

Neural mechanisms of encoding and maintenance of emotional faces in social anxiety disorder : An ERP study with an N-back task

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Social Anxiety Disorder (SAD) is associated with an attentional bias for threatening information, inducing an automatic orientation of attentional resources toward face expressing anger. This could reduce the resources available for more complex processes, such as working memory. We tested the hypothesis that attentional bias toward threatening stimuli in a SAD group could induce a better perceptual processing of angry faces (reflected by larger P100, N170 and P200) and therefore affect later stages of information processing in comparison to a control group. Event-Related Potentials (ERPs) were recorded during an emotional N-Back task in which 24 socially anxious and 25 non-socially anxious individuals were asked to remember either the identity or the emotion of three different faces displaying angry, happy or neutral facial expression. Subjects were asked to maintain either the information relative to the identity of the faces (regardless of the emotion displayed) or one target emotion expressed by the different faces. Regarding our hypothesis, SAD group could show either improved performances (reflected by a larger P300) due to the better perceptual treatment of the faces; or reduced performances on the identity condition due to the prior encoding of emotional valence. Results showed an enhanced P200 in SAD group in both emotional and identity condition, in the one and two-back tasks. However, no differences were noticed between both groups regarding to behavioural responses, despite the improved perceptual treatment recorded for all faces. Further studies shall try to clear up the dissociation between ERPs modulations and behavioural responses in SAD population.