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Documented Educational Benefits of Drumming and Music

Brain Size, Development, and Function

Studies using magnetic brain images showed significant differences in the size and function of the corpus callosum area of the brain in musicians, especially those who began studying music during childhood. The corpus callosum is involved in communication and interhemispheric integration of the brain.

(Schlaug G, Jäncke L, Huang Y, Staiger JF, Steinmetz H. Increased corpus callosum size in musicians. *Neuropsychologia* 1995;33:1047-1055.)

Reading and Writing

Research shows there exists a significant difference in relative volume of the cerebellum between musicians and non-musicians. This part of the brain is thought to be involved in interpreting written letters and words.

(Hutchinson S, Lee LHL, Gaab N, Schlaug G. Cerebellar volume: gender and musicianship effects. *Cerebral Cortex* 2003, in press.)

Focus and Concentration

Preliminary research using QEEG readings to map neuron firing in the brain shows that drumming organizes the patterns of neural firing in the pre-frontal cortex into a state associated with alert awareness. The pre-frontal cortex is the area of the brain associated with focus, judgment and decision-making.

(Stevens, Emily. Neural firing patterns in the pre-frontal cortex: the organizing effect of rhythmic drumming. 2007, in process.)

Motor Coordination and Movement Control

Musicians who began studying music as a child had a significant increase in development of the region of the brain whose growth is associated with increased motor coordination and movement control.

(Schlaug G, Jäncke L, Huang Y, Staiger JF, Steinmetz H. Increased corpus callosum size in musicians. *Neuropsychologia* 1995;33:1047-1055.)

Perception

Evidence shows that musical ability is tied to the dominance of brain structures within the left superior temporal lobe of the brain, which is thought to be the mediator for categorical perception.

(Schlaug G. The brain of musicians: A model for functional and structural plasticity. *Ann NY Acad Sci* 2001;930: 281-299.)