



## Junk Food Junkies

### Scientists confirm that compulsive overeating is a genuine addiction

For the first time, scientists have demonstrated that the same molecular mechanisms that drive people to drug addiction are also behind the compulsion to overeat.

A recently published study by researchers at the Florida-based Scripps Research Institute shows that the onset of obesity coincides with a progressive chemical imbalance in the brain's reward center. Experimenting on laboratory rats, the researchers found that the rats quickly developed compulsive overeating habits as their brain's pleasure circuits became less and less responsive, consuming larger quantities of high-calorie, high-fat foods until they were obese. The same changes have also been observed in the brains of rats that are addicted to cocaine or heroin.

Scripps Research Associate Professor Paul J. Kenny, who co-authored the three-year study, said it confirms the "addictive" properties of junk food.

"It presents the most thorough and compelling evidence that drug addiction and obesity are based on the same underlying neurobiological mechanisms. In the study, the animals completely lost control over their eating behavior, the primary hallmark of addiction."

The scientists fed the rats a diet modeled after the type that contributes to human obesity -- easy-to-obtain high-calorie, high-fat foods like sausage, bacon, and cheesecake. Soon after the experiments began, the animals began to bulk up dramatically.

"They always went for the worst types of food," Kenny said, "and as a result, they took in twice the calories as the control rats. When we removed the junk food and tried to put them on a nutritious diet -- what we called the 'salad bar option' -- they simply refused to eat. The change in their diet preference was so great that they basically starved themselves for two weeks after they were cut off from junk food."

He noted that even when the scientists applied an electrical shock to try to stop the rats from feasting on the junk food, the animals still kept overeating, "highlighting just how motivated they were to consume the palatable food."

Human struggling with overeating may not have to worry about getting an electrical shock, but they do need to fear the no-less painful shock of learning they have an obesity-related disease such as type 2 diabetes.