our ideas to fruition — in fact, verbal communication is like magic when you consider the impact it can have on others.

The etymology of every magician's favorite utterance, “abracadabra,” is ambiguous and contested, but many believe its roots come from ancient Hebrew or Aramaic where it means, “I will create as I speak,” or “I create like the word.”

In nearly every religion, the origin story of the universe begins with sound. In Eastern philosophy, “aum” was the primordial reverberation that sparked existence; in Christianity, God spoke the universe into existence; in Jewish mysticism, creation texts like the *Sefer Yetzirah*, stress the significance of specific Hebrew letters and powerful root words used to create the universe.

And beyond contemporary religion, this concept of a “sound of creation” was even taught in ancient Egyptian schools with Ptah, the god who gave life to all through his heart and tongue.

When we consider the physics of sound, these creation stories actually make a lot of sense, as sound and matter are intrinsically connected. Because sound is unable to travel through the vacuum of space, some physical medium is necessary to not just generate it, but to propagate its waves — whether that be a solid, liquid, gas, or plasma.

This underlying connection between sound and vibration, the fundamental elements, and the architecture of the universe has been pondered for time immemorial. In modern esotericism, the Platonic solids are the best example of this, stemming from Plato's idea of an unseen blueprint existing throughout the universe that dictates the structure of physical reality. The Platonic solids are commonly recognized today and are essential figures in what we call sacred geometry.

The ancient Greeks conceived of these solids, though they weren't the first — stones carved in similar shapes were found in Scotland 1,000 years prior — and let's be honest, ancient Hindu yantras clearly depict the same concept. So, no matter who we give credit to, this is clearly archetypal knowledge (read gnosis) conceived by numerous cultures.

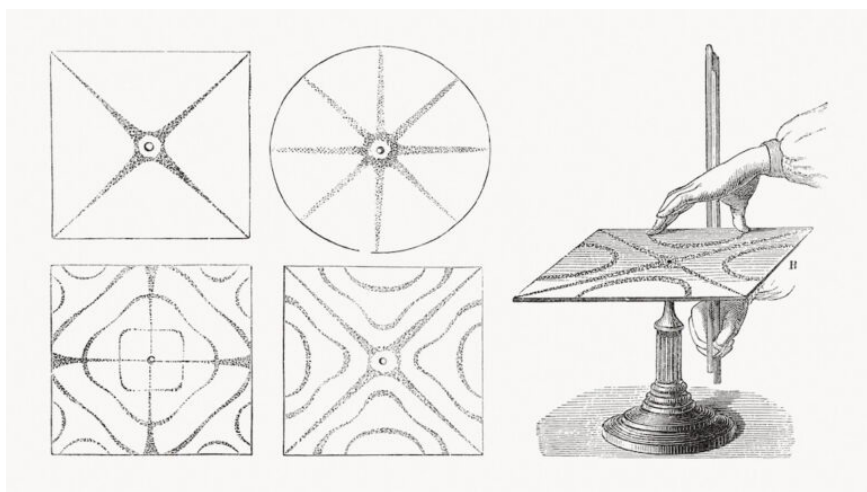
Essentially, the idea is to consider our universe as you would a circle or sphere, where every point is equidistant from the center, or source. Within that circle, there can then be continued polygonal divisions — the tetrahedron, cube, octahedron, dodecahedron, icosahedron, and so forth. These divisions, on a cosmic scale, are tantamount to the various vibrations (sonic, frequential, or energetic) within our



universal plane that create the fundamental elements and their permutations.

If we jump ahead a millennia or so from the Greek thinkers, we begin to see the Renaissance intelligentsia philosophizing over these connections. Polymaths like Da Vinci, physicists like Galileo, and the more obscure English scientist Robert Hooke started making astute observations about our physical reality in terms of resonance, wavelengths, and the possibility of visualizing sound — all of which laid the groundwork for the revolutionary study of cymatics.

By taking a glass plate, covering it in lycopodium powder, and running a bow along its edge, Hooke was amazed when he observed specific patterns spontaneously appear. Soon after, German musician and physicist Ernst Chladni repeated Hooke's experiments and documented them further, giving the various arrangements their eponymous name — Chladni Figures.



Ernst Chladni's method of creating Chladni figures.

But these incredibly symmetrical figures weren't just aesthetically pleasing... a century later they would provide a crucial hint to the father of quantum physics, Erwin Schrödinger, as he was working out the fundamentals of quantum mechanics. The nodal patterns depicted by the Chladni figures were found to be relevant to Schrödinger's equation in one-electron atoms, while he was conceiving electron orbital patterns. Suddenly, the underlying connection between sound, vibration, and matter came clearer into focus through the lens of materialist science.

Soon thereafter, a Swiss scientist at the Rudolf Steiner School in Zürich picked up where his acoustic predecessors left off and coined the fascinating study "cymatics." Equipped with modern technology, Hans Jenny discovered an incredible range of Chladni figures he could produce through crystal oscillators and sonorous devices that ran the gamut of ultra-low to ultra-high-frequency sound.

Today, the science of cymatics is more exciting than ever, as practical applications in medicine may prove it a useful tool for advanced medical procedures. Researchers are using cymatics to image cancer cells against healthy ones, in order to enhance the efficacy of targeted surgery. Meanwhile, other scientists are using sound to literally regrow human bone and other tissues.

As we continue these studies and explore the incredible possibilities sound has to heal, we realize how foundational it

is in every facet of our existence. Could it also be the key to our transcendence?

# MICRODOSING



## STUDY SHOWS MICRODOSING PSILOCYBIN BOOSTS MOOD, MENTAL HEALTH

*“Our findings of improved mood and reduced symptoms of depression, anxiety, and stress add to the growing conversation about the therapeutic potential of microdosing.”*

A new study provides the most compelling evidence to date on the impressive mental health benefits of microdosing psilocybin.

While there has been an ever-increasing number of studies showing the efficacy of treatment of mental health disorders

with psychedelics, there has been relatively little research on the practice of microdosing.

Microdosing, or repeatedly taking small, barely perceptible amounts of psychedelics, has been exponentially increasing in popularity, with a wide range of people reporting a multitude of improvements to their psychological wellbeing.

The latest scientific study to look at the effects of microdosing was conducted by researchers at the University of British Columbia, as well as other leaders in the fields of psychology and mycology. The study followed 953 people who used small, repeated doses of psilocybin for about 30 days, as well as a control group who did not microdose.

While the exact dosages of psilocybin that participants self-administered varied somewhat, they were all low enough to not impact daily functioning.

Over a one-month period, participants took these psilocybin microdoses three to five times per week and were asked to complete a number of assessments through a smartphone app that tracked their mental health symptoms, mood, and measures of cognition. The findings definitively showed that the microdosing participants demonstrated greater improvements in mood and mental health than those in the non-microdosing control group.

Study author Dr. Zach Walsh, told news nine, “Our findings of improved mood and reduced symptoms of depression,

anxiety, and stress add to the growing conversation about the therapeutic potential of microdosing.”

In addition, as researchers were looking to assess cognitive benefits, participants used a finger tap test to measure their psychomotor ability, which is a marker for neurodegenerative disorders such as Parkinson’s Disease. The findings showed improvement in these abilities, especially in those over the age of 55.

Another fascinating component of this study was the investigation of the use of stacking — where psilocybin mushrooms are combined with other non-psychedelic substances such as lion’s mane mushrooms. The study noted that those who stacked had greater improvements than those who did not. Researchers are very enthusiastic about the results and adamant about the need for further research in the form of more rigorous placebo-controlled studies.

As Dr. Walsh stated to the Vancouver Sun, “We have an epidemic of mental health problems, with existing treatments that don’t work for everyone. We need to follow the lead of patients who are taking these initiatives to improve their well-being and reduce suffering.”

# MICRODOSING



## PSILOCYBIN AND DEPRESSION; PSYCHEDELICS CAN RESET BRAIN FUNCTION

Psychotropic plants once considered taboo are now being used as highly effective clinical solutions for treating a number of psychological issues, including depression, PTSD, and end-of-life anxiety.

And recent studies have gained traction using psilocybin, the psychoactive compound in ‘magic’ mushrooms, as a successful treatment for depression. The study found evidence of a reset mechanism in the brain triggered by psilocybin that can have lasting effects.

## Psilocybin & Depression

A calm, relaxed feeling in the hours, days, and weeks after using psilocybin is familiar to those who have taken it before. This is sometimes referred to as an “after-glow,” and many attribute this to the sense of profundity or universal insight acquired during the experience. This sensation is often subjective and fleeting – something that would be difficult to measure in a lab.

But now a team of researchers has set out to measure this feeling and the potential it has for use as a clinical treatment for depression and anxiety. These researchers believe they have possibly recorded this reaction and noticed a reconfiguration of the neural pathways in patients, which they say have become narrowly reinforced in people experiencing severe depression and anxiety. Their research appears to show what they call a disintegration and reintegration in which psilocybin acts as a “reset mechanism.”

This test, conducted by researchers at Imperial College London, looked not only at subjective measures of how patients felt in the days and weeks after receiving a dose of psilocybin but also more objective measures seen in brain scans that monitor cerebral blood flow and functional connectivity. The scientists focused on the amygdala, an area of the brain where emotion, behavior, and motivation are processed, noticing that decreased cerebral blood flow to this particular location correlated with reduced depressive symptoms.



The amygdala is directly connected to the prefrontal cortex, controlling a sort of back and forth process for measuring fear. This is basically where your fight or flight response plays out. The amygdala acts as our alarm system, sending a signal to the prefrontal cortex, which in turn tells it whether that threat is something to actually be concerned about. It's thought that higher activity in the amygdala leads to lower activity in the prefrontal cortex which causes anxiety and depression.

This has led scientists to see psilocybin as an appropriate medicine for people experiencing anxiety and depression. But psilocybin isn't the only psychedelic shown to have this effect. And while these material observations seem to correlate things like blood flow and electrical activity with those positive changes, some still maintain that the mystical psychedelic experience rather than the plant is what is so palliative.

## **LSD for Depression**

Similar studies have been undertaken with LSD in place of psilocybin, providing similar results. The most well-known trials have been conducted by MAPS, the Multi-Disciplinary Association for Psychedelic Studies, a group that has been working on advancing clinical research with psychedelic and empathic drugs for the treatment of depression, anxiety, and PTSD.

A 2014 study administered LSD to 12 patients experiencing severe depression, anxiety, and end-of-life anxiety, 11 of

whom had never taken the drug before. Nearly all who completed the trials expressed the desire to receive more treatments in the future due to their notably positive experiences.

One subject said the experience caused a marked shift in her values to make time for things that were more important in life, like family. Another subject with end-of-life anxiety found that after her LSD experience she found humor in her illness and looked at herself as part of a larger cosmic entity rather than an individual. Meanwhile, all subjects reported no lasting adverse side effects after the experience.

While these clinical studies show promise and work well in closely monitored environments accompanied by professional psychotherapy sessions, many remain unconvinced due to the smaller data set of studies and subjects. But this is primarily due to strict laws preventing these trials as well as difficulty obtaining compounds from legitimate sources.

However, a recent shift in the public perception regarding psychedelics and cannabis seems to be bucking the trend. Meanwhile, groups like MAPS and the Beckley Foundation are helping ease the stigma, stating their belief that more psychedelic compounds will be approved for clinical use in coming years.

## **Ketamine Depression Treatment**

Clinical trials for treating depression with LSD and psilocybin often lead critics and journalists to harken back to the '60s

and make some clichéd quip about the hippie generation, or their brief stint experimenting with drugs in college. But when it comes to ketamine, personal anecdotes are fewer and far between. This drug, which tends to also fall into the recreational club-drug scene, has shown some profound results when it comes to its potential for treating severe depression, especially for those who are suicidal.

Though ketamine for treating depression is considered an off-label drug, one that is used for a purpose other than what it is labeled for, it has shown unprecedented results. Typically used as an anesthetic, in large doses ketamine is a highly psychoactive hallucinogen, and also an antidepressant.

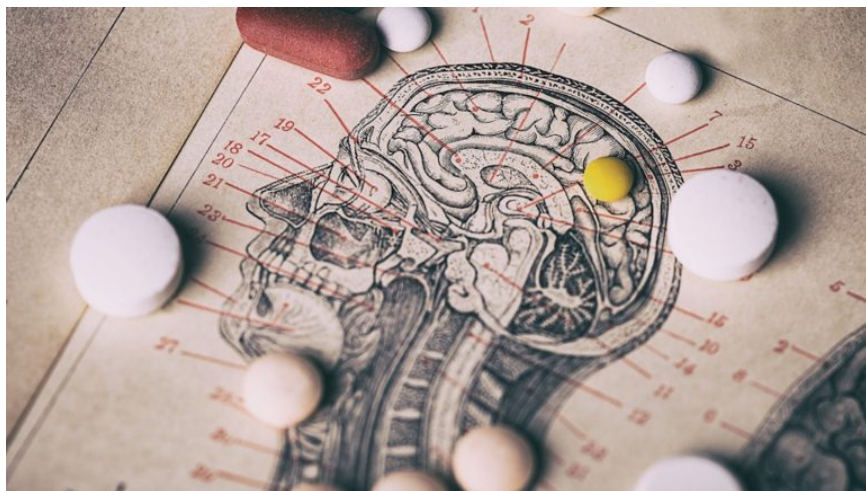
People who are suicidal and have not had success with typical antidepressants have seen drastic changes within a few hours of ketamine treatment. Researchers believe that ketamine acts on glutamate, rather than serotonin and dopamine, the chemicals most antidepressants focus on. This particular channel can cause drastic changes and overnight transformation in attitudes of people suffering from severe depression.

Of course, doses high enough to achieve this effect are incapacitating and can be difficult to deal with. The psychedelic effect of ketamine can lead to “k-holes” or feelings of intense and sometimes frightening psychedelic experiences often paired with paralysis. This has lead doctors to search for drugs that can target the glutamate in the brain, but skip a burdensome trip.

While these drugs have amazing potential to help solve mental issues that plague large percentages of society, there needs to be a shift in drug policy to allow them to be rescheduled. Almost all of these drugs are Schedule 1, classified as having no medical value, but clearly, there is plenty of evidence to the contrary.

While their use should be monitored and administered in a controlled set and setting, their criminalization prevents people from taking advantage of the positive results scientists are seeing. And when an effective drug is made illegal, it can lead to those who need it seeking it out on the street where purity and quality aren't guaranteed.

# MICRODOSING



## CHRONIC SUFFERERS ARE CHOOSING LSD AND PSILOCYBIN FOR MIGRAINES

I remember the day I got my first migraine pretty vividly. I was a freshman in high school sitting in math class, when all of a sudden, my vision became blurry. I soon felt shaky, nauseous, incredibly confused, and frightened by what was happening to me. But in the hour or two it took to see a doctor, my symptoms had disappeared.

### **Migraine Hallucinations and Pain**

Eventually, I realized I had experienced my first migraine, and since then I suffer through a few every year. While

they're pretty debilitating and can ruin an entire day, I'm lucky I don't suffer from chronic migraines as some do.

In the U.S. it's estimated that roughly 3.2 million Americans live with chronic migraines and of that percentage, some experience 15 to 20 a month. These headaches last four hours or more on average, and often force sufferers to take days off work. This adds up to not only lost hours of their lives but lost productivity and money. In fact, it's estimated up to \$31 billion in productivity is lost annually from headache disabilities in the U.S. alone.

I can tell when a migraine is coming on because of a chain of predictable symptoms. First, I begin to see auras and my vision is blurred, then all symptoms subside like the calm before a storm, and finally the piercing headache, nausea, vomiting, and shakiness.

Hallucinations and bizarre visuals often accompany or signal to migraine sufferers they're about to endure a headache. The most common visual oddities are blurriness and auras, but some experience zigzags, swirling vortices, and Picasso-esque patterns. Physical hallucinations aren't unusual either.

During his first migraine, author, Anthony Peake, says, "I felt that the top of my head was lifting off and moving upwards toward the ceiling. I then noticed that the office seemed to be getting smaller as if I was looking at it from the wrong end of a telescope."

Only about 15 to 20 percent of migraine sufferers experience migraines with auras. These migraines can be so disorienting and confusing, sometimes rendering sufferers unable to communicate properly, almost like a stroke. But despite the well-documented symptoms and prevalence of these painful experiences, doctors still don't know what causes them exactly.

Headache disorders are ranked 7th in all disabilities globally, though only 36 percent of sufferers are diagnosed. And migraines aren't even the worst type of debilitating headache – that title is reserved for cluster headaches.

Cluster headaches have been described as one of the worst pains a human being can feel, worse than childbirth, or as one sufferer put it, worse than having a limb amputated without anesthesia. Cluster headaches have been nicknamed the suicide headache for reasons that can probably be inferred.

These two types of headaches tend to occur in one gender more than the other, with migraines choosing women, and cluster headaches more often reserved for men. Some attribute this to hormonal functions, but no one really knows for certain.

Specific things activate migraines, including caffeine, lack of sleep, alcohol, weather fluctuations, and stress. Cluster headaches, on the other hand, seem to fall into episodic cycles, and contrary to migraines, sleeping can actually

trigger them. Sufferers often get cluster headaches as they're entering REM sleep, leading them to fear bedtime.

## **LSD and Psilocybin for Migraines**

Sometime in 2015, well over a decade after my headaches began, I was at a friend's house when I felt the early signs of an oncoming migraine. I alerted my buddies to what would happen and the protocol I typically followed to deal with the next few hours of pain.

My friend Sean said he wanted to make me something that might help my symptoms. So he whipped out his mortar and pestle and began making me a chunky paste, while I laid on the couch, preparing for the impending agony. After a few minutes, he came back with the paste and a glass of water, telling me to consume the strange concoction.

I asked what was in it and he replied, "Some honey, various herbs, and some (magic) mushrooms. Not enough to induce a full on trip, just a micro-dose, but there's a chance you might feel a body high. It will definitely help your symptoms, though."

Now, full disclosure, I had taken psilocybin before, so I was familiar with its effects, but the idea of a potential psychedelic trip while suffering from a mind-numbing headache sounded like a horrible idea. But I trusted Sean and took the mushroom mixture.



For chronic headache sufferers, there are a number of pharmaceuticals prescribed to mitigate their symptoms and lead a semi-normal life. Triptans are one of the most commonly prescribed, often paired with an NSAID, i.e. aspirin or ibuprofen. But these drugs are not a panacea and only provide temporary relief.

Triptans are referred to as selective serotonin receptor agonists, stimulating serotonin production in the brain. This serotonin increase reduces inflammation and constricts blood vessels to alleviate the headache. Triptans belong to the tryptamine family of monoamine alkaloids. Coincidentally, the psychoactive compounds found in many psychedelics are also tryptamines.

Psilocybin from “magic” mushrooms converts to psilocin in the body, becoming a partial agonist for serotonin receptors known as 5-HT receptors, particularly the 5-HT(2b) and 5-HT(2a) receptors. Psilocybin and other tryptamines, including DMT and LSD, are referred to as serotonergic psychedelics because they activate these serotonin receptors. Triptans work as agonists on serotonin receptors in the same way, but instead, stimulate 5-HT(1b) and 5-HT(1d) receptors.

For reasons not fully understood, the receptors that psilocybin and LSD target produce a psychedelic experience, while the receptors the triptans target do not. However, when both receptors are targeted, the psychedelic experience can be amplified immensely, but not in a pleasant way.

Unsurprisingly, another pharmaceutical used in the past to treat migraines due to its affinity for those 5-HT receptors is ergotamine, a peptide derived from ergot fungus, first isolated by Arthur Stoll at Sandoz Pharmaceuticals in 1918. Stoll worked alongside Albert Hofmann, the famous chemist who first synthesized LSD at Sandoz from, you guessed it, ergotamine.

When Hofmann accidentally synthesized LSD he had also worked to isolate psilocybin from the mushroom *Psilocybe mexicana*. Sandoz sold psilocybin to clinicians using it for psychotherapy before the drug was criminalized in 1968. It's believed that Hofmann was actually working on synthesizing new medicines to treat headaches, which he may have apparently found, though the hype from his discovery's psychedelic properties completely overshadowed any other use for it.

After Sean gave me the micro-dose of magic mushrooms, my headache began to play out as expected. My liver had to first process the psilocybin, convert it to psilocin, and release a number of metabolites into my bloodstream; a process that usually takes 30 to 45 minutes. But after that time had passed, it felt like I had skipped the worst part of my headache and was coasting through the dull afterglow that marks the latter stage of my migraines. I also felt a little woozy – the feeling I knew the mushrooms were responsible for.

It seemed Sean's magic mushroom remedy worked. It didn't stop the headache dead in its tracks, but it did mitigate the



pain significantly and shorten its span. Now, had I been working at the time, the subtle psychoactive effects of the psilocybin may have been distracting, but with a full-blown migraine, no work would have been accomplished anyway.

## **Cluster Busters; Using Psychedelics for Headaches**

Triptans, steroids, and other pharmaceuticals prescribed to treat chronic bouts can have long-term side effects ranging from organ fibrosis, cardiac disturbances, and even osteoporosis. And while triptans are good for alleviating individual headaches, chronic sufferers have found that psychedelic serotonergics can break or even prevent the episodic cycles of headaches that recur on a predictable basis.

Those unfortunate enough to suffer from cluster headaches experience as many as eight to 10 a day during cycles. Though they don't suffer year-round, cycles typically last anywhere from two to three months, with each headache lasting anywhere from 45 minutes to three hours.

Bob Wold is the founder and president of Cluster Busters, a group that has, for the past 15 years, advocated for the study and legal use of psilocybin and LSD for the treatment of cluster headaches. Wold began suffering from them biannually for a period of 20 years after being misdiagnosed many times. He was ineffectually prescribed 75 different medications, including the highly addictive fentanyl and even cocaine drops.

Wold was so desperate to ease the pain that he almost underwent an invasive, unproven surgery that would have severed his trigeminal nerves and destroyed all sensation in his face. That was until he found an online forum touting the benefits of serotonergic psychedelics for treating his condition.

Wold said he asked his two kids, who happened to be in college, to procure him the necessary psilocybin-containing mushrooms to see if they could ameliorate his agonizing pain. While he doesn't condone buying psilocybin mushrooms off the street, as acquiring them is illegal and hard to determine the exact dosage, Wold was in a desperate state and willing to take risks.

Shortly after using the drug to treat his headaches, Wold noticed an immediate difference, saying his head hadn't felt that good in the 20 years since his condition began. From then on, he used the drug as both an analgesic and a preventative measure, spreading the word to fellow sufferers as often as possible.

Cluster Busters says it believes the key difference between triptans and serotonergic psychedelics is that the receptor targeted by the latter acts as a vasoconstrictor, preventing attacks by keeping the carotid artery from expanding and pressing on the trigeminal nerves.

Unfortunately, taboos and legal constrictions have made it hard to gauge doses and procure these drugs safely for chronic headache sufferers, but recent persistence and overwhelming anecdotal evidence from Cluster Busters has led to legally approved trials of the drugs for the treatment of severe chronic headaches.

Researchers like Harvard psychiatrist, Dr. John Halpern, decided to look more closely into the stories being reported from Cluster Busters and conduct a study of his own. After interviewing 53 subjects who used a serotonergic psychedelic to treat cluster headaches, he found that 95 percent successfully delayed or completely avoided headaches. This led Halpern to set up future double-blind studies with control groups to properly test results.

Much like the dose I received from Sean to treat my migraine, the doses used by most cluster headache sufferers

are micro-doses or non-psychedelic doses. Even the slightly larger, preventative doses Wold takes a few times a year, he says, are roughly tantamount to a buzz from a few glasses of wine – enough to make lights look slightly more vivid.

Another strong proponent who deserves mention for the use of psychedelics to treat chronic headaches is Graham Hancock. Hancock says at one point he was suffering from up to 20 severe migraines a month before he took Ayahuasca and Iboga in shamanic ceremonies.

Ayahuasca is an Amazonian brew containing DMT, another serotonergic psychedelic found in many plants. Today, after suffering from chronic headaches his entire life, Hancock no longer suffers from them at all and has vowed to take Ayahuasca two to three times a year to prevent them, and for the spiritual experience it provides.

Of course, one should tread with caution when considering these drugs for treatment. Wold says it's important to consult a doctor to ensure these psychoactive substances won't react adversely with any other medications one might be on and to assure that one is healthy enough to take them.

With any luck, further research into serotonergic psychedelics can help relieve the pain for victims of chronic headaches and eliminate the unwarranted stigma placed on a natural substance with medicinal value. For more information visit the Cluster Busters website or MAPS – another group that continues to achieve funding and legal permission to advance

clinical trials studying the healing potential of psychotropic drugs.

# MICRODOSING



## STUDY SHOWS PSILOCYBIN PROMOTES NEW GROWTH OF NEURONS IN BRAIN

A major development in the treatment of depression shows psilocybin can actually grow connections inside the brain without a hallucinogenic trip.

As we have previously reported, researchers have found that psilocybin, the active ingredient in psychedelic mushrooms can reduce major depressive disorder in humans. but we have not known how it works or how long it will last.



Now a new study out of Yale University shows one dose of psilocybin in mice creates rapid and sustained connections between neurons.

Steven Grant Ph.D. Director of Research at the Heffter Research Institute, a non-profit organization a non-profit organization that promotes research into hallucinogens and the brain, has studied how drugs affect the brain for nearly 50 years.

“So, what they discovered, not only does a single dose of psilocybin produce the formation of neuronal growth as measured by what are called ‘spines,’” Grant said. “Spines are the little nubby protrusions off the branches of a neuron that are associated with the connections with other neurons, so presumably the more spines the more connections you have. And the study found that psilocybin not only produced growth in the number of spines, but it persisted over a month. So that’s remarkable — one dose produces this long-lasting change in the ability of the neurons to form new connections.”

How does psilocybin creating spine formation work to relieve depression?

“The jump between spine formation and relief of anxiety is a jump; it’s a leap,” Grant said. “So, we can’t fill in every single step there, but the idea is that these drugs are increasing the ability of neurons to communicate with each other and form new connections, which will then form new patterns of brain activity, which will then form new patterns of behavioral

activity. So, if you think of depression for example as being stuck — you're stuck in a place that's aversive and hedonic, you have low mood — how do you get out of that? Especially if you don't think anything is worthwhile. What this study suggests is there is a neurobiological process that psilocybin kicks off that starts with the formation of new connections that then will presumably allow the person to engage in new forms of behavior and not be in the hole that they were in."

By blocking the receptor in the brain that receives the psychedelic effects of psilocybin, the researchers made another, perhaps more important, discovery, and settled an ongoing debate.

"There is a debate in the field whether the therapeutic effects depend on the psychedelic effects, and this is an active controversy in the field. This study suggests that spine formation is related to the therapeutic effects and can occur in the absence of a measure of the psychedelic effects, insofar as we can measure it in mice. This study is remarkable because it's a step in showing that you can get some degree of disassociation between the psychedelic effects and the therapeutic effects," Grant said.

As someone who has studied this for nearly 50 years, what does Grant hope these discoveries mean for the future of psychedelics to treat depression?

"This will result in the use of drugs that will have a therapeutic effect very rapidly, that the person doesn't have

to be on a chronic drug regimen, and that it produces persistent therapeutic effects,” Grant said.

Although the findings of this study were remarkable, Grant cautions that this study was done on mice. Animal studies often translate to humans, but not always. Much more testing remains to be done, and it will be hard to replicate the same results in humans, but this could be a major step forward in understanding how plant medicine can heal us.

# SECRET OF WATER



## RESEARCH CONFIRMS INTENTION AFFECTS STRUCTURE OF WATER

*“Since 2006, Radin has led several studies on the effect of mental intention on water, culminating with a groundbreaking just-published experiment.”*

Groundbreaking new studies have been published on the power of the mind to change the structure of water and even help stem cells grow.

Water, the most plentiful substance on Earth, has been shown to have the unique properties of recording and storing

information. For this reason, it has recently been used as a target in the scientific study of mind-matter interactions.

Dr. Dean Radin is the Chief Scientist at the Institute of Noetic Sciences, or IONS, which has for the last 50 years been at the forefront of studying the frontiers of consciousness. Since 2006, Radin has led several studies on the effect of mental intention on water, culminating with a groundbreaking just-published experiment.

“We’re interested in mind-matter interactions where water is the target because we are composed mostly of water,” Radin said. “One of the questions then — when it comes to any kind of psychic healing, distance healing, energy medicine — maybe the reason why it works is because the mind can influence properties of water because then it would obviously influence all of us.”

“So, some years ago we did some studies to look at the claims of Dr. (Masaru) Emoto, who had become famous as the result of putting different kinds of mental intentions into water and then making little frozen crystals, and his claim was that if you think beautiful thoughts at the water as you make the crystals, the crystals will look beautiful, and if you think ugly thoughts, then you get ugly looking crystals,” Radin said.

When IONS conducted two rigorous studies to validate Dr. Emoto’s work, the scientists found that the effect held; the quality of the intention placed on the water directly affected the configuration of the crystals.

In another more recent study, Radin and his team explored the effect of intention on water as part of an experiment looking at energy healing.

“We were looking at different kinds of energy medicine practitioners, and then almost 200 clients, each of which had carpal tunnel syndrome,” Radin said. “Each person then would be treated by one of the healers. We were also taking water almost as a proxy for the body. And the way that we did it, we took an aliquot of water (a couple of millimeters of water) and put it around a necklace that the healer would wear during healing, and then we gave the same to the client. So, before all of that happened we took a few drops from each aliquot and did a spectrographic analysis, which tells us about the molecular bonding in the water itself, and then they did the half an hour of healing, took the water, and did it again. So we have a pre-healing/post-healing structure of water comparison.”

What researchers found was extraordinary.

“What we found on that was quite strong evidence that the water around the healer’s neck had changed,” Radin said. “It changed in a place where we had kind of expected it to change, which is called the stretching bond. There’s something about, not necessarily mental intention towards the water, because in the case of healing the patient, yes they were wearing a necklace, but the healer wasn’t thinking about the water, they were just engaged in a highly focused mental activity. And that was apparently sufficient to change that water in the way that we saw.”

Just what are the implications of these results?

“(With a) clinical study looking at energy medicine, the most important thing was: [I]s there clinical relevance? So the measure there is: [W]as the pain reduced? So, the answer was yes, very significant statistical difference and even clinical significance. We took a number of other measures — water measures, magnetic field measures, random number generators — to see if there was something that could be detected in the environment itself. All of that together, especially the clinical outcome, suggests that whatever it is that energy healers are doing, not only affects the patient, but it affects something in the environment, and it affects it in an objectively measured way,” Radin said.

IONS’ most recent experiment looked at the effect of intentionally treated water on the growth of stem cells — the results have the potential to change everything.

“One of the implications is that wherever stem cells are being used, you want to train the people who are growing the stem cells to maintain a certain intention; that these cells are going to grow better, and then see what happens. If it worked, well that would change everything, because now it means that anybody doing any kind of mental preparation, not just stem cells, but anything, if they come at it with an intention that this is going to work better, well, it looks like it will look better,” Radin said.

This exciting new study by a leading research institute suggests that mental intention can not only change the

structure of water but may even help stem cells to grow. The study provides fascinating results with profound implications.

The Institute of Noetic Sciences (IONS) is a leader in the field of exploring mind-matter interactions. Its latest study is the culmination of a number of other experiments, all suggesting that the act of making an intention on water produces a measurable response.

Dr. Dean Radin is the chief scientist at IONS who led the study.

“In this experiment, as in previous studies, we asked three Buddhist monks in a temple in Taiwan, to focus their attention towards samples of water, with the intention that stem cells grown with that water as part of the growth medium would proliferate more,” Radin said. “And then we had control water — same company, same source — that was not part of the experiment which we set aside as a control. So then the water was used in a double-blind fashion by a technician who was growing the stem cells, to create growth media that these stem cells were put into. Then they simply measured, over three days, how much were the stem cells growing, and they also took other measures that are genetic expression factors showing the health of the stem cells.”

Researchers were astounded by the results.

“What we found was significant evidence that the stem cells proliferated more, (and) that the genes that were expressed



were in alignment with the idea that they were actually healthier stem cells.”

Just what makes these results so significant?

“Stem cells are part of the human body that are called pluripotent, which means that they can turn into any other kind of cell. So, it’s being used, mostly experimentally at this point, for repair of the human body. Anything which makes adult stem cells proliferate more and last longer is really good because it’s not so easy to make adult stem cells live longer and be healthier,” Radin said.

“So what this is suggesting is that simply the act of intention on water must have done something to the water to make the stem cells actually grow better. One of the implications is that wherever stem cells are being used, you want to train the people who are growing the stem cells to maintain a certain intention that these cells are going to grow better, and then see what happens. But if it worked, well that would change everything, because now it means that anybody doing any kind of mental preparation — not just stem cells, but anything — if they come at it with an intention that this is going to work better, well, it looks like it will work better.”

IONS is currently planning follow-up experiments to replicate the results and explore further. For Radin, the implications of this research are far-reaching.

“The reason why consciousness is particularly interesting and why intention is interesting is because a lot of people are

spending a lot of time doing things like praying for peace, or praying for somebody else to be well, or praying for this, or praying for that. It's all about intention that you want something to change in the world. Well, in order for that to work, it requires, from a non-religious perspective, that consciousness, and intention in particular, does something. It is causal, in which case things like praying for peace would make sense because then it's not just people comforting themselves, but they're actually changing something in the physical world," Radin said.

# SECRET OF WATER



## SACRED WATER: CONNECTING TO WATER THROUGH RITUAL AND REVERENCE

*“Water is a giver of life, a source of purification, and an element that can be infused with sacred blessings.”*

Water is an essential ingredient to life on this planet. Its necessity and dynamic capacities are recognized and revered by spiritual traditions across cultures. Water is a giver of life, a source of purification, and an element that can be infused with sacred blessings.

Religious traditions have long utilized water in their rituals from the washing of oneself before daily prayers (Islam); pilgrimages to sacred rivers (Hinduism); the baptism and admission of a soul into a religious sect (Christianity). This article explores how water is utilized in various spiritual traditions and how we can develop our own rituals to honor this sacred element of life.

## **Water: An Essential Element of Life**

From the blood that carries nutrients through our body, to the rivers and oceans that feed the animal and plant kingdoms, water is crucial for the existence of life. It inhabits all areas of our lives. Our bodies are 55 to 75 percent water. We drink it. We bathe in it. The entire planet's surface is over 70 percent covered by this essential element. The versatility of water allows it to move through land and sky. We find it solidified in glaciers, running freely through rivers, and floating in clouds before its molecules coalesce and fall as sacred rain.

## **Spiritual Traditions and Water**

Water symbolizes regeneration, fertility, purification, and transformation. Across the globe, spiritual traditions revere water and use it in rituals of purification, blessing, and connection into divine paths.

## **Purification through Water**

Ablutions, or ritual washing, is a tenant in several religious traditions. In Judaism, ritual washing is intended to restore

purity and takes two main forms: full-body bath in a mikveh, a bath used for ritual immersion, and netilat yadayim, where one washes their hands upon rising and before meals.

In Islam, ritual washing is referred to as “wudu” and is practiced to cleanse oneself for sacred practice, such as daily prayers. Baptism is a common ablution of the Christian faith. Here an individual has their head sprinkled with holy water or is partly or fully immersed in water. Through this ritual, the individual is both purified and admitted to the church.

A foundation of the Hindu faith is to seek purity of thought and being. Hindus believe that bathing in sacred water cleanses one of spiritual impurities and assists in the liberation from Moksha, the cycle of life and death.

Holy places are located along sacred rivers, coasts, and mountains, and it is common for Hindu practitioners to go on a pilgrimage to these sacred sites. The Ganges is considered the holiest rivers in India. It is believed that the water of the Ganges has great spiritually cleansing properties and as such, is a common destination for devotees.

In Bali, water is an essential aspect of culture and spiritual practice. Their unique expression of Hinduism is referred to as Agama Tirtha, “the religion of the holy water.” All holy sites on this island are accompanied by water from rushing rivers, waterfalls, springs, and streams, to spouts offering this sacred element. Many temples are devoted to water, such as the Tirta Empul temple which was built in 962 A.D around a

natural spring. Here devotees come with prayers and offerings to immerse themselves in the sacred waters.

## **Infusion of Blessings**

The theory of “water memory” postulates that water can hold the imprint or “memory” of a substance once diluted in it. This idea is further explored by Japanese author Masaru Emoto who suggests that human consciousness has an effect on the molecular structure of water. In his view, blessings and prayers can change the molecular structure of water and give it more vitality. Though theories of water memory have yet to be inexorably proven, this theory exists in spiritual traditions as well.

Examples of infusing water with holy qualities can be found in various traditions. Balinese priests/ priestesses imprint water through mudra and mantra so that it may effectively carry God’s blessing in the ceremony. In Christianity, ministers and priests may sanctify water through prayer and ritual so that it may be used for sacrament and protection.

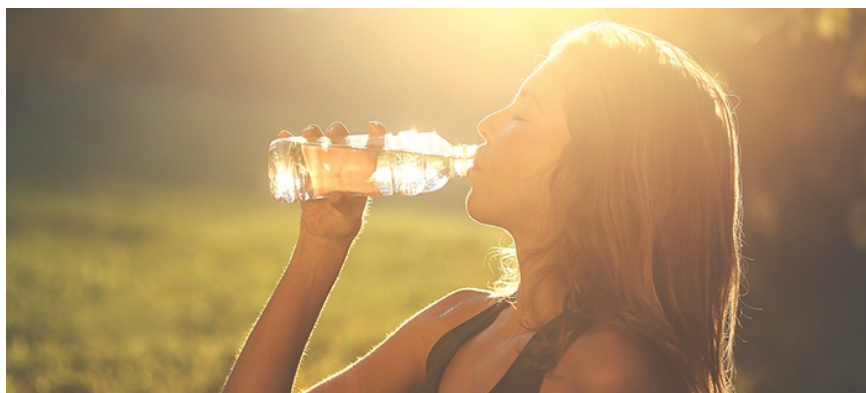
## **Blessings of food and drink**

Most religious traditions have a practice of giving thanks or blessing before taking in food or drink. Though not specific to water, such practices include gratitude for the gifts and bounty that nourish us; water included. In Judaism, a bracha,

a blessing, is said before the enjoyment of food or drink. In Hinduism, chants of gratitude are commonplace at mealtime, as is saying “grace” in Christianity.

## **Creating Rituals of Water**

Spiritual rituals with water vary from simple practices of gratitude to elaborate rituals of immersion and purification. Drawing inspiration from spiritual traditions, we can create our own rituals to connect with water in both simple and elaborate ways. The following section offers guidance in creating such rituals.



### **RITUALS FOR DRINKING WATER**

## **Giving Thanks**

While holding a glass of water, take a moment to close your eyes and feel gratitude for the water of this earth. Feel into the oceans, rivers, rains, and streams, and sense genuine

appreciation for the life that this element brings. As you drink, allow yourself to be nourished by this gratitude.

## **Infuse With a Written Prayer**

Before going to sleep, take some time to write a prayer or affirmation that is particularly meaningful to you on a piece of paper. Take the paper and wrap it around your water bottle or glass. As you do so, imagine the water pulling in the vibration of your words and intentions. In the morning, take a moment to reconnect to your prayer. As you drink this water throughout the day imagine the vibration of your prayer/affirmation permeating every cell in your body.



## **RITUALS FOR BATHING AND WASHING**

### **Daily Washing**



Daily washing is an opportunity to connect with the purifying properties of water. As you wash, acknowledge that water is cleansing your physical body, as well as your spiritual and emotional bodies. Take your time and bring love and attention to each body part as you clean.

## **Sacred Immersion**

This ritual is a more in-depth water purifying and self-rejuvenating ceremony. It combines elements of Ayurvedic practices with sacred rituals. This practice can be used to support our hearts, soothe our minds, and purify our spirit.

## **Preparation: What you need**

- A bathtub
- Offerings: Collect offerings for your bath that will infuse it with soothing elements for your heart, body, and mind. Examples may include essential oils (lavender, geranium, jasmine), flowers (rose petals, chamomile flowers, pansies, and dandelions), milk, oats, and any other supportive natural ingredients
- Incense: Incense serves as an effective way to set the space
- Candles: Candles serve to create a tranquil atmosphere
- Music: Chanting or prayer songs may serve as an effective way to clear the mind (Check out “Pray” by Sundari Studios)
- Natural massage oil

## **Ceremony**

- Fill your bathtub with warm water
- Place offerings near the tub
- Light incense and candles
- Turn on music as desired
- Close your eyes and offer a short prayer or mantra. You will find additional options for prayers and mantras in the next section “Purification through Living Water”
- Add your offerings, one by one, into the bath. Infuse each offering with intentions of gratitude and blessing
- Slowly enter the bathtub, be mindful of every sensation in your body as you immerse
- Once in the tub, take your time washing and blessing each part of your body
- Lay back in the tub and take time for meditation. You may choose to observe your breath, listen to the chanting music, or repeat prayer or mantra
- When you are complete, get out of the bath and towel off
- Massage your entire body with natural oil and bless each body part as you do so
- Take a moment of stillness and gratitude for the water that cleanses you, and for taking this time of self-care
- You may choose to watch the water go down the drain and know that it takes the impurities back into the water system to be transformed



# PURIFICATION THROUGH LIVING WATER

The Hindu faith gives great reverence to the sacredness of water, particularly in natural sources of rivers or springs. In this ceremony, inspired by Hindu practices, we will use natural holy waters for spiritual purification.

## Preparation

1. **Choose a location** - Whether it's a nearby river or a day trip to a canyon, choose a location that inspires you and makes you feel connected to spirit. Consider how you want to connect with the water. If you wish to immerse yourself, ensure that the location you choose is safe for bathing or swimming.
2. **Prepare offerings and prayers** - You may wish to make physical offerings to the water. Ensure these offerings are natural and will not adversely affect the ecosystem. Offerings may include; flowers, stones, leaves, rice (be mindful that food offerings will not negatively affect wildlife), and incense. Prayer is an individual practice. You may wish to prepare a prayer that is unique to your personal spiritual connection or choose a specific mantra or affirmation with which you resonate. Here are some options:

## Prayer

*“Sweet spirit thank you for the water that nourishes this life into existence. I understand that the fluid of this body is that of the oceans and the rains. In water we are we are all connected. I honor the power of water to restore this body, spirit, and mind, to its eternal state of grace and peace. Thank you for this perfect gift, this giver of life.”*

## **Mantra**

“Om”

“Om Mani Padme Om”

“Gayatri mantra”

### **3. The Ceremony**

- Set out your offerings and preparations near the water
- Light incense and sit quietly by the water’s edge
- Take time to connect to the natural setting
- Recite your prayer or mantra either internally or aloud
- Release your offerings
- If staying onshore, place your offering into or near the water
- If you choose to immerse in the water, hold the offering at heart height and release them when you reach your destination in the water
- Submerge your body or cup into the water and pour it over your head three times
- With each submergence or washing, allow the water to cleanse your heart, spirit, and mind. You may choose to

infuse this practice by offering specific personal challenges to the cleansing powers of the water

- Return to the edge of the water and sit quietly
- Give thanks to the water. You may choose to again recite your mantra or prayer

Water is the giver of life and is essential to existence on this planet. Spiritual disciplines across cultures have long revered water and utilized it for purification and blessing. Through water, we are all intimately connected to the wholeness of this life. The spiritual qualities of water may be harnessed in our own lives through ritual. From giving thanks as we drink to more elaborate ceremonies of purification, water offers us a gateway to the gift of life, transformation, and connection to the divine.

# THE SCIENCE OF GROUNDING



## CAN EARTHING REPAIR FREE RADICAL DAMAGE, IMPROVE SLEEP, INCREASE ENERGY?

*“We are meant to build up free radicals and inflammation by the way we live our lives, and the Earth is our docking base.”*

In all likelihood, you’ve tried Earthing (also known as grounding) whether you knew it or not. You know, you were strolling down the beach or sitting in your backyard, and you decided it was time for the shoes to come off. Sinking your toes into that warm grass or sand feels so good, doesn’t it? Turns out there’s a reason for that, and it’s more than just a moment of peace. It’s also a booster for your health!

You have the basic idea of Earthing, but getting into the specifics, it's defined as the practice of obtaining the healing properties of the Earth through the simple act of touching it. You might be a little skeptical, but the good news is, there are medical practitioners who back it up, such as Laura Koniver, M.D., of Summerville, S.C.

To understand the health benefits, Dr. Koniver says, we must also understand free radicals. You've probably heard of them as something to protect our bodies against, and you're on the money. Free radicals are highly reactive atoms, molecules or ions that have unpaired electrons. Free radicals are "intimately connected to inflammation," and inflammation is linked to cancer, heart disease, immune dysfunction, aging and cognitive decline. Dr. Koniver explains, "Using your body in any way, shape or form can create inflammation, so even during something healthy like yoga, where we're stretching and creating microscopic tears to the muscles, we're still building up free radicals."

It's pretty unavoidable, but it's also just what happens living on our earth. It's natural and normal, but it's also something to actively combating, as free radicals do damage to our bodies. The most common and talked-about method is through antioxidants that neutralize the damage. However, Koniver maintains that Earthing is the best practice, and that consuming antioxidants is "definitely a drop in the bucket compared to what Earthing can do."

The science behind Earthing is simple. According to Dr. Koniver, the free radicals that we build up throughout the day

are positively charged, and the surface of the Earth is negatively charged.

“It’s a symbiotic thing,” adds Dr. Koniver. She argues that if we can get our vitamin D from the sun and our oxygen from the trees, we too can get healing electrons from the ground. In Dr. Koniver’s words, “We are meant to build up free radicals and inflammation by the way we live our lives, and the Earth is our docking base.”

## **A list of Earthing Health Benefits:**

- Reducing inflammation by defusing excess positive electrons
- Reducing chronic pain
- Improving sleep
- Increasing energy
- Lowering stress and promoting calmness by reducing stress hormones
- Normalizing biological rhythms including circadian rhythm
- Improving blood pressure and blood flow
- Relieving muscle tension and headache
- Lessens menstrual and female hormone symptoms
- Speeds healing- used in some places to prevent bedsores
- Can eliminate jet lag
- Protecting the body from EMFs
- Shortens recovery time from injury or athletic activity
- Reducing or eliminating snoring
- Helping support adrenal health
- Weight loss



Getting started on Earthing is an extremely easy thing, as well. It's free. It can be practiced almost anywhere. The instructions are simple. You just have to take off your shoes, to make sure you have exposure to the ground itself. You can wear socks if you want, as well. Koniver assures that you will still get the electron transfer necessary for the benefits.

This transfer, according to Koniver, can also be made through any point of the body, as long as that body part is making direct contact with the ground. So you can always take a nap in a sunny field, writing it off as a health benefit! How awesome is that?

Again, Earthing can be practiced almost anywhere, but Dr. Koniver points out that some places are better than others. "To me, if healthy grass is growing outside over a layer of soil, it's connected to the crust of the Earth, and that's all it needs to be," says Koniver. Beaches are on the top of the list, as the moisture from the ground acts as a conductor, but grass, sand, rock, dirt, soil, all give health benefits as well.

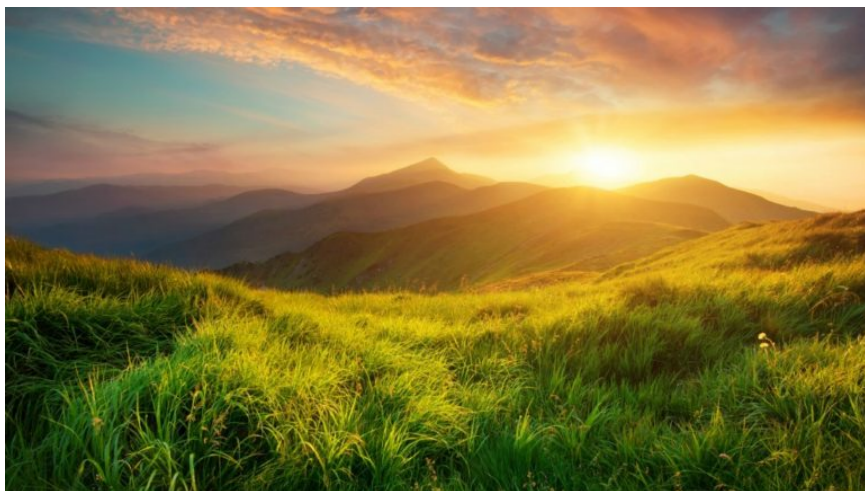
Even concrete that's been laid over the crust of the Earth can do the trick, though it's not optimal. "Concrete acts as a semi-conductor," says Koniver, "so if you live in a city with no real access to nature, you can map out a little patch and kick off your shoes."

More good news about Earthing is that there is absolutely no such thing as overindulgence. Your body can benefit from just a few minutes, though 10 a day is the sweet spot as the minimum, according to Koniver. She truly believes you

should work as much barefoot walking into your day as possible, whether it's walking barefoot to get the mail or taking a quick stroll around your block.

In conclusion, it's important to note that there are no current studies that definitively prove that Earthing has a major impact on human life. Some critics call it a placebo effect and nothing more. However, getting out in nature, grabbing a little sun, and moving your body a bit more during your day cannot be a bad thing for you. So there is nothing to fear if you want to give the practice a try. After all, all you have to do is kick off your shoes and sink your toes into earthy goodness. Ahhhh!

# THE SCIENCE OF GROUNDING



## HOW TO GROUND YOURSELF

*“Profound change is waiting just beneath your feet.”*

Every naturally occurring event gives energy to the earth. Its surface acts as a conductor, constantly receiving and distributing energy to all its inhabitants. For most of humanity, humankind was one with this primordial connection. Walking barefoot across the land, our bodies were continually linked to this massive energy field. Now, thanks to the advent of asphalt and plastics, we have become increasingly separated from the earth and its many gifts. From tennis shoes to supermarkets, nearly every step we take is on a foundation that is not conducive.

# What is Grounding?

The term grounded is often applied to stabilizing electricity, which is precisely why the new theory and movement are aptly named. The world is made up of electrical and magnetic fields or currents (electromagnetic), including our bodies. We are endlessly emitting vibrational signals out from our organs, while also receiving them from the objects around us. This notion is the driving force behind cable television pioneer Clint Ober's theory, which applied the same techniques behind grounding electricity to the human body.

Though it may have started as an innocent query into the conducting and stabilizing powers of the earth, universities and scholars have adapted Ober's research. One of the most advantageous qualities of the theory is its ability to be tested by nearly anyone. All one needs to do is step outside and touch the earth for several minutes a day and record the results. There are, however, other DIY experiments that offer more proof for the skeptics.

Research held by the University of Arizona examined the vitality of plants in relation to their connection to the earth. The earthing experiment pitted 2 sunflowers against each other, one grounded, and one ungrounded, to reveal the results of separating a living entity from its direct source. What became apparent immediately was the decline in the health of the ungrounded flower, which became "stressed", versus the vibrant nature of its grounded neighbor.

# Earthing for Healing

What does all this mean for humans? As bioelectric living beings, we too need to feel this grounded connection to the earth. Amongst one of the groundbreaking revelations provided by the University of Arizona was the discovery that electrical currents transmitted from the earth increase electrical charges, emitting electrons that neutralize disease and inflammation. Simply put, when our skin comes into contact with the ground, the molecules in our bodies receive an extra boost of vital energy.

*"Emerging evidence shows that contact with the Earth—whether being outside barefoot or indoors connected to grounded conductive systems—may be a simple, natural, and yet profoundly effective environmental strategy against chronic stress, ANS dysfunction, inflammation, pain, poor sleep, disturbed HRV, hypercoagulable blood, and many common health disorders, including cardiovascular disease."*

*- Dr. Stephen Sinatra, Research from the Journal of Environmental and Public Health.*

According to Dr. Sinatra and other experts in the field, that's not all the earth's energy has to offer. Not only can our bodies be healed by this vibratory connection, but the currents emitting from the earth can also counteract and deflect the

effects of potentially harmful frequencies commonly known as electromagnetic frequencies (EMFs).

## **Deflecting Electromagnetic Frequencies**

Like the molecules that move with the wind, EMFs are unseen to the naked eye yet our bodies are constantly communicating with them, as they emit from nearly anything that holds an electrical charge. While most electronics release a low level of energy, those dealing with autoimmune or chronic conditions may find themselves especially susceptible to EMFs.

Devices have been designed to provide energy readings to help maintain a healthy energetic field in your home. Orgone is also a great resource for reducing the effects of EMFs, as they convert all surrounding charges and into positive energy.

Often found in small pyramids, organite can be placed around the home or near sources of water and electricity, as well as in pendants to be worn around your neck. Another cost-effective option for deflecting electromagnetic frequencies: leave electronics out of the bedroom. This will ensure a period of at least 6-8 hours of sleep, uninterrupted by potentially harmful energies.

Hours of rest are perhaps the most opportune moments to take advantage of grounding. Along with leaving out cell phones and televisions, tools have been developed to connect you to the earth's healing energies without leaving your

home. Some hotels have also adopted this idea and have designed Grounded Rooms for overnight visitors to receive an extra recharge at night.

## **How to Ground**

Perhaps the most intriguing, and most criticized, aspect of grounding is its simplicity. It proposes the idea that all you need, in order to be your most healthy, revitalized self, is to spend time connecting with nature.

The film *Grounded* and its follow up *Heal for Free* feature first-hand accounts of individuals who have used earthing techniques to heal. Those suffering from chronic pain, insomnia, and other conditions show improvements after practicing grounding, including the profound healing of a 30-year-old paraplegic.

The most straightforward way to participate in grounding is to simply make contact with the ground on either the dirt or concrete, which is also conductive. Making a habit of taking a walk to the nearest park on a Sunday, or taking your shoes off in your backyard each day after work, are practices that are easily adaptable for any lifestyle.

You'll not only receive the benefits of grounding, but you'll also allow yourself the time for fresh oxygen to fill your lungs and hopefully, a few moments enjoying nature, rather than focusing on your phones. Swimming in a large body of water is another way to consume mass amounts of positive earth energy, so if you are in need of serious healing, plan your

next vacation near a beach or lake. Gardening is also a great opportunity to ground, not to mention eat organic garden vegetables!

## **Grounding Meditation**

If you find yourself looking for a deeper connection to Mother Earth and her supportive power, a grounding meditation is simple and effective. Through the power of imagination in meditation you are able to project strong emotions and thoughts into the universe, sending messages through your heart's own magnetic field, which acts as a communicator between your desires and the universe.

Find a comfortable seat on the earth. Close your eyes and breath deeply. Feel the supporting soil underneath. Imagine roots stemming out from the base of your spine and into the core of the earth. Reach as far down as you can imagine, fractal roots surrounded by and connected to Mother Earth. Spend a few breaths embodying this strong, supportive energy. This connection is always available to you. Return to your heart center and send your blessings of gratitude to mother earth out into the world.

Mantras are also a great tool to call upon when meditating, but also when in need of re-centering throughout the day. Words can be a powerful tool and hold their own vibration, so the thoughts and words you speak impact the energetic fields around you. Repeat the below phrases in your head or out loud and notice how your body responds.



*"I am grounded. My spirit is grounded deep in the earth. I am calm, strong, centered and peaceful. I am able to let go of fear and trust that I am eternally safe. I am worthy of all things beautiful." -Carly Marie*

If you find yourself feeling unsure, weak, or vulnerable, engaging in your earth energy through grounding and meditation can alter your conscious and physical states out of stress and into harmony.

## **For the Love of Earth**

*"Every square yard of the surface of the earth is spread with miracles." - Walt Whitman*

Instinctively, we feel a profound gratification when encountering nature. Whether walking along the beach, touching the bark of a tree, or picnicking at the park, a deeper connection is ignited within us. We walk away taller, happier, and more grounded to ourselves and loved ones. We have been disconnected from these gifts for decades, but thanks to the work of Clint Ober, Dr. Sinatra, and others, science is proving the importance of engaging with this essential relationship.

Think of the earth as a giant recharging station. Anytime you touch the ground your body is provided the chance to be reenergized through this connection, and the relationship goes both ways. Earth needs our contact just as much as our bodies long to connect to it. As our cosmic mother, Earth is

always there loving and supporting us, and although we may never call, she waits every day for her children to acknowledge her presence.

*The next time the sun beckons you to come out and play, consider taking your shoes off and allowing the soles of your feet to connect to the earth's energy.*

There are no consequences to grounding, only the opportunity to benefit your overall health and well-being. Remember, the earth knows what you need to be healed, all you need to do is stop by and say hello.

# SACRED GEOMETRY



## SACRED GEOMETRY IN NATURE

*“It’s outside of any race or religion. It is a pattern that is intimately part of nature. If you go to distant planets where there is consciousness, I’m sure you’ll find the same image.” - Drunvalo Melchizedek*

Sacred geometry is the nexus point between physics and mysticism. It is the realm where infinities live within finite forms, and the chaos of creation is brought to order.

The true beauty of sacred geometry is that it satisfies both the right and left brain. Elegant expressions of compelling proportional relationships simultaneously activate the intellectual and artistic functions, merging the rational with the abstract.

Sacred geometry arises from the desire to express philosophical truths through concrete means. It offers a scientific method for philosophical inquiry, complete with hypotheses, experiments, and repeatable results.

The best way to study the fundamental shapes of nature is to draw them yourself. In order to fully appreciate this article, I would encourage you to procure paper, pencil, compass and straight edge in order to perform at home the experiments here described.

Now, we will embark on a journey through creation as it arises in spheres, lines, and spirals. Fair warning: visceral engagement with these shapes can be irrationally rewarding; what begins as strictly formulaic may soon become more magical than ever expected.

## **Seed, Flower, Fruit**

By way of introduction, let us consider the life cycle of any fruit-bearing tree.

Down from the ancestors a seed reaches Earth, is buried, and germinates. Its cells divide and the seed expands into a baby plant. A stable trunk grows up and the tree eventually flowers, portending of abundant fruits to come.

When ripe, a fraction of fruits fall to the earth. The flesh rots into compost that then feeds the new seeds now

underground, just waiting for the day when the process starts anew.

This cycle ought to be painfully familiar to anyone with even the briefest human experience. Like plants, people are born, grow up, bear fruit, decay, and then die in order to feed that which is being born. This exact pattern is mirrored by the most fundamental processes of sacred geometry.

Our journey begins with a single circle, which may also be drawn or imagined as a sphere. This is not yet a seed, but its mere potential. This first circle is an abstract concept that serves as the perpetual center point and container for all that comes next.

If you are drawing along, this is a good time to bust out your compass and draw a circle – probably smaller than you might initially like – in the center of your paper.

The first movement on the road to fruition is duplication. Keeping the compass set to precisely the same radius, place its point anywhere along the circumference of the first circle and draw a second circle so that its edge passes through the center point of the first.

You are now looking at a shape known as vesica piscis, the womb of creation or literally, “the bladder of a fish.” This shape represents the union of opposites, the resolution of

polarity. Two distinct entities overlap to create a unified space wherein a distinct third entity can arise. Need I explain why this shape is associated with femininity?

Here we have all the information needed to generate two equilateral triangles within the “womb,” where the circles overlap. Draw a line connecting the center points of the two circles. Now connect each center point directly to the point where the circles cross paths. You now have two equilateral triangles on either side of a horizontal (x) and an implied vertical (y) axis.

From here, we can infer the existence of six equidistant points around one of the circles. A protractor is a useful tool to maintain precise measurements at this juncture, although a straight-edge is sufficient and ultimately, a compass is all you need.

Now then, place the point of the compass on each of these new points and draw five more circles. You are now looking at something like this:

This conglomeration of circles is called the Seed of Life. When someone mentions sacred geometry, the Seed arises first in my mind’s eye. It is extremely common to see derivations of this structure in visionary art, corporate logos, and new age tattoos.

Despite its pervasive usage, the shape is so fundamental to the structure of the cosmos that humans will never grow weary of its perfect harmonics. Would you or anyone deny that this pattern is infinitely pleasing?

It is so interwoven into our lives that we may not even notice the depth of its symbolism. Where else do we encounter the concept of six encircling one?

The days of the week come to mind, based as they are upon the six days of creation followed by a single day of rest. Similarly, there are six heavenly bodies (Mercury, Venus, Moon, Mars, Jupiter, Saturn) visible to the naked eye, all encircling the central sun.

In addition, many traditions identify seven chakras, where the heart-center is encircled by three upper and three lower chakras. Likewise, there are seven perceptible colors in the rainbow, with green at the center and red or violet at either end of the spectrum.

There are plenty more of these examples available if you care to investigate further on your own, but evolution is ongoing and so are we.

## **From Seed to Flower**

Once germinated, the seed becomes a plant and achieves its utmost beauty in the form of a flower. In sacred

geometry, this is shown by adding another ring of six circles around the Seed, so that we now have twelve encircling one.

(Remember: you can always add a circle around the outside to contain the entire shape. Just like the infinitesimally tiny dot at the very center, it doesn't influence the overall energetics of the form).

Is this a familiar shape? Does it have any applications in nature or human culture?

Common examples include the twelve signs of the zodiac that encircle our perspective here on Earth and the twelve hour-markers on the face of a clock. The famous Jesus of Nazareth is said to have had twelve disciples, the same way King Arthur led twelve knights of the round table. We recognize twelve months in a year, and there is often a thirteenth full moon hidden within those solar months.

According to John Michell in *How the World is Made*, twelve "is the root number in the code of proportions that governs the solar system... In some remote, unknown age the zodiac was divided into twelve sections so that the sun passed through one zodiacal house or sign in 2160 years, which is... the same as the diameter of the moon in miles..."



Far beyond any possibility of coincidence, such alignments reveal the divine intelligence inherent to creation. Such mysterious rationality and beautiful order cannot be the result of so many mere happy accidents.

The fact that the Flower of Life is found carved or otherwise encoded into the remnants of ancient civilizations the world over only adds to the power of this image to inspire us toward further study of the fixed forms that give rise to reality as we know it.

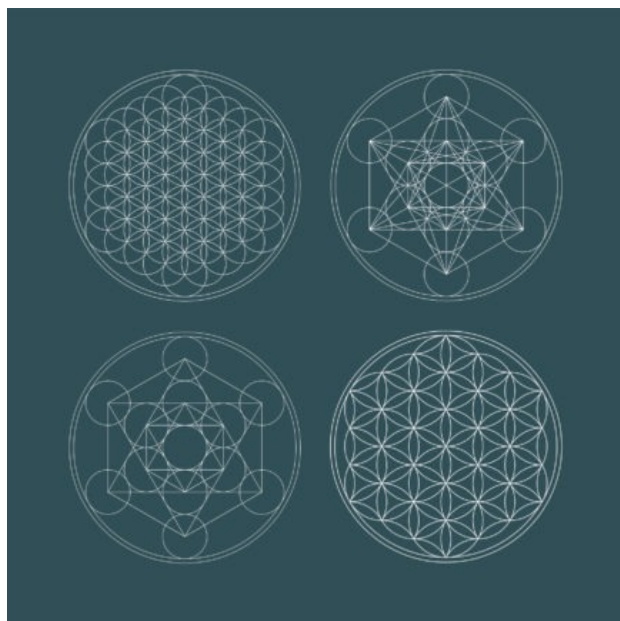
## **Metatron's Cube**

In any healthy organism, flowering precedes the production of fruit. After the flower expresses its irrepressible beauty and fragrance, it wilts and all that energy redirects to generate the next generation.

Plants are super intelligent but basically immobile. As such, they have strategies to spread their seeds. Primary among these is to hide seeds within a delicious morsel so that some animal might pass by, consume the fruit and in its droppings, drop the seed in a far off the fertile ground. Thus the species is propagated, arriving in fresh territory already encased in the best kind of compost.

*"The fruit of one's labor, loins, or karma refers to the tangible output of a period of incubation; to the cumulative and far-reaching effect of a collection of causes."*

The fruit is the distillation of all previous efforts and growth. That which has been expanding now sheds superfluous forms to become highly concentrated



in order to create new forms. To obtain excellent fruits, one must prune the tree.

The glorious complexity of the Flower is reduced in order to produce the Fruit of Life. This little death serves that which is being born.

Now simplified, the Fruit becomes the creative framework from which the infinite potential of Metatron's Cube springs to life.

Home Geometers, if you haven't already, draw a fresh Fruit of Life, separate from your other scribbles. Use a new paper if need-be.

Now, connect the center points of the thirteen circles that compose the Fruit, and you'll discover a web of interlocking lines that are the two-dimensional representation of the three-dimensional polyhedra that are the complete structural basis for human experience. This multidimensional shape-stack is called Metatron's Cube.

Esoterically, Metatron is an archangel, one of the energetic entities that oversee our particular corner of creation. Among the archangels, Metatron is understood to be the architect, the transcendent genius of shape and proportion. Metatron governs the specific logistics by which consciousness is able to take form.

Dear reader, at our shared level of experience, the most fundamental forms we can grasp are the five Platonic solids. The tetrahedron, octahedron, cube, icosahedron, and dodecahedron are the building blocks of our reality. These polyhedra are the only shapes in existence that have uniform numbers of sides, side lengths, and internal angles. They are the only perfectly symmetrical three-dimensional forms possible.

The five Platonic Solids correspond to the five elements and our five senses; they define the relationships between planetary orbits and atomic structures; they are the tools of Metatron; they are the vehicle whereby the Many arise from the One.

## Two Kinds of Spirals

If you've drawn along with us this long, congratulations – you have now sketched an outline of everything that is or could be. There is, however, one more dynamic we must acknowledge before reaching completion, and that is the quality of spin.

At each successive stage in the evolution from seed to flower, we simply added one more ring of circles around the center. This linear style of the spiral is called Archimedean, after the great Archimedes of Syracuse.

Archimedean spirals progress in a linear fashion, the way a paper towel is wrapped around cardboard, or a rope is a coiled layer by layer. This is contrasted to a Phi, or Golden spiral, which expands proportionally according to the Fibonacci sequence. The Phi spiral is in fact far more common in nature, observable in phenomena such as whirlpools, tornadoes and spiral galaxies.

An excellent exercise to experience the difference between these two types of spirals is given on page 120 of *A Beginner's Guide to Constructing the Universe*, by Michael Schneider.

In essence, the instructions are to cut two strips of paper and decide on a unit of measurement (inches, finger-

breadths, it doesn't matter). Beginning at one end of the first strip, measure and mark units of sequentially increasing value (1, 2, 3, 4...). For example, if the first section is one inch, then the second section is two inches, and so on. Then fold a right angle at each mark on this strip, and feel an Archimedean spiral unfold in your very own hands.

Do the same thing with the second strip of paper, except that here the length of each section is determined by the Fibonacci sequence (1, 1, 2, 3, 5, 8, 13...). Again, make a right angle at each mark and compare the results. When finished, you'll have earned a direct and profound understanding of the two types of spirals that exist in nature.

## **Traces of the Creator**

This essay tracks the organic evolution of potential energy into actuality using the simplest shapes available. These are the building blocks of sacred geometry.

These are concrete representations of abstract, otherwise inconceivable ideas. Simple shapes, lines, and curls generate a journey through the dimensions, perpetually approaching zero or infinity, the One and Many.

To discern the patterns by which creation unfolds and retracts is to approach the Creator directly. By participating in the process yourself, literally tracing the steps of the

Creator, you have initiated yourself into a mystery tradition whose only limits are your own imagination.

This is truly universal knowledge, and according to Drunvalo Melchizedek, "It's outside of any race or religion. It is a pattern that is intimately part of nature. If you go to distant planets where there is consciousness, I'm sure you'll find the same image."

# SACRED GEOMETRY



## WHAT ARE FRACTALS?

*“In living things, fractal shapes allow them to maximize their surface area for exchanging energy or nutrients.”*

If you look around you right now, depending on where you are, you’re likely to see to two distinct types of shapes: 1) blocky, linear and smooth if you’re in a manmade environment; or 2) branching, uneven and irregular shapes if you’re in a natural one. Why is there such a difference between the appearance of manmade and natural spaces? Why does one tend to look smooth, while the other looks rough? It comes down to one word: fractals.

## **A Brief History of Fractals**

At the beginning of the 20th Century, mathematicians Pierre Fatou and Gaston Julia discovered fractal patterns while looking at complex mathematical systems. Back then, these objects defied linear analysis; they were considered aberrations or scary mathematical monsters, with infinite depth and complexity. They weren't very popular and were forgotten until the late Belgium mathematician Benoit Mandelbrot discovered them again while working at IBM labs in Armonk, New York in 1980.

## **Fractals Contain Imaginary Numbers**

To distinguish fractals from ordinary objects, you should know that fractal sets are created by algorithms that, in addition to ordinary integer numbers, also contain so-called "imaginary numbers". This allows fractals to behave in much more complex ways, and describe more complex systems than ordinary numbers.

## **The Behavior of Fractals**

Mandelbrot was the person who coined the word fractal. He used it to describe the behavior of financial markets and telephone line noise. The word fractal is derived from the word Greek "fractus," meaning "fractured." Mandelbrot noticed that telephone line noise is similar, whether you look at it over the course of an hour, a minute, or a second: you still see the same wave-form shape. In this sense, you can describe telephone line noise with a numerical dimension that applies at any time scale. The dimension



defines the visual “roughness” of the signal; in other words, the dimension translates to how choppy it looks.

This is a very different type of geometrical logic than the one we were taught in school, where objects have a definite length and size. This is because, in school, we’re dealing with abstract objects that we imagine are perfectly linear and smooth. Nothing in the real world really looks like that!

*“If you take a look at almost anything natural under a microscope, you’ll see it’s full of fissures, pits and holes.”*

That’s because natural things are seldom perfectly flat beyond a certain scale. The closer you look, the more defects you’ll see.

## **Self-Similarity: Nature’s Preference**

Nature seems to have a favorite type of shape: nature prefers that a structure looks similar whether you look at it close-up or from a distance. This is known as “self-similarity” and you can see it in almost any natural object or process you look at. You can see it in clouds, mountain ranges, coastlines, trees, your own hair, rivers, blood vessels, or the branching shape of your lungs.

*“In living things, fractal shapes allow them to maximize their surface area for exchanging energy or nutrients.”*

If all of your blood vessels were laid out end to end they would wrap around our Earth's equator! Similarly, a fractal structure allows a tree to maximize the sun's exposure to its leaves. There are many more leaves than branches and more branches than trunks.

## **Beyond Euclidian Geometry**

Self-similar objects are those that look the same at any scale. They have lots of branches, are rough rather than smooth, and also tend to be very resilient to disturbances in their environments. The key characteristic of these fractal shapes is that, contrary to manmade things, they are not linear. Thus, they cannot be measured according to the principles of ordinary Euclidian geometry, which is the basis of modern geometry. You can't get a definite measure of their length because their shapes do not resolve to a simple line.

## **The Challenge With Scale**

A famous fractal example that Mandelbrot wrote about is the relation of fractals to the length of the coastline of England. While a standard automobile map would give a standard distance between two beaches on England's coast, this is actually a fictitious number. The actual length, if you walked it, would be longer than the map shows because, in reality, you're going to encounter rivers, inlets, eroded areas, and detours.

And if you were the size of a grain of sand walking along England's coast, you would find even more spaces and detours, mainly between all the other sand grains that are larger than you. The smaller your ruler or yardstick, the greater the distance between two points on a self-similar, fractal object. This is because the coastline of England is not a straight but so-called "curvilinear." (In case you are wondering, the fractal dimension of the West Coast of England is about 1.25: more dimensional than a straight line but less than a 2-D flat surface.)

Compare this with a Euclidean object like a flat sheet of glass. It's smooth, with definite measurements of the distance between two points on the glass, whether measured in yards, feet, inches or even millimeters. It's all the same distance at any real-world scale.

## **What is a Fractal Dimension?**

Fractal objects are characterized as being "scale-free." There's no definite scale that defines them and their appearance looks the same no matter what the scale is. You can't measure their absolute length but you can get a sense of their "roughness" and that's what a fractal dimension is.

Clouds typically have a fractal dimension around 2.2 to 2.3, if you're curious. That's because clouds fill up more than a

flat 2-dimensional surface like a tabletop, but are not entirely 3-dimensional because there's so much space between the water drops. So they are actually objects that exist between dimensions! From the point of view of fractal geometry, clouds are truly interdimensional beings, as are many other natural things.

Take a tree, for example. The branching structure, as you move from the main trunk to the leaves or needles, become finer and smaller. You have one trunk but many branches and even more needles or leaves. The tree doesn't completely fill its 3-dimensional space, as would a solid cube, but it's much more than a flat surface. It's an object between dimensions.

## **Fractal Flattening: The Hallmark of Modernity**

Modern societies attempt to make things flat because they're more manageable that way. Think of a highway, a dam, or an airplane propeller. Flatness adds to something's predictability and controllability. I call this process "Fractal Flattening" and it's a hallmark of modernity.

The author Dr. Edwin Abbott wrote a funny parody of this idea in 1884 in his book *Flatland: A Romance of Many Dimensions*. Abbott was making fun of Victorian England and its rigid attitudes. The story itself is about a society of flat shapes that don't want to believe in or acknowledge

the existence of complex shapes from Spaceland because they find them threatening to their social order.

## **Flattening Impacts Resiliency**

The challenge and main drawback of flattening everything is that you reduce the amount of resiliency to sudden change and make things more vulnerable to catastrophes. For example, a fractal object like a tree can take a lot of wind as you see in a hurricane. Even if some branches snap off, you've still got all the other branches and the tree will grow back. It's self-repairing, and so is the forest as a whole.

Now compare that to a manmade electrical grid with power lines going everywhere. If a few of those tree branches fall down on just a few power-lines during a hurricane, entire neighborhoods will lose power, sometimes for quite a long time. The system is not self-repairing and in fact, quite fragile.

## **Antifragile Systems Benefit From Stress**

The author Nassim Taleb describes manmade systems that are vulnerable to stress as "fragile". Conversely, those that benefit from disorder are "antifragile". Antifragile systems are often characterized by fractal geometry, not linear

structures. These anti-fragile systems benefit from chaos and grow stronger. (You can read more in *Antifragile: Things That Gain from Disorder*.)

The medical principle of hormesis states that some biological and living things can become stronger from stress. For example, small doses of a toxic agent can actually lead to immunity to that same agent. What is a poison at one dose can be a preventative medicine at another. Thus, fractal systems, because they are non-linear, can benefit from types of chaos that would topple manmade systems. In this way, stress can be beneficial to fractal systems.

## **Technology and Fractals**

More recently fractals have been used to create the JPEG algorithm that is used to send pictures from one computer to another. The algorithm identifies self-similar patterns in pictures and allows them to be compressed. Similarly, fractals are used in satellite data compression. If you can identify repeating patterns in the data, you can summarize these as fractal equations which are faster to send wirelessly than every pixel in the raw picture.

In fact, modern cell phones use a fractal antenna shape to be able to work at different frequencies at the same time. Within the antenna are different shapes that correspond to the various radio bands that carry cell phone signals. These

shapes are nested within one another so that even in a cell phone, many different frequencies are simultaneously at use. Research shows that fractal antennas perform at a higher efficiency than regularly shaped antennas like the old-fashioned whip antennas that used to be installed.

## **Fractal Meditation**

I often find it useful to meditate on fractal shapes when I'm walking or just relaxing. You'll find if you do this it will help you feel connected to the larger natural forces that are all around you. It's a great way to unwind and feel like your natural self.

Just spend a few minutes every day in the most natural environment you can find, or imagine one if you're in a completely urban area. First, see and appreciate the branching structures you see around you whether they be trees, mountains, clouds, rivers, coastlines or entire galaxies.

Then visualize your own fractal structures like your hair, blood vessels, lungs, or beating heart which has its own unique fractal rhythm. Then imagine a connection between the fractal structures of your body and those in nature. Feel a sense of gratitude for this amazing geometry that nature has created for your body and your environment. Marvel at how well it works to keep you alive every moment of every day. And then see your boundless awareness stretching to

the limits of the universe along with these fractal networks of matter and energy.

If you are struggling to call fractals around you to your mind's eye, don't distress. Watch this meditation series, featuring an enchanting flow of fractals.

## **Fractals and the Multiverse**

One of my Taoist teachers, Mantak Chia, used to tell us that the structures that make up our body, like our hair, served as antennas to other worlds and dimensions.

He said we could pull in Chi energy from our environment and cautioned us not to cut our hair too short. In a sense, he was referring to how fractal shapes serve double duty as physical and resonant structures. In a sense, he was suggesting that we're all fractal antennas!

We know that nature doesn't waste anything. Wouldn't it be amazing if all those fractal shapes we see in and around us not only contribute to physical resiliency but also serve as resonant antennas to parallel realities? In other words, the fractal shapes of trees allow them to collect a lot of energy from the sun. Perhaps it also lets them communicate with other tree worlds in parallel Earth realities. This is purely speculation on my part.



Take time to appreciate all the fractal structures in your life and how they support life in so many ways. And then the next time you're designing something, consider whether it needs to be so straight, smooth or even. Perhaps your next project, task or work goal could benefit from some of nature's fractal logic.

# SACRED GEOMETRY



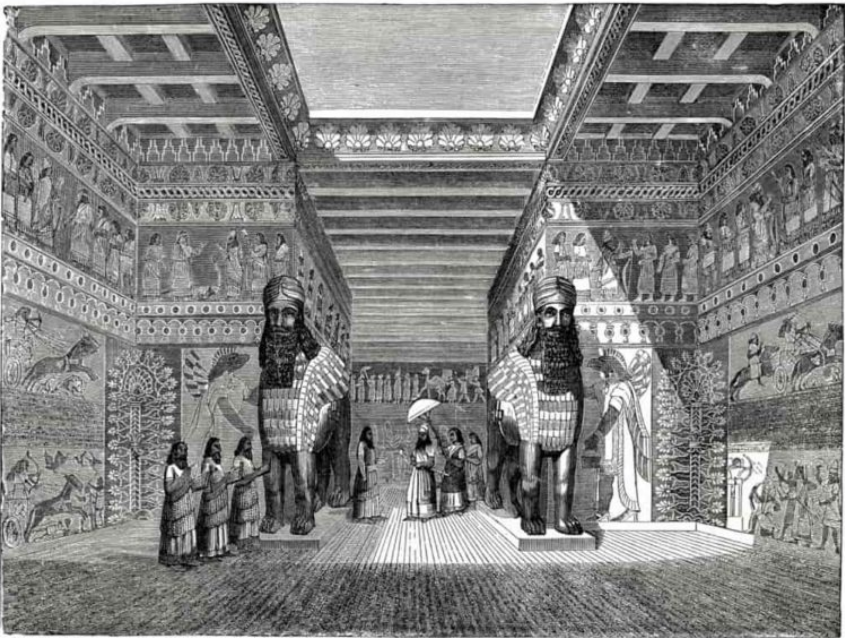
## CAN SACRED GEOMETRY PRODUCE MUSICAL HARMONY?

### **Geometric Frequencies**

Is there a direct correlation between geometry and frequency? Were ancient civilizations given a key to connect mathematics, geometry, and sound?

Eric Rankin believes so in his documentary revolving around an interconnectedness between geometry and frequency. Sonic Geometry focuses on harmony found when the sum of the angles of all shapes is played as frequencies.

The basis of Rankin's theory dates to the ancient Sumerian culture, roughly 5,000 years ago. The Sumerian civilization in Mesopotamia oft referred to as the Cradle of Civilization, spawned the first written language and mathematical system. The Ancient Sumerians wrote that the information that is the basis for their systems came from 'sky gods,' known as the Annunaki. They relied on a system of mathematics based on the numbers 12 and 60. We still retain some of the Sumerian's mathematical system in how we calculate time, measurement in inches, and in geometry.



## Pythagorean Tuning

We're all familiar with the Pythagorean theorem in geometry, but the Greek philosopher/mathematician is not as commonly known to have applied his focus to music. Pythagoras applied geometry to music when he noticed how dividing a string in half would double its pitch. He created the Pythagorean scale based on harmonic fifths, which is now used as a root in modern music.

But according to Rankin, Pythagoras' scale led him to stumble upon the number 432, maybe without knowing its synchronistic implications. The number happens to appear on his scale of fifths, which became the keystone for tuning frequency until the 20th century.

The sum of the angles of the basic geometric shapes, when played as frequencies, increases in octaves as you add additional sides. When combining these frequencies starting with a triangle, all the way up to an octagon, they create perfect harmony in a three-part major chord of F#. This pattern works with three-dimensional shapes as well as sacred geometric patterns to create harmonies.

## The Mayan Equinox

The Ancient Mayan civilization was astronomically in tune and knew about the Earth's axial precession. The Mayans

calculated the time it took for a complete rotation of the Earth's wobble on its axis to be 25,920 years, with one month being 2160 years. It happens that the diameter of the moon is 2160 miles. When this number is divided simply, you get some interesting results...

$2160/2 = 1080$  - the angle sum of an octagon

$2160/3 = 720$  - the angle sum of a hexagon

$2160/4 = 540$  - the angle sum of a pentagon

$2160/5 = 432$  - the Pythagorean frequency key tone

$2160/6 = 360$  - the angle sum of a circle and square

Rankin presents evidence of the recurrence of the number 432 as being found in multiples of measurement of time and distance, from the moon and sun to the speed of light. He believes there is some connection that is hidden within this number, that could have possibly been gifted to the Ancient Sumerians by the Annunaki and has remained embedded in many aspects of how we measure our world.

## **A Change in Frequency**

In the early 1900s, there was a shift away from the 432hz frequency to 440hz. Almost all music since then has been recorded in this frequency, which does not have the same

numerical synchronicity. To those who have alternated between the two frequencies, there is a noticeable difference.

Some theorize that the frequencies were changed as a sinister plot by the Nazis as a way of subversively increasing aggression or agitation on a large scale. It has been shown that different sound frequencies affect everything from water molecules to living organisms at different levels, so a plot to change the frequency of music sent to the masses seems like a plausible tactic of disruption. However one must judge for themselves – is the difference in frequencies big enough to manipulate human consciousness?

## **Cosmic Cycles of 432**

Joseph Campbell found the number 432 intriguing in his studies, particularly as it recurred across different religious contexts. One instance is of an ancient Babylonian priest who wrote an account of the history of Babylonia in which a flood destroyed everything after 432,000 years.

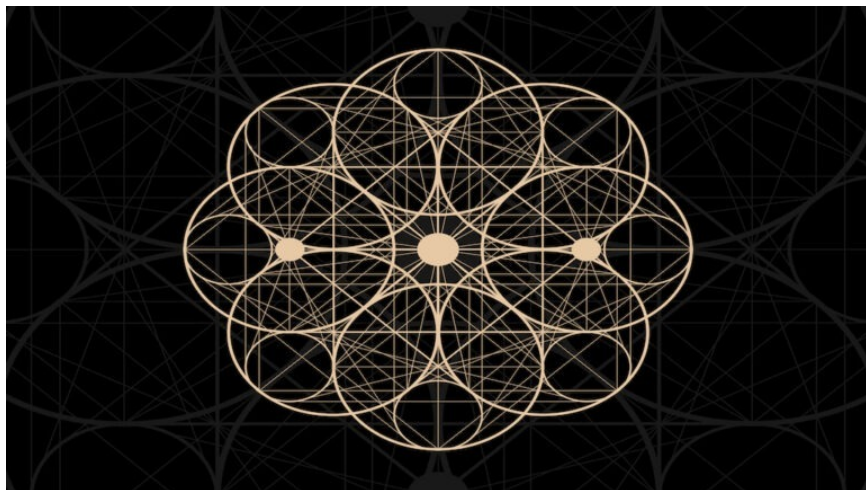
In the ancient Hindu timeline, cosmic cycles are measured in multiples of 432,000 years. The Kali Yuga is 432,000 years, followed by the Dwapara Yuga at 864,000 years, the Treta Yuga at 1,296,000 years and lastly the Satya Yuga at 1,728,000 years.

There is even reference to cosmic cycles of 432,000 in the Icelandic Eddas, recounting Norse mythology. In one book describing Odin's hall in Valhalla, there are 540 doors with 800 warriors coming through each door representing our time cycle. Those numbers multiplied, of course, equal 432,000.

With the interrelation of mathematics and nature as seen in such instances as the Fibonacci Sequence, it would come as no surprise that there would be an intrinsic relationship between geometry and sound frequency. What other inherent connections have we yet to discover in the nature of our existence?



# SACRED GEOMETRY



## CAN SACRED GEOMETRY PRODUCE MUSICAL HARMONY?

Throughout the entire natural world, a simple set of ratios and patterns govern the structure of all things. From the growth patterns of tree branches, to the design of an insect's compound eyes, and on to the distances between the planets, everything in existence harkens to a hidden set of underlying rules. These rules are so subtle, that we see them every day, yet seldom acknowledge what we are seeing.

Ancient seekers took the time to carefully observe the world around them. It was in their examination of the



minute details that they found repeating geometric patterns. Many of these seekers already had an understanding of mathematics behind geometry. Thus they began to ask if their world could be broken down into simple mathematical formulas and the sacred pursuit of numbers was born.

## **Finding the Formulas**

Through countless years of endless computations, the most brilliant of minds discovered specific ratios and mathematical formulas upon which the natural world was formed. These ancient seekers believed that these subtle elements of their reality were indicators of a divine hand at work. As they struggled to unlock these geometric secrets, they felt that they were approaching a level of understanding that could only be akin to sacredness.

Thus, these ratios and geometric patterns became akin to the most sacred of prayers. They were not prayers which were spoken aloud; rather they manifested as the structures which reflected the source of all living things. If these seekers truly did understand divine secrets of the gods, then they must be able to demonstrate it through their own constructions and bring the divinity of nature into the realm of mankind.

## **Building Holy Temples**

Layouts of holy sites and temples were built using these sacred mathematical codes. It was believed that if they used only the most sacred and purest geometry, then these sites would focus and amplify the divine source of all things. Despite the divine nature of the mathematics used, or maybe because of it, the geometry proved to be superior for the construction of larger and larger monuments. The scale and grandeur of these temples did not disappoint and the ruling powers of the known world erected as many of these temples that they could.

## **The Sacred Occulted**

All of this took place before middle ages when the physical world was declared profane and any attempt to discern its nature was derided as sacrilege. Although the sacred teachings of ancient geometry were forbidden, its supremacy for building large and stable structures was heralded. To preserve these secrets of the divine nature of the constructions were whispered down through ages from master to apprentice, never to be fully lost.

Many churches and holy Christian sites were built using the same exacting standards that were discovered and used in the building of the great pyramids of Egypt. The same ratios found in ancient obelisks can be found in Gothic architecture. Patterns once considered to reflect the numinous were now reflected in the intricate details of the designs on church walls. The knowing observer could read

these patterns and understood the ancient secrets within them. The general public, as well as the enforcers of the law, only saw magnificent aesthetics.

Today, we can once again explore these ancient secrets and speak of them openly. We can examine the details of holy sites around the world and across oceans of time. Hidden in these details, the ancient secrets of the structure of the universe are just waiting to be unlocked. Perhaps by studying these intricacies, and finding their natural world correlates, we can begin to understand the minds of the gods as we continue our path to ascension.

## **Can our world be broken down into mathematical formulas?**

Though the numbers were different, as well as the means for mathematical formulations, ancient seekers attempted to capture the complexities of the natural world in the most simplest forms. Through countless years of endless computations, the most brilliant of minds discovered specific ratios upon which the natural world was formed. It was these ratios that we find in the layout and construction of the great pyramids of Giza and the obelisks. Known only to a select few, these secrets permeated through the ages, hidden in architecture – such as Vatican city, the Golden ratio and temples built to reflect these sacred ratios – to bring in and enhance the divine nature of the world.

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