Fructose dose too high, but exercise can offset

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Natural sources of pure fructose include fruits and honey. Credit: Lori Greig

A high-fructose diet is related to major health problems including diabetes, but can be offset by a moderate exercise regime, a Murdoch University scientist suggests.

Murdoch University School of Chiropractic and Sports Science Exercise Physiology's Timothy Fairchild says that a recent West Australian study based on data collected from the Raine cohort, shows 14-year-olds consume between 40-60g of fructose per day.

"While individual values were not presented, some individuals would have consumed close to, or slightly over 100g of fructose per day (more than 400 calories from fructose alone)," Dr Fairchild says.

"Given that no more than 40g of sugar should be added to the diet, more than 20g of fructose added to the diet would be considered high."

Dr Fairchild says a high-fructose diet could raise the levels of glucose in the body and subsequently increase the risk of a person acquiring serious health problems.

"Increasing fructose in the diet has been associated with increased prevalence of obesity, diabetes, high blood pressure and elevated blood fats," he says.

"Whether this is directly influenced by fructose is still a matter of debate, however the evidence is very strong in animals and reasonably strong in humans."

A small study in the US—overseen by Dr Fairchild—found that physical activity weakened the harmful effects a high-fructose diet can have on glycemic control.

"We were interested in seeing whether an increase in physical activity levels would provide protection against some of the adverse health consequences associated with increasing fructose intake," Dr Fairchild says.

The results were clear; a high level of physical activity was found to be a protective measure against the onset of type 2 diabetes, caused by higher levels of fructose in the diet.

Exercise decreased insulin and glucose-dependent insulintropic peptide concentrations in the body; hormones that directly effect glycemic control.

"The benefits [of physical activity] include reducing the energy stocks in the liver so that a lower portion of the fructose is converted to fats; increasing the metabolic flexibility of the body, meaning that the body becomes better at regulating and handling blood sugars and fats in response to dietary intake," Dr Fairchild says.

"The studies with the greatest benefits typically have individuals exercise for 45 minutes per day, five times per week.

"However the minimum levels of 150 minutes of moderate exercise per week is a good starting point."

More information: "Lower fructose intake may help protect against development of nonalcoholic fatty liver in adolescents with obesity." O?Sullivan TA, Oddy WH, Bremner AP, Sherriff JL, Ayonrinde OT, Olynyk JK, Beilin LJ, Mori TA, Adams LA. *J Pediatr Gastroenterol Nutr*. 2014 May;58(5):624-31. DOI: 10.1097/MPG.0000000000000267.

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