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NEUROIMAGING OF THE VARIOUS SYMPTOM DIMENSIONS IN OBSESSIVE-COMPULSIVE DISORDER - A SYSTEMATIC REVIEW

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Introduction: Several neuroimaging studies in obsessive-compulsive disorders (OCD) have shown a dysfunction in the orbito-fronto-striato-thalamamic neural circuitry as the fundamental neuropathological correlate, consistent across all symptom subtypes.

Therefore, the neurobiological differentiation of the various obsessive-compulsive symptoms is attracting increasing interest in neuroimaging as this clinical picture becomes increasingly subclassified.

Method: A systematic literature survey was used to search for original papers that studied the neurobiological correlates of the various symptom dimensions of OCD (symmetry, forbidden thoughts, washing, hoarding).

Results: It was possible to include a total of 15 original papers in the assessment. The “forbidden thoughts” factor, which also includes compulsion to control, is associated mainly with activations in brain structures of the cognitive control system, i.e. the basal ganglia and parts of the anterior cingulate cortex (ACC). Therefore, the neural representation pattern of “forbidden thoughts” differs clearly from that of “washing”, in which cerebral regions of emotional control seem to be particularly involved, i.e. the orbito-frontal cortex (OFC), ACC, the amygdala and insula. On the other hand, the “hoarding and collecting” dimension is primarily associated with brain areas involved in decision-making, i.e. the ventro-medial OFC, the dorsal ACC and the dorso-lateral prefrontal cortex (DLPC).

Discussion: The results confirm the hypothesis that all dimensions of OCD are based on different neuronal networks, which underlines the neurobiological heterogeneity of the clinical picture of OCD, thus pointing the way for future research strategies.