Diet vs Disease
Research-Driven. Hype-Free.

7 Foods Shown To Keep Your Blood Sugar Levels In Check

When we talk about blood sugar (glucose), we often focus on the foods that increase levels.

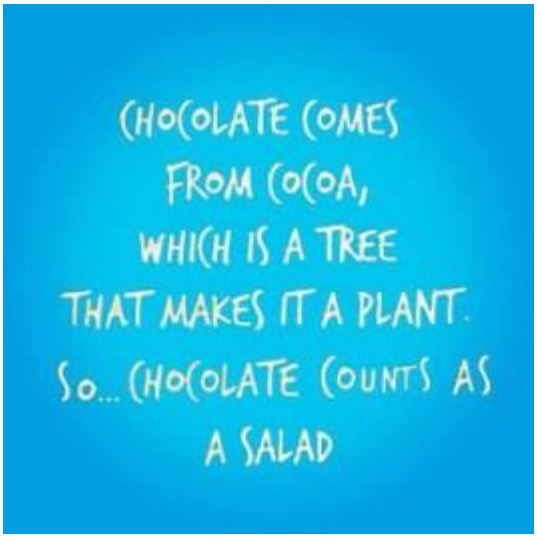
Foods like pasta, soft drinks and rice.

But what about foods that can actually help keep blood sugar levels down?

Research shows there are many natural foods that can assist, either by reducing sugar absorption into the bloodstream, or by improving insulin resistance.

It's certainly worth your while to learn what those foods are, rather than just what to avoid. I've done some of the research here and strongly recommend you start with the following:

1. Dark chocolate can improve glucose metabolism



Sound too good to be true? It's not, but it's close.

Chocolate "technically being a plant" has some science behind it.

The cocoa in chocolate originates from the cocoa plant. The active ingredients are the flavanols which remain in cocoa powder after it's extracted from the plant.

Current human studies suggest that cocoa helps to improve insulin sensitivity, particularly for those who already have decreased insulin sensitivity and high blood pressure (such as type 2 diabetics) (1, 2, 3, 4).

By improving insulin sensitivity, your body becomes more efficient at moving sugar out of the blood and into cells to be used as energy.

A study on 15 healthy adults given either 100 grams per day of dark chocolate (500 mg total flavanols) or an equal amount of white chocolate, found that insulin sensitivity was doubled in the dark chocolate group. That was after only a 15-day period (5).

So dark chocolate can have health benefits, but there is a catch.

Your chocolate must be **really** dark chocolate, typically shown on the package as 85% cocoa or more. Fortunately for me I've grown to really enjoy this variety, and much prefer it to the taste of milk chocolate. All the studies that found benefits used either dark chocolate or a cocoa extract equivalent to around 500-1000 mg of flavanols per day.

This equals about 25-40 grams of 85% dark chocolate.

According to Calorieking, 20 grams of 70-85% dark chocolate has 120 calories (500 kilojoules) and 9.2 grams of carbohydrate, of which 4.8 grams are sugar. The lower the percentage of cocoa, the higher the calories and sugar.

Therefore, in order to reach the desired flavanol intake, it's pointless to eat any varieties less than 85% cocoa. Otherwise the health benefits are cancelled out by the increased amount of added sugar.

Summary: If you regularly eat chocolate, it's strongly recommended to swap to 85% dark chocolate, no less. There's a good chance it could improve your insulin sensitivity.

2. Green coffee appears to reduce absorption of sugar

Green coffee refers to **unroasted coffee beans**.

Unroasted coffee beans contain a large amount of chlorogenic acid, the active ingredient linked to most of the health benefits (6).

A supplement containing chlorogenic acid, known as green coffee bean extract, has shown promise in research looking at blood sugar control. Several studies suggest it restricts glucose absorption into the bloodstream, which in turn lowers blood sugar levels and insulin spikes (7, 8, 9).

One study even found that chlorogenic acid-enriched coffee reduced glucose absorption by 6.9% compared to normal coffee (10).

Green coffee, and indeed the chlorogenic acid within, could very well play a protective role as part of a diet for type 2 diabetes.

Summary: The active ingredient in green coffee beans, chlorogenic acid, seems to significantly restrict absorption of sugar into the bloodstream. If you already drink coffee, try switching to green coffee and see how it works for you.

3. Green tea catechins are proven to improve sugar control

Coffee is great. Green coffee is even better.

But green tea is the best.

It is loaded with many powerful compounds and antioxidants making its nutritional value second to none (11). The main active ingredients in green tea are its polyphenols, which are thought to benefit almost every organ system in the body including glucose metabolism (12, 13).

According to a review of 7 studies with a total of 286,701 individuals, green tea drinkers had an 18% lower risk of becoming diabetic (14). One Japanese study found that decreased risk blew out to 42% for the true green tea enthusiasts (15).

Normally I wouldn't draw conclusions from observational studies (which cannot prove cause and effect), but it's clear across many aspects of health that green tea is beneficial.

If you are already a tea drinker, then it's time to switch to green. If you aren't, then it's time to start.

Seems to be a small change that could make a big difference to your metabolic health.

Summary: According to observational studies, regular green tea drinkers are 18-42% less likely to become diabetic.

4. Almonds improve glucose metabolism

Tree nuts – not peanuts, which grow in the ground – are linked with many metabolic health benefits.

But almonds really standout when it comes to managing blood sugar.

They are very low in carbohydrates, but that's not why. The reason is Magnesium.

Magnesium is an essential mineral involved in over 300 bodily processes, including blood pressure regulation and **blood sugar control** (16, 17).

Alongside spinach, almonds and cashews are among the best sources of magnesium in the human diet. Several handfuls provides over 20% of the daily recommended intake (17).

Top 3 Food Sources of Magnesium (18)

Food	Milligrams (mg) per serving	Percent RDA*
Almonds, dry roasted, 28 g (1 oz)	80	20
Spinach, boiled, ½ cup	78	20
Cashews, dry roasted, 28 g (1 oz)	74	19

**Recommended Dietary Allowance*

While the mechanism is unclear, having low magnesium levels is strongly associated with both type 1 and type 2 diabetes. It appears to impact on insulin secretion, which may be the reason that **25-38% of type 2 diabetics have low magnesium** (19).

Clinical trials have shown that restoring low magnesium significantly improves insulin response and reduces blood sugar levels (19, 20). Especially if you're magnesium deficient **and** insulin resistant.

Interestingly, those with normal magnesium levels but poor blood sugar levels still see improvements with magnesium supplementation (21, 22, 23). However, there's no benefits for those with a healthy glucose metabolism (24, 25).

There are many signs of magnesium deficiency to look out for, but you can only be sure with a blood test.

Summary: If you have low magnesium levels, replacing these with nuts such as almonds may greatly improve your blood sugar control. Definitely test your magnesium levels if you haven't done so already.

5. Resistant starch can lower sugar levels and enhance insulin sensitivity

Most carbohydrates in the diet are starches.

Starches are long chains of glucose found in grains, oats, potatoes, bananas and various other foods.

But not all of the starch we eat gets digested. Certain varieties pass through digestion unchanged; they do not get absorbed as sugar in the blood. Hence, the term **resistant** starch.

Many studies in humans have shown resistant starches are beneficial to digestion and health (26). This is why, gluten aside, whole-grains and seeds are often linked with health benefits.

Looking at diabetes specifically, its benefits on glucose and insulin metabolism are **very impressive.** Several studies show resistant starch can improve insulin sensitivity, in other words, how well the body's cells respond to insulin (27).
This may be why it's so effective at lowering blood sugar levels after meals (28, 29, 30). In fact, the effect is so great that having resistant starch with lunch will lower your blood sugar spikes at dinner too, known as the "second meal effect" (31).

Some studies have found a 33-50% improvement in insulin sensitivity after 4 weeks of consuming 15-30 grams per day. That is equal to what you would see if you lost around 10% bodyweight (32, 33).

Be mindful that many foods high in resistant starch are also high in **digestible** carbs and **will** affect your blood sugar. Fortunately, resistant starch is also available in supplement form without the extra carbs.

Summary: There is a lot of science supporting the anti-diabetic effect of resistant starches. They seem like a fantastic option if you're struggling to control your sugars or have hit a plateau. Supplements are available and sure to increase in popularity.

6. Cinnamon can reduce sugar absorption and greatly improve insulin sensitivity

Cinnamon has been used in both sweet and savory dishes throughout history.

Its use was documented as far back as Ancient Egypt and China, with its medicinal properties widely celebrated (34). These days, several human trials have found promising results for the anti-diabetic effects of cinnamon intake (35, 36, 37).

It appears that certain compounds in cinnamon interfere with digestive enzymes. This slows the digestion process, which also slows glucose absorption (38, 39). As a result, less sugar enters the bloodstream after meals, minimising sugar spikes.

Looking at effects on insulin, one laboratory study found cinnamon improves the effectiveness of insulin by more than **20-fold** (40).
It's no surprise then that clinical studies show a daily dose of cinnamon extract greatly improves insulin sensitivity in those with type 2 diabetes, insulin resistance, or polycystic ovary syndrome (41, 42).

Interestingly, one compound in cinnamon called methylhydroxychalcone polymer (MHCP) mimics insulin by transphosphorlyating the insulin receptor on fat cell membranes (43, 44).
This copy-cat mechanism to create more "insulin" appears to improve glucose absorption, albeit 3 to 6 times slower than insulin itself.

The typical dose required for cinnamon to have these anti-diabetic effects is 1-6 grams (0.25-1.5 teaspoons) daily, best taken with carbohydrate-containing meals.

Summary: Cinnamon appears to interfere with digestive enzymes, slowing the absorption of sugar into the bloodstream. It has also been shown to increase insulin effectiveness 20-fold, and even contains a compound that can mimic the function of insulin.

7. Fenugreek can reduce absorption of sugar into the blood

Fenugreek is a popular herb in Indian and Arabic regions.

It was traditionally used for medicinal purposes, particularly to enhance masculinity and libido. Fortunately this article is focused on maintaining healthy blood sugar levels.

Fenugreek has several compounds which work together to improve glucose control, the most notable of which is thought to be a plant protein known as 4-hydroxyisoleucine (45).

Based on a whole host of animal and human trials, it appears to be beneficial by either restricting absorption of sugar into the bloodstream, or by increasing insulin sensitivity (46, 47, 48, 49, 50, 51).
A study on 25 newly diagnosed type 2 diabetics found supplementing with 1 gram of fenugreek extract daily increased insulin sensitivity by 53% compared with the control group.

Significant improvements to blood sugar control have also been seen in type 1 diabetics and healthy non-diabetics (52, 53).

Eating the seeds whole or as a flour have so far shown to be the most effective way to improve blood sugar control. But fenugreek should **definitely** be avoided if pregnant.

Summary: Fenugreek appears to greatly improve blood glucose control and overall diabetes management. 2-5 grams of fenugreek seeds can be very helpful for diabetics and should certainly be at the top of your list.

What are you waiting for?

Type 2 diabetes has increased 10-fold in just a few decades and shows no signs of slowing.

It's fair to say then that for most, the "conventional" approach to managing sugar doesn't work well enough.

If that's you, those 7 foods could very well help with keeping your blood sugar levels down. They are all considered healthy and nutritious so there's nothing to lose from giving them a try.

I hope you found this useful, and if you have any feedback or comments then you can email me directly at **hello@dietvsdisease.org.**

Here's to straight and hype-free health advice,

Joe Leech, MSc Nutrition.

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