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# Neural Basis of Biased Information Processing in Phobics and its Modulation by Exposure Therapy

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## Abstract

Many studies have demonstrated biased processing of threat information in phobics and patients with other anxiety disorders. Functional MRI data and data from other imaging methods like ERPs and source analysis of neural activities indicate that several neural networks in the brain of these subjects are critical for this processing peculiarities including the amygdala, the anterior insula, the subgenual anterior cingulate cortex and several networks of the frontal brain including Brodmann area 9 and 10, and the ventromedial part of the orbitofrontal cortex. Several fMRI and ERP-studies will be presented that show increased activities of these structures in phobics as compared to non-phobic subjects when subjects were exposed to threatening stimuli of personal concern as compared to general threatening or neutral stimuli. In the second section of the presentation results of three studies will be presented that show that the hyperactivities of these brain structures might become significantly modified in accordance with subjects fear behaviors and subjective experiences in response to threat following brief periods of exposure therapy.

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