

Study suggests obese children who consume recommended amount of milk at reduced risk of metabolic syndrome

May 25 2018



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New research being presented at this year's European Congress on Obesity (ECO) in Vienna, Austria (23-26 May) suggests that obese children who consume at least two servings of any type of cows' milk each day are more likely to have lower fasting insulin, indicating better blood sugar control.

"Our findings indicate that [obese children](#) who consume at least the daily recommended amount of milk may have more favourable sugar handling and this could help guard against metabolic syndrome", says author Dr. Michael Yafi from McGovern Medical School at The University of Texas Health Science Center, Houston, USA. "Worryingly, only 1 in 10 young people in our study were consuming the recommended amount of milk."

Metabolic syndrome is defined as the presence of at least three of five conditions that increase the risk of diabetes, heart disease, and stroke—high blood pressure, high levels of [blood sugar](#) or triglycerides, excess belly fat, and low "good" cholesterol levels. At least a third of Americans are thought to have metabolic syndrome, while one in three American [children](#) and teens are overweight or obese. Previous studies have shown that milk protects against metabolic syndrome and diabetes in adults, but studies investigating the effect of milk consumption on metabolic health and metabolic syndrome risk factors in obese children are scarce.

To investigate this further, Dr. Yafi and colleagues assessed daily milk intake and its association with fasting [insulin](#) levels—the hormone that stabilises blood sugar and a biomarker for metabolic syndrome risk—in obese children and adolescents attending a paediatric weight management clinic. A high insulin level is a sign of [insulin resistance](#) or prediabetes, and can also signify metabolic syndrome.

They conducted a retrospective chart review of 353 obese children and

adolescents aged 3 to 18 years between December 2008 and December 2010. Information on fasting serum insulin was available for 171 children at their first visit. The research team also recorded information on daily milk intake, milk types, daily fruit juice and other sugary drinks intake, fasting blood glucose, and insulin sensitivity. They used an upper normal level of fasting insulin (19 microunits per ml; uiu/ml) to link the results to insulin resistance.

Over half of the participants were male, three quarters were Hispanics, and had an average age of 11.3 years. On average, just one in ten children (13%; 23/171) reported drinking the daily recommended milk intake of three cups or more. Girls reported drinking less milk than boys, but no difference in intake was noted by ethnicity.

The American Academy of Pediatrics and the 2015 Dietary Guidelines for Americans advise two to three cups of low fat (1% or 2%) milk a day for children over the age of two. The study also found that under half (44%) of children who reported drinking less than one cup a day had fasting insulin levels of less than 19 uiu/ml, compared to almost three-quarters (72%) of children who reported drinking more than two cups a day.

Overall, children who drank less than one cup of milk each day had significantly higher levels of fasting insulin (median 23 uiu/ml) than those who drank less than two cups a day (15 uiu/ml), or at least two cups a day (13 uiu/ml). After adjusting for other aspects that might affect insulin levels including race, ethnicity, gender, level of physical activity, sugary drinks intake, glucose levels, and type of milk based on fat content, the researchers found lower fasting insulin levels among children who drank at least two cups of milk a day. No association was noted between milk intake and blood glucose or lipid levels.

Dr. Yafi concludes: "Many studies have linked [sugary drinks](#) to

childhood obesity. In contrast, our pilot study suggests that milk intake is not only safe but also protective against [metabolic syndrome](#). We should encourage our children, especially those with obesity who are at higher risk of insulin resistance and poor glycaemic control, to consume the recommended daily amount of [milk](#)."

The authors acknowledge that their findings show observational differences rather than cause and effect. They point to several limitations, including the small sample size, and that the study includes mainly Hispanic children making the generalizability of the findings to other ethnicities uncertain.

Provided by European Association for the Study of Obesity

Citation: Study suggests obese children who consume recommended amount of milk at reduced risk of metabolic syndrome (2018, May 25) retrieved 26 April 2024 from <https://medicalxpress.com/news/2018-05-obese-children-consume-amount-metabolic.html>

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