

Not enough vitamin D in the diet could mean too much fat on adolescents

March 12 2009



Pictured are (L to R): Inger Stallman-Jorgensen, a research dietician at the MCG Georgia Prevention Institute and Dr. Yanbin Dong, a molecular geneticist and cardiologist at the GPI and co-director the MCG Diabetes & Obesity Discovery Institute. Credit: Medical College of Georgia

Too little vitamin D could be bad for more than your bones; it may also lead to fatter adolescents, researchers say.

A [Medical College of Georgia](#) study of more than 650 [teens](#) age 14-19 has found that those who reported higher [vitamin D](#) intakes had lower overall [body fat](#) and lower amounts of the fat in the abdomen, a type of fat known as [visceral fat](#), which has been associated with health risks such as [heart disease](#), stroke, diabetes and [hypertension](#).

The group with the lowest vitamin D intake, [black females](#), had higher percentages of both body fat and visceral fat, while [black males](#) had the lowest percentages of body and visceral fat, even though their vitamin D intake was below the recommended levels. Only one group - white males - was getting the recommended minimum intake of vitamin D.

"This study was a cross-section so, while it cannot prove that higher intake of vitamin D caused the lower body fat, we know there is a relationship that needs to be explored further," says Dr. Yanbin Dong, a molecular geneticist and [cardiologist](#) at the MCG Georgia Prevention Institute.

Dr. Dong, who also co-directs the MCG Diabetes & Obesity Discovery Institute, and Inger Stallman-Jorgensen, a research dietician at the GPI, present their findings this week at the American Heart Association's Joint 49th Conference on Cardiovascular Disease Epidemiology and Prevention and Nutrition, Physical Activity and Metabolism in Palm Harbor, Fla.

The pair will next study whether it is feasible for teens to take a daily vitamin D supplement in pill form. Those results will help them design a larger study to explore the relationship between vitamin D intake and body fat levels in teens.

"We already know that encouraging teens to get an adequate amount of vitamin D in their diets will help promote a healthy body as they grow and develop," Ms. Stallman-Jorgensen says. "Now we need to do intervention studies where we give teens vitamin D supplements to determine if there is a cause and effect relationship between vitamin D intake and fat."

The American Academy of Pediatrics recommends [adolescents](#) get at least 400 units of vitamin D per day - either from milk or sun exposure.

There are typically 100 units in one 8-ounce glass of whole milk. The recommended daily dose from the sun would require at least 30 minutes of adequate exposure to direct sunlight two or three times a week at peak hours, between noon and 3 p.m.

Ms. Stallman-Jorgensen said there are many reasons teens don't get enough vitamin D, which has been linked to the prevention of diabetes, cancer and cardiovascular disease.

"As humans, our largest source of vitamin D should be the sun. But we don't spend enough time outdoors to get enough sun exposure and when we do, we're often covered up and wearing sunscreen," she said. "We can get vitamin D from certain foods, like fatty fish and liver, but it's not in a lot of foods that we commonly consume. In this country, our milk is fortified with vitamin D. Unfortunately, teens just don't drink enough milk to get their daily requirements."

She points out that low sunlight during the winter months reduces the amount of vitamin D the skin produces, and that darker-skinned people obtain less vitamin D from the sun because the extra melanin in their skin filters out more sunlight.

Some people can't tolerate milk because they lack the enzyme that processes lactose, the natural sugar in milk, though "most people can handle it in small amounts," Ms. Stallman says.

Cultural issues may also be at play, Ms. Stallman-Jorgensen says.

"Most teens want to drink sodas and sugary drinks. It's not cool to drink milk - they think of it as more of a food for babies," she said.

Potential study participants had their weekday and weekend diets tracked by researchers seven times during a three-month period. Those

who provided at least four diet reports were included in the final group of 659.

Body fat percentages were measured by dual energy X-ray absorptiometry scans, which can measure total body composition. Visceral was measured in a subset of 432 teens.

Source: Medical College of Georgia

Citation: Not enough vitamin D in the diet could mean too much fat on adolescents (2009, March 12) retrieved 18 April 2024 from <https://medicalxpress.com/news/2009-03-vitamin-d-diet-fat-adolescents.html>

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