

Could dietary tweaks ease type 1 diabetes?

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Foods rich in amino and fatty acids may help preserve insulin production, study suggests.

(HealthDay)—Eating foods that contain certain nutrients may help people with newly diagnosed type 1 diabetes continue producing some insulin for as long as two years, a new study finds.

Although eating such foods doesn't alter the need to take [insulin injections](#) to treat [type 1 diabetes](#), foods with leucine—an amino acid—and with [omega-3 fatty acids](#) may mean that less [insulin](#) is needed, according to the new research.

"After the diagnosis of type 1 [diabetes](#), a branch-chain amino acid and long-chain fatty acid were related to C-peptide levels, which are important because they've been shown to improve control of glucose, and maybe help prevent complications," said Elizabeth Mayer-Davis, the study's lead author.

This is "very early work," however, and parents of children with type 1 diabetes need to continue to follow their child's doctor's orders with regard to insulin and any other medications, said Mayer-Davis, professor of nutrition and medicine and interim chairwoman of the department of nutrition at the University of North Carolina at Chapel Hill.

Foods containing leucine include dairy products, meat, soy products, eggs, nuts and [whole wheat](#). Omega-3 fatty acids are found in [fatty fish](#), especially salmon.

At least one expert wasn't convinced that these foods could make a difference in [insulin production](#) in patients with type 1 diabetes.

"Nutrition in type 1 diabetes is very difficult to evaluate," said Dr. Joel Zonszein, director of the Clinical Diabetes Center at Montefiore Medical Center in New York City. "It's possible that nutrition has a small effect, but people have been trying to connect nutrition to type 1 [diabetes] for more than 30 years. This study will not change my practice."

Type 1 diabetes is believed to be an autoimmune disease in which the body's immune system mistakenly attacks and eventually destroys the insulin-producing beta cells in the pancreas.

Insulin is a hormone that's necessary to metabolize the carbohydrates in food. When carbohydrates are processed into glucose, insulin helps that glucose get into the body's cells to be used as fuel for the body and brain. Without insulin, glucose can't enter the cells and it builds up in the blood.

People with type 1 diabetes often continue making some insulin, though not enough to nourish their bodies properly, for months or even years after diagnosis, according to background information included in the study. The more beta cells that are preserved and still making insulin, the

less the chance of serious complications, according to the study.

To see if nutritional factors might contribute to the preservation of [beta cells](#), Mayer-Davis and her colleagues reviewed data on more than 1,300 young people up to 20 years old who had been diagnosed with type 1 diabetes. Their average duration of diabetes was nearly 10 months.

Nutritional information was gathered from participants and mothers, including information on the consumption of foods containing leucine. Blood samples were analyzed for nutrients such as vitamin D and fatty acids. Blood samples also were used to measure the amount of C-peptide, which is a byproduct of insulin production.

After two years, the researchers found that leucine and omega-3 fatty acids were significantly associated with higher levels of C-peptide.

Vitamin D, which has long been suspected to be somewhat protective against type 1 diabetes, was linked to lower levels of C-peptide in this study. Mayer-Davis said she feels this finding may have been due to chance, especially since it isn't consistent with previous research.

Higher levels of omega-3 fatty acids appeared to have a linear relationship with the preservation of beta cell function, Mayer-Davis said. That means the more omega-3 [fatty acids](#) in the blood, the greater the likelihood of higher levels of C-peptide.

"It's possible that there are approaches that may improve the ability to produce insulin after diagnosis," Mayer-Davis said. "Within the context of a healthy diet, dairy products, high-protein foods and salmon may help. But parents shouldn't expect that these foods will be a miracle. Their children will still need insulin."

For his part, Zonszein said, "Type 1 is a very complex disease. I think

this needs to be studied more, but I wouldn't recommend dietary changes now. I think the potential mechanism of action needs to be studied. But changing diets dramatically, especially in kids, can dramatically change the flora [such as bacteria] in the gut, which may create other problems."

Mayer-Davis agreed that more research is needed, and she said she hopes other scientists look into this connection.

Asked if this information could benefit children or adults with type 2 diabetes, Zonszein said it's impossible to know from this study. Mayer-Davis noted, however, that previous research on animals with type 2 disease is one of the factors that initially sparked their interest in this nutrient.

Results of the study appear in the July issue of the journal *Diabetes Care*.

More information: Learn more about type 1 diabetes from the [U.S. National Library of Medicine](#).

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