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(abstracts)

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Categorization of Frequency Modulated Tones in Schizophrenia

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The ability to discriminate fine nuances in human affective prosody is an important feature of human social functioning. In Schizophrenia, this aspect is thought to be disturbed. Some studies have addressed the recognition of affective prosody in Schizophrenia but without controlling for semantic aspects of language. Linear frequency modulations (FM) are a simplified, well established model of human affective prosody, independent of semantic aspects of language. Several studies have shown that the right auditory cortex (AC) is predominantly involved in the categorization of affective prosody as well as categorization of FM-direction. To test the hypothesis if there are any differences in categorization of FM-direction between patients with schizophrenia and matched healthy controls, we used a functional imaging paradigm. Participants and patients had to categorize upward vs. downward FM. Two conditions were used. First, they had to listen passively to the FM, in the second condition they had to categorize upward vs. downward FM. In each scan 105 functional volumes were collected in a 3 Tesla scanner, using a low-noise gradient echo sequence (FLASH) (54dB(A)SPL). Data were carefully corrected for movement artifacts. The results showed in comparison to healthy controls an opposite hemispheric distribution of AC activation in Schizophrenia. This suggests that the neural processing of prosody could be disturbed in Schizophrenia independent of semantic aspects of language. Moreover, this study strengthens the hypothesis of diminished hemispheric specialisation in Schizophrenia, importantly in this study a task, in which the right hemisphere is predominantly involved.