

Got the BLOOD SUGAR BLUES?

The lowdown on prediabetes—and why it can undermine your health

by Jacob Teitelbaum, MD

Second chances rarely come in life, but if you've been diagnosed with prediabetes, consider it your wake-up call. Prediabetes, which affects 84 million Americans, is a warning sign that you're on the road to developing type 2 diabetes. But by making some strategic lifestyle changes, you can reverse this path and regain good health.

THE SUGAR SABOTAGE

Prediabetes occurs when your blood sugar levels are higher than normal, but not high enough to be diagnosed with full-blown type 2 diabetes. A diagnosis means that you

also have an underlying condition called insulin resistance. Insulin is a hormone produced by the pancreas that transports sugar (glucose) from the bloodstream to the cells to use for energy. When you are insulin resistant, your muscle, fat, and liver cells don't respond properly to insulin and can't easily absorb glucose from the bloodstream. In response, the pancreas pumps out more and more insulin in an effort to shove glucose into the resistant cells. But over time, the pancreas loses its ability to compensate for the malfunction. As a result, glucose builds up in the bloodstream, circulating through your blood vessels instead of entering the cells.

According to the Centers for Disease Control and Prevention (CDC), moderately elevated blood sugar means that, without making healthy lifestyle changes, you may be more likely to develop type 2 diabetes within the next five years. But because prediabetes has no symptoms, it can often fly under the radar until you find you have type 2 diabetes.

GET TESTED

Testing for prediabetes is a fairly simple process. A blood test, called an A1C test, will tell your health care provider critical information about your average blood sugar levels over the past three months. The A1C

SLAY THE SUGAR DRAGON

If you've ever tried to cut back on sugar, you know how incredibly difficult it is. Turns out, there's a reason why. According to researchers at Princeton University, sugar hijacks your brain, affecting the natural reward centers. In fact, it's estimated that sugar is eight times more addictive than cocaine! But getting your sugar fix doesn't just affect your brain. Sugar also sends your blood sugar levels on a wild roller coaster ride that can lead to weight gain and prediabetic sugar spikes. Here are some ways to loosen the grip of the sweet stuff:



DON'T GO COLD TURKEY.

Abruptly going sugar-free can lead to withdrawal symptoms like headache, anxiety, and mood swings. Instead, ease off sugar gradually.

KNOW ALL THE NAMES FOR SUGAR.

Common names for sugar include brown sugar, corn syrup, dextrin, dextrose, fructose, fruit juice concentrate, high-fructose corn syrup, galactose, glucose, honey, hydrogenated starch, invert sugar, maltose, lactose, mannitol, maple syrup, molasses, polyols, raw sugar, sorghum, sucrose, sorbitol, and turbinado.



test result is reported as a percentage. The higher the percentage, the higher your blood glucose levels are. A normal A1C level is below 5.7 percent.

But here's the rub. The A1C test is not as sensitive as other tests, like the fasting plasma insulin test. If this test is over 10 mIU/L it suggests insulin resistance even though it's considered normal if it is under 25 mIU/L. The fasting plasma insulin level can identify how your body handles glucose after a meal—often before your fasting blood glucose level becomes abnormal. If you have several risk factors for prediabetes, it's wise to discuss having both a glycosylated hemoglobin and a fasting insulin test with your doctor.

TAKE ACTION!

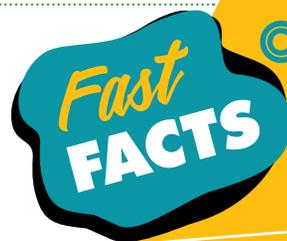
What you eat can either feed prediabetes or starve it. That's why the number one change you can make is to eat a healthy diet. Avoid added sugar, simple carbohydrates, and heavily processed foods of any kind. It's also wise to watch your portions since the more you eat, the more insulin your body needs to produce. Instead, consider adopting a low-carb paleo or ketogenic diet. These diets provide healthy amounts of good-for-you fats, lean protein, and nutrient-dense vegetables instead of processed carbs.

This not only nourishes the body, it causes the body to use body fat and dietary fat for energy instead of sugar.

It's also important to get moving! Increasing the amount of physical activity you get is a major component in the prevention of prediabetes. In addition to what it can do to strengthen your muscles, heart, and bones, exercise also helps you keep blood sugar levels in check. Doing both cardiovascular and strength training activities is the best way to balance a workout routine. Start slowly. Even 30 minutes of walking five times each week can get you on the track to a healthier future. Just make sure you choose an activity that you enjoy such as tennis, dancing, biking, or playing a team sport. This will help ensure that you stick with it. And don't forget to include some resistance training. The latest research finds that weightlifting can improve blood sugar control.

SMART SUPPLEMENTS

Supplements can play an important role in managing blood sugar. One of particular note is an herb called *Hintonia latiflora*. Sometimes called "vegetable insulin," *Hintonia latiflora* contains a neoflavanoid known as coumestrol (COU) that decreases blood glucose levels, blood fats, and



1 in 3 people have PREDIABETES.

9 out of every 10 of them **AREN'T AWARE** they have the condition.

Prediabetes increases the risk for **HEART DISEASE** and **STROKE**, as well as type 2 diabetes.

Without **LIFESTYLE CHANGES** **15-30%** of prediabetics will develop type 2 diabetes **WITHIN 5 YEARS.**



DITCH SIMPLE CARBS. Pastries, cookies, muffins, and soft drinks offer little nutrition but are packed with added sugar that can spike your blood sugar levels. And since they're not hard to identify, it's easy to slash them from your diet.



FORGET FAKES. Chemical sweeteners like aspartame or saccharin provide a sweet taste without calories, so when you eat or drink these foods, your hunger isn't satisfied. A study in the journal *Trends in Endocrinology & Metabolism* reports that drinking just one diet soda a day is linked to weight gain and diabetes.



WATCH OUT FOR HIDDEN SUGAR. Cough syrups, chewing gum, tomato sauce, baked beans, soups, salad dressings, and lunch meats often contain added sugar.

**YOU
MAY HAVE
PREDIABETES IF:**

- You are **45 YEARS** old or older
- You are **OVERWEIGHT**
- Your body **STORES FAT** primarily around the abdomen
- You have a **FAMILY HISTORY** of type 2 diabetes
- You live a **SEDENTARY** life
- You live for the **DOLLAR MENU** (frequently eating high-carb, sugar-filled processed food)
- You have **HIGH BLOOD PRESSURE** or cholesterol
- You have a history of **HEART DISEASE** or stroke
- You've had gestational diabetes or gave birth to a **9+ POUND** baby
- You're a woman with polycystic ovary syndrome (**PCOS**) or high testosterone levels
- You're a man with a **TESTOSTERONE LEVEL** under 500 ng/dl (though your doctor may say it's normal if it's over 240 ng/dl)
- You are African-American, Asian-American, Hispanic/Latino, Native American, or a Pacific Islander

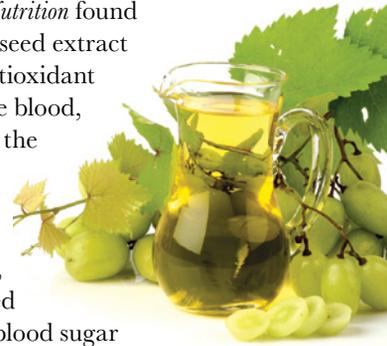
blood pressure. Thanks to ultrasound measurements, scientists have found that COU can safely:

- **Metabolize carbohydrates and sugars by delaying glucose absorption**
- **Decrease blood glucose concentrations**
- **Change calcium and potassium levels that stiffen blood vessels**
- **Dilate blood vessels by relaxing the rings of tight muscle bands inside vessel walls**
- **Stimulate healthy insulin secretion**
- **Reduce A1C levels by as much as 10 percent**

One *Hintonia latiflora* study followed 177 patients with prediabetes or mild type 2 diabetes for eight months. During the study, patients were evaluated every two months on various parameters including A1C, fasting glucose, and postprandial blood sugar (glucose measured after a meal), as well as common symptoms associated with diabetes, such as neuropathy. At the end of eight months, researchers noted that A1C improved by a dramatic average of 10.4 percent, fasting glucose improved an average of 23.3 percent, and post-meal glucose improved an average of 24.9 percent. Impressive to say the least!

When choosing a *Hintonia latiflora* supplement, look for a clinically studied form that delivers 20 mg of polyphenols from *Hintonia latiflora* bark extract when taken three times daily. The supplement should also provide B-vitamins, folic acid, chromium, zinc, and vitamins C and E. These ingredients help protect against oxidative damage to blood vessels, stop nerve damage, and keep your metabolism functioning the way that it should.

Because elevated blood sugar can lead to oxidative damage throughout the body, a powerful antioxidant is also essential. One free-radical fighting superstar is French grape seed extract. Rich in a family of chemicals known as oligomeric proanthocyanidin complexes (OPCs), a randomized, placebo-controlled trial that appeared in the *British Journal of Nutrition* found that grape seed extract boosted antioxidant levels in the blood, suppressed the oxidation of LDL (bad) cholesterol, and reduced post-meal blood sugar concentrations compared to a placebo among a group of middle-aged people with metabolic syndrome (another condition that is often a precursor to type 2 diabetes). Earlier animal studies also suggest that the OPCs in grape seed extract help to balance blood sugar while also decreasing cholesterol levels and oxidative stress to the liver. But not all grape seed extracts optimize these benefits. It's important to choose a tannin-free supplement that provides only low molecular weight OPCs for maximum absorption and bioavailability.



By opting for a whole-foods, low-carb diet, increasing your level of physical activity, and taking targeted supplements, you can greatly increase your chances of preventing—and even reversing—prediabetes. After all, it's never too late to start making good health a priority. ■



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