

# BRAIN DC POTENTIAL CHANGES OF EMOTIONAL DECISIONS DURING EMOTIONAL BACKGROUND STIMULATION

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## Background

Long term recordings of brain DC potentials are discussed as an indication of cortical activation, and are therefore of interest in relation to emotion. In Addition the quantitative aspect of brain DC potentials and the aspect of lateralisation in relation to mental resources is discussed.

## Aims

Purpose of the investigation was to examine the effect of emotions induced by music on DC potential change during emotional decisions.

## Method

By means of a pretest (n=100) three types of music were chosen to induce either positive (Pachelbel, „Canon in D Major“), neutral (brown noise) or negative (Praxis, „Rivet“) emotions. Participants consisted of 36 non-musicians. A repeated measure design was chosen, where participants were confronted with the three emotional conditions in consecutive, permuted order. After 2 minutes listening only, subjects had to evaluate their mood using the MDBF (Mehrdimensionaler Befindlichkeitsfragebogen) followed by a period of 8 minutes listening to music combined with presentation of 99 pictures of the IAPS (International Affektive Picture Set) randomised to their emotional content

(positiv, neutral, negativ), each lasting 2.5sec. Participants had to evaluate the pictures on a scale concerning their subjective emotional impact. Additional anxiousness was rated by means of the STAI (State-Trait-Anxiety-Inventory).

## Results

Preliminary results showed changes in the DC potential over time. During the emotional evaluation of pictures DC potential was positive compared to the baseline. Comparing persons affected by musical background stimulation showed differentiated DC potential changes related to mood as opposed to persons not affected by emotion. Independent of involvement negative musical stimulation (first 2min) showed a 100 $\mu$ V negative DC-shift whereas a positive DC-shift was found in response to „neutral“ music.

## Conclusions

Results suggest that individual differences of music perception were reflected by changes in Brain DC-potential.