

IMPLICIT LEARNING OF CUE-PICTURE ASSOCIATION WITH NEUTRAL AND EMOTIONAL FACES IN PATIENTS WITH DEPRESSION AND HEALTHY CONTROLS

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Introduction: Knowledge on the brain mechanisms of psychopathology is extremely important for successful treatment of patients. Depression is a group of disorders with varied origins and complex and yet unclear neurobiology.

Objectives: Depressed patients show attentional bias to emotional (especially negative) stimuli. Automatic (implicit) emotional processing in such patients may differ compared to non-depressed controls.

Aims: We aimed at studying the EEG-correlates of implicit learning with emotional stimuli in patients with depression.

Methods: 128-channel EEG was recorded in healthy volunteers (12 female and 7 male) and depressed patients (12 female and 7 male), while they performed categorization of pictures as human or animal photographs. Half of the photographs were neutral and half were showing aggressive people or animals. The pictures were preceded by the cue (simple abstract pattern, one for each picture category), which meaning was not explained to the participants. We analyzed visual response to the cue and the CNV recorded during the picture anticipation period (duration was 2s).

Results: All participants reported that they did not notice cue-picture association. Unlike the healthy controls, our patients showed strong CNV differences in the right anterior area: larger negativity for the emotional face condition versus the neutral faces.

Conclusions: Although our participants were contingency unaware, the cue-picture association was established in our patient group: certain simple neutral pattern was associated with neutral or emotional (aversive) faces, eliciting different CNV during real face anticipation. This may underlie the impairment in depressed patients leading to their fixation on negative emotions.