

Blood Sugar Dysregulation

Blood sugar is like a roller coaster with peaks and valleys. When you eat starchy or sugar-laden foods, your blood sugar responds by spiking, and the pancreas responds by releasing insulin to bring blood sugar back to baseline after a meal (postprandial). For some, glucose regulation becomes more difficult over time if there are constant spikes and dips, eventually leading to different levels of dysglycemia.

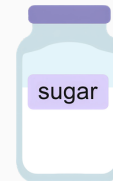
Stage 1



Reactive Hypoglycemia

Reactive hypoglycemia can happen after eating a high carb or high sugar meal, spiking blood sugar, followed by a large release of insulin from the pancreas. This type of dysglycemia can lead to a large drop in blood glucose, making a person feel 'hangry,' along with headaches, mood swings, anxiety, poor sleep, feeling shaky, sweating, rapid heartbeat, increased blood pressure, and reduced cognition.

Stage 2



Insulin Resistance

Insulin resistance occurs when your cells become less responsive to insulin, which forces the pancreas to make more insulin in order to stabilize blood sugar levels. Some common signs are weight gain (especially in the waist), extreme hunger & thirst, dark patches on the skin, fatigue, and hormone dysregulation.

Stage 3



Prediabetes

Prediabetes is considered a precursor to type 2 diabetes. At this stage, there's some level of insulin resistance, but a person may not present with diabetes symptoms. Measuring A1C through a doctor can confirm prediabetes if the three-month average falls between 5.7-6.4%, along with fasting blood glucose levels of 100-125 mg/dL. If a person does show signs, they're often intense thirst, fatigue, darkened skin patches, and numbness or tingling in the extremities.

Stage 4



Type 2 Diabetes

Type 2 diabetes is the final stage of dysglycemia. It is characterized by impaired insulin secretion from the pancreas, continuous hyperglycemia, and sometimes requires a need for exogenous insulin or medication like Metformin to help with insulin signaling and lowering fasting glucose levels. Type 2 diabetes is diagnosed when fasting glucose reaches >125 mg/dL, and A1c is equal to or above 6.5%. Symptoms are similar to prediabetes, along with frequent infections. The good news is, remission and reversal are possible by adopting healthier diet and lifestyle habits.

What can we do about it?

There are multiple diet and lifestyle changes that can improve insulin sensitivity:

Dietary Changes:

By making breakfast the largest meal of the day, you can:

- Lower your BMI
- Reduce inflammation
- Decrease the risk for obesity

The order in which you eat your food makes an impact when it comes to avoiding blood sugar spikes. It's best to start with some vegetable fiber, which slows sugar absorption. You can then follow those first bites with protein, fat, and starches/sugars.

Time-restricted eating (TRE) can be a huge help when it comes to insulin resistance by lining meals up with our circadian rhythms. An eating window of 6-10 hours and eating the last meal or snack 3-4 hours before bedtime is best.

Lifestyle Changes:

Breathing exercises like box breathing and guided meditation can lower cortisol levels and help mitigate stress, a potential precursor for dysglycemia

Strength training just a few times a week can trigger GLUT4 transport into skeletal muscle cells, and taking a 10-minute walk after meals can flatten glucose spikes.

Chemicals like BPAs, phthalates, glyphosate, and pesticides can lead to blood sugar dysregulation. Avoiding these can help reduce your overall toxic load.