



The Truth about the Ketogenic Diet and Diabetes

By Cyrus Khambatta, PhD, and Robby Barbaro, MPH
February 19 2020

Editor's Note: [Mastering Diabetes](#), Cyrus Khambatta and Robby Barbaro's groundbreaking book on reversing insulin resistance, debuted on February 18. In this abridged excerpt, the authors take a hard look at the ketogenic diet for diabetes treatment.

If you are living with diabetes, you may have been told to eat a low-carbohydrate diet to control your blood glucose or you may have been told to eat a *very* low-carbohydrate diet, otherwise known as a *ketogenic diet*. Regardless of which form of low-carbohydrate diet you may have come across, understanding the pros and cons of low-carbohydrate and ketogenic nutrition for people with diabetes will give you the information you need to choose what's right for you.

What Is a Ketogenic Diet?

A ketogenic diet involves eating between 30 to 50 grams of carbohydrates per day in order to achieve a metabolic state known as ketosis, in which your muscles and liver derive the bulk of their energy from fatty acids and amino acids instead of from glucose found in carbohydrates. To do so, those adopting ketogenic diets are told to get 70 to 90 percent of their calories from fat—from meat, eggs, sausages, heavy cream, cheeses, fish, nuts, butter, oils, seeds, non-starchy vegetables, avocados, coconuts, and small amounts of berries, while avoiding almost all fruits, starchy vegetables, breads, pastas, legumes, milk, and yogurt.

Are Ketogenic Diets Good for People with Diabetes?

Many people around the world who eat a ketogenic diet are able to lose weight, achieve a flat-line blood glucose profile, greatly reduce or eliminate their need for oral medication and insulin, and reduce their total cholesterol. So why aren't we recommending this diet ourselves? Because despite these advantages, there are four very important points to take into consideration:

- Evidence-based research conducted in large numbers of people over long periods of time

consistently demonstrates that eating more animal products *increases* your risk for premature death, no matter what short-term benefits may unfold in the process. Similar large-scale research demonstrates that eating more whole plant foods *reduces* your risk for premature death.

- The short-term benefits associated with a ketogenic diet can also easily be achieved using a low-fat plant-based whole-food diet, as seen in research dating back to the 1920s.
- Low-fat plant-based whole-food nutrition is the only approach shown to *reverse* heart disease (the leading cause of death of people living with all forms of diabetes), whereas diets high in saturated fat and cholesterol have been shown to *promote* heart disease.
- There are many examples of [long-lived societies](#) around the world who eat plant-based diets, and *zero* examples of long-lived societies who eat a low-carbohydrate or ketogenic diet with a high intake of animal products.

While the ketogenic diet may seem like a logical approach to reducing blood glucose fluctuations, it is based on the outdated and incorrect carbohydrate-centric model of diabetes, which points a finger at carbohydrates as the *cause* of insulin resistance and type 2 diabetes, even though overwhelming evidence shows that low-carbohydrate, *high-fat* diets are [actually the cause of insulin resistance](#) and type 2 diabetes.

Are the Short-Term Benefits of a Ketogenic Diet Worth It for People with Diabetes (or Those at Risk for Developing It)?

Many doctors today are quick to recommend a ketogenic diet to patients with type 2 diabetes based predominantly on short-term studies, such as a 2005 study in which scientists from Temple University followed 10 obese patients living with type 2 diabetes for two weeks and observed a 0.5 percent reduced A1c (a measure of average blood glucose) and a 75 percent increase in insulin sensitivity.

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Indeed, based on the short-term evidence, a ketogenic diet is a very effective tool at promoting short-term improvements in body weight, blood glucose, A1c, and triglyceride levels. In the long term, however, a ketogenic diet is unlikely to provide the same results, and it's more likely to pose risks, as is the general class of low-carbohydrate diets. In large-scale studies performed over long periods of time, the evidence-based literature consistently shows that low-carbohydrate diets *worsen* long-term health, *increase* the risk for many chronic diseases, *increase* the risk for infectious diseases, and *increase* mortality.

Take, for example, the 2014 study in which [researchers from Loma Linda University](#) summarized the results of three separate Adventist health studies (covering more than 100,000 people): In comparison with their meat-eating counterparts, lacto-ovo-vegetarians were 38 to 61 percent less likely to develop diabetes, and vegans were 47 to 78 percent less likely to develop diabetes. They concluded that vegetarian and vegan diets offer significant protection against death from cancer, heart disease, and diabetes, and that those who chose to eat more meat and dairy products in the long term significantly increased their risk for death.

In a 2016 study, researchers from Massachusetts General Hospital and Harvard Medical School analyzed data of more than 130,000 participants from the Nurses' Health Study and Health Professionals Follow-Up Study. They found that for those who were already living with diabetes, eating more animal protein raised the risk of all-cause mortality, whereas [eating more plant protein](#) reduced that risk.

Most mainstream diabetes recommendations encourage eating more animal protein as a means of losing weight and "stabilizing blood glucose," but large-scale research shows exactly the opposite.

A more [recent paper](#) showcasing the effect of a ketogenic diet in 262 people living with type 2 diabetes demonstrated that only 14 percent of patients were able to maintain a ketogenic diet over a 2-year period. In addition, after 2 years patients had an elevated fasting glucose, elevated fasting insulin, elevated A1c, elevated total cholesterol, and elevated LDL cholesterol, despite significant reductions in their use of oral medications and insulin.

The Takeaway

If a ketogenic diet was the *only* way to improve your metabolic health in the short term, then the benefits would certainly outweigh the prospect of no improvements at all. However, practically all "diets" work in the short term, because diets prompt you to pay attention to the quality of the food that you're eating, how much you're eating, when you're eating, and how you feel between meals. The difference between dietary approaches becomes much more apparent over the course of time, and those that create long-term sustainable habits and provide lasting metabolic fitness will always beat out those that are unsustainable as well as those that negatively impact your long-term metabolic health.

And this is exactly why we strongly caution you against adopting a ketogenic diet without understanding that the short-term metabolic improvements can easily trick you into believing that it is a smart long-term option, when the evidence-based research demonstrates that people who reduce their intake of carbohydrate-rich foods and substitute more fat-and more protein-rich foods from animal sources are at a greater risk for chronic disease and premature death.

Now for the good news: Unlike ketogenic diets that haven't been studied in depth for long periods of time, almost a hundred years of evidence-based research has demonstrated that a low-fat plant-based whole-food diet is an excellent option for simultaneously maximizing your overall metabolic health, reversing insulin resistance, and dropping your chronic disease risk.

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