

RESEARCH ON CHILDREN, MUSIC, AND BRAIN DEVELOPMENT

The latest research on brain development provides more evidence of the beneficial effects of introducing music to your infant or young child.

EVEN BABIES LEARN MUSIC

A recent study showed that newborns can process music even if they don't show an outward response. Researchers played consistent percussive rhythm patterns and then occasionally changed the pattern for newborns who were sleeping. The newborns were able to detect the change! How do we know? Tiny sensors on the surface of their heads were able to detect a change in their brain waves (ref1).

In another study, seven month-old Infants were bounced to a specific beat (either in duple or triple meter). Afterward they paid attention longer to music with the same beat they were bounced to. Infants that listened to the same music but weren't bounced did not show a preference for either type of beat. This demonstrates that infants of this age can perceive the beat more readily if bounced to it (ref2).

NEURAL DEVELOPMENT

A study of children 5-7 demonstrates that musical training results in more connections (neurons) forming between the right-brain and the left-brain. Researchers looked at images of the brains of the children before assigning them to one of three groups: high-practicing, low-practicing, and no music instruction. There were no differences in left-brain, right-brain connections prior to the musical instruction. However, after two years of musical instruction and practice, these children had more connections than children not given musical instruction. The children assigned to the high practicing group had the most number of connections (ref3).

SUMMARY

These scientific studies join a growing body of research suggesting that early exposure to music not only enhances your child's ability to create and enjoy music, but affects other aspects of brain development as well. There's growing evidence that musical training increases plasticity. Plasticity is flexibility in brain function and enhances many aspects of brain activity, and also facilitates recovery from brain injury. (ref4)

(ref1)Winkler, I., G. Haden, O. Ladinig, et al. Newborn infants detect the beat in music. Proc. Natl. Acad. Sci. 2009; 106: 2468-2471. <http://www.pnas.org/content/106/7/2468.abstract>

(ref2)Phillips-Silver J, Trainor LJ. Feeling the beat: Movement influences infant rhythm perception. Science 2005;308:1430.
<http://www.sciencemag.org/cgi/content/abstract/308/5727/1430>

(ref3) Schlaug G, Forgeard M, Zhu L, Norton A, Norton A, Winner E. Training-induced neuroplasticity in young children. The Neurosciences and Music III: Disorders and Plasticity. Ann NY Acad Sci. 2009;1169:205-8.
<http://www3.interscience.wiley.com/journal/122522498/abstract>

(ref4) Pantev C. Musical Training and Induced Cortical Plasticity. The Neurosciences and Music III: Disorders and Plasticity. Ann NY Acad. Sci. 2009;1169: 131-132.

(no abstract available)