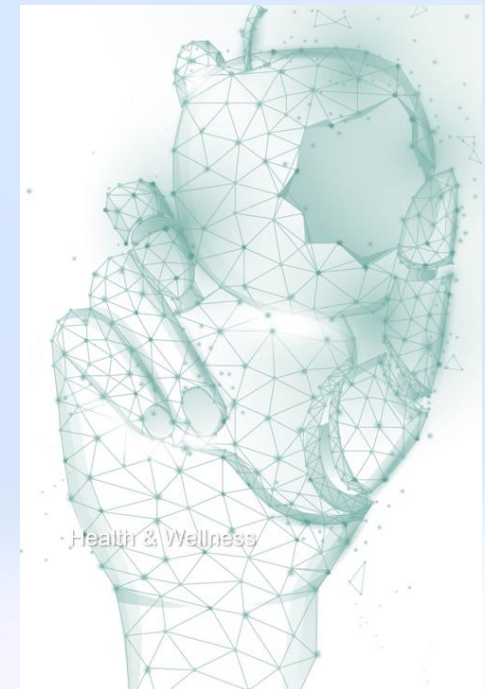


Patient Cases, Panel Discussion, and Audience Q & A

CASE 1

Ronesh Sinha, MD
Medical Director of Metabolic Wellness Program



Case Study

- 45 year old Chinese male software engineer with type 2 diabetes and elevated triglycerides who came to see me for a metabolic consult
- High job stress, eats what he considers a healthy diet which is ethnically diverse with meat, fish, noodles, rice, and rare sweets.
- He does not drink or smoke and goes to the gym 2-3 times a week and average walking steps are 6-7K daily
- He has tried low calorie, low fat, and even a Mediterranean diet in the past with temporary weight loss and glucose improvement. He has trouble sticking to “diets.”
- His diabetes has rapidly progressed over the past 24 months

Lifestyle Plan

- Estimated daily carbohydrate consumption using MyFitnessPal app: 350-400 grams of carbohydrate split into BF,L,PM Snack, and Dinner
- Prescribed CGM which identified significant PPG elevations after lunch, PM snack, and dinner
- Given history of dietary non-compliance and high stress, we started with an initial carb goal of 200 grams a day which he felt was easily achievable and had a noticeable impact on his CGM glucose metrics
- He felt improved energy, started losing weight, and on his own reduced his daily carbs to less than 150 grams a day, allowing himself one “free carb day” on weekends
- We also increased his walking steps to above 8K and increased his pace to brisk walking, which over time has progressed to light jogging and hiking

3 months of CGM + Lifestyle Changes

Component	11/11/2020	12/12/2020 (1mo)	2/17/2021 (3 mo)
Cholesterol	248 (H)	109	185
HDL Cholesterol	35 (L)	32 (L)	35 (L)
Triglycerides	584 (H)	116	124
LDL Cholesterol		114	122
Trig/HDL Ratio	16.7 (H)	3.6	3.5
Hemoglobin A1c	15.1 (H)	11.5 (H)	6.2 (H)
Average Glucose	387	200	131

Insulin Resistance: A Carbohydrate Parking Problem

Muscle Resistance

- Can't clear glucose (pass not accepted)
- Inactive (no demand)
- High carb intake (no parking)



- A1C, Fasting Glu, CGM

- Waist-to-height ratio
- Body weight/BMI

Fat storage in liver (fatty liver)



- Liver tests (AST, ALT)

CARBS
Consistent & Personalized
dietary advice

Fat released by liver into blood
(high triglycerides)

- Fasting lipid test

Fat Storage

- Weight gain
- Inflammation
- Worsening insulin resistance
- Fatigue



Success Factors

- After being on restrictive diets in the past with short-term compliance, he felt dropping to a 200 gram carbohydrate diet initially was a breeze and he saw significant improvements in his CGM metrics almost immediately
- His initial metabolic improvements motivated him to spontaneously make further changes, leading to further progress.
- Brisk walking helped reduce stress, enhanced glycemic control and weight loss, and I've asked him to periodically measure his 1 mile walk time to keep him motivated.
- He felt not making drastic changes to his diet and being able to eat 80% of his usual foods has resulted in a sustainable lifestyle change.

Dietary Dosing Approaches

- In this patient, given his history of low dietary compliance, I initiated a “lower dose diet” and then he gradually titrated up the intensity by lowering carbs further until his CGM metrics and labs took him out of the danger zone
- In other patients I’ve tried a “loading dose approach” where we initiate a more significant carb reduction strategy such as a ketogenic diet. If patients choose to remain on this they can, but otherwise we then transition to a longer-term low carb diet that is sustainable. The dose is adjusted based on CGM and lab results
- Giving patients a wide range of dietary dosing ranges provides a greater rate of success and long-term compliance

Case 2

Dr Tony Hampton, MD, MBA, MS-HNFM, ABOM
Family and Obesity Medicine Board Certified
Chair Society of Metabolic Health Practitioners Outreach
Committee
Chair-elect Advocate Midwest Governing Council
Advocate Midwest Primary Care Service Line Leader South
Region Chicago

The patient is a 57-year-old African American female smoker who presents with an eleven-year history of type 2 diabetes, for which she's been taking insulin since the onset. She also suffers from depression and eczema. She has been on Lantus insulin since her diagnosis and also takes Humalog insulin

Labs:

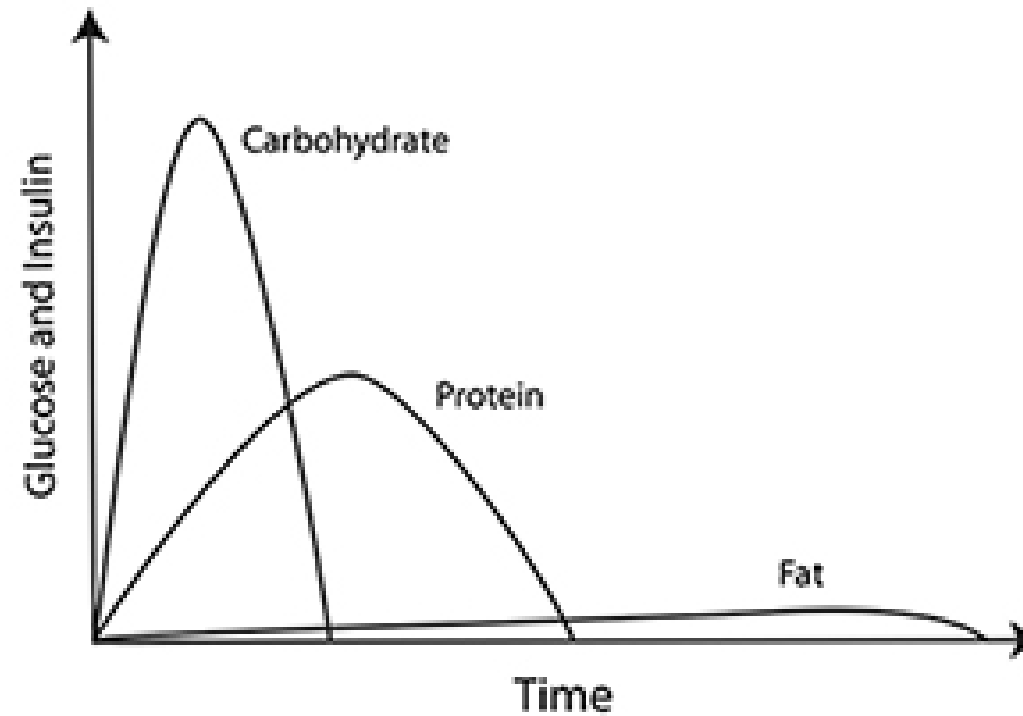
A1c 9.0

All other labs are normal.

She is agreeable to adopting a low-carb diet with a goal of taking less than 30 total carbs per day.

Insulin Type	Onset	Duration
Rapid-acting inhaled	10 to 15 minutes	3 hours
Regular/short acting	30 minutes	3 to 6 hours
Intermediate acting	2 to 4 hours	12 to 18 hours
Long acting	2 hours	Up to 24 hours

Glucose/Insulin Reaction to Macronutrients



Case 3

Dr Tony Hampton, MD, MBA, MS-HNFM, ABOM
Family and Obesity Medicine Board Certified
Chair Society of Metabolic Health Practitioners Outreach
Committee
Chair-elect Advocate Midwest Governing Council
Advocate Midwest Primary Care Service Line Leader South
Region Chicago

48-year-old with history of hypertension and anxiety. Since having COVID-19, the loss of her mom, aunt, and sister she's been having anxiety. She's continued to have elevated blood pressures with a blood pressure on presentation of 160/60

Open discussion about the Keto for Refractory Mental Illness study
<https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2022.951376/full>