



SUNADA

Music, Therapy and More...
Volume VI, JUNE, 2017



From the Editor's Desk..

This month, we are showing interesting effects that meditation has on the human brain. The pictures show various stages of this effect. This gives us a new insight into the working of the brain and how we can in fact control our emotions from going awry. Learn the art of meditation and see for yourselves. Team Sunada is still learning to cope with new technology. So just enjoy the content only.



*Editor & Founder
KS Vasantha Lakshmi
MA, MT, TM Specialist*

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AMYGDALA THE HUMAN EMOTION CENTER

By

KS Vasantha Lakshmi

Every human being experiences various emotions at any given time as part of daily life. It is natural for humans to become emotional first and logical later. The emotional part of the brain, the Amygdala is a part of the limbic system of the brain and is involved with emotions and other reactions to stimuli. The emotional center of the brain is responsible for releasing the stress hormone cortisol is located close to the base of the brain. The prefrontal cortex is the logical center of the brain. The Amygdala is a processing center that is hooked up to receive incoming messages from our senses and our internal organs. It is involved with different emotional responses.

Conditions such as anxiety, autism, depression, post-traumatic stress disorder and phobias are suspected of being linked to abnormal functioning of the Amygdala, owing to damage, developmental problems, or neurotransmitter imbalance. According to Neuroscience, the

interaction between the region of the brain that processes sound, the auditory cortex and the region which processes negative emotions is termed as the Amygdala. Using brain imaging scientist showed that when we hear an unpleasant noise, the Amygdala modulates the response of the auditory complex. The range of noises varies from the most unpleasant – the sound of a knife on a bottle – to the most pleasant – bubbling water.

A normal human ear is able to hear sounds with frequencies from 20 Hz to 20,000 Hz.

Painful:

150 dB = Fireworks at 3 ft; 140 dB = firearms, jet engine; 130 dB = jackhammer; 120 dB = jet plane taking off, siren;

Extremely Loud

110 dB = maximum output of some MP3 players, model airplane, chainsaw; 106 dB = gas lawn mower, snow blower; 100 dB = hand drill, pneumatic drill; 90 dB = subway, passing motorcycle;

Very Loud

80–90 dB = blow-dryer, kitchen blender, food processor; 70 dB = busy traffic, vacuum cleaner, alarm clock;

Moderate

60 dB = typical conversation, dishwasher, clothes dryer; 50 dB = moderate rainfall; 40 dB = quiet room;

Faint

30 dB = whisper, quiet library

Some doctors claim that it may cause anxiety and stress which may lead to fright, emotional disturbances along with other abnormal behaviours.

How can noise emanation be therapeutic?

White noise therapy:

It is normal and natural for the human brain to crave for sensory inputs. That is why people with sensory deprivation tend to hallucinate. When this external stimulus is taken away, the brain starts to create its own. That is why during sleep, in the quietness of the night any random noise is likely to activate the restless brain and cause one wake up. Subjecting one to constant white noise can act like a tonic signal that dampens its own

internal systems. The *whir* of a fan or *purr* of a pet cat works just as well to tune out the brain's systems.

Pink Noise:

Pink noise closely matches the spectrum of sound that we hear in our everyday world. That is why it is most important to increase our tolerance to these frequencies. White noise has equal energy to all frequencies. Since patients with a collapsed tolerance to usual environmental sounds are more sensitive to high frequencies, white noise is not the sound of choice for therapy. It tends to slow our progress on re-establishing our tolerances because of the high frequency content in white noise.

Pink noise is an acoustical energy distributed uniformly by octave throughout the audio spectrum (the range of human hearing, approximately 20 Hz to 20 kHz). Most people perceive pink noise as having uniform spectral power density -- the same apparent loudness at all frequencies. In pink noise, the total sound power in each octave is the same as the total sound power in the octave immediately above or below it. An octave is a band whose highest frequency is exactly twice its lowest frequency. Any given octave represents a frequency band twice as large, in arithmetic terms, as the one below it. For example, the octave

from 100-200 Hz is 100 Hz , the next octave (200-400 Hz) is 200 Hz wide, the octave above that (400-800 Hz) is 400 Hz wide, and so on. Pink noise can be obtained from white noise by means of a low-pass filter designed so the output spectral power density. Pink noise can also be directly generated by a computer-controlled acoustic synthesizer.

The terms "pink" and "white" come from optics. The visual color pink has greater spectral power density at the longer optical wavelengths (lower frequencies, near the red end of the visible spectrum) than at the shorter optical wavelengths (higher frequencies, near the violet end of the visible spectrum). Some engineers talk about "brown noise," which is similar to pink noise except that the spectral power density decreases even more rapidly with increasing frequency. White, pink, and brown noise can be generated by an acoustic synthesizer to produce sound effects mimicking surf on a beach, a high wind through trees, a rocket taking off, and other phenomena. White and pink noises are used by audio engineers to test and adjust sound recording and reproduction equipment.

Pink noises are also said to help people with Tinnitus-a hearing disorder where people hear a constant ringing, whistling or buzzing in the ears without any external stimulus usually caused by a specific condition, such as an ear infection, the use of certain drugs, a blocked auditory tube or canal, or a head injury or in people with ultra-sensitive hearing.

This might be a new inroad into emotional disorders and disorders like tinnitus and migraine in which there seems to be heightened perception of the unpleasant aspects of sounds. Information such as this could further our understanding of how to use a pleasant sound like Music for various medical conditions where people are highly stressed, irritable (possibly due to High PB), depressed due to chronic and terminal illnesses. Through Music Therapy, Meditation and Trained thinking (Transcendental Musical Meditation) with practiced emotional and conversational intelligence human brain can be calm down the emotional center and let logic take over to find solutions to many an awkward and unpleasant situations.

INTERESTING FACTS

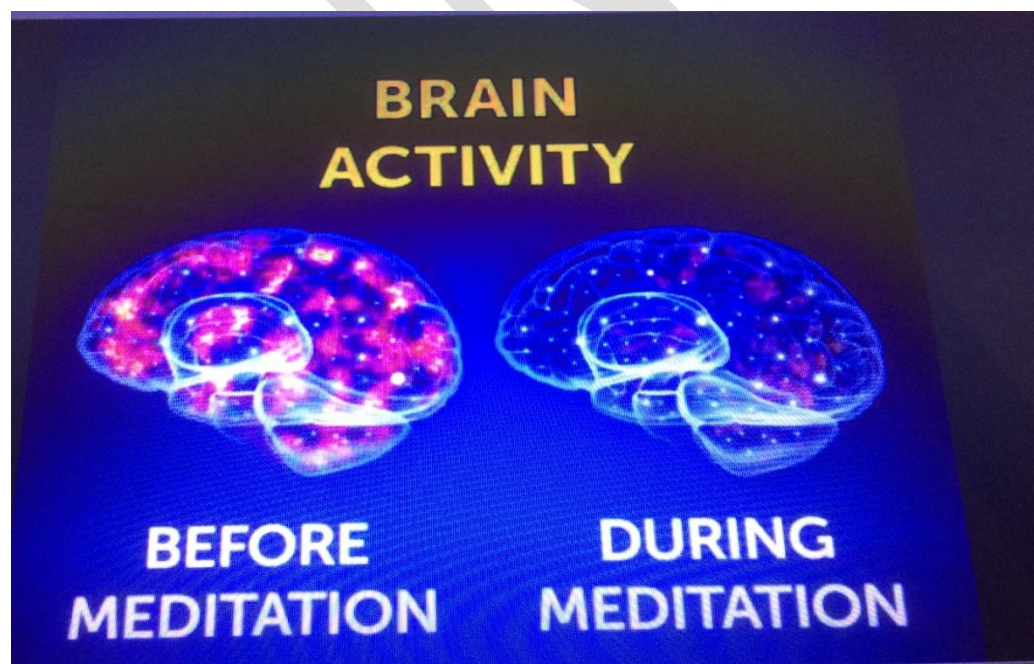
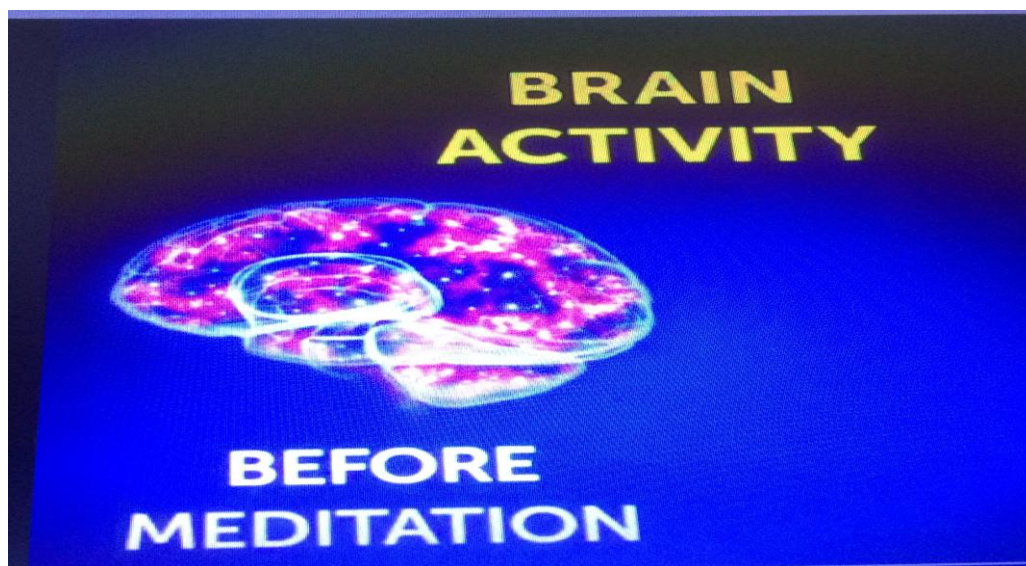
Sing loud like nobody is listening

Singing to your heart's content helps in releasing the endorphins which create a ripple of positive hormone secretion in your body. As a result, it oozes out to your personal space too. Singing out loud also helps communicate joy to Universe and is a means of showing gratitude. As joy is the highest vibration, it effectively deals with the negativity around and creates positivity all around us.

Meditate like you are alone

Meditation is one of the most ancient Indian practices and today's much sought after practice that clears the negative energies. While meditating you can connect with your higher self, your spirit guides your mind. Your angels get help to cleanse your mind and home of the Negative energies. If you have been a regular practitioner, you can also visualise white light clearing every pore of your home walls off, of the negative energies.

BRAIN ACTIVITY DURING MEDITATION



FRONTAL CORTEX

SPEECH + MOVEMENT +
THINKING



FRONTAL CORTEX

SPEECH + MOVEMENT +
THINKING



**SWITCHES OFF
DURING MEDITATION**

PARIETAL LOBE
ORIENTATION IN SPACE



PARIETAL LOBE
ORIENTATION IN SPACE



**ACTIVITY
SLOWS DOWN.**

THALAMUS

CENTER OF SENSITIVITY



**MINIMIZES FLOW
OF INCOMING INFORMATION.**

RETICULAR FORMATION

PROCESSING OF INFORMATION



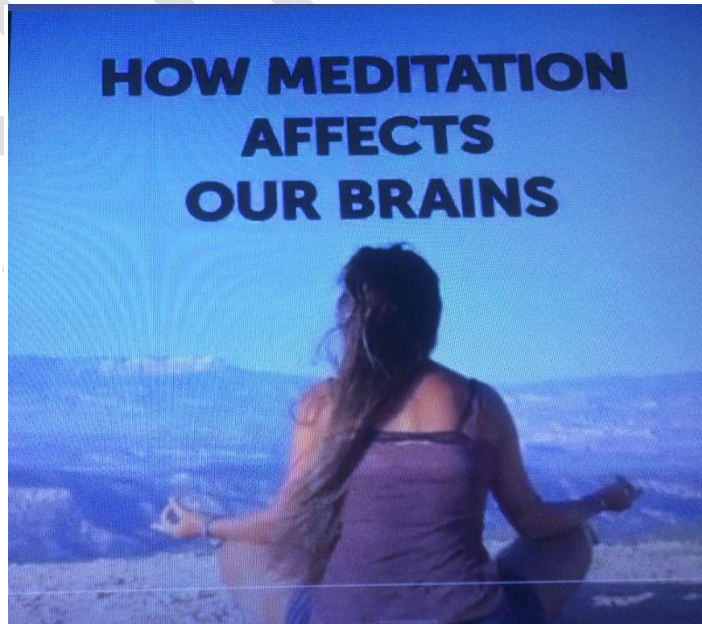
**WORK IS REDUCED
TO NOTHING.**

WHAT'S THE RESULT?

- THE WORK OF THE BRAIN IMPROVES
- PRESSURE RETURNS TO NORMAL
- LEVEL OF STRESS DECREASES
- AGING OF THE BRAIN SLOWS DOWN

MAKE MEDITATION A REGULAR HABIT AND ENJOY THE BENEFITS

HOW MEDITATION AFFECTS OUR BRAINS



WHAT YOU THINK

What you think: singvasantha@gmail.com

Please keep the good work going. It is giving some musical sense to many unmusical people like me. Arranging occasional concerts will add to the effect. Regards,
J.L.Reddy

New Delhi

I understand the work and the time and effort needed to bring a monthly issue like yours. I appreciate your tenacity of purpose and self reliance, a quality in you amongst so many good qualities you have. The article by Dr. Rao is very informative and well researched.

Kudos to him.

Bhavaraju Srinivasa Murthy

It is really great that you started this Vasantha. All continued strength.

Best

Nilima Mathur

Spot Films

Naukuchiatal

I went through the brief articles. I liked the one contributed by Dr. KVN Rao giving scientific credence to music therapy.

E. Rammohan Rao
USA
New Jersey, US

Articles related to Music and Music Therapy, not exceeding 500 words may be sent to: singvasantha@gmail.com. No remuneration will be paid. You can read these at: www.sunadavinodini.com

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