

# Glycemic index diet: What's behind the claims

By [Mayo Clinic staff](#)

## Definition

Glycemic index diet is a general term for weight-loss diets that are based on your blood sugar level. Many popular commercial diets, diet books and diet websites revolve around the glycemic index, including Nutrisystem, the Zone diet and Sugar Busters.

A glycemic index diet uses the glycemic index to guide your eating plan. The glycemic index was originally developed to help improve blood sugar control in diabetes. The glycemic index classifies carbohydrate-containing foods according to their potential to raise your blood sugar level.

The glycemic index diet is not a true low-carbohydrate diet because you don't have to count carbohydrates (carbs). Nor is it a low-fat diet. It also doesn't require you to reduce portion sizes or count calories. But the glycemic index diet does steer you toward certain types of carbs.

## Purpose

Diets based on the glycemic index suggest that you eat foods and beverages with low glycemic index rankings to help you keep your blood sugar balanced. Proponents say this will help you lose weight and reduce risk factors for certain chronic diseases.

## Why you might follow the glycemic index diet

You might choose to follow the glycemic index diet because you:

- Want to change blood sugar imbalances related to your current diet
- Want to change your overall eating habits
- Don't want to count calories or go low-carb
- Want a diet that you can stick to for the long term

Check with your doctor or health care provider before starting any weight-loss diet, especially if you have any health conditions, including diabetes.

## Diet details

Proponents of the glycemic index diet, sometimes called a low GI diet, say that high blood sugar levels are linked to a variety of health problems, including diabetes, obesity and heart disease. They say that following a diet based on the glycemic index can help you choose foods that will result in weight loss and

prevention of chronic diseases. But scientific evidence supporting the role of the glycemic index diet in weight loss remains mixed. And you might be able to achieve the same health benefits by eating a healthy diet, maintaining a healthy weight and getting enough exercise.

### **Blood sugar basics**

Sugar (glucose) is a main source of energy for the cells that make up your muscles and other tissues.

Glucose comes from two major sources: carbohydrates in food and extra stores in your liver.

Carbohydrates come in the form of sugar, starch and fiber. After you eat or drink something with carbs, your body breaks down each type of carbohydrate in essentially the same way, converting it into sugar.

The exception is fiber, which passes through your body undigested. The sugar then enters your bloodstream. From there, it enters individual cells throughout your body to provide energy. Extra sugar is stored in your liver and muscles in a form called glycogen.

Two hormones from your pancreas help regulate the level of blood sugar. The hormone insulin moves sugar from your blood into your cells when your blood sugar level is high. The hormone glucagon helps release the sugar stored in your liver when your blood sugar level is low. This process helps keep your body fueled and ensures a natural balance in blood sugar.

### **Blood sugar imbalance**

Some food is thought to disrupt this natural balance by creating large spikes in your blood sugar level.

When your blood sugar and insulin levels stay high, or cycle up and down rapidly, your body has trouble responding and over time this could contribute to insulin resistance. Insulin resistance is associated with a host of health problems, including:

- Type 2 diabetes
- Obesity
- High blood pressure
- Stroke
- Heart disease

### **Glycemic index ranking**

The glycemic index ranks foods and beverages based on how they affect your blood sugar level. Foods are scored on a scale of 0 to 100. Only foods and beverages that contain carbs are ranked, since they have the biggest effect on blood sugar. You can find extensive lists online and in books of GI rankings, but many foods and beverages remain unranked. Manufacturers can pay to have their brand-name

products ranked by Sydney University Glycemic Index Research Services in Sydney, Australia, which maintains a comprehensive database of glycemic index values for carbohydrate-containing foods.

Foods ranked by the glycemic index are given scores:

- **High: 70 and up.** Examples include instant white rice, brown rice, plain white bread, white skinless baked potato, boiled red potatoes with skin and watermelon.
- **Medium: 56 to 69.** Examples include sweet corn, bananas, raw pineapple, raisins and certain types of ice cream.
- **Low: 55 and under.** Examples include raw carrots, peanuts, raw apple, grapefruit, peas, skim milk, kidney beans and lentils.

With the glycemic index diet, a high glycemic index is undesirable. Proponents say that foods and beverages with high glycemic index scores are rapidly digested by your body. This causes a spike in your blood sugar, which may then be followed by a rapid decline in blood sugar, creating wide fluctuations in your blood sugar level. In contrast, items with low glycemic index rankings are digested more slowly, raising blood sugar in a more regulated and gradual way.

Because low glycemic index foods are absorbed more slowly, they stay in your digestive tract longer. This is why these foods are sometimes called slow carbs. These foods may help control appetite and delay hunger cues, which can help with weight management. Balanced blood sugar also can help reduce the risk of insulin resistance.

### **Typical menu for a glycemic index diet**

Many commercial diets are based on the glycemic index. What you can eat depends on the specific commercial diet you follow. Sydney University's glycemic index website doesn't promote specific commercial weight-loss plans or label carbs as good or bad. Rather, it recommends that you use the glycemic index to help you choose what foods to eat and suggests that you:

- Focus on breakfast cereals based on oats, barley and bran
- Choose breads with whole grains, stone-ground flour or sourdough
- Eat fewer potatoes
- Eat plenty of fruits and vegetables
- Avoid oversized portions of rice, pasta and noodles

## Results

### Weight loss

Commercial diets that are based on the glycemic index say that you'll lose weight without having to count carbs or calories. Foods that have a low glycemic index ranking are said to make you feel full longer and to balance your blood sugar.

Results from research studies are mixed, and some studies have been of poor quality. Some studies show that calorie for calorie, there's little difference in hunger after eating a high GI food or a low GI food. Other studies, though, conclude that you're more likely to lose weight and reduce your body mass index (BMI) with a glycemic index diet than with a traditional diet, even if you're obese and need to lose a significant amount of weight. That may be, at least in part, because it's easier to stick to the glycemic index diet for the long term since it's not considered an extreme diet.

One study showed that participants following the Zone diet maintained a weight loss of about 7 pounds (3.2 kilograms) after one year — about the same amount of weight lost as in the three other diets in the study. There have been few studies about the impact of the glycemic index diet on weight loss after a year or more. But some evidence suggests that a diet higher in protein and lower on the glycemic index may lead to sustained weight loss. Some evidence also suggests that you may lose weight on a glycemic index diet simply because you choose more fiber and protein, which helps you reduce portion sizes and eat less.

Still other studies suggest that there's little if any evidence that having an elevated blood sugar level leads to weight gain if you're healthy. These studies note that insulin is vital to good health, and that insulin becomes a problem only when insulin resistance develops. Insulin resistance doesn't develop from eating certain carbs or proteins but from being overweight. Weight loss from any type of diet improves blood sugar control.

The bottom line is that to lose weight, you must reduce the calories you take in and increase the calories you burn. Traditional recommendations for weight loss advise losing 1 to 2 pounds (0.45 to 0.9 kilograms) a week by reducing calories and fat and emphasizing complex carbohydrates. Losing a large amount of weight rapidly could indicate that you're losing water weight or lean tissue, rather than fat.

### Health benefits

Proponents of the glycemic index diet say that you can improve or reduce the risk of serious diseases, including diabetes and cardiovascular disease.

Almost any diet can reduce or even reverse risks factors for diabetes and cardiovascular disease — if it helps you shed excess weight. And most weight-loss diets can improve blood cholesterol or blood sugar levels, at least temporarily.

On the other hand, the glycemic index doesn't rank foods according to how healthy they actually are. Indeed, some foods with the preferred lower GI ranking may, in fact, be less healthy because they contain large amounts of calories, sugar or saturated fat, especially packaged and processed foods. Both potato chips and ice cream, for instance, have a lower glycemic index ranking than do baked potatoes, even though baked potatoes are generally considered healthier. So while lower GI items may help blood sugar balance, choosing them indiscriminately could lead to other health problems.

### **Other concerns**

One major concern with the glycemic index is that it ranks foods in isolation. But in reality, how your body absorbs and handles carbs depends on many factors, including how much you eat; how the food is ripened, processed or prepared; the time of day it's eaten; other foods you eat it with; and health conditions you may have, such as diabetes. So the glycemic index may not give an accurate picture of how one particular food affects your blood sugar. Glycemic load is a related concept that scores a food product based on both carb content and portion size. But the larger the portion size, the greater the calories consumed whether the glycemic index is high or low.

It also can be difficult to follow a glycemic index diet on your own. For one thing, most foods aren't ranked by glycemic index. Packaged foods don't generally list their GI rank on the label, and it can be hard to estimate what it might be. And for some types of food, the glycemic index database has multiple entries — you may not be sure which entry is accurate.

On the other hand, many generally healthy foods are naturally low on the glycemic index, such as whole grains, legumes, vegetables, fruits and dairy products. If you eat a healthy diet, based on fresh foods that aren't highly processed, you may get the same benefits of the glycemic index diet. But if you need extra guidance toward healthier choices, the glycemic index may help.

### **Risks**

Studies of the glycemic index diet haven't revealed any specific health risks to following the diet. However, it's possible that if you choose lots of low GI foods that are high in calories, sugar and saturated fats, you could develop some of the same health problems the diet hopes to prevent.