BRAIN DC POTENTIAL CHANGES INDICATE A MOZART EFFECT

Christoph Goger
Thomas Geiss-Granadia
Ulrike Spitzer
Michael Trimmel
University of Vienna, Institute for Environmental Health, Austria

Background

Improved performance in spatial temporal tasks was observed after listening to Mozart´s sonata (K.448). This short-term enhancing effect was termed as the „mozart effect“ and received widespread attention. There have been some attempts to replicate this effect with positive and negative outcome and there is still controversy over the mozart effect.

Aims

This study aims to monitor changes of the brain DC potential while listening to Mozart´s sonata compared to other acoustical excerpts.

Method

Thirty eight non-musicians were exposed to four acoustical conditions in consecutive order, each 10 minutes in length, consisting of Mozart´s Sonata (K. 448), Albinoni´s Adagio for Organ and Strings, Schubert´s Fantasia for Piano (D940) and brown noise. During the first 5 minutes of music presentation participants listened passively, during the second half they rated the preference of music as well as annoyance and filled out a questionaire of mood (MDBF).

Results

Repeated ANOVA for DC potentials showed a location related negative DC shift while listening to Mozart whereas during Schubert, Albinoni and brown noise, participants showed a positive potential change. Ratings of preferences as well as annoyance showed significant effects. All music excerpts were more highly rated in preference compared to noise and also as less annoying compared to noise. Ratings of MDBF revealed no differences in mood, alertness and excitation between music excerpts, but for all compared to noise.

Conclusions

This study suggests empirical evidence of the Mozart effect on brain activity. As neither rated preferences nor annoyance rated arousal nor mood accounted for the observed pattern of cortical activity, the fundamental reasons for the Mozart effect remain unexplored. However, changes in the brain DC potential while listening to Mozart´s K.448 indicate enhanced cortical activation.

ISBN: 3-931852-66-0
ISSN: 1617-6847