

Helping Individuals Adopt Therapeutic Nutrition Along the Dysglycemia Continuum

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Positive lifestyle changes, especially for diet and exercise, are usually the first-line treatment for individuals with prediabetes and type 2 diabetes, but during busy patient appointments, care providers' dietary advice often amounts to vague and unhelpful platitudes, such as "try to eat less and move more."

How can we help our patients adopt therapeutic nutrition more effectively?

This question is becoming increasingly relevant as research evidence demonstrates that a variety of intensive therapeutic nutrition interventions can improve blood glucose, prevent type 2 diabetes and its complications, and even put type 2 diabetes into remission (1–6).

In 2018, a joint position statement from the American Association of Clinical Endocrinologists and the American College of Endocrinology noted that scientific evidence clearly supports 4 stages of "dysglycemia" existing in the continuum of a single chronic disease: insulin resistance, prediabetes, type 2 diabetes, and complications of type 2 diabetes (7). Our clinical practices specialize in supporting people in weight loss, metabolic health improvements, and type 2 diabetes remission using therapeutic nutrition. In particular, we hope to share how we engage with individuals at key motivational moments along this dysglycemia continuum.

Changing dietary habits can be extremely challenging. Unlike other health-care professional encounters, which are more directive, therapeutic nutrition interventions involve tapping into an individual's own strengths, goals, and desires. Then, the care provider must act as a coach to help individuals prioritize their changes, to decide what they are willing and able to change, and to anticipate and plan for the challenges of any change.

One effective model for coaching behaviour change, recommended by Obesity Canada, is the 5As framework, which is designed to structure conversations (8,9). The 5As stand for Ask, Assess, Advise, Assist, and Arrange. However, any validated style of motivational coaching can work (10). What they all have in common is that they treat the person as an equal partner who is an expert in their own life and health goals. The care provider's role is to tap into that motivation and then supply relevant information to help them choose the evidence-based personalized therapeutic nutrition approach that will work best for them.

It is a given that, along with support for therapeutic nutrition changes, every patient also has a full medical assessment, including in-depth medical history, current medications, lab tests (fasting blood glucose, glycated hemoglobin, lipid panel, C-reactive protein [CRP]), waist-to-height ratio, weight and weight history, and diet history. It is especially important that if the person is taking any glucose-lowering medications, these will have to be carefully monitored, reduced, or deprescribed (11). Antihypertensive medications will also need to be monitored as the patient's metabolic health improves. Recommendations to avoid alcohol and other substances are also given.

What is personalized therapeutic nutrition?

First, before we present 3 patient scenarios, what do we mean by "personalized therapeutic nutrition"? In short, this is an individually tailored nutrition intervention designed to manage or reverse patient-specific metabolic dysfunction (12). It includes a variety of eating patterns that are evidence-based but also consider a person's needs, food preferences, motivations, and degree of insulin resistance and metabolic dysfunction.

There is no single recommended therapeutic nutrition diet. Rather, finding the best dietary intervention involves working with individuals to discuss their current patterns of eating and providing options for new food choices they could make that best fit their health needs, goals, lifestyle, and food preferences.

Dietary commonalities

Distinct commonalities, however, exist among all personalized therapeutic nutrition approaches that work to improve dysglycemia. They are as follows:

- focus on whole foods and minimally processed foods;
- eliminate ultra-processed foods;
- reduce or eliminate added sugars and foods that rapidly digest to sugar;
- eliminate all sweet beverages, including pop, fruit juice, sports drinks, specialty coffees;
- ensure adequate protein and other essential nutrients;
- contain plenty of vegetables for fibre and nutrients; and
- include healthy fat sources, such as olive oil or nut oils.

Following these dietary commonalities, individuals can eat in the style of their choosing, including whole foods plant-forward, low-carb, ketogenic, vegetarian, vegan, Mediterranean, and more. Ethnic or cultural diets can be adjusted using these commonalities. In general, reducing the overall carbohydrate load, especially reducing high-glycemic or “fast” carbs that rapidly digest to sugar, has the most evidence for improving glycemia (13).

Case 1: Female, 35 years old, is frustrated at being unable to lose the 20 kg she gained during pregnancy. Fatigue, hunger, and cravings, as well as looking after a busy toddler, make her unwilling and unable to sustain a low-fat, calorie-restricted diet, which is the method she has used previously to manage her weight.

Her medical history includes a strong family history of type 2 diabetes, giving birth 18 months earlier to a 4,250-g infant, previously diagnosed polycystic ovary syndrome, and the presence of skin tags—all of which indicate insulin resistance and a high risk of future type 2 diabetes (14,15).

Using the 5As approach, the physician asks for permission to discuss other possible dietary approaches.

The health-care provider explains how insulin resistance may be contributing to her weight, hunger, and cravings, and her future metabolic health risk. He advises that eliminating or reducing foods that increase insulin secretion, specifically sugar and fast carbs, may help her lose weight or prevent future diabetes. She is eager to try when she learns she will not need to count calories.

Together, they review her typical daily eating pattern, looking for easy and palatable swaps. She chooses to follow a moderate low-carb Mediterranean-style diet, following the dietary commonalities above. Her biggest dietary change is to eliminate all the added sugar, sugary beverages, and ultra-processed foods she eats in a day, which she discovers is a lot.

Instead of juice and cereal at breakfast, she will eat eggs. Instead of her afternoon frappuccino, she will have herbal tea. With the health-care provider's help, she looks for ways to prioritize her favourite protein and vegetables at each meal. She feels empowered to make these changes, which leads to slow but steady weight loss without hunger over the next 12 months.

Case 2: Male, 45 years old, Indo Canadian, has a body mass index of 22 kg/m², but with evidence of visceral adiposity and a strong family history of type 2 diabetes, including a father with diabetic kidney disease. His fasting blood glucose and glycated hemoglobin indicate prediabetes. He is motivated to avoid his father's health trajectory.

The physician explains about genetic risk factors and personal fat threshold for diabetes onset (16). Together, they review his daily eating patterns to look for easy changes under the dietary commonalities above.

He currently eats a vegetarian South Asian diet and does not want to stress his wife and family with too much change. However, he consumes a lot of sweet chai tea, colas, rice, breads (e.g. naan, chapati, and roti), and sweet desserts. Sticking to his vegetarian Indian cuisine, he is advised to eliminate the sugary drinks, to eat just 1 small daily serving of rice, to eat just 1 serving of a bread-like food a day, and to increase his plant-based protein and fibre, such as doubling his portions of dal and vegetables. He is either to avoid desserts or eat low-sugar fruit, like fresh berries.

He finds these changes easy to follow, without disrupting the family meals. In 3 months, his blood glucose has returned to normal and he has lost 6 kg, primarily from his abdomen.

Case 3: Male, 58 years old, has had type 2 diabetes for 20 years, at first managed with metformin and by diet and exercise, but with increasing medications over the years, including sulfonylureas, an SGLT-2 inhibitor, antihypertensives, and, 6 months ago, the initiation of insulin, which he is currently taking at 100 units per day.

He is distressed by the injection of insulin and is motivated to improve his blood glucose, but he has a 30-year history of yo-yo weight gain and loss, and is currently 125 kg. He has learned he may be able to get off insulin if he loses weight, but he is not confident he can do it on his own, as he has tried so many diets in the past.

His physician explains the protocol and results of the very low-calorie DiRECT trial (1,17) and links him up with a clinical trial of a similar pharmacist-led version in his community, in which he will follow a 12-week supervised program using nutritionally formulated meal replacement products (i.e. OPTIFAST, Medifast, Ideal Protein) (18). The pharmacist leads the safe deprescribing of insulin and his glucose-lowering medications (19).

He also receives coaching for stress management and joins a walking program. After the 12-week supervised program, he has lost 25 kg, or 20% of his body weight. His diabetes is in remission. He transitions to a whole foods, minimally processed, low-sugar diet in the Mediterranean style and maintains his weight and diabetes remission for 2 years post intervention.

Discussion

These interactions and subsequent coaching can be provided by solo primary care providers, such as physicians or nurse practitioners, but a team-based approach that includes dietitians, health coaches, pharmacists, psychologists, and/or nurses is also very effective. Group visits with other individuals who have similar health conditions and goals can provide efficient and effective opportunities for teaching and discussion, peer support for daily challenges, recipes, and camaraderie.

As the individual experiences success with their dietary approach, other lifestyle behaviour changes can be added, such as enjoyable physical activity, as well as attention to sleep and stress.

As with all types of treatment, the potential benefits and risks must be considered in the context of person-centred, outcome-driven care; this is the cornerstone of evidence-based medicine. Thus, the critical challenge is to identify motivated individuals who may prefer and benefit from a food-first approach and then safely support their choices.

Granted, the majority of care providers receive very little training in nutrition therapies or little health system support to offer these approaches, but things are beginning to shift. One recognized resource is the Institute for Personalized Therapeutic Nutrition (IPTN), a registered Canadian charity that, since 2016, has been raising public awareness, supporting individual choice, and fostering health provider knowledge and skills around food-first approaches to treating or reversing type 2 diabetes and other chronic conditions. For health-care professionals seeking more information, the IPTN offers training programs in therapeutic nutrition for dietitians, nurses, pharmacists, and physicians. The IPTN also hosts a monthly webinar series with topic experts and an engaged Community of Practice for all health-care providers, researchers, and educators interested in discussion and support for therapeutic nutrition information and application.

The IPTN also offers a website with additional information and resources (diabetesremission.ca). This can be helpful, particularly when a care provider has limited time.

Using a therapeutic nutrition approach has increased our professional satisfaction as we see people improve their health, reduce their risk of future disease, come off medications, and even put their type 2 diabetes into remission.

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