

CHALLENGES IN

Flattening the Post-Meal Spike

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Challenges in Flattening the Post-Meal Spike

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People often say that managing diabetes is so difficult because you can eat the same thing every day for breakfast, take the same dose of insulin, and have different blood sugars on each day. This can be so frustrating and make people feel like they are failing at their diabetes. But getting the bolus for meals right depends on a lot of things, including counting the carbohydrates accurately, timing the bolus properly given the glycemic index or [fat and protein content](#), and ensuring that the insulin actually gets into the body properly, just to name a few.

High post-meal glucose levels affect [Time in Range](#), HbA1c, and, over the long term, increases the risk of complications. It's also incredibly common for the post-prandial (post-meal) blood sugar spike to be a challenge for people with diabetes. It turns out that even when you conduct a study where you control the meals, there is still more variability within a person than between people when you look at the glucose levels after meals.¹

Let's break down the study. There were thirty participants in the study who met the inclusion criteria:

- Age 8-15 years
- Type 1 diabetes for more than a year
- HbA1c 9%
- Using a CGM (continuous glucose monitor)

Before the study began, participants completed a two-week "run-in period" where the study doctors review participants' glucose data and adjust their current insulin regimen. This is done to reduce the variables that could affect the study. Then the participants were given a breakfast that was consistent for six days. After the six days, they had a 14-day "free-living period," meaning they went back to their usual routine. This allowed the researchers to look at the CGM data for the controlled portion compared to the normal portion.

The researchers were surprised when the results showed that the variability was greater within the individual participants as opposed to between the different participants. There have been other studies that showed variability both within and between participants in adults, while this was the first study to look at pediatrics.^{1,2} The researchers hope that this will help health care professionals with education strategies, and, above all, to help them feel empathy for the families with diabetes that they see.

Hopefully this also helps you have self-compassion or compassion for your loved one with diabetes when the after-meal glucose levels are out of range. And this can help you build resilience and remind yourself that you can only control so many variables, and some of it is just luck.

References:

1. [Substantial Intra-Individual Variability in Post-Prandial Time to Peak in Controlled and Free-Living Conditions in Children with Type 1 Diabetes](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8620341/)
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8620341/>
2. [Interindividual and Intraindividual Variations in Postprandial Glycemia Peak Time Complicate Precise Recommendations for Self-Monitoring of Glucose in Persons with Type 1 Diabetes Mellitus](https://journals.sagepub.com/doi/10.1177/193229681200600221)
<https://journals.sagepub.com/doi/10.1177/193229681200600221>

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