Keto Diet: Healthy or not?

Description

Dear Ones,

From the Heart….

I've been eating lots of rhubarb, some from my own garden, but most from the healthiest patch of rhubarb I have ever seen in the garden of a woman who doesn't eat it because she is on a keto diet. I decided to see what a keto diet is since my trainer at the Xgym promotes this diet, too. We're told not to eat carbs even as they show up in vegetables and fruit except for the ones very low on the "sugar" scale or glycemic scale.

I add sugar to my cut-up rhubarb and put it in the microwave for about 6 minutes. Out comes a sauce with rhubarb pieces still intact, soft and delicious, tart spring in every mouthful. Have I ruined a Keto diet? Let's take a look at what my most reliable doctor/scientist, Dr. Stephen Chaney, has to say.

Personally, I think people gravitate to the keto diet because they need rules about refined carbohydrates, which are altogether different from fruits and vegetables and a little added pure cane sugar. When a person craves sweets, a teaspoon of sugar does not satisfy. It's the refining and additives, fat and salt, that make carbohydrate foods fattening. A small serving of rhubarb crisp a couple times during the spring growing season will not induce diabetes or cause your low-carb diet to fail.

The ketogenic diet has been around since the 1920s when doctors realized it helps control epilepsy. Today the ketogenic diet is mainstream. Proponents claim:

Hunger and food cravings will disappear. The pounds will melt away effortlessly and rapidly.

You will feel great. You'll have greater mental focus and increased energy.

Physical endurance will increase. You'll become superhuman.

Type 2 diabetes will disappear.

Your blood sugar, cholesterol, and triglyceride levels will improve, reducing your risk of developing diabetes and heart disease.

This sounds like the perfect diet. But, is this diet safe?

What Is Ketosis?

Ketosis is a natural metabolic adaptation to starvation.

Metabolism 101:

The Fed State: **fed** (absorptive) **state** of metabolism ie. while your food is being digested. Here's what happens to the carbohydrate, protein & fat when we eat in a meal.

- Most carbohydrates are converted to blood sugar (glucose), which is utilized in three ways:
  - Most tissues use glucose as their primary energy source in the fed state.
  - Excess glucose is stored as glycogen in muscle and liver.
  - Glycogen stores are limited, so much of the excess glucose is stored as fat.
- A few tissues such as heart muscle use fat as an energy source. Excess fat is stored.
- Protein is also used in three ways:
  - Some of it is used to replace and repair the protein components in muscle and other tissues.
  - In conjunction with exercise, protein can be used to increase muscle mass.
  - Excess protein is converted to fat and stored.

The Fasting State: Between meals:

- Most tissues switch to fats as their primary energy source. Fat stores are utilized to fuel the cells that can use fat.
- Brain, red blood cells, and a few other tissues still rely solely on glucose as their energy source.
  - Liver glycogen stores are broken down to keep blood glucose levels constant and provide energy for these tissues. (Muscle glycogen stores are reserved for high intensity exercise).
  - As liver glycogen stores are depleted, the body starts breaking down protein and

converting it to glucose.

Starvation – The Problem: If the fasting state were to continue for more than a few days, we enter what is called starvation. At this point we have a serious problem. Fat stores and carbohydrate stores (liver glycogen) exist for the sole purpose of providing fuel during the fasting state. Protein, however, is unique. There are no separate protein stores in the body. All protein in our body is serving essential functions.

To make matters worse, our brain is metabolically very active. It consumes glucose at an alarming rate. Thus, large amounts of glucose are needed even in the fasting state. If protein continued to be converted to glucose at the same rate as during an overnight fast, our essential protein reserves would rapidly be depleted. Irreversible damage to heart muscle and other essential organs would occur. We would be dead in a few weeks.

Starvation – The Solution: Fortunately, at this point a miraculous adaptation occurs. Our bodies start to convert some of the fat to ketones.

All tissues that use fat as an energy source during fasting can also use ketones as an energy source, sometimes with greater efficiency.

Over a period of several days, the brain adapts to ketones as its primary energy source. This greatly reduces the depletion of cellular protein to supply blood glucose.

However, red blood cells and a few other cells still require glucose as an energy source. Essential protein reserves are still being depleted, but at a far slower pace.

With these adaptations, humans can survive months without food if necessary.

There are a few other adaptations that make sense if we think about the dilemma of going long periods without food.

Appetite decreases.

Metabolic rate decreases, which helps preserve both protein & fat stores.

What Is The Ketogenic Diet?

Proponents of the ketogenic diet advocate achieving a permanent state of ketosis without starving yourself. That is achievable because the real trigger for ketosis is low blood sugar, not starvation.

The starting point for the ketogenic diet is low-carb, high-fat diets like Atkins. However, ketogenic diets go beyond traditional low-carb, high-fat diets. They restrict carbohydrates even further to <10% of calories so that a permanent state of ketosis can be achieved. Basically, the ketogenic diet:

Eliminates grains and sugars.

Eliminates most fruits.

Eliminates starchy vegetables (root vegetables like beets, corn, peas, beans, squash & yams).

Reduces protein intake. That's because dietary protein will be converted to glucose when blood glucose levels are low.

You are left with a highly restrictive diet that allows unlimited amounts of fats & some vegetables and moderate amounts of meats, eggs, and cheeses.

The Ketogenic Diet Is Not For Wimps

#1: You have to be committed. You will have great difficulty following it when you eat out and you will have to give up many of your favorite foods.

#2: The transition is rough. Physiological adaptation to the ketogenic diet will take anywhere from a couple of days to a week or two. During that time, you will have to endure some of the following:

- Headaches, confusion & "brain fog"
- Fatigue
- Hunger
- Lightheadedness and shakiness
- Leg cramps
- Constipation
- Bad breath

- Heart palpitations

#3: There are no “cheat days”. On most diets, you can have occasional “cheat days” or sneak in some of your favorite foods from time to time. A single “cheat day” will take you out of ketosis. You will need to go through the transition period once again.

Is The Ketogenic Diet Effective?

Mostly True Claims:

Reduced hunger.

Improved mental focus and increased energy. Contrast to the “brain fog” and fatigue of the transition phase. You have also eliminated all foods that can cause blood sugar swings from your diet. Blood sugar swings can affect both mental focus and energy levels.

Rapid weight loss. If we focus on short term weight loss, this is true because:

A lot of the initial weight loss is water. Glycogen stores retain water. As glycogen stores are depleted, the water is lost along with them.

Most people inadvertently reduce their caloric intake on a highly restrictive diet like this. For example, fats are often consumed along with carbohydrate-rich foods (butter with toast, sour cream with potatoes, cream cheese with bagels). Less fat intake.

The weight loss with the ketogenic diet is because you are burning fat stores. You burn fat stores when fat intake is not sufficient to meet your energy needs. “Calories in” are less than “calories out” as in all diets.

Reversal of type 2 diabetes. Because carbohydrates are restricted in this diet, blood sugar and insulin levels will be low.

Half true claims:

Improved cholesterol and triglyceride levels. Some studies show an improvement. Other studies show them getting worse.

Increased physical endurance. This is only true for low-intensity endurance exercise. It is not true for any exercise or event that requires spurts of high intensity exercise. Because:

The muscle fibers used for low intensity endurance exercise utilize ketone bodies with high efficiency. You can run for miles as long as you don't care how fast you get there.

The muscle fibers used for high-intensity, short-duration exercise cannot adapt to use of ketone bodies because they lack sufficient mitochondria. They require glycogen stores, which are depleted on a ketogenic diet. Even in events like marathons most people want to sprint to the finish line. They won't be able to if they are on a ketogenic diet.

Mostly False Claims:

Long term weight loss. Some long-term success has been claimed in a highly controlled clinical setting. However, most studies show:

People regain some or most of the weight after 6 months to a year.

After 1 or 2 years, there is no difference in weight loss between high-fat/low-carb diets and low-fat/high-carb diets.

The reduction in metabolic rate and the reduction in muscle mass associated with the ketogenic diet make it difficult to keep the weight off long term.

It is a healthy diet. To a point……

This is a healthy diet only from the point of view that it eliminates most fast foods and processed foods.

However, any diet that eliminates 2 and a half food groups (grains, fruits, and starchy vegetables) is setting you up for long term nutritional deficiencies. It is possible to cover some of those deficiencies with supplementation, but supplements can never provide all the nutrients found in real food.

Is the Ketogenic Diet Safe?

For most people the ketogenic diet is likely to be safe for short periods, maybe even a few months. However, I have grave concerns if the diet is continued long term.

This diet is likely to create nutritional deficiencies which could have severe health consequences.

Long term reduction of protein intake will result in a gradual depletion of essential cellular protein reserves which can weaken heart muscle, compromise the immune system, and damage essential organs.

Ketones can damage the kidneys.

The problem is the ketones, not the protein.

Long term ketosis has the potential to cause osteoporosis.

Try the Mediterranean Diet for a healthier way to achieve your goal weight and stay there.

If you disagree with Dr. Chaney's analysis and conclusions, I recommend you go to his web post and read the thoughtful objections and criticisms people posted and his responses. Some number of people have had excellent results with the Keto diet.

Be well, Do well and Keep Moving, Betsy



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1. Health and Fitness

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Date Created
July 2019
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