DAILY MAIL (London)

Date: June 21, 2011 Tuesday

Word count: 125

Sentences: 6

THE KEY TO **ADDICTION?**

SCIENTISTS have discovered **brain** abnormalities that could explain why some people are more prone to drug **addiction.**

**Cocaine**, one of the most addictive illegal drugs, exerts its effects on the **brain** by creating an overwhelming need to take more .

Researchers at the University of Cambridge found that parts of the **brain** reward system Ð where **cocaine** exerts its actions Ð were significantly enlarged in **cocaine** users, but they believe this abnormality is present in these individuals before their drug abuse starts and may make them more vulnerable to its effects.

Dr Karen Ersche, who led the study, said: 'People describe their out-of-control drug use as a "compulsion". Our work has laid the foundation for an understanding of **cocaine** dependence and why this compulsion occurs.'

**The Daily Telegraph (London)**

Date: June 21, 2011 Tuesday   
Word count: 37

Sentences: 3

'Abnormal **brains'** aid drug **addiction**;   
In Brief

**Brain** abnormalities mean some people are predisposed to being **cocaine** addicts, claim researchers at Cambridge University. They found that parts of the reward system on which **cocaine** acts are larger in addicts and say abnormalities predate **addiction.**

The Guardian (London) - Final Edition

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**Cocaine addiction** linked to **brain** disorder, say scientists  
  
**BYLINE:** Alok Jha Science correspondent

Scientists have found "significant abnormalities" in the **brains** of people addicted to **cocaine**, which could help explain some of the compulsive behaviour associated with using the drug. It may also hint at why some people are more prone to **addiction**.

**Brain** scans revealed that **cocaine** users had a "dramatic decrease in grey matter" in their frontal lobes, according to researchers, which affected key functions including decision-making, memory and attention. Karen Ersche of the Behavioural and Clinical Neuroscience Institute at the University of Cambridge, who led the latest work, found the longer a person had been using **cocaine**, the poorer their attention was, and the more compulsively they used the drug.

"That is the hallmark of **cocaine** dependence - namely, that most of them are intelligent people who go to great extents to buy **cocaine**, to get more **cocaine**, to put their jobs at risk, their families at risk," said Ersche.

The results were published in the journal **Brain**. Ersche and her team scanned the **brains** of 60 people who were dependent on **cocaine** and compared them with scans of 60 people without any history of drug-taking. "We found significant abnormalities in the **brains** of the **cocaine** users," she said.

Specifically, the amount of grey matter in the orbitofrontal cortex was reduced in people with **cocaine** **addiction**, an area involved in decision-making and goal-directed behaviour.

Other affected areas included the insula, an area of the **brain** involved in feedback processing, learning and feelings of cravings. The grey matter in the anterior cingulate, involved in emotional processing and being attentive, was also reduced.

In contrast, a region deep in the **brain** associated with reward processing, attention and motor movements - the chordate nucleus - was enlarged in subjects who were addicted to the drug. This could explain why those subjects were more prone to **addiction** but the scientists cannot be sure whether the enlargement is a result of **cocaine** use.

Ersche said her research was not conclusive on which came first. "At the moment, correlation shows me a direct relationship, but I don't know which direction the relationship is."

But the work could be used to help in diagnosis and treatment of **addiction**.

"We basically show that **cocaine** is a disorder of the **brain**, which is a big step," said Ersche.