

In the news

ADDICTIVE PERSONALITIES

Drug abuse has long been associated with impulsivity and alterations in the dopamine system, but the question remained of whether these features precede or follow drug use.

A recent study in *Science* shows that the former is the case: impulsive rats, which had never before been exposed to cocaine, self-administered more of the drug than non-impulsive rats. Moreover, the higher the rats' pre-drug impulsivity levels, the fewer dopamine D2/3 receptors they had in the nucleus accumbens, a brain structure known to have a role in motivation and reward.

Lesley King-Lewis, from Action on Addiction, says the study is interesting because it "has identified a biological basis in rats for some of the behaviours ... and shows how they can lead to drug addiction" (*BBC News Online*, 1 March 2007).

Some researchers warned against overestimating the predictive power of dopamine receptor levels. They can also be associated with traits like "social phobia, obsessive-compulsive disorder, social detachment and increased age," says Diana Martinez, from Columbia University Medical Center in New York City (*Scientific American*, 1 March 2007).

However, the study "... identifies a target," says Michael Nader, of Wake Forest University in Winston-Salem, North Carolina, USA. "If you have low D2 levels you're more vulnerable" (*Scientific American*, 1 March 2007). Gerome Breen of the Institute of Psychiatry in London, UK adds: "we can start to investigate treatments that ... correct this deficit" (*BBC News Online*).

However, the findings do not mean that people who are impulsive or have lower numbers of D2/D3 receptors are predestined to become addicts. As Gerome Breen observes, "The biggest determinant in who will become an addict is whether they actually take the drug in the first place and whether it is available to them" (*The Guardian*, 2 March, 2007).

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