

The Herald

So what's the story with... Serotonin?

Could road, trolley and office rage become things of the past if we ate more chicken soup, chocolate and cheese? After reading a groundbreaking new study into the role of the brain chemical serotonin, you might think so.

A report published in the journal Science Express this week by psychologists from the University of Cambridge supports evidence that serotonin - a neurotransmitter, or chemical messenger between brain cells - has a key role to play in regulating emotions such as aggression.

In experiments conducted by a team of experts headed by PhD student Molly Crockett of the Behavioural and Clinical Neuroscience Institute, people with high levels of the chemical were more likely to succeed in delicate negotiations affecting their own interests. By contrast, those with low levels were more inclined to let their hearts rule their heads and either blow a short fuse - or succumb to depression.

The research is significant because it's the first time a definite link has been established between serotonin and an over-emotional reaction to perceived unfairness. Serotonin has long been associated with social behaviour, but its precise involvement in impulsive aggression has hitherto been controversial.

Interestingly, serotonin is manufactured in the body by the essential amino acid tryptophan - which is only obtained through diet. This could explain why some of us become especially combative when we haven't eaten, because serotonin levels naturally drop after a period of fasting. The best thing to do is to eat tryptophan-rich foods such as oats, bananas, dried dates, milk, salmon, sesame seeds, turkey, chicken, chocolate and cheese, all of which could help boost serotonin levels and calm us down. That's why they're sometimes called "feel-good" foods.

Some observers believe they might be even be more effective than anti-depressants such as Prozac and Efexor, the selective serotonin reuptake inhibitors (SSRIs) that are being prescribed for an increasing number of Scots. A recent review by the research unit of the Royal College of Psychiatrists suggested that some of the most widely prescribed drugs were no more effective than a placebo for patients with mild depression, and was unconvinced whether there was clear clinical benefit for the severely depressed.

The Cambridge University researchers were able to reduce brain serotonin

levels in 20 volunteers aged between 20 and 35 for a short time by manipulating their diet and getting them to participate in an “ultimatum game”, a scenario in which one player proposes to split a sum of money with a partner, which is not necessarily 50%. If the partner accepts, both players are paid accordingly. But if the offer is rejected, neither gets paid.

Normally in this game, which has been used for decades by psychologists and economists to test responses to fair and unfair offers of money, and to explore whether human decision-making is rational, people tend to reject about half of all offers less than 20%-30% of the total stake. After serotonin reduction, however, the rejection rate shot up to 80% because the volunteers’ anger at the perceived injustice and a desire to punish the person who made the offer far outweighed the loss of cash and the harm to their long-term interests.

“Our results suggest that serotonin plays a critical role in social decision-making by normally keeping aggressive social responses in check,” said Molly Crockett. “Changes in diet and stress cause our serotonin levels to fluctuate naturally, so it’s important to understand how this might affect our everyday decision-making.

“If decision-making were rational we would accept every ultimatum game offer, even those that are really unfair, but that is not what happens.”

So the next time you see the red mist rising as you try to negotiate a pay rise, count to 10 and remind yourself that the irresistible desire to punch your boss could perhaps be cooled by swallowing a little piece of hard cheese.

12:46am Saturday 7th June 2008

By CATE DEVINE

[Back](#)