

Foods That Improve Insulin Sensitivity

- **Alfalfa:** Alfalfa is high in essential nutrients and has been connected with improved metabolism and lowering of blood sugar in preliminary studies. Contraindicated in clotting disorders, in pregnancy, and with aspirin therapy.
- **Algae and sea vegetables:** Sea veggies contain DHA and minerals to support repair of insulin receptors.
- **Avocado:** Avocado contains a unique weight loss friendly carbohydrate called “mannoheptulose,” a rare form of sugar, found primarily in avocado. Mannoheptulose has been found to lower insulin secretion.
- **Billberry:** This relative of the blueberry contains powerful antioxidants called “anthocyanidins” in its fruit and leaves. Animal studies have suggested that billberry may lower blood sugar. Typical dosage: 80 to 120 milligrams two times per day of standardized bilberry extract. Billberry protects the eyes and nerves, and thus can prevent some of the complications of elevated blood glucose.
- **Bitter melon:** Bitter melon is thought to help cells use glucose more effectively and block sugar absorption in the intestine. Typical dosage: 50 to 100 milliliters (approximately 3 to 6 tablespoons) of the juice daily.

[The Best Herbs and Supplements for Diabetes](#)

- **Blueberries:** Compounds in blueberries, called “anthocyanins”, have antioxidant properties, contribute to improved insulin sensitivity.

[Blueberries May Help Improve Insulin Sensitivity](#)
[Obese Patients With Prediabetes May Benefit From Drinking Blueberry Smoothies. Study Shows Bioactives in Blueberries Improve Insulin Sensitivity in Obese, Insulin-Resistant Men and Women](#)
[Life Extension Magazine March 2011 Journal Abstracts: Blueberries](#)

- **Broccoli:** Contains an isothiocyanate called “sulforaphane”, an antioxidant found in cruciferous vegetables such as broccoli, Brussel sprouts, cabbage, cauliflower, and kale. Sulphoraphane has been associated with decreased inflammation and assists in healing damaged insulin receptors.

[Sulphoraphane effects on Insulin Resistance](#)

- **Broccoli sprouts:** the richest source of sulforaphane, containing 20 to 50 times the amount as broccoli.

[Sulphoraphane effects on Insulin Resistance](#)

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- **Brussels sprouts:** contain high levels of “Vitamin K , which helps keep insulin levels in check.” Also, similar to broccoli, they contain sulforaphane.

[Sulphorophane effects on Insulin Resistance
http://www.howtolivealongerlife.com/2009/07/11-ways-to-reduce-insulin-resistance.html](http://www.howtolivealongerlife.com/2009/07/11-ways-to-reduce-insulin-resistance.html)

- **Cabbage:** Contains “B Oleracea”, a compound shown to mimic insulin. It also can lower glucose and decrease insulin production, thus improving insulin resistance.
- **Carob:** Contains “pinitol”, a natural compound that has the same effect on insulin receptors as the MHCP in cinnamon. Both pinitol and MHCP mimic the action of insulin. The best source of pinitol are the husks of the carob tree pods. Studies have shown in animals and in humans that pinitol is capable of lowering blood glucose levels and improves use of glucose in cells. D-pinitol belongs to a family of compounds called inositols – a critical B vitamin. When insulin binds to its receptor, these members of the inositol family are released in the cell membrane, so they may aid in the conversion of glucose into useful energy.

[Carob Pods Boost Energy Naturally
Nutritional Supplement Facts for D-Pinitol
D-Pinitol](#)

- **Cinnamon:** The active principle in cinnamon that makes fat cells more receptive to insulin is a water soluble, polyphenol compound called “MHCP”. MHCP activates an enzyme that causes insulin to bind to cells and inhibits the enzyme that blocks this process. MHCP mimics insulin by activating its cellular receptors and it works synergistically with insulin in the cells. In a test conducted by the U.S. Department of Agriculture (USDA)—MHCP increased glucose metabolism by twenty-fold! For example, in test tube experiments, researchers discovered MHCP mimics insulin and helps transport glucose to your cells, activates insulin receptors to allow glucose through the "gates" of your cells, and works synergistically with insulin in cells. Typical dosage: ½ - 1 teaspoon or more of ground cinnamon with meals or in tea or 2-3 500mg capsules of ground cinnamon with each meal.

Cinnamon oil, commonly used as a flavoring, won't help though. You have to eat ground cinnamon to get the beneficial effects of MHCP.

[Cinnamon Reduces Blood Sugar and Cholesterol Levels Researchers suggest that all adults, not just diabetics, may benefit from its health
Cinnamon for Diabetes? A Half Teaspoon A Day Could Help Control Cholesterol](#)

- **Citrus peel extract:** Research indicates that citrus peel extract containing polymethoxylated flavones (PMFs) may help prevent diabetes. The results suggest that that a daily supplement of citrus peel extract could be a way to improve insulin resistance and in patients at risk for developing diabetes.

[Citrus peel extract shown to reduce insulin resistance; may help diabetics, says research](#)

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- **Cloves:** In a randomized controlled study reported by *Experimental Biology* in 2006, subjects were given 1, 2, or 3 grams of cloves per day. After 30 days, in treated subjects, regardless of dose, blood sugar dropped an average of 225 to 150.

[Lower Blood Sugar Naturally | Suite101.com](http://mary-earhart.suite101.com/lower-blood-sugar-naturally-a299433#ixzz1qJMjVtw) <http://mary-earhart.suite101.com/lower-blood-sugar-naturally-a299433#ixzz1qJMjVtw>

- **Cucumber:** Gabriel Cousens, MD, author of *There is a Cure for Diabetes*, asserts that cucumbers contain a substance needed by the beta cells of the pancreas to produce insulin. The book suggests drinking cucumber juice and adding the vegetable to salads.

<http://www.drritamarie.com/go/DiabetesCure>

- **Dark chocolate (sweetened with stevia):** (controversial) Dark chocolate improves insulin sensitivity, according to Italian researchers. It is rich in flavonoids which help counteract insulin resistance, the condition that prevents your body from using insulin effectively.

[8 Foods That Fight Diabetes](#)

[Dark Chocolate Improves Insulin Sensitivity/Resistance and Blood Pressure](#)

[Insulin Sensitivity Promoted by Dark Chocolate](#)

[Dark Chocolate and Diabetes Connection? Cocoa Flavonoids](#)

[Chocolate's Health Benefits—Trick or Treat?](#)

[True or False: Eating Dark Chocolate Can Lower Your Risk of Cancer and Cardiovascular Disease](#)

- **Essential oil:** Oils of oregano and thyme improved insulin sensitivity, according to N. Talpur, lead author for a study published in "Diabetes, Obesity and Metabolism." The oil needs to be combined with other oils such as cumin, fenugreek and pumpkin seed oil to have this effect, Foster says.

<http://www.livestrong.com/article/180381-long-term-benefits-of-oregano-oil/#ixzz1qJO8Frpn>

- **Fenugreek:** Typical dosage: 5 to 30 grams with each meal or 15 to 90 grams with one meal per day. These seeds, used in Indian cooking, have been found to lower blood sugar, increase insulin sensitivity, and reduce high cholesterol, according to several animal and human studies. The effect may be partly due to the seeds' high fiber content. The seeds also contain an amino acid that appears to boost the release of insulin. In one of the largest studies on fenugreek, 60 people who took 25 grams daily showed significant improvements in blood sugar control and post-meal spikes.

[The Best Herbs and Supplements for Diabetes](#)

- **Garlic:** Garlic can raise insulin production and increase insulin sensitivity and thus lower blood sugar. Raw garlic has potent antioxidant properties and promotes a healthy cholesterol profile as well as protecting against certain types of cancer.

[Garlic improves insulin sensitivity and associated metabolic syndromes in fructose fed rats](#)

[Sulfur-rich nutrients: What do garlic, glutathione, glucosamine, NAC, alpha-lipoic acid, chondroitin, and MSM have in common?](#)

[Sulfur—a compound that helps the body heal in a variety of ways](#)

[Garlic - The Whole Story](#)

[The Chemistry of Garlic Health Benefits](#)

[The benefits of garlic: letting the research speak for itself](#)

[Chemistry of Allicin](#)

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- **Ginseng:** Ginseng is known for its immune-boosting and disease-fighting benefits, and has several positive diabetes studies behind it. Researchers have found that ginseng slows carbohydrate absorption; increases cells' ability to use glucose; and increases insulin secretion from the pancreas. A team from the University of Toronto has repeatedly demonstrated that ginseng capsules lower blood glucose 15 to 20 percent compared to placebo. Typical dosage: 1 to 3 grams a day in capsule or tablet form, or 3 to 5 milliliters of tincture three times a day.

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- **Greens:** Green leafy vegetables are low in carbohydrates and rich in the nutrients that assist in the uptake of glucose into the cells. They are abundant in minerals, amino acids and phytochemicals that improve insulin resistance and keep blood sugar steady.
- **Gymnema sylvestre:** This plant's Hindi name translates as "sugar destroyer," and the plant is said to reduce the ability to detect sweetness. It's regarded as one of the most powerful herbs for blood-sugar control. It may work by boosting the activity of enzymes that help cells use glucose or by stimulating the production of insulin. Though it hasn't been studied extensively, it's not known to cause serious side effects. (Undesirable effect: May increase insulin so is good for type 1 diabetic but not type 2 or insulin resistance.) Typical dosage: 200 to 250 milligrams twice daily.

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- **Jerusalem artichoke:** Contain inulin, which slows down absorption of carbohydrates and stabilizes blood sugar.
- **Konjac:** The root of the konjac plant, native to the east, contains a fiber called glucomannan, which has repeatedly been shown to lower blood glucose and provide satiation between meals.

[Glucomannan and Konjac Noodles](#)

- **Lemon:** Very effective at lowering blood sugar. Lemons are rich in vitamin C, contain potent health promoting compounds like rutin and limonene, and their acidity can lower the glycemic index of a meal considerably. They have cholesterol lowering and anti-cancer properties as well. Several studies have shown that using vinegar or lemon juice as a salad dressing, consumed with a mixed meal, lowers blood sugar levels significantly.
- **Onion:** Lowers blood sugar similar to how garlic does.

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- **Prickly pear cactus:** The ripe fruit of this cactus has been shown in some small studies to lower blood sugar levels. You may be able to find the fruit in your grocery store, but if not, look for it as a juice or powder at health food stores. Researchers speculate that the fruit may possibly lower blood sugar because it contains components that work similarly to insulin. The fruit is also high in fiber. Fiber has been known to help with the metabolism of sugar. Typical dosage: If you eat it as a food, aim for 1/2 cup of cooked cactus fruit a day. Otherwise, follow label directions.

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- **Pungent spices:** Spices like cinnamon, ginger, and cardamom increase the body's metabolic rate.
- **Turmeric:** Curcumin, the anti-inflammatory constituent of turmeric, lessens insulin resistance and prevents Type 2 diabetes by dampening the inflammatory response. This is from research by Dr. Tortoriello and fellow endocrinologists at Naomi Berrie Diabetes Center. They discovered that turmeric-treated mice were less susceptible to developing Type 2 diabetes, based on their blood glucose levels, and glucose and insulin tolerance tests. They also discovered that turmeric-fed obese mice showed significantly reduced inflammation in fat tissue and liver compared to controls.

<http://www.scientistlive.com/European-Food-Scientist/Ingredient-Lower-Blood-Sugar-Naturally-|Suite101.com>
http://mary-earhart.suite101.com/lower-blood-sugar-naturally-a299433#ixzz1qJMjVtwnts/Turmeric_fights_diabetes/20610/

- **Vinegar (apple cider):** Several studies have found that vinegar may help lower glucose levels. It contains chromium, which can alter your insulin sensitivity. According to a study conducted at Arizona State University and referenced in a 2006 "Medscape General Medicine" review, the acetic acid in vinegar may have an effect on blood sugar, especially in those with mild cases of type 2 diabetes. In the study, people had vinegar just before meals and just before bed time. The results showed improved maintenance of blood glucose after eating, which usually causes a spike, and a drop of 6 percent blood glucose upon waking in the morning. The researchers found that taking two tablespoons of vinegar before meals lowered blood sugar levels in diabetics by 25%. In prediabetics, blood sugar levels were cut in half. In a similar study, Italian researchers discovered that apple cider vinegar with meals slashed blood sugar levels by 30%. Typical dose: 1/4 cup apple cider vinegar, instead of lemon juice, with 1/2 teaspoon baking soda added to *AM Gut Rejuvenator Drink*.

[8 Foods That Fight Diabetes](#)

[How to Use The Powerful Health Qualities of Natural Apple Cider Vinegar](#)

[Scientific Evidence of Apple Cider Vinegar Benefits](#)

["Medscape General Medicine": Vinegar: Medicinal Uses and Antihyperglycemic Effect; Carol S. Johnston, Ph.D., et. al.; May 2006](#)

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