

Monday's medical myth: Blame it on my sweet tooth

July 23 2012, By Merlin Thomas



Men generally prefer higher concentrations of sweet compared with women.
Credit: Ethan

My wife says she has a sweet tooth. But doesn't everyone? It's universal to the human condition (as well as the human palate) to like something sweet.

It may even be an evolutionary advantage to seek out an energy source in the form of carbohydrates. Sweet meant ripe, and ripe meant more energy and a better safety profile. In fact, sweet preference is associated with fruit consumption. So next time your kids ask you for sweets, just think how well adapted they are.

Of course, it's nothing to do with your teeth. "Sweet tooth" is just an expression, used in the same way as "a head for heights", "an ear for

music”, “a nose for trouble” or “an eye for a bargain” to denote a particular talent, as well as a proclivity towards it. In more recent times, this latter meaning has dominated and the sweet tooth has largely become a depiction of gluttony. But is there also a skill to it?

Taste perception begins on the tongue and soft palate, where receptors on the cluster of cells that make up the taste bud interact with food or beverages and the saliva in which they’re dissolved. These can respond not only to simple sugars but also other chemicals. This is how sugar substitutes (like saccharin, acesulfame K and aspartame) are able to taste as sweet as table sugar. But much less is needed to elicit the same sweet taste, and this means fewer calories.

In humans, the ability to detect and perceive the intensity of a sweet taste is subject to considerable individual variation, based on differences in concentration of taste-buds, number and type of taste receptors and signal transduction molecules. There are also large differences among people in the degree to which they like highly sweetened foods.

Humans can be loosely divided into two types. Those who like increasing levels of sugar up to a mid-range concentration, but then reach a point when it things get too sweet and liking falls off. The second group also like increasing levels of sugar up to a mid-range of concentration, but as sweetness increases, enjoyment rises – or at worst, levels off. For these people, there is no such thing as too sweet.

Sugar preferences are influenced by age and gender. Men generally prefer higher concentrations of sweet compared with women. And children have more of a sweet tooth than their parents. In fact, sweetness turns out to be the most important features that determine what children are willing to eat. But the liking for concentrated sweetness fades rapidly during adolescence.

In animals, the ability to taste sweet and the preference for eating sweet things are loosely linked. Cats, which have no sweet receptors at all (they are carnivores), would rather lick the sweat off your arm than eat something sweet. But bears possess sweet sensors and a well-known fondness for honey. This relationship doesn't seem to hold for humans. How well you taste sweetness doesn't predict how much you like it or whether you will eat lots of sweet things. So the sweet tooth is neither super-sensitive nor overcompensating because of lack of sensitivity.

Sweet foods may also be preferred for their hedonistic as well as their comforting properties, partly through its effects on brain chemicals including endogenous opiates. Sugar was probably the first drug. And the more enjoyable, rewarding or relaxing the experience, the more likely you'll reach for it again.

Finally, it's widely assumed that most overweight people have a sweet tooth and the over-consumption of sugary delights got them there in the first place. But body weight doesn't affect either the perception or the liking for sweet. Obesity is much more complicated. We can't just blame it on our (sweet) tooth.

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