

A Ketogenic Diet to ~~LOSE weight and Fight~~ Disease

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Obesity and metabolic diseases have become the world's biggest health problems.

In fact, at least 2.8 million adults die from obesity-related causes each year (1).

Metabolic syndrome affects over 50 million people in the US, and can lead to a variety of health problems (2, 3, 4).

To combat this, many diets have emerged, few of which are actually backed by research (5).

The benefits of the [ketogenic diet](#), on the other hand, are well-supported by science (6, 7).

This article explains how a ketogenic diet can help you [lose weight](#) and fight metabolic disease.

What is a Ketogenic Diet?

A ketogenic diet is high in fat, moderate in [protein](#) and extremely low in [carbs](#) (8).

As carbs are reduced and fat is increased, the body enters a metabolic state called ketosis. Then the body starts turning fats into [ketones](#), which are molecules that can supply energy for the brain (9, 10).

After a few days or weeks on such a diet, the body and brain become very efficient at burning fat and ketones for fuel instead of carbs.

The ketogenic diet also lowers [insulin](#) levels. This, along with the increased ketones, are two of the main reasons this diet has so many health benefits (9, 11, 12, 13, 14).

Staple foods on a ketogenic diet include meat, [fish](#), [butter](#), [eggs](#), [cheese](#), heavy cream, [oils](#), nuts, [avocados](#), [seeds](#) and low-carb vegetables.

In contrast, nearly all carb sources are eliminated, including [grains](#), [rice](#), [beans](#), [potatoes](#), sweets, [milk](#), [cereals](#), [fruits](#) and even some higher-carb vegetables.



Bottom Line: A ketogenic diet is a high-fat, moderate-protein and low-carb diet. It primarily works by lowering insulin levels, producing ketones and increasing fat burning.

Ketogenic Diets and Weight Loss

There is strong evidence that ketogenic diets are very effective for weight loss (15).

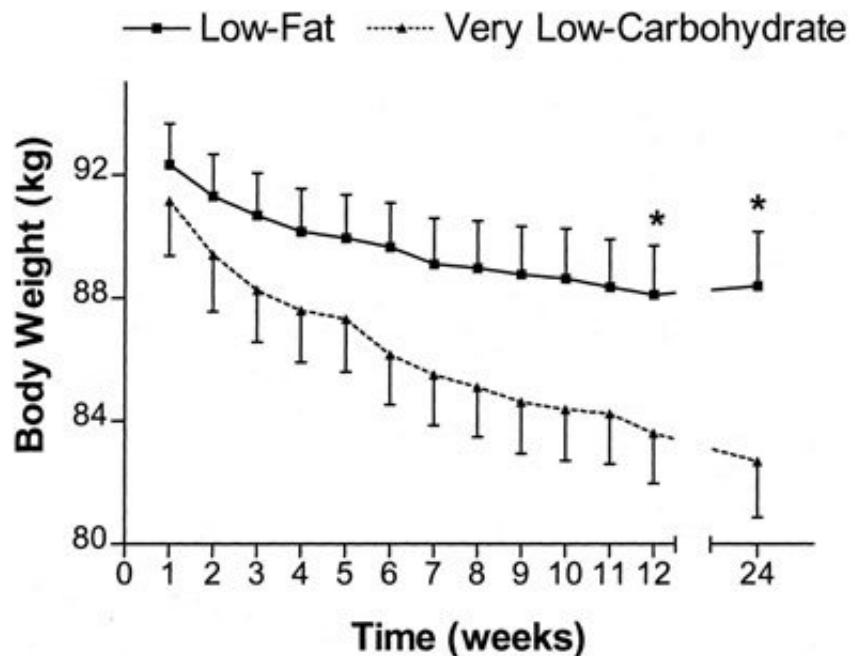
They can help you lose fat, preserve muscle mass and improve many markers of disease (7, 15, 16, 17, 18, 19).

In fact, many studies have compared the recommended low-fat diet to a ketogenic diet for weight loss.

Findings often show the ketogenic diet to be superior, even when total calorie intake is matched (17, 20, 21).

In one study, people on a ketogenic diet lost 2.2 times more weight than those on a low-calorie, low-fat diet. Triglyceride and HDL cholesterol levels also improved (19).

You can see typical weight loss results on this graph (19):



Another study compared a low-carb diet to the Diabetes UK's dietary guidelines. It found the low-carb group lost 15.2 lbs (6.9 kg), while the low-fat group lost only 4.6 lbs (2.1 kg). Over 3 months, the low-carb diet caused 3 times more weight loss (22).

However, there are contrasting theories for these findings. Some researchers argue the results are simply due to a higher protein intake, and others think there is a distinct "metabolic advantage" to ketogenic diets (23, 24).



Other ketogenic diet studies have found that people can lose fat when food intake is not controlled or restricted. This is extremely important when applying the research to a real-life setting (25).

If you dislike counting calories, the data suggests a ketogenic diet is a great option for you. You can simply eliminate certain foods and don't have to [track calories](#).

Bottom Line: The ketogenic diet is an effective weight loss diet that's well-supported by evidence. It is very filling and usually does not require calorie counting.

Mechanisms Behind Ketogenic Diets and Weight Loss



Here's how ketogenic diets promote weight loss:

- **Higher protein intake:** Some ketogenic diets lead to an increase in protein intake, which has many [weight loss benefits](#) (23).
- **Food elimination:** Limiting your carb intake also limits your food options. This can noticeably reduce calorie intake, which is key for fat loss (24, 25).
- **Gluconeogenesis:** Your body converts fat and protein into carbs for fuel. This process may burn many additional calories each day (26, 27).
- **Appetite suppressant:** Ketogenic diets help you feel full. This is supported by positive changes in hunger hormones, including [leptin](#) and [ghrelin](#) (28).
- **Improved insulin sensitivity:** Ketogenic diets can drastically improve insulin sensitivity, which can help improve fuel utilization and metabolism (29).
- **Decreased fat storage:** Some research suggests ketogenic diets may reduce [lipogenesis](#), the process of converting sugar into fat (30).
- **Increased fat burning:** Ketogenic diets rapidly increase the amount of fat you burn during

rest, daily activity and exercise (31, 32).

It is very clear that a ketogenic diet can be a successful weight loss tool compared to the recommended high-carb, low-protein and low-fat diets.

Bottom Line: A ketogenic diet may help you burn fat, reduce calorie intake and increase feelings of fullness, compared to other weight-loss diets.

A Ketogenic Diet Can Fight Metabolic Diseases

Metabolic syndrome describes five common risk factors for obesity, type 2 diabetes and heart disease (33, 34):

- High blood pressure.
- Abdominal obesity (lots of belly fat).
- High levels of “bad” LDL cholesterol.
- Low levels of “good” HDL cholesterol.
- High blood sugar levels.



Many of these risk factors can be improved — or even eliminated — with nutritional and lifestyle changes (35).

Insulin also plays an important role in diabetes and metabolic disease. Ketogenic diets are extremely effective for lowering insulin levels, especially for people with type 2 diabetes or prediabetes (36, 37, 38).

One study found that after only 2 weeks on a ketogenic diet, insulin sensitivity improved by 75% and blood sugar dropped from 7.5 mmol/l to 6.2 mmol/l (36).

A 16-week study also found a 16% reduction in blood sugar levels. Additionally, 7 of the 21 participants were able to completely stop all diabetic medication (39).

A ketogenic diet can also have amazing effects on triglyceride levels. One study found that triglyceride levels fell from 107 to 79 mg/dL after only 4 weeks (40).

Bottom Line: Ketogenic diets can improve many aspects of the metabolic syndrome, a major risk factor for obesity, type 2 diabetes and heart disease.

The Mechanisms Behind The Effects on Metabolic Disease



There are several key factors that explain the drastic effects of the ketogenic diet on markers of metabolic disease. These include:

- **Less carbs:** A high-carb diet can constantly elevate blood sugar and insulin levels, which can lead to poor cell function and damage over time (36).
- **Decreased insulin resistance:** Insulin resistance can cause health issues like inflammation, high triglyceride levels and fat gain (42).
- **Healthy fats:** The additional healthy fats you eat while on a ketogenic diet can help improve “good” HDL cholesterol levels (43).
- **Ketone bodies:** Ketone bodies have some surprising benefits for health, including diseases such as cancer, Alzheimer’s and epilepsy (44, 45, 46).
- **Inflammation:** The ketogenic diet can drastically reduce chronic inflammation, which is linked to metabolic syndrome and various diseases (46, 47, 48, 49).
- **Fat loss:** This diet promotes the loss of body fat, especially unhealthy abdominal fat. Excess fat in the abdominal area is disastrous for metabolic health (50).

Additionally, ketogenic diets may help restore normal insulin function. Research has shown that healthy insulin function can [fight inflammation](#), while poor insulin function can increase it (51).

As you can see, the combination of these factors plays a rather remarkable and important role in health and protection against disease.

Bottom Line: Ketogenic diets may improve metabolic health by improving insulin function, lowering inflammation and promoting fat loss, among others.

How to Follow a Ketogenic Diet

If you want to try a ketogenic diet, follow these basic rules:

- **Eliminate carbs:** Check [food labels](#), and aim for 30 grams of carbs or less per day.
- **Stock up on staples:** Buy [meat](#), cheese, whole eggs, nuts, oils, avocados, oily fish and cream, as these are now staples in your diet.
- **Eat your veggies:** Fat sources are high in calories, so base each meal on low-carb veggies to fill your plate and help keep you feeling full.
- **Experiment:** A ketogenic diet can still be interesting and tasty. You can even make ketogenic pasta, bread, muffins, brownies, puddings, ice cream, etc.
- **Build a plan:** It can be hard to find [low-carb meals](#) for when you're on the go. As with any diet, it is important to have a plan and go-to snacks or meals.
- **Find what you love:** Experiment until you find the ultimate keto diet for you.
- **Track progress:** Take photos, measurements and monitor your weight every 3 to 4 weeks. If progress stops, try reducing portion sizes slightly.
- **Replace minerals:** Ketosis changes your fluid and mineral balance. For this reason, [salt](#) your food and maybe take electrolytes or [magnesium](#).
- **Try supplements:** To boost the ketogenic process, you can take [ketone salt supplements](#), MCT oil (5–10 grams twice a day) or use [coconut oil](#) regularly.
- **Be consistent:** There is no shortcut to success. With any diet, consistency is the most important factor.



You may also wish to monitor ketone levels in either urine or blood, since these let you know whether you are keeping carb levels down sufficiently to achieve ketosis.

Based on current research, studies at my lab and continuous testing with clients, anything over **0.5–1.0 mmol/l** demonstrates sufficient nutritional ketosis ([21](#)).

Bottom Line: Base most of your meals on low-carb veggies and high-fat meats, fish or eggs. You may also wish to monitor your ketone levels.

Should You Try a Ketogenic Diet?



No single diet is suitable for everyone, especially since individual metabolism, genes, body types, lifestyles, taste buds and personal preferences differ.

However, the ketogenic diet can work wonders for people who are overweight or at risk of metabolic syndrome.

Nevertheless, if you dislike high-fat foods but love carbs, this diet may be hard for you to stick to. If you still like the idea of a low-carb diet, then [carb cycling](#) or a [standard low-carb](#) diet may be better options for you.

Ketogenic diets may also be used in the short-term, to help you lose fat and improve health. Yet this requires a lot of discipline, and must be followed with healthy eating.

A ketogenic diet may also not be the best option for elite athletes or those wishing to build large amounts of muscle. Vegetarians or vegans may also struggle with this diet, due to the key role played by meats, eggs, fish and [dairy](#).

Additionally, the transition to a ketogenic diet can occasionally cause negative symptoms that are often referred to as “keto flu.”

This may include poor energy and mental function, increased hunger, [sleep](#) issues, nausea, digestive discomfort and poor [exercise performance](#).

While this only happens rarely, it may cause some people to quit before they even get started properly, especially as the first few weeks of any diet are the toughest.

Due to the very limited carb intake — less than 50 grams per day — ketogenic diets also may not be suitable for people who want to take the weekend off.

Bottom Line: The ketogenic diet can provide amazing results if you stick to it. However, it may not be the best option for everyone.

Take Home Message

In order to get the most out of a ketogenic diet, you must eat high-fat foods and limit your carb intake to less than 30–50 grams per day.

If you stick with it, the benefits of a ketogenic diet are extremely impressive — especially for health and weight loss.

Ketogenic diets can also reduce metabolic disease risk factors and even fight diseases like type 2 diabetes and obesity.