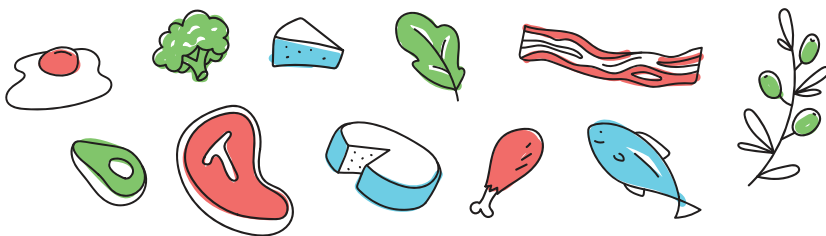


THE KETO CRAZE

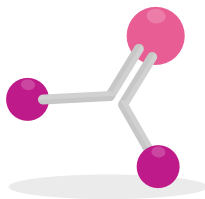
What Is It?

Nutritional ketosis, or the “keto diet,” is a low carbohydrate (carb), high fat, and moderate protein diet.^{1,3} The keto diet is gaining traction with the public as a new weight loss tool. Most of the foods on the keto diet consist of high fat meats, poultry, fish, cheese, eggs, avocado, oils, nuts/seeds, and low amounts of non-starchy vegetables.



Traditionally, the keto diet has been used in the medical community for children with epilepsy.¹

How Does It Work?



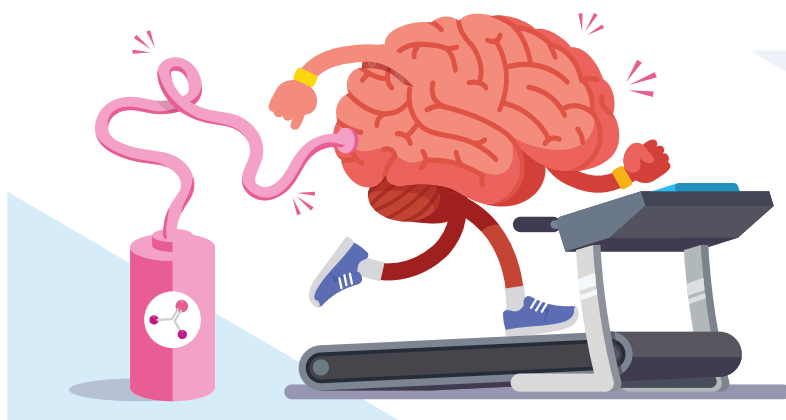
The body's preferred fuel source is glucose, the sugar that carbohydrates break down into. The keto diet aims to restrict carbs enough to, instead, use **ketones** as the main fuel source.^{1,3}



Ketosis occurs when carbs are restricted to **20 to 50 grams per day**, or less than 10% of daily calories. Typical carb intake is 45 to 65% of calories. Protein intake must remain moderate, as it can be broken down into glucose.³



After 3 to 4 days of very low carb intake, depleted glucose stores and low insulin levels trigger ketones to be made from the body's fat stores, so they can be used as energy.^{1,3}



The brain cannot store glucose, so it counts on ketones (AKA “ketone bodies”) for fuel to function when there is a lack of carbohydrate.

Findings

Many keto dieters claim after the initial symptoms, they feel full of energy, lost weight, and saw improvements in their lab work. What the scientific research on the keto diet shows:



High fat content keeps you full. ¹	May decrease triglycerides (low carbohydrate diets in general, in comparison to high carbohydrate low fat) ² ; possible increased LDL-cholesterol, but this may be lessened by choosing unsaturated fats instead of saturated fats. ^{1,2,3}
Cutting out an entire macronutrient.	Cutting out essential vitamins and minerals, phytochemicals, fiber, prebiotics that aid in probiotic gut health (note: more research needs to be done on the ketogenic diet's impact on gut bacteria); risk of dehydration, electrolyte imbalance, low blood sugars. ³
Initial phase of "keto flu" (short-term side effects) are headache, nausea, vomiting, tiredness, dizziness, shakiness, difficulty sleeping or exercising. After a few weeks, these symptoms usually stop. Appropriate amounts of fluid and electrolytes may help. ²	Long-term side effects are fatty liver, low protein levels, nutrient deficiencies, kidney stones, osteoporosis, and high uric acid levels (which may lead to gout). ^{1,2}
Weight loss is likely. Ketones may suppress appetite. ^{1,3}	Decreased calories leads to fat loss. All low carb diets result in more muscle loss than diets with balanced protein, carbohydrate, and fat intake. Initial weight loss on low carbohydrate diets is due to water loss. Long-term weight loss outcomes are not greater with keto diets compared to other types of diets. ³
Short-term improved hemoglobin a1c at 6 months. ³	At over 1 year of starting the diet, HbA1c levels were similar in high carb, low fat dieters compared to low carb dieters. ³
There are no long-term studies. ²	Our knowledge on other long-term health consequences is limited. ²
Lower levels of insulin (hormone that allows glucose to be used for energy) and ghrelin (hormone responsible for appetite). ⁴	Long-term high and low carb diets have shown a greater risk of cancer, cardiovascular, and general mortality. The lowest risk of mortality is moderate carbohydrate intake diets. ³ Further, the ketogenic diet has not shown high levels of adherence for the long-term. ^{1,3}

What Is Ketoacidosis?

The body has mechanisms in place to make sure your body does not get too acidic or too alkaline. In fact, it maintains a pH of 7.35 to 7.45. However, ketone bodies are highly acidic.¹



Ketoacidosis is most common in type 1 diabetes, where insulin is not produced by the body, and is a very dangerous condition that can lead to coma and death if ketone levels are not controlled.^{4,5}



Long-term alcohol abuse can also lead to ketoacidosis, due to a combination of poor food intake, changing hormone levels, and that ethanol found in alcohol can break down into ketone bodies.^{4,5}



Healthy individuals in nutritional ketosis are unlikely to develop ketoacidosis, as insulin acts to prevent ketone levels from getting too high.^{1,4,5}

Who Should Not Try The Keto Diet



Proceed with caution and seek the care of a skilled medical provider if you have any heart, blood sugar, blood pressure, kidney, or liver problems. Certain medications, like blood thinners or those for high blood sugars or blood pressure, often require adjustment.^{2,3}



Very low carbohydrate or ketogenic diets should not be considered for those with very high triglyceride levels, history of acute pancreatitis, family history of high cholesterol, or during pregnancy or lactation.^{3,6}

Bottom Line

There may be short-term benefits of the ketogenic diet for weight loss and improved blood markers. However, it hasn't shown long-term benefits or sustainability more so than other types of diets.^{2,3} The keto diet may be an option for short-term weight loss, but it is not suggested for the long-term, even in healthy individuals.²

For any diet, ask yourself if it's something you can see yourself doing for the rest of your life. If not, the diet will likely end and you may gain the weight back. Find an eating pattern that is sustainable for the long-term, and allows you to engage in nutritious eating in social situations, on holidays, and for sheer enjoyment.

As with any dietary pattern, make it more sustainable by adding in things you love. Zevia beverages are zero sugar, zero calories, and do not spike blood sugars, making them great for anyone monitoring carbohydrate intake. Keep your doctor and Registered Dietitian in the loop with any significant dietary changes.



Sources:

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