The goal of diabetes medical nutrition therapy (MNT) is “to promote and support healthful eating patterns, emphasizing a variety of nutritional foods to improve A1C, blood pressure, and cholesterol levels, weight management, and to delay or prevent complications.”

Recent advancements in continuous glucose monitors (CGMs) have been beneficial in supporting diabetes MNT. These monitors provide clearer insights into post-prandial glucose response (PPGR) variability and relevant factors. Current research has shown that personalized nutrition plans are more effective in managing glycemic outcomes than generalized diets, especially when considering individual PPGR heterogeneity.2,3

**INTRODUCTION**

**Case Study Patient**

- 69 y/o male dx with T2D in 1999
- Tx: hybrid closed loop (Dexcom/ Omnipod), Ozempic, Farxiga
- PMH: pancreatitis, acanthosis nigricans, microalbuminuria, kidney stones, neuropathy
- Roux-en-Y gastric bypass 2018 (A1c 8.4%, 313 lbs.)
- Current A1c 7.5% and 261 lbs

**Meal and Time**

- **Breakfast (5:30 AM)**:
  - Homemade breakfast burrito, applesauce, instant vanilla latte
  - 5x/week
- **AM Snack (9 AM)**:
  - Protein shake
  - 3x/week
- **Lunch (11:30 AM)**:
  - Frozen Turkey Meal
  - 3x/week
- **PM Snack (3 PM)**:
  - Del Monte diced pears
  - 4x/week
- **Dinner (5:30 PM)**:
  - Shoyu chicken thighs, instant white rice, protein shake
  - 1-2x/week

**Dexcom and Omnipod Data (6/18/23 – 7/17/23)**

**Table: Average Blood Glucose Throughout Day**

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>BG Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning (5 – 10 AM)</td>
<td>175 mg/dL</td>
</tr>
<tr>
<td>Afternoon (10 AM – 3 PM)</td>
<td>196 mg/dL</td>
</tr>
<tr>
<td>Evening (3 – 9 PM)</td>
<td>206 mg/dL</td>
</tr>
<tr>
<td>Overnight (9 PM – 5 AM)</td>
<td>153 mg/dL</td>
</tr>
</tbody>
</table>

**MNT Intervention**

**Diabetes Diagnosis**

Food/medication interaction related to higher daytime blood glucose threshold evidenced by glycemic variability in CGM/pump data.

**Interventions**

1. Adjusted BG correction threshold to lower daytime hyperglycemia.
2. Tightened ICR to 1:8.5
3. Increase protein by 10 grams per day (~30% daily kcal), at snacks and dinner based on PPGR.

**CONCLUSIONS**

Despite consistency in the patient’s diet, meaningful variability still exists in PPGR even for identical meals eaten at the same time each day.

Future studies should assess PPGR heterogeneity in diabetes subjects.

CGM data combined with dietitian expertise will produce optimal MNT intervention for patients.