

Sweet As?

Sometimes nature has a way of playing nasty tricks on us. Take our relationship with sugar for example – evolution has basically hardwired us to enjoy its sweet taste, sending reward signals throughout our brain when we eat it.

Things have changed since our distant ancestors walked the earth. Sources of sugar were scarce then, and getting those precious extra calories could make the difference between life and death.

It only makes sense then, that evolution gave our ancestors an incentive to seek out sources of sugar wherever possible. By giving us a boost in the form of dopamine and other feel-good chemicals in the brain in response to its pleasant taste, nature initiated what would become our love/hate relationship with the stuff.

It has only been fairly recently in human history - during the 18th century - that the production of sugarcane became widespread, but there's been no holding it back since then. It's estimated that the world produced about 168 million tonnes of sugar in 2011.

Now, sugar is all around us; there's no need to hunt or gather it any more. Instead of foraging for berries or other fruit, or risking the ire of a hive of bees to get a taste of elusive honey, all we need to do is go to the supermarket and it's right there.

Sugar, in abundance. Today we see a resurgence of our hunter-gatherer behaviour in some individuals, trying to find foods which haven't had sugar added to them. This is easier said than done, because sugar is insidious – you can find it in surprising amounts in products you wouldn't think would contain it.

It's no mystery that too much sugar is having negative effects on our physical health, with one in three adults in New Zealand being classified as obese and a further 34% overweight. But is it possible that our mental health is also being put at risk?

Science has been attempting to answer this question, and judging from the research so far the answer is disconcerting to say the least.

One possible effect that everyone should be concerned about is sugar's impact on learning and memory.

In a study carried out by the University of Los Angeles, rats had been trained to learn their way through a maze. Some of the rats (the control group) were given a nutritious diet, while another group was fed a sugary fructose solution similar to a soft drink for six weeks.

Those rats who had been on a sugary diet actually ended up forgetting their way out of the maze; their nutritionally balanced counterparts managed to navigate the same maze much faster.

It's believed that the high sugar diet the rats had been exposed to had caused insulin resistance in their brains, and in turn caused damage in the neural pathways between brain cells responsible for learning and memory.

Too much sugar is also thought to suppress a brain hormone called BDNF, low levels of which is linked to instances of depression and schizophrenia. Sugar is also known to cause inflammation of many tissues of the body including the brain, which some specialists believe may further explain the link to depression.

It's worth noting that countries with a high level of sugar intake also have high levels of depression.



The news doesn't get any better according to other studies; sugar has also been shown to be addictive, with symptoms including cravings, tolerance and dependence exhibited. In many ways sugar could be compared to nicotine and other dangerous chemicals.

Although a diet without sugar in all forms would be almost impossible if not fatal, efforts to cut down or moderate its intake and make healthier choices could yield sweet results for both your physical and mental wellbeing.

Tony Spencer

This month's "*Korero Mai*" and "*What's On*" are edited by Stephanie Mapley and "*Whakaaro Pai*" by Tony Spencer— from Like Minds Taranaki. Your news and views are eagerly sought. Like Minds Taranaki, PO Box 5015, New Plymouth, 3rd Floor, Brougham House, 50 Devon Street West, NP, ph. 06-759-0966 mental.health@xtra.co.nz. www.likemindstaranaki.org.nz

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