

# Music, the Brain and Your Health

Many are not aware how powerful music is and how it impacts brain development and behavior. In this article I will present a number of quotations from experts on the effects of music on the brain, behavior and health. Napoleon Bonaparte understood the enormous power of music. He summed it up by saying, "Give me control over he who shapes the music of a nation, and I care not who makes the laws." Some ancient Chinese Emperors measured the health of a Chinese village by the quality of the music.

It has been proven that music influences humans both in good and bad ways. These effects are instant and long lasting. Music is thought to link all of the emotional, spiritual, and physical elements of the universe. Music can also be used to change a person's mood, and has been found to cause like physical responses in many people simultaneously. Music also has the ability to strengthen or weaken emotions from a particular event such as a funeral." "Babies can even interpret the emotional contents of a piece of music." "They can recognise happiness, anger and sadness," Prof. Trevarthan is reported as saying. Babies show a preference for light, gentle and joyful sounds. They are not apparently keen on rock music because "it is too passionate and frightens them." Dr. James Le Fann

Albert's Einstein parents bought him a violin. Albert became good at the violin. Music was the key that helped Albert Einstein become one of the smartest men who has ever lived. Einstein himself says that the reason he was so smart is because he played the violin. He loved the music of Mozart and Bach the most." Ancient Greek philosopher, Plato said

"Music is a moral law. It gives soul to the universe, wings to the mind, flight to the imagination, a charm to sadness, gaiety and life to everything. It is the essence of order and lends to all that is good and just and beautiful."



Hungary, Japan, and the Netherlands, the top three academic countries in the world, all place a great emphasis on music education and participation in music. It is interesting to note that the top engineers from Silicon Valley are all musicians. It is

important to note that the kind of music these engineers listen to are classical to inspirational music.

## **SLOW MUSIC AND PHYSICAL HEALTH**

Music affects us physically. A quick example of this is that our heart beat, respiration and brain waves all entrain, or synchronize with different rhythms. Slow music tends to slow down our heart rate respiration and brain waves. Fast music has the opposite effect, tending to speed us up." Music therapy is the prescribed use of music and musical interventions in order to restore, maintain, and improve emotional, physical, physiological, and spiritual health and well-being. Music therapists work towards a number of non-musical goals including improving communication skills, decreasing inappropriate behavior, improving academic and motor skills, increasing attention span, strengthening social and leisure skills, pain management and stress reduction. Music therapy can also help individuals on their journey of self-growth and understanding.

An Australian physician and psychiatrist, Dr. John Diamond, found a direct link between muscle strength/weakness and music. He discovered that all of the muscles in the entire body go weak when subjected to the "stopped anapestic beat" of music from hard rock

musicians, including Led Zeppelin, Alice Cooper, Queen, The Doors, Janis Joplin, Bachman - Turner Overdrive, and The Band. Dr. Diamond found another effect of the anapestic beat. He called it a "switching" of the brain."

Research by Costas Karageorghis, a sports psychologist at Brunel University, suggests that the right music can lift a person's athletic performance by as much as 20 per cent. Dr Karageorghis found that athletes who ran while listening to "synchronous" music — when the beats fitted with the rhythm of body movement — could endure a fifth more exertion than those without.

### **LOUD MUSIC**

"Loud music stimulates a part of the ear connected to the brain's pleasure centre which controls the body's craving for sex and food." People's response to the thumping beat of pop music is controlled by a tiny organ in the inner ear called the sacculus which till now was thought to have nothing to do with any hearing function. The sacculus normally controls a person's sense of balance but is also sensitive to noises above 90 decibels. When the volume of a sound is turned up it generates vibrations that are picked up by the sacculus. The distribution of frequencies that are typical in rock concerts and at dance clubs almost seem designed to stimulate the sacculus. Dr. Neil Todd, an expert in music perception. University of Manchester.



### **CLASSICAL MUSIC, EDUCATION & LEARNING**

Responses to music are easy to be detected in the human body. Classical music from the baroque period causes the heart beat and pulse rate to relax to the beat of the music. As the body becomes relaxed and alert, the mind is able to concentrate more easily. Furthermore, baroque music decreases blood pressure and enhances the ability to learn. Music affects the amplitude and frequency of brain waves, which can be measured by an electro-encephalogram. Music also affects breathing rate and electrical resistance of the skin. It has been observed to cause the pupils to dilate, increase blood pressure, and increase the heart rate.

Preschoolers who studied piano performed 34% better in spatial and temporal reasoning ability than preschoolers who spent the same amount of time learning to use computers. - Rauscher and Shaw, as reported in Neurological Research, February 1997. Listening to music can increase levels of interleukin-1 (IL-1) in the blood from 12.5 to 14%. Interleukins are a family of proteins associated with blood and platelet production, lymphocyte stimulation and cellular protection against AIDS, cancer, and other diseases. - Michigan State University. For the unborn Child, classical music, played at a rhythm of 60 beats per minute, equivalent to that of a resting human heart, provides an environment conducive to creative and intellectual development. -Dr Thomas Verny, The Secret Life of the Unborn Child

The power of music to affect memory is quite intriguing. Mozart's music and baroque music, with a 60 beats per minute beat pattern, activate the left and right brain. The simultaneous left and right brain action maximizes learning and retention of information.

The information being studied activates the left brain while the music activates the right brain. Also, activities which engage both sides of the brain at the same time, such as playing an instrument or singing, causes the brain to be more capable of processing information. Dr. George Lozanov of The Center for New Discoveries in Learning states that learning potential can be increased a minimum of five times by using this 60 beats per minute music. For example, the ancient Greeks sang their dramas because they understood how music could help them remember more easily.

### **MUSIC AND MENTAL HEALTH**

Dr. Ardash Kumar, research associate professor in the department of psychiatry and behavioral sciences at the University of Miami School of Medicine in Florida states that “A month-long course of music therapy improved behavior and sleeping problems in a group of Alzheimer's patients.” Blood analyses indicated that a significant increase in blood melatonin levels occurred after participation in music therapy sessions and that the increase continued even after the therapy had been discontinued for 6 weeks. Levels of epinephrine and norepinephrine are elevated.

Dear reader, let wholesome music be a part of your life. Listen to it. Learn it. Sing it. Let your music choice include a variety—religious, classical and inspirational music.

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