



“You don't know when the sugar's going to kick in”: Experiences of People Managing Type 1 Diabetes During a Marathon

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Introduction

- There are many benefits of regular exercise in diabetes; however, risks of exercise-related short-term complications must also be considered.
- With T1D, exercise can lead to increased glycemic variability and greater vulnerability to nocturnal hypoglycemia (1,2).
- There is a lack of research and information about how people with T1D should prepare and recover from endurance exercise.

Methods

- The present study had two primary objectives: 1) Understand previous runners experience participating in a marathon with T1D and 2) Examine different methods for managing diabetes while training for and recovering from a marathon.
- The study included 10 participants who had previously participated in the New York City Marathon with the Beyond Type 1 team (mean age 33.3 ± 12.9 years, duration of T1D 13.2 ± 14.8 years, A1c 6.59 ± 0.7%), 80% female, 90% on insulin pump and 100% on CGM.
- Interviews were transcribed and thematically analyzed.

Conclusions

- This data provides initial insight into the decision-making that occurs for people with T1D who participate in endurance activities - including food preparation, planning ahead for supplies and insulin adjustment, real-time management decisions, and recovery period glucose management.
- Understanding the best practices to managing glycemic variability before, during, and after endurance activities may help people with T1D reduce anxiety-related to exercise and nocturnal hypoglycemia that may follow.

Results

Training – Methods to Maintain Euglycemia

- Participants reported that diabetes frequently disrupted their training plan. Participants adjusted basal rates, minimized the amount of insulin on board, and ate specific types of food before exercising. Strategies varied for the timing of the exercise.
“Obviously I'm not going to go for a run if I have like six units on board, but overall, it doesn't bother me if I have a little bit of insulin on board. I definitely, depending on my starting blood sugar, try to have a snack before.”

Recovery – Blood Glucose Variability and Insulin Needs

- Most participants experienced blood glucose variability post marathon with recovery duration ranging from 1 day to 3-4 months.
- Many participants experienced varying insulin needs 24 hours post marathon.
“And I probably even did littler amounts of bolus than normal or at least like did more in the aftermath, then trying to prevent a high. I think, I remember being like, I'm just going to do little bits and then I'll correct as needed.”

Proper Planning Necessary to Reduce Blood Glucose Variability

- During running and training, strategies included plans for when to stop exercise due to low or high blood glucose.
“I think I go into my runs a little more prepared, not in terms of fitness level, but what I have on me or what I'm ready for. I think it's definitely made me more mindful of my body overall, as I'm running. Other than that, I don't think [diabetes] had a huge impact. I would say probably active running, I'm definitely much more attentive to my body and recovery.”

Marathon – Blood Glucose Variability and Food Consumption

- Participants described blood glucose variability and eating extraordinary amounts of food during marathon training and running the marathon.
“So I would have like Gatorade and a banana or GU, at almost every mile. And not every mile, but like, so it just, it was an extraordinary amount. I remember being full, like this is getting ridiculous.”

References

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