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# Frontal cortex dysfunction may contribute to compulsive sexual behavior

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Sex "addiction" is a concept that has had particularly high visibility recently with the publicity associated with Tiger Woods. Persons with addictive or compulsive disorders frequently display an inability to inhibit behaviors once they become maladaptive, despite adverse consequences of their behavior. The medial prefrontal cortex (mPFC) is a brain region involved in decision-making and behavioral flexibility, and it has been identified as a potential mediator of behavioral inhibition.

In a new study, Dr. Lique Coolen and colleagues tested whether the mPFC is involved in inhibition of sexual behavior when associated with aversive outcomes. Using a carefully-designed experimental paradigm in rats, the researchers found that lesions of the mPFC result in compulsive sexual behavior. In contrast, lesions did not alter sexual performance or the learning associated with reward or aversive stimuli. This indicates that intact mPFC function is not required for normal expression of sexual behavior.

Instead, the results support the hypothesis that the mPFC regulates the execution of behavioral inhibition toward sexual behavior once this behavior is associated with aversive outcomes. The animals with mPFC lesions were likely capable of forming the associations with aversive outcomes of their behavior but lacked the ability to suppress seeking of sexual reward in the face of aversive consequences.

Collectively, these data suggest a general role for the mPFC in regulating

the compulsive seeking of reward, and may contribute to a better understanding of a common pathology underlying impulse control disorders.

Compulsive sexual behavior has a high prevalence of co-morbidity with psychiatric disorders, including substance abuse and mood disorders. The current study suggests that mPFC dysfunction may contribute to sexual risk-taking or to compulsive seeking of sexual behavior. Although thought-provoking, we do not yet know whether these findings apply to humans.

**More information:** "Lesions of the Medial Prefrontal Cortex Cause Maladaptive Sexual Behavior in Male Rats" by Jon F. Davis, et al. The article will appear in Biological Psychiatry, Volume 67, Issue 12 (June 15, 2010).

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