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.

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.

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.

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

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.

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.

References