

Lessons music to kids' brains

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ABSTRACT (ABSTRACT)

All children responded more to violin sounds than to white noise, reflecting a preference for meaningful tones, and their response times fell as their brains matured. Among those receiving the music lessons, however, responses to the violin tones changed more over the year.

"It is very interesting that the children taking music lessons improved more over the year on general memory skills that are correlated with non-musical abilities such as literacy, verbal memory, visio-spatial processing, mathematics and IQ," Professor [Laurel Trainor] said.

"The finding of very rapid maturation (of responses to) violin sounds in children taking music lessons fits with their large improvement on the memory test. It suggests that musical training is having an effect on how the brain gets wired for general cognitive functioning related to memory and attention."

FULL TEXT

MUSIC lessons may improve memory and learning ability in young children by promoting different patterns of brain development.

Researchers involved in a new study claim that after a year of musical training, children aged between four and six performed better at a standard memory test than children who were not taught music.

Because good scores on the test -- which involved listening to a series of numbers and remembering them -- were associated with general intelligence skills such as literacy and mathematical ability, the findings suggest that music could be useful for building the learning capacity of young minds.

Studies have shown that older children given music lessons become better at IQ tests than those musically untrained, but this is the first to show a similar benefit in children so young.

Laurel Trainor of McMaster University in Ontario also found differences in the way children's brains responded to sound after a year of musical training.

"This is the first study to show that brain responses in young, musically trained and untrained children change differently over the course of a year," she said. "These changes are likely to be related to the cognitive benefit seen with musical training."

The study looked at 12 children, six of whom had just started extra-curricular music lessons and six of whom were not being taught any music beyond their school curriculum. The lessons were at a Suzuki school, which encourages young children to listen to and imitate music before they can read it.

The 12 children had their brains examined four times during the year using magnetoencephalography (MEG), which measures magnetic fields outside the head, associated with the electrical currents generated by nerve activity. Each child was played two types of sound – white noise and a violin tone.

All children responded more to violin sounds than to white noise, reflecting a preference for meaningful tones, and their response times fell as their brains matured. Among those receiving the music lessons, however, responses to the violin tones changed more over the year.

In the first and last session, the children were also tested on their ability to discriminate between melodies and harmonies, and took the general memory test. The musically trained children improved more in both areas.

"It is very interesting that the children taking music lessons improved more over the year on general memory skills that are correlated with non-musical abilities such as literacy, verbal memory, visio-spatial processing, mathematics and IQ," Professor Trainor said.

"The finding of very rapid maturation (of responses to) violin sounds in children taking music lessons fits with their large improvement on the memory test. It suggests that musical training is having an effect on how the brain gets wired for general cognitive functioning related to memory and attention."

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