

# 'Sugar high' is bitter-sweet for aggressive people: study

November 19 2010, By Bob Beale

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Drinking a sweet beverage may either help or hinder people with aggressive personalities depending on the social setting, a new study has found.

Consuming a sugary drink can make such people less likely to respond impulsively when they are insulted or otherwise provoked, yet it can also make them more aggressive when they are not provoked, the study found.

Despite a widely held notion that glucose consumption can lead to a "sugar high" resulting in impulsive behaviour, the findings suggest that glucose can actually increase self-control in circumstances where aggressive individuals are provoked, says a research team led by Dr. Tom Denson, of the UNSW School of Psychology, in a paper in the *Journal of Experimental Psychology*.

"Other research has found no adverse effects of glucose consumption on hyperactivity and conduct problems," says Dr. Denson. "Yet our findings suggest there may be some truth to the 'sugar high hypothesis'. When provoked, glucose reduced aggression among highly aggressive individuals. Yet when unprovoked, it augmented their aggression. This surprising finding deserves further investigation.

"Aggressive individuals tend to have particular difficulty controlling aggressive impulses when they are provoked and most provocation happens unexpectedly. But our finding suggests that if you know you're

about to have an encounter with someone who is likely to provoke you - a difficult work supervisor, for example, or an ex-spouse - having a sugary drink beforehand may be effective in inhibiting your aggressive impulses, particularly if you are an aggressive person.

"Put simply, the brain uses sugar as fuel and earlier research suggests that when the fuel is running low it can impair your executive functioning – those high-level mental abilities that we use to over-ride routine or impulsive responses to external stimuli.

"We're not sure what's going on here but it may be that a sugary drink quickly tops up the brain's energy reserves and helps those executive functions to operate more effectively to exercise self-control and restrain aggressive impulses, but only in the context of being provoked.

"It's intriguing that glucose can also make aggressive people more aggressive when they are not provoked. Our data suggest that while providing aggressive individuals with glucose may be helpful in some circumstances, there's a need for caution in the absence of provocation.

"Interestingly, [glucose](#) had no effect on our study participants' anger. This suggests that the control of aggression and anger – the first being a behaviour and the second being an emotional state - operate on different chemical pathways and it certainly opens up new lines of investigation into those pathways."

The study involved two blind controlled experiments with more than 230 student volunteers who fasted for three hours before being tested. The students performed some demanding mental tasks then were given either a sugary drink or an artificially sweetened placebo and asked to prepare and deliver a two-minute speech to a bogus web conference.

They were provoked by the supposed recipient of the speech - a pre-

recorded actor, who insulted their efforts as juvenile, boring and a waste of the recipient's time - then given a disguised opportunity to deliver blasts of white noise to the person who insulted them.

Provided by University of New South Wales

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