Scientists Test the Brain Region That Makes Us Averse to Alcohol

Neuroscientists at the University of Utah investigate the region of the brain that regulates how sensitive we are to the negative effects of alcohol.

The brain's relationship to recreational drugs, of which alcohol is one, involves a complex system of reward and punishment. Alcohol triggers the brain's reward system, releasing pleasure-inducing neurotransmitters that make us want to consume more.

But the adverse effects of alcohol - hangovers, sickness and impaired motor function, among other things - help us to regulate our intake so that the consumption of intoxicants does not become a problem for us.

To understand more about how this shapes the way we learn to avoid things that are bad for us, the University of Utah researchers investigated how they could inhibit this regulatory mechanism in rats.

Their main area of interest was in a brain region called the lateral habenula.

Other recent studies have suggested that the habenula negatively regulates the motivation to consume nicotine and cocaine, and encourages us to learn from adverse experiences associated with these drugs.

The researchers inactivated the lateral habenula in a group of rats, and both these rats and a group of control rats were given intermittent access to a solution of 20% alcohol over several weeks.

They found that the rats with an inactivated lateral habenula escalated their drinking faster, drinking more alcohol than the control rats.

Study author Sharif Taha, PhD, professor of neurobiology and anatomy at the University of Utah, comments: "In people, escalation of intake is what eventually separates a social drinker from someone who becomes an alcoholic.

These rats drink amounts that are quite substantial. Legally they would be drunk if they were driving."

The team - who publish their results in PLOS One - believes that more specific research is required to understand exactly how the lateral habenula works.

Source, David McNamee, Medical News Today