



## Low-carbohydrate diets for growing children? Report has dietary guidance for those with, or at risk for, diabetes

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*T.H., a 14-year-old patient with type 1 diabetes, is struggling to maintain her body mass index in the normal range and wants to try a low-carbohydrate diet. You are aware that these diets are used in adult weight management and diabetes programs but are unsure about whether they are recommended for children and adolescents. Where can you go for guidance to determine what you should recommend to T.H. and her family to support optimal health and diabetes outcomes?*

A new AAP clinical report addresses the use of low-carbohydrate diets in children and adolescents with — or at risk for — diabetes. The report includes background on dietary patterns in youths and reviews evidence associated with low-carbohydrate diets. It also provides carbohydrate recommendations for youths with type 1 or type 2 diabetes, or obesity and prediabetes as well as practical information for counseling families.

The report, *Low-Carbohydrate Diets in Children and Adolescent With or at Risk for Diabetes*, from the AAP Committee on Nutrition, is available at <https://doi.org/10.1542/peds.2023-063755> and will be published in the October issue of *Pediatrics*.

### **Dietary patterns in youths**

Self-reported dietary intakes for children and adolescents reflect an average of 50% of daily calories from carbohydrate, which is consistent with dietary guidelines. However, most of these calories come from added sugars and starches in processed foods.

In people ages 2 years and older in the United States, more than 50% of the average daily energy intake (and most of the carbohydrate intake) comes from processed foods made mostly from substances extracted from foods, including processed starches, sugars and fats.

This dietary pattern is putting more Americans at risk for obesity, prediabetes and type 2 diabetes.

### **Concerns with low-carb diets**

Some experts suggest that low-carbohydrate diet patterns are the way to go to reverse the worrisome trajectory of obesity and diabetes.

Low-carbohydrate diets restrict consumption to less than the recommended 45%-65% of total daily calories from carbohydrate. Very low-carbohydrate diets allow 20-50 grams (g) per day, while ketogenic diets generally allow less than 20 g of carbohydrate per day.

However, there are concerns about the use of these overly restrictive dietary patterns for growing children and adolescents, including growth deceleration, nutritional deficiencies, poor bone health and disordered eating behaviors.

Neither the American Diabetes Association nor the International Society for Pediatric and Adolescent Diabetes has endorsed the generalized use of low-carbohydrate diets in growing children and adolescents with type 1 diabetes.

The clinical report includes the rationale for the use of low-carbohydrate diets as part of diabetes care or for diabetes prevention as well potential concerns. It does not recommend low-carbohydrate diets for children and adolescents with type 1 diabetes, except under close supervision of a diabetes care team.

In addition, children and adolescents (or their families) who elect to follow a very low-carbohydrate or ketogenic diet should be monitored closely by a multidisciplinary team. The report includes a table with recommendations to monitor for diet-associated risks.

### **Dietary recommendations**

Nutrition recommendations are a major tenant of the treatment of diabetes. The report recommends dietary patterns for youths with or at risk for diabetes.

The focus of dietary change should be reducing nutrient-poor carbohydrate intake. While evidence does not support the restriction of nutrient-dense carbohydrates (vegetables, fruits, whole grains and legumes), reducing the consumption of refined grains and added sugars and eliminating sugar-sweetened beverages are highly recommended.

Families of children and adolescents with type 1 diabetes, prediabetes or type 2 diabetes may be counseled to follow a healthy dietary pattern strategy (i.e., Dietary Guidelines for Americans) and strive for 60 minutes per day of moderate to vigorous aerobic activity to improve diabetes-related health outcomes and promote optimal glycemic and cardiometabolic outcomes.

It is recommended that all pediatric patients with diabetes be followed by a multidisciplinary diabetes care team, as well as their general pediatrician, with communication across disciplines. Dietary recommendations and support can be reinforced broadly.

### **Conclusions**

These are among the report's takeaways:

- Low-carbohydrate (less than 26% energy) and very low-carbohydrate (20-50 g) diets are not recommended for children and adolescents with type 1 diabetes, except under close diabetes care team supervision using safety guidelines.
- Reducing nutrient-poor carbohydrate intake by minimizing consumption of processed foods with high amounts of refined grains and added sugars and eliminating sugar-sweetened beverages are recommended for the prevention and treatment of prediabetes and type 2 diabetes.
- Dietary restriction of any kind can be associated with physical, metabolic and psychological consequences, including risk for disordered eating, especially for those with diabetes.
- Patients who have socioeconomic disadvantages are at increased risk for prediabetes and type 2 diabetes and face barriers to following Dietary Guidelines for Americans and restricting processed foods. Pediatricians can advocate for stronger federal nutrition programs and encourage families who qualify to participate in them.

*Dr. Hannon is a lead author of the clinical report and a member of the AAP Committee on Nutrition.*

## **Resources**

- [Addressing Food Insecurity: A Toolkit for Pediatricians](#)
- [Institute for Healthy Childhood Weight](#)
- [Dietary Guidelines for Americans](#)
- [Information for parents on safety of low-carb diets for children with diabetes from HealthyChildren.org](#)

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