

Low-carb diets in kids with type 1 diabetes: safe, but not standard?

Written by The Life Science Feed Editorial Team · Published 1 October 2026 · Edited by Mara Voss

Parents of children with type 1 diabetes are increasingly turning to very low carbohydrate diets to steady blood sugar, often ahead of the evidence. The largest study of its kind, presented at EASD 2026, found no sign of stunted growth, severe hypoglycaemia or ketoacidosis, and some metabolic benefit, in 45,569 children.^{1,4}

KEY TAKEAWAYS

- **The Pivot:** The largest study of low carbohydrate eating in children with type 1 diabetes found no signal of harm to growth, severe hypoglycaemia or ketoacidosis.
- **The Data:** In 45,569 children, including 219 on very low carbohydrate and 4,837 on low carbohydrate diets, HbA1c, basal insulin dose and IDAA1c were lower and BMI rose less than on standard diets.
- **The Action:** Discuss diet openly with families already using it and monitor growth and lipids, but treat the findings as observational, self-reported and without published effect sizes.

Interest in low and very low carbohydrate diets is being driven by families rather than by guidelines. Professor Christian Denzer of University Medical Center Ulm, who led the study with Dr Belinda Lennerz of Boston Children's Hospital, says patients notice much better blood sugar control and lower insulin needs. The worries are equally familiar: nutrient deficiencies, high cholesterol, hypoglycaemia, ketoacidosis and, in children, a possible effect on growth.⁴

Until now the evidence has been observational or small. An earlier observational study led by Dr Lennerz in 316 children and adults found major glycaemic benefit, mixed effects on cholesterol and no apparent harm to growth or acute complications, and a review of the field found benefits on glycaemia and insulin needs with no major safety events published.^{2,3,4} The authors say large, long-term studies are still needed to confirm both the benefits and the safety.⁴

The Numbers

The team used 25 years of data from a diabetes prospective follow-up registry, including 45,569 children aged 1 to 17 with type 1 diabetes (55% male, mean age 10.3 years) whose carbohydrate intake had been recorded at least twice over a year or more. Children were grouped by carbohydrate share of estimated energy intake: very low carbohydrate (VLC, under 10%) with 219 children, low carbohydrate (LC, 10% to under 26%) with 4,837, and standard or higher carbohydrate (SC, 26% or more) with 40,513. Mean follow-up was 2.18, 2.40 and 3.67 years.^{1,4}

The analysis tracked height and weight, allowing for continued growth, along with glycaemic trajectories, insulin use and 2 severe complications, hypoglycaemia and diabetic ketoacidosis. It found no evidence that a VLC diet stunted growth,

and no association between VLC diets and severe hypoglycaemia or ketoacidosis. No safety concern appeared in any area examined.^{1,4}

Lower carbohydrate intake was associated with some favourable changes. BMI rose less in children on VLC and LC diets, so they stayed closer to a healthy weight. HbA1c and basal insulin dose were lower at the end of follow-up and rose less over time than in the SC group. IDAA1c, a measure that combines HbA1c with insulin dose, was also lower on VLC and LC diets, which Dr Lennerz says means better control was achieved without simply using more insulin.^{1,4}

The press release gives direction but no effect sizes, confidence intervals or adjusted differences, so the size of the HbA1c or insulin advantage cannot yet be judged. The VLC group is also small, 219 children or 0.5% of the sample and followed for just over 2 years, so the safety finding for the most restrictive diet rests on far fewer children than the headline of 45,569 suggests.^{1,4}

How Far the Findings Can Be Trusted

The main limitation is that this is an observational registry study. Analyses were adjusted for sex, age, migration background and diabetes duration, but the authors say they cannot exclude residual confounding, including from the self-reporting of diet. Families who choose very low carbohydrate diets may differ in ways that also affect glycaemia, such as engagement with care, use of diabetes technology or health literacy, and no adjustment can fully capture that.⁴

Self-reported carbohydrate intake is a second weakness. Diet records can be inaccurate, and a child recorded at under 10% of energy intake in one year may not stay there, which blurs the difference between groups and may bias estimates in either direction. Follow-up also differed, with the SC group followed longest at 3.67 years, so the groups were not observed for equal time.^{1,4}

Not every safety question has been answered by the summary. It does not report cholesterol or lipid outcomes, micronutrient status, or eating behaviour and food variety, all of which remain concerns in growing children. Dr Lennerz's own concluding comment names the need to establish the ideal amount of carbohydrate to maximise benefit while avoiding adverse effects and promoting food variety, and describes the results as very encouraging but observational.⁴

The work is presented as late-breaking abstract LBA 72, and there is no full paper, as it has not been submitted to a journal. The authors declare no conflicts of interest. For families and clinicians, that makes it a strong reason to keep the conversation open with parents who are already using these diets and to monitor growth and ketones carefully, but not yet a basis for recommending a specific carbohydrate target.^{1,4}

CLINICAL IMPLICATIONS

Many clinicians already have patients or parents who are following very low carbohydrate diets, sometimes without telling the diabetes team. This study gives them something more useful than a reflex warning. In a large registry, children on these diets did not show impaired growth or more severe hypoglycaemia or ketoacidosis, so the conversation can move from whether it is safe to how to do it well.

Because the evidence is observational, the practical response is monitoring rather than endorsement. Growth, weight, lipids, and ketone and hypoglycaemia plans deserve regular attention in any child on a restricted diet, and the diet should still include enough variety to avoid nutrient gaps. The 219 children in the strictest group are too few to support firm reassurance on rare events.

The gaps are clear: no published effect sizes, no lipid or micronutrient data, self-reported diet, and follow-up of only 2 to 4 years. A randomised trial or a full peer-reviewed analysis with confidence intervals will be needed before any guideline changes, and the authors are explicit that the ideal carbohydrate intake has not yet been defined.

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REFERENCES

1. Denzer C, Lennerz B, et al. Very low carbohydrate diets, growth and metabolic safety in children with type 1 diabetes (late-breaking abstract LBA 72). Presented at: European Association for the Study of Diabetes (EASD) Annual Meeting; September 28-October 2, 2026; Milan, Italy. No full paper; not yet submitted to a journal at the time of writing.
2. Lennerz BS, Koutnik AP, Azova S, Wolfsdorf JI, Ludwig DS. Carbohydrate restriction for diabetes: rediscovering centuries-old wisdom. *J Clin Invest*. 2021;131(1):e142246. doi:10.1172/JCI142246
3. Lennerz BS, Barton A, Bernstein RK, et al. Management of type 1 diabetes with a very low-carbohydrate diet. *Pediatrics*. 2018;141(6):e20173349. doi:10.1542/peds.2017-3349
4. European Association for the Study of Diabetes. Very low carbohydrate diets linked to health benefits in children with type 1 diabetes, largest study of its kind finds. EASD press release, embargoed to October 2, 2026.

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