TYPE 1 DIABETES FAMILY CENTRE

Therapeutic Carbohydrate Reduction (TCR) and Insulin Dosing: A Guide for Patient Conversations

When guiding patients with type 1 diabetes through the transition to TCR, healthcare providers can use these key messages to explain how insulin needs and blood glucose responses may change.

Changes in Mealtime Insulin Needs and Other Medications

- As you transition from a higher-carb diet to TCR, your mealtime insulin needs will change significantly.
- Rapid-acting insulin doses typically need to be reduced, often significantly, to avoid hypoglycemia. Extra caution is needed.
- Other diabetes or blood pressure medicines may need adjusting.

What to Expect with Blood Glucose Levels

- With small amounts of carbohydrates in TCR meals, your blood glucose may not spike as much after eating. You may notice:
  - A small rise in blood glucose after eating carbs, followed by a gradual rise due to protein and fat.
  - High-fat meals may cause a delayed glycemic response (e.g., more than 3 hours later) and prolonged high blood glucose unless insulin adjustments are made.

Monitoring and Insulin Adjustments

- Your healthcare provider will help you with an initial insulin dosing plan to guide your TCR transition.
  - This plan will account for mealtime insulin needs to cover small amounts of carbohydrates and the effects of dietary protein and fat.
  - It will also address your basal insulin requirements.
- Frequent blood glucose monitoring is especially important during times of transition.
  - Monitoring helps identify patterns and allows for necessary insulin adjustments.

Increased Insulin Sensitivity Over Time

- When following TCR, your body may become more insulin-sensitive. Over time, this often means:
  - Adjusting correction/sensitivity ratios to weaker settings.
  - Reducing basal insulin doses.

Increased Sensitivity to Carbohydrates

- When you lower your carbohydrate intake, you may find that your blood glucose may become more ‘responsive’ to carbohydrate, meaning that even small amounts of carbohydrate will cause a blood glucose response. This can require adjusting your insulin-to-carb ratio (stronger bolus calculations).

Treating Hypoglycemia

- If hypoglycemia occurs, treat it with fast-acting carbohydrate, preferably using glucose or dextrose.

Communicating During the TCR Transition

- Contact your healthcare provider during the first weeks of TCR for help with insulin adjustments. If you experience frequent hypoglycemia or persistent hyperglycemia, seek support before your next appointment.

Adapted from *Therapeutic Carbohydrate Reduction in Type 1 Diabetes: A Guide for Dietitians and Nutritionists.* https://www.therapeuticnutrition.org/tcr-type-1-diabetes-guide