

All in the family - scientists discover gene for cocaine addiction



Addicts are 25% more likely to carry the gene variant than non-users of cocaine. Photograph: Alamy

It has become commonplace for people who are overweight to attribute their waistline to their DNA. Now, celebrities caught snorting cocaine might also be able to blame their parents.

Scientists reported yesterday the discovery of a gene that increases the chances of becoming hooked on the drug. Addicts were 25% more likely to carry the gene variant than people who did not use cocaine, a study found.

The discovery is unlikely to lead to a treatment for cocaine addicts, but scientists hope it could be used to screen for those most likely to have problems kicking the habit if they ever try the drug.

"If you are a carrier of this gene variant, the likelihood of getting addicted to cocaine is higher," said Rainer Spanagel, a professor of psychopharmacology at the Central Institute of Mental Health in Mannheim, Germany, who led the study. "You can certainly use this as a vulnerability marker for cocaine addiction."

He said people found to be susceptible to cocaine addiction could be given counselling or protected with experimental vaccines now being developed. The vaccines are designed to block the "high", or euphoria, associated with the drug. Last week, an analysis by the European Union's drug agency put Britain at the top of its list of cocaine-abusing states, with its users outnumbering all those elsewhere on the continent.

Genetic factors, scientists believe, account for 70% of cocaine addiction, making it as heritable as schizophrenia and other mental health conditions. Studies of twins suggest alcoholism is about 50% genetic.

Researchers linked a version of the CAMK4 gene with cocaine addiction after studying mice that had been genetically modified to alter the gene. One particular breed was affected more strongly by the drug and became addicted quicker than others in the group, according to the study in the US journal, *Proceedings of the National Academy of Sciences*.

To see if the gene played a role in cocaine addiction in humans, the researchers ran genetic tests on 670 cocaine addicts and more than 700 matched non-users. While 40% of non-users carried the gene, it was found in half of the addicts.