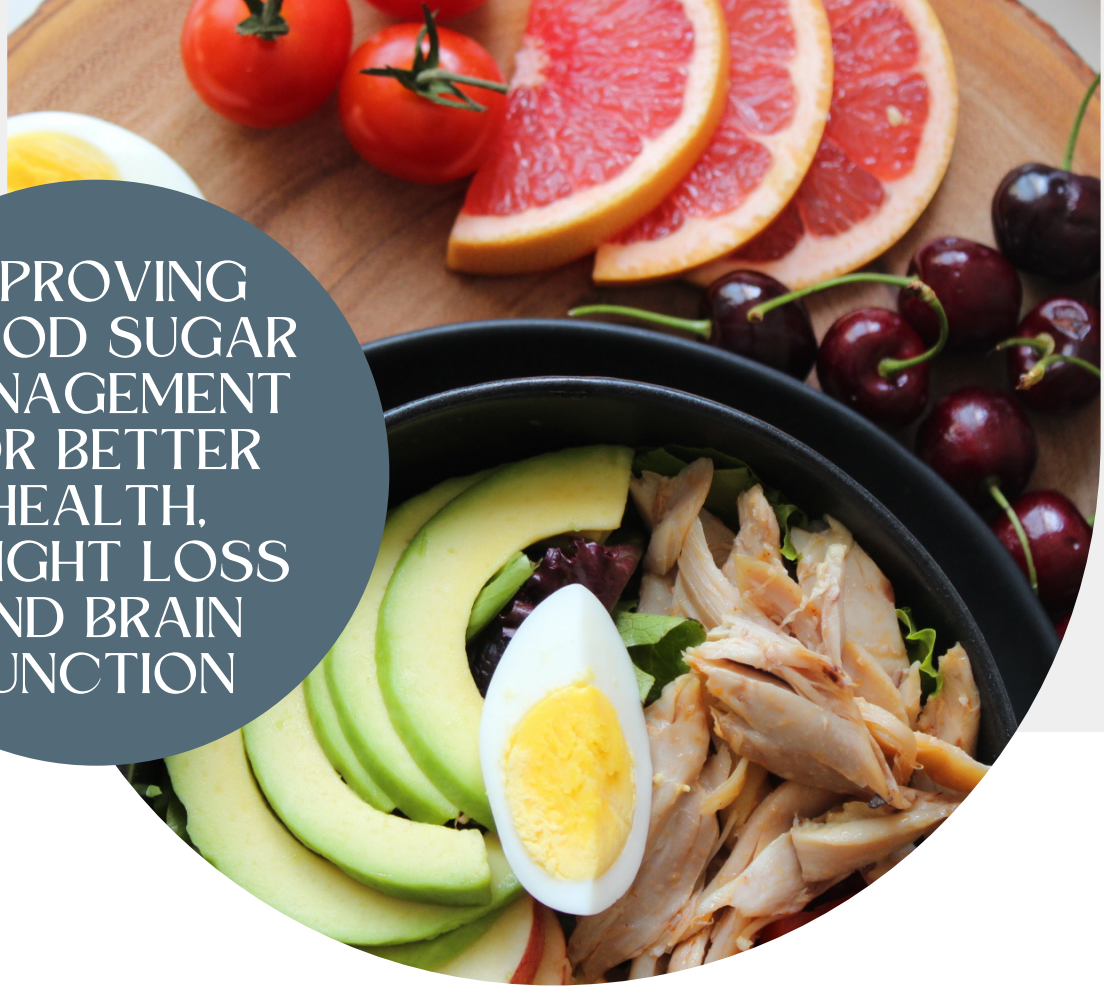


IMPROVING BLOOD SUGAR MANAGEMENT FOR BETTER HEALTH, WEIGHT LOSS AND BRAIN FUNCTION

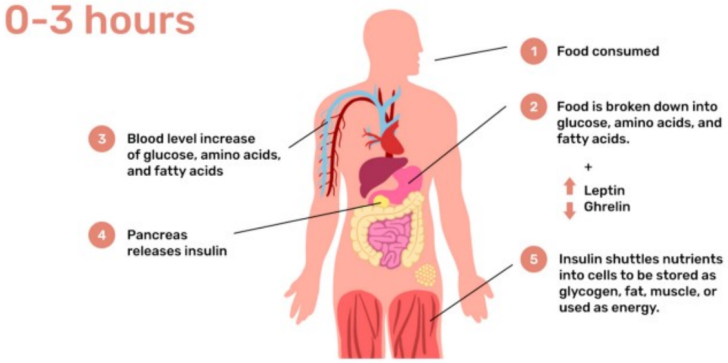
The model of "calories in/calories out" that many of us are familiar with is flawed

It doesn't consider the complex hormonal and biochemical pathways involved in energy balance, weight gain, and weight loss in the body.What's more, different individuals can have highly variable glucose responses to the same food, regardless of calorie content.

Glucose

When there is more glucose in the bloodstream than what the body needs to meet energy demands, increased insulin levels signal to the liver and muscles to store glucose in chains of glycogen. Once the liver and muscles are filled to the brim with glycogen, the excess glucose is turned into fat (triglycerides) and sent out in the blood to be stored in the fat cells around the body.

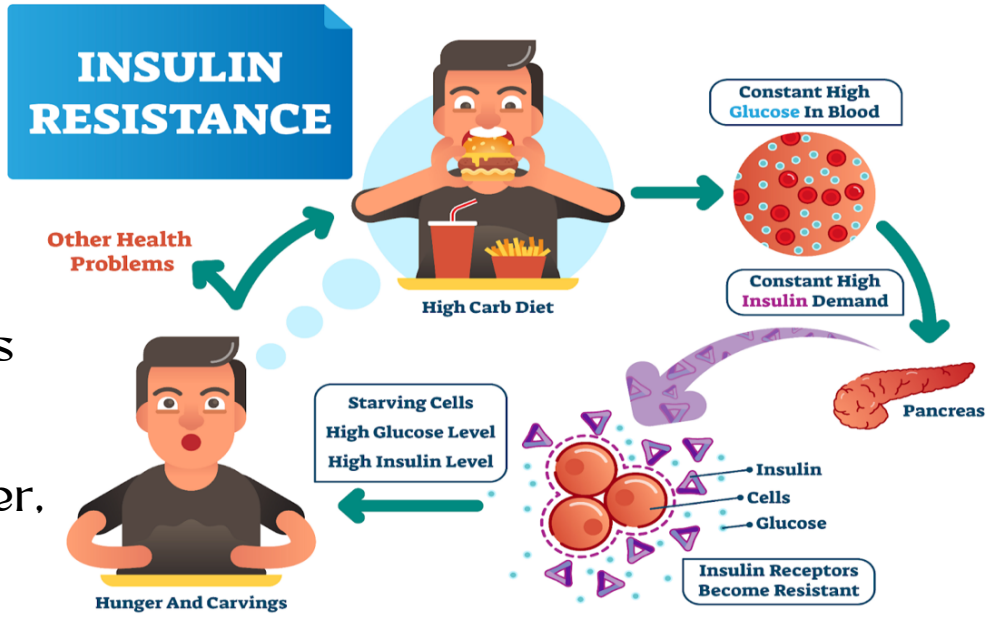
You can think of the liver and muscle as short term, limited storage space for energy in the form of glycogen, and fat cells as long term, essentially unlimited storage space for energy in the form of triglycerides.



It all starts with glucose levels

if they're elevated, insulin is generally released. Increased insulin levels lead to fat storage and weight gain. Over time, if glucose is consistently elevated due to diet and insulin production is constantly active, our cells can become "numb" to insulin, which is called insulin resistance. This means that we need more and more circulating insulin to get glucose into cells, leading to higher baseline levels of insulin. This process directly counters weight loss efforts. (Graphic Courtesy of Renewed Vitality)

In obese individuals, high insulin levels also lead to impaired leptin signaling and "leptin resistance," making it harder for us to feel full and more likely to continue consuming calories rather than burn stored fat for energy. On the other hand, decreased glucose levels lead to lower insulin levels, leading to weight loss and decreased fat mass (Means et al, 2021).



Our blood sugar is the master controller that dictates our hunger, our cravings, and our energy

We feel our best when our blood sugar is balanced; not too high or not too low. Balanced blood sugar helps keep our brain healthy, our energy levels stable and our mood balanced. However, when disrupted, our blood sugar can lead to increased sugar cravings, irritability, poor sleep, brain fog, anxiety, low energy and weight gain, and in the longer term, diabetes. It is important to understand that balancing blood sugar is not only important for those with diabetes or severe health conditions, balancing blood sugar is important for everyone. Your blood sugar is controlled by two main hormones; insulin and glucagon. Every time that you eat, your pancreas creates insulin that is released into the bloodstream to regulate blood sugar.

High Glucose = High Insulin = High Body Fat

When you eat a meal with a lot of sugar, or carbohydrates, you end up giving your body more glucose than it actually needs at one given time. In a balanced state, the body should be able to regulate this excess glucose and bring down blood sugar levels within an hour or two, but when sugar or carbohydrate-rich foods are consistently over-consumed, this process becomes stressed.

As you continue to over-consume carbohydrate-rich foods, your body needs more and more and more insulin to manage your blood sugar. Eventually, your body becomes resistant to this insulin response, which means that insulin is no longer able to unlock your cell doors.

This creates two problems; excess glucose begins to accumulate in the bloodstream (also known as high blood sugar), and the cells become starved for energy because insulin is unable to unlock the doors to let glucose into them. This is known as insulin resistance.

Blood Sugar Roller Coaster

Monitoring the quantity and quality of your carbohydrate intake is a very important factor in balancing your blood sugar

the simplest way to start balancing your blood sugar is to focus on whole foods. Whole foods come packed with fibre, nutrients, proteins and fats, and do not include copious amounts of refined sugars which are detrimental to blood sugar (Kay, 2021).

The glycemic index is a number that tells you how much your blood sugar will go up after eating a particular food. There are no gimmicks, no measuring or weighing of food and no counting calories when you follow the glycemic index for weight loss. It's the types of food you eat to get those calories that is most important. Refined sugars and white flours make you hungrier and cause you to eat more calories.

Our body's digestive tract and hormones are designed to process natural sugars.

Refined sugar and flour affect our bodies differently than natural sugars:

- Natural sugars consist of long chain sugar molecules – complex carbohydrates – which are usually "wrapped" in fiber. Your body needs time to "unwrap" complex carbs to convert them to energy. This process – breaking down complex carbs into smaller pieces so they can be absorbed and digested – helps you feel full.
- Processed sugar and white flour consist of short chain sugar molecules – simple carbs. They're not wrapped in fiber and are already broken into easily digestible pieces. Simple carbs are absorbed quickly by the body and cause a fast, substantial increase in blood sugar – also called a sugar spike.

Our bodies are "time programmed" to keep insulin in our bloodstreams long enough to break down carbohydrates.

Our bodies can't immediately tell whether we've eaten healthy food or junk food, so even though simple carbs are absorbed quickly, the insulin hangs around and keeps lowering your blood glucose levels.

This lowering of the glucose causes a "roller coaster-like effect", resulting in low glucose levels and when glucose levels fall we get hungry. When we get hungry, we eat more and often tend to reach for convenient processed foods like chips, bagels, and crackers. Then the whole cycle starts again. At the end of the day, the more refined sugars and flours you eat, the more weight you gain.

This is why paying attention to your food's glycemic index is so important for health and works for weight loss. It clues you in to how your body will react to certain foods:

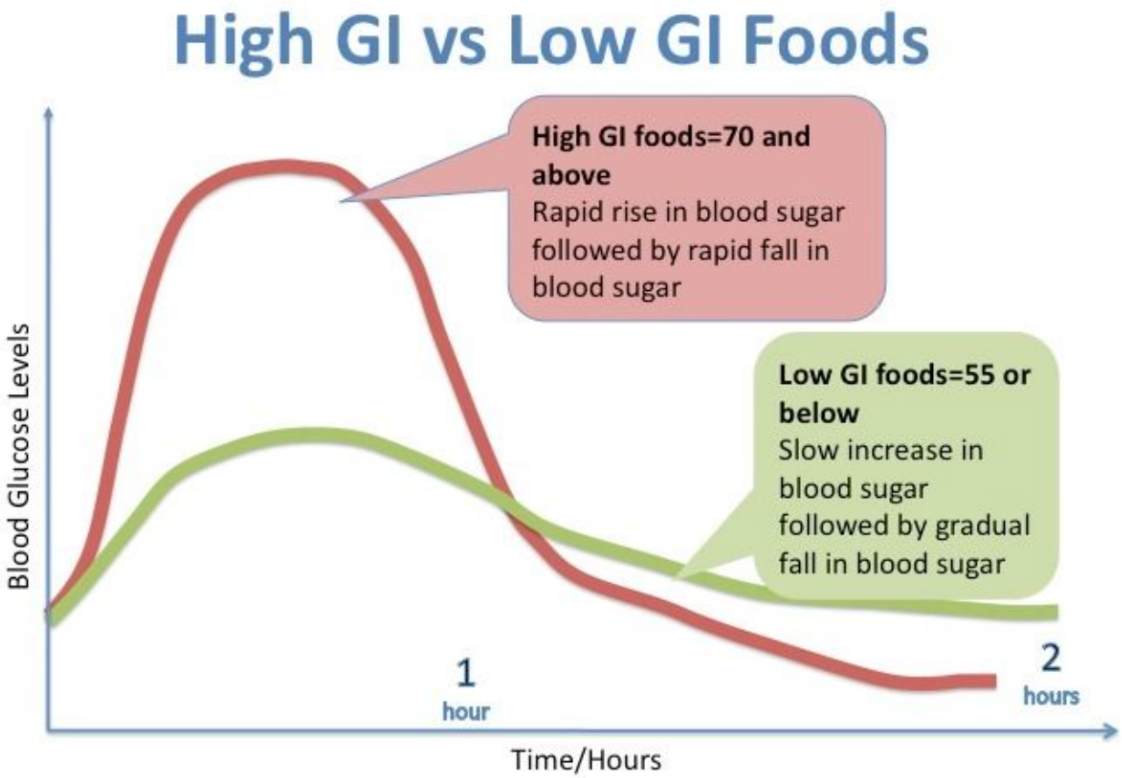
- Higher glycemic foods trigger more insulin, resulting in more calories stored as fat – and more weight gained.
- Lower glycemic foods trigger less insulin, resulting more calories used for energy – and more weight lost.

When you eat natural foods that your body can't process quickly, you feel full longer, avoid overeating, and therefore avoid weight gain.

How does the glycemic index work?

The glycemic index is pretty simple to use. The numbers can be broken up into three levels:

- 55 and less: Eat these foods to lose weight. This includes beans, nuts, vegetables and most fruits.
- 55 to 75: Eat very few foods in this range. This includes foods like white bread, crackers, bagels and most sodas and colas.
- 75 or more: Eat almost no foods in this range. This includes foods like potatoes, sports drinks, waffles and instant oatmeal.



If you are struggling with your weight, make it a point to follow this easy system. Your goal is to make sure the majority of the food you eat is non-processed, free of refined sugar and white flour and ranked at 55 or less on the glycemic index.

Most food labels do not list the glycemic index number

to support your process to eating for better glucose control.

Dr. Muenzer's motto: "If it comes from a plant, eat it. If it comes from a manufacturing plant, don't!" Watching your sugar intake is not a traditional "diet" – it's a return to eating the natural foods that our bodies can process in the healthiest way (Muenzer, 2021).

Based on the evidence presented in this review, it is clear that dietary components have significant and clinically relevant effects on blood glucose modulation. An integrated approach that includes reducing excess body weight, increased physical activity along with a dietary regime to regulate blood glucose levels will not only be advantages in T2DM management, but will benefit the health of the population and limit the increasing worldwide incidence of T2DM (Russell, 2016).

Nutrition Facts

Serving size	1 potato (148g/5.2oz)
Amount per serving	
Calories	**110**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 26g	**9%**
Dietary Fiber 2g	**7%**
Total Sugars 1g	
Includes 0g Added Sugars	**0%**
Protein 3g	
Vitamin D 0mcg	0%
Calcium 20mg	2%
Iron 1.1mg	6%
Potassium 620mg	15%
Vitamin C 27mg	30%
Vitamin B_6 0.2mg	10%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

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