

# BALANCE YOUR BLOOD SUGAR

by Jacob Teitelbaum, MD



**H**ere's a sobering statistic: approximately 1 in every 10 Americans is living with diabetes. Among those, 95 percent have type 2 diabetes. If that doesn't grab your attention, how about this? While type 2 diabetes used to be known as adult-onset diabetes because it primarily affected people over the age of 45, it's now affecting a significant number of children. But don't assume you're out of the woods if you haven't been diagnosed with diabetes. Turns out that more than one in three people in the U.S. have prediabetes, a condition where your insulin levels are higher than normal, but not high enough to be classified as full-blown type 2 diabetes.

What's behind this looming epidemic? The prevalence of high-sugar and low-fiber fast foods, ultra-processed foods, and sugary sodas and fruit juices paired with a sedentary lifestyle

can send blood sugar levels on a rollercoaster ride. When a poor diet and lack of exercise become habit, these spikes and dips in blood sugar levels can lead to prediabetes or worse yet, type 2 diabetes.

But the news isn't all bad. Keep reading to discover how taking a proactive approach to controlling your blood sugar can help reduce your odds of becoming one of the statistics. It can be as easy as combining smart lifestyle changes with targeted supplements.

## Blood Sugar Basics

The food you eat provides the energy your cells need to function. This energy primarily comes from carbohydrates, which are broken down during digestion into a simple sugar known as glucose. But that's just part of the equation. Your cells

can't use glucose without insulin, a hormone produced by the pancreas. Insulin helps cells take in glucose and convert it to energy.

Eating simple carbohydrates such as refined white sugar or high-fructose corn syrup (HFCS) provokes a higher insulin secretion than eating a complex carbohydrate such as a sweet potato. This higher release of insulin is sometimes called an insulin spike. If these spikes occur too often, cells can become resistant to insulin. When this happens, your cells can't use the glucose created during digestion, so it builds up in your bloodstream. Over time, these frequent spikes can lead to prediabetes or even type 2 diabetes.

## Lifestyle Levelers

Because insulin resistance starts with the foods you eat, the solution to leveling out your blood sugar

levels also starts with food. The most important thing to know is that a diet high in sugary drinks as well as ultra-processed foods promotes high fasting blood sugar and can lead to insulin resistance, weight gain, and an increased risk of diabetes. Opt instead for foods that help keep your blood sugar on an even keel. Among the best are low-glycemic vegetables like broccoli and green beans, healthy starches like sweet potatoes and butternut squash, high-quality meat, wild-caught fish, and healthy fats like avocado and olive oil.

Exercise can also have a profound effect on your blood sugar levels. When you engage in physical activity, your muscles require more energy in the form of blood sugar. This lowers the amount of glucose in your blood. But you don't need to become a gym rat to experience the metabolic perks of physical activity. Research in the journal *Diabetologia* found that brief, snack-sized portions of exercise throughout the day may control

blood glucose levels even better than spending an uninterrupted hour on the treadmill.

In the study, people with insulin resistance worked out in a lab three separate times. The first time, they spent 30 minutes walking at a moderate pace on a treadmill just before dinner. The second time, their workout was broken up into three “exercise snacks” consisting of high-intensity intervals. The participants would walk as fast as they could for one minute and then slowed their pace for another minute, toggling between the two intensities for a total of 12 minutes. During the final session, the subjects again walked intervals, but this time they included one minute of high-intensity upper body exercise using resistance bands. In the final analysis, researchers found that, while the 30-minute walk offered some benefits, the two interval

sessions lowered the participants’ blood sugar for a full 24 hours.

### Help from Hintonia

While making changes to your diet and adding more activity to your life are great ways to start reigning in your blood sugar levels, adding this herb can take your efforts to the next level. Derived from a small tree that grows in parts of Central and South America, *Hintonia latiflora* can often be found throughout the markets of Mexico, where the bark is sold as an herbal remedy for diabetes. But hintonia is much more than a folk remedy. Studies show that the bark contains potent micronutrients—especially a polyphenol called coutareagenin—that help keep blood sugar levels low without the risk of hypoglycemia or other side effects.

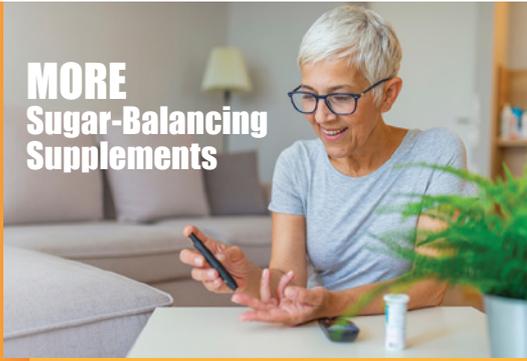


## BY THE NUMBERS

Blood sugar levels are often determined while fasting. In a healthy person, a normal level is approximately 6.1 mmol/L. But be aware that blood sugar levels typically go up and down throughout the day. Dramatic swings in your blood glucose levels, however, may indicate a problem.

Blood Sugar Level	Children mg/dL (mmol/L)	Adults mg/dL (mmol/L)
Normal	70 – 100 mg/dL (3.9 – 5.5 mmol/L)	70 – 140 mg/dL (3.9 – 7.7 mmol/L)
Low	lower than 70 mg/dL (lower than 3.9 mmol/L)	lower than 70 mg/dL (lower than 3.9 mmol/L)
High	Over 140 mg/dL (over 7.7 mmol/L)	Over 180 mg/dL (over 10 mmol/L)

## MORE Sugar-Balancing Supplements



Hintonia may well be one of the most effective herbs to help you control your glucose levels, but it's not the only botanically derived supplement you should have in your blood sugar-balancing toolbox. Two more—berberine and French grape seed extract—can help lower blood sugar and reduce insulin spikes.

**Berberine** is an alkaloid found in herbs like barberry, goldenseal, and Oregon grape. Studies show that berberine has a positive impact on blood sugar and insulin levels. One analysis of 28 studies involving more than 2,300 patients found that berberine was better at lowering blood sugar compared to

a placebo. Another analysis of 27 studies reported that pairing berberine with lifestyle changes was more effective for lowering blood sugar than lifestyle changes alone.

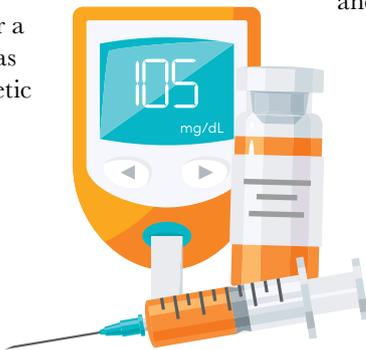
So what's the secret to berberine's efficacy? According to one review that appeared in the journal *Diabetes*,

berberine appears to activate a key regulator of cellular metabolism and energy called AMP-activated protein kinase. This, in turn, can help regulate how the body uses blood sugar. But to get these benefits, it's important to search out a berberine supplement that is derived from Indian barberry bark and root extract. While generally safe, do speak with your holistic healthcare provider if you are taking a blood thinning drug or anti-depressant as berberine may interact with your medication.

**Grape Seed Extract:** Because elevated blood sugar can lead to oxidative damage throughout the body, a powerful antioxidant is

essential. One free-radical fighting superstar is French grape seed extract, which is rich in a family of chemicals known as oligomeric proanthocyanidin complexes (OPCs). In a randomized, placebo-controlled study, researchers from the University of California, Davis, analyzed the effect of 300 mg of grape seed extract on a dozen middle-aged people with metabolic syndrome—a condition that is often a precursor to type 2 diabetes. They were given either the supplement or a placebo an hour before eating a high-carbohydrate, high-fat meal. The grape seed extract boosted antioxidant levels in the blood, suppressed an uptick in oxidized LDL (bad) cholesterol, and reduced post-meal blood sugar concentrations compared to the placebo. But to get the most antioxidant power out of your grape seed extract, look for a tannin-free supplement that provides only low molecular weight OPCs for maximum absorption and bioavailability.

Hintonia's anti-glycemic effects were shown in a recent German study that involved 177 patients with prediabetes or mild type 2 diabetes. The patients were given a daily dose of the herb and evaluated every two months for various parameters of diabetes, including A1C, fasting glucose, and postprandial blood sugar (glucose measured after a meal), as well as common diabetic symptoms like neuropathy. At the end of eight months, researchers noted that:



- A1C improved by an average of 10.4 percent.
- Fasting glucose improved by an average of 23.3 percent.
- Postprandial glucose improved by an average of 24.9 percent.
- Blood pressure, cholesterol levels, and liver values also improved.

During the study, diabetic patients who were on medication were included in the study if they still struggled to control their blood sugar levels. By the end of the trial, 10 of those patients were able to stop using their medication and 45 patients had

reduced the amount of medication they required. This is important since many antidiabetic drugs have significant side effects, including fluid retention, hypoglycemia, and liver disease. Being able to delay using pharmaceuticals or reduce the dosage could decrease the risks associated with these medications and improve the quality of life of patients. ■



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