



The Calorie Control Council responds to inaccurate allegations in *Nature*

“The toxic truth about sugar” is based on selected research

The article “The toxic truth about sugar”¹ incorrectly uses the terms fructose and high fructose corn syrup (HFCS) interchangeably. Often confused with high fructose corn syrup (which contains nearly equal amounts of glucose and fructose and is handled by the body in the same way as sucrose), fructose has a low glycemic index, and does not cause surges and dips in blood glucose levels. Fructose is the sweetest of the nutritive sweeteners, so less is needed to sweeten foods and beverages, resulting in calorie savings. Although dietary fructose consumption has increased in recent decades, relative consumption of fructose compared to other sugars has remained constant.

The research presented in “The toxic truth about sugar” is selective and does not reflect the totality of the scientific literature on fructose. Studies alleging untoward health effects of fructose have been based on studies in which animals or humans were fed unrealistic amounts of fructose (up to 60% of the diet) or epidemiological studies which cannot demonstrate cause and effect. Two recent reviews have concluded that not only does fructose *not* cause relevant changes in biologically significant measures like triglyceride levels or bodyweight,² but that there are benefits to be gained from moderate levels of fructose in the diet.³

Lustig has published papers proposing a hedonistic parallel between sugar and alcohol⁴⁻⁵, and his premise in the current article is based on the authors’ theory of a habituation or addiction to sugar in humans. However, this effect has never been demonstrated scientifically in a randomized, controlled human trial. There is no need to make dietary changes as a result of a theory, especially if that theory is in contrast to scientific research findings.

Obesity is a multi-factorial issue. Placing a ban or tax on sugar is unlikely to reverse obesity or metabolic syndrome. Weight maintenance and health involve many factors, such as healthful eating habits (including balance and moderation), exercise and long-term commitment. There is no scientific evidence that one component of the diet, such as fructose, is responsible for weight gain, metabolic syndrome or diabetes.

References

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3. Livesey G. Fructose ingestion: Dose-dependent responses in health research. *J Nutr*. 2009;139(6):1246S-1252S.
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5. Lustig R. Fructose: Metabolic, Hedonic, and Societal Parallels with Ethanol. *J Am Diet Assoc*. 2010;110:1307-1321.

