

The neuroscience behind the beat

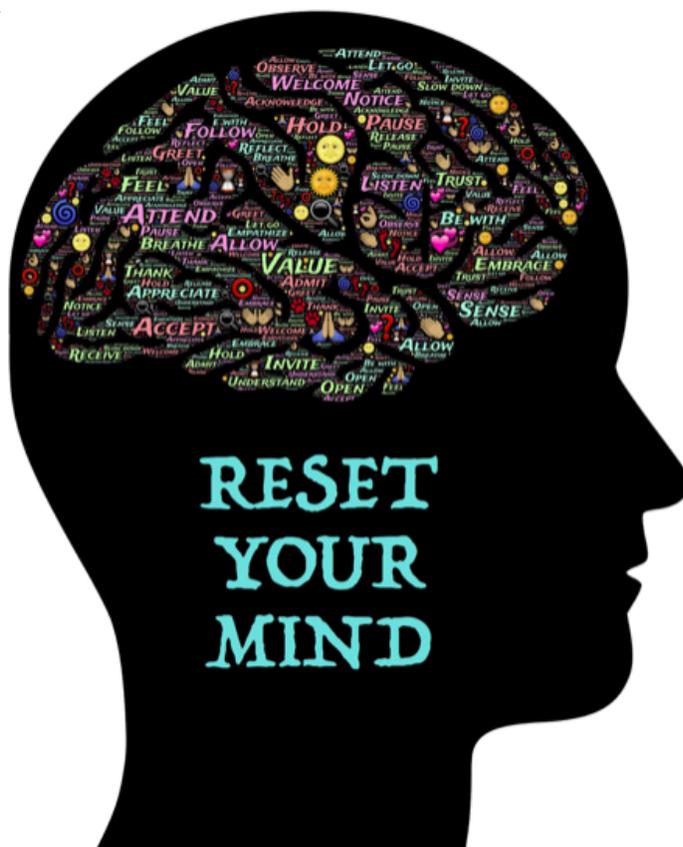
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This is Your Brain on Drumming



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The first sound everyone on Earth heard was the sound of our mother's heartbeat. Our relationship with rhythm began in the womb. As human beings, we are intrinsically rhythmic, and this rhythm is a potent source of well-being.

The ritual use of rhythmically beating a drum is one of the oldest practices of humankind. The beat of the first drum perhaps reminded our distant ancestors of that very first rhythm we heard, the comforting heartbeat; of our deep connection to the body of our mother, and to Earth itself. Its revival and integration into modern society could bring with it a boon of physical, emotional and spiritual healing that could profoundly impact individual and collective health.

In a new article published in *Frontiers of Psychology* entitled *The Human Nature of Music*, researchers present a theory that “our ability to create and appreciate music at the center of what it means to be human”. From Pythagoreas, who is thought to be the first person to describe music as medicine as far back as 600 B.C, to modern board certified sound healing technicians, rhythm and harmony have been healing the the psyche through the ages.

Shamanic drumming, which is a fast paced, 4–7 beats per second rhythm, has the ability to profoundly alter brain states. Ancient shamans knew this, and now a plethora of science backs it up. The two hemispheres of the human brain often operate at different levels and at different rates. The steady beat of shamanic drumming is a powerful tool for brain health because by the very nature of it’s constant rhythm, it permeates the entire brain, bringing both hemispheres into rhythmic balance. This is profound, because that balance is exceedingly hard to come by in modern day life, and brings with it deep healing.

In his book, *Shamanism: The Neural Ecology of Consciousness and Healing*, Michael Winkelman explains how “drumming synchronizes the frontal and lower areas of the brain, integrating nonverbal information from lower brain structures into the frontal cortex, producing feelings of insight, understanding, integration, certainty, conviction, and truth, which surpass ordinary understandings and tend to persist long after the experience”.

Neurologist Barry Bittman, M.D. has led recent studies on the potential benefits of drumming. Results show that participating in drumming circles helps to fortify and increase natural killer T cells that fight cancer and viruses such as AIDS. The research, published in *PLOS/ONE*, reveals a profound reduction of inflammation in people that took part in in 90-minute drum circles during a 10 week study.

In cases of significant damage to the parts of the brain, such as with Parkinson’s disease, drumming has the ability to generate neuronal connections between all parts of the brain. These rhythmic cues, according to Michael Thaut, director of Colorado State University’s Center for Biomedical Research in Music, “can help retrain the brain after a stroke or other neurological impairment”.

With busy modern lifestyles, coupled with noise and light pollution, it can be difficult to go deep into the silence within. But the shamanic drum causes one to do just that: go internal. To ride the drumbeat and feel its vibration in your heart and brain. Something primal and ancient in our neuroanatomy responds.

In his book, *The Healing Power of the Drum*, Robert Lawrence Friedman explains how he’s led several studies that demonstrate the simple yet effective power of drumming. He has seen “veterans releasing some of their post- traumatic emotional pain, “at-risk” adolescents discharging their anger and negative emotions, and corporate executives letting go of some of their day-to- day stress”. Drumming has also been shown to help Alzheimer’s patients improve their short-term memory and increase their social interactions, autistic children increase their attention span, and help stroke victims regain control of their movements.

Barry Quinn, Ph.D., a clinical psychologist who runs a neurobiofeedback clinic for stress management, has been working with a variety of techniques that affect human brainwaves. His recent studies have shown that drumming for brief periods can alter brainwave patterns, dramatically reducing stress.

During periods of normal alert activity our brainwaves operate at a level of a 'Beta' rhythm, which is 14–20+ cycles per second. When people relax, their brainwaves slow to an 'Alpha' rhythm, which is 7–14 cycles per second. The Alpha state is connected with a general feeling of relaxation and well-being. But Dr. Quinn estimates that as much as 30–40% of the population is unable to regularly achieve Alpha.

One of Dr. Quinn's patients, a Vietnam veteran who has long suffered from high stress, PTSD, and insomnia, was producing almost no Alpha in his brainwave patterns. During a single 40-minute session of slow, gentle drumming, the patient nearly doubled his Alpha brainwaves.

Dr. Quinn stated that the results of 30–40 minutes of drumming for the highest- stress clients were *"by far the most amazing results I've encountered thus far in my research."*

It's no coincidence that every culture around the world has made ritual use of a drum. The effectiveness anecdotally throughout time, as well as proven by recent research, illustrates the continued relevance of shamanic paradigms in treating psychological symptoms like stress, anxiety, and pain. A drum is simple, so simple, yet it is pure power. Most importantly, it is a cheap, essentially free, way to heal and increase your well-being. There is a freedom there; an approach to health that can liberate people from seeking externally, and instead develop a knowing that healing can arise from our own magnificent minds. In this sense, it is a people's medicine; a liberation from within.

Modern drumming circles are popping up everywhere in healing communities, as a remembering and a revival of this power. Sometimes the best healing can come from moments of solidarity and song, from the simple freedom to release and feel, hand in hand. Just like our ancestors, gathering in circles around fires, feet stamping into the Earth, voices shouting up to the sky, hearts beating in unison with the drumbeat and each other.

This is tribe. This is community. This is health.

This is your brain on drumming.

Sources:

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4. Winkelman, Michael, *Shamanism: The Neural Ecology of Consciousness and Healing*. Westport, Conn: Bergin & Garvey; 2000

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