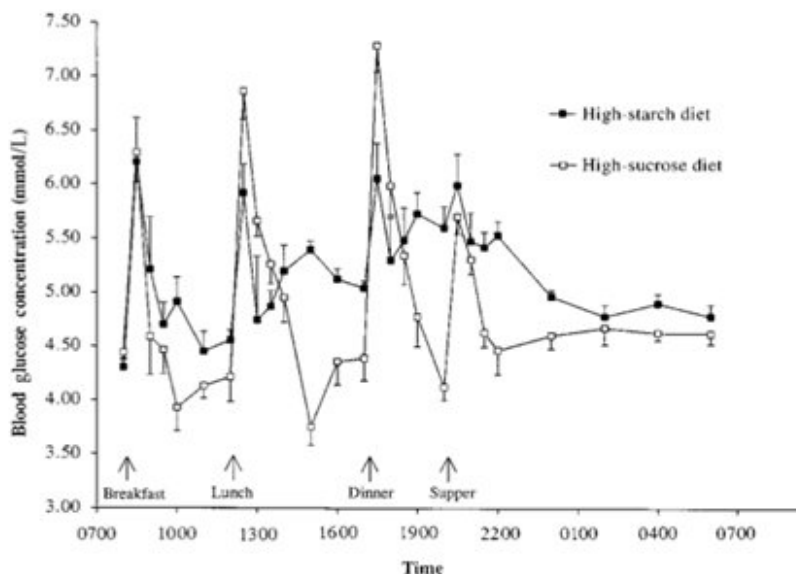


Effective Diabetes Treatment

The best diabetes treatment is one which helps people with diabetes get off a blood sugar roller coaster. The roller coaster happens when blood sugars rise to absurdly high levels after a high carb meal and crash to low levels when large amounts of insulin are secreted or injected. The image below is from a study which looks at blood sugar reactions to high carb meals.

The blood sugar roller coaster is rooted in the advice that the American Diabetes Association passes out to people with diabetes. Telling people with diabetes to eat 45-65% of their calories from carbohydrates causes high blood sugar (**hyperglycemia**) which sticks to or glycates body cells and tissues and guarantees the development of long term complications such as **peripheral nerve pain** (neuropathy), **kidney damage** (nephropathy), a **loss of eyesight** (retinopathy) and other common diabetic complications.

Worse, the large doses of insulin that have to be given to drive the high blood sugar back down can result in low blood sugar (**hypoglycemia**) episodes which are incredibly dangerous, since hypoglycemia can cause a loss of consciousness or death if the brain runs out of glucose.



Daly ME, et al. Acute effects on insulin sensitivity and diurnal metabolic profiles of a high-sucrose compared with a high-starch diet. *Am J Clin Nutr.* 1998 Jun;67(6):1186-96.

I believe that there are several reasons why the ADA recommends a high carb diet for diabetes treatment that makes diabetics worse. One reason is a belief that at least 130 grams of carbohydrates per day are needed to keep the brain functioning. This is only true if one is eating alot of carbohydrate. The brain only needs a higher level of carbohydrate intake if the body is what I call **carb-adapted**, meaning the physiology is running on carbohydrate, insulin levels are elevated and fat stores are inaccessible to make ketones. But if a person is **keto-adapted**, meaning insulin levels are normal, than the body is able to make ketones to supplement brain fuel stores. At that point, the brain only needs about 50 grams of carbohydrate/day, and that can easily come from **gluconeogenesis**. So the difference is in the primary fuel supply - carbs or fat.

I made the props below for a presentation I gave in my town. You can see the problem clearly. The ADA tells diabetics to eat 60 carbs per meal, and 2 snacks of 20 carbs; that totals 240 grams of carbohydrate DAILY. Compare that to the actual amount of sugar a normal human body contains. A person eating 240 grams of carb each day will definitely be carb-adapted, and using glucose as a primary fuel.

A second reason the ADA recommends higher carb intake as a diabetes treatment may be legal concerns over low blood sugar (hypoglycemia) deaths. People taking insulin can die from taking too much without enough blood glucose to offset it, and so the ADA may be erring on the side of caution with the idea that long term complications from high blood sugar don't happen immediately while dying from low blood sugar does. They may fear law suits. The sad thing here is that this line of reasoning ignores what Dr. Richard K Bernstein in his book *The Diabetes Solution* calls the **Law of Small Numbers**: eating small amounts of carbohydrate results in the need for less insulin. Smaller does of insulin results in fewer episodes of



hypoglycemia.

The ADA's advice does nothing more than delay the cause of diabetic related death, but reducing carb intake prolongs life on both the high and low blood sugar end of the spectrum.

People with diabetes have a choice in their diabetes treatment. They can start a low carb, high fat diet, limit carbohydrate intake to more reasonable and healthy amounts, and effectively take down the roller coaster. Blood sugars highs will be greatly reduced and being in ketosis is protective against hypoglycemia as well.

A ketogenic diet treats diabetes at the root cause, and is a much safer, more effective plan than injecting insulin to counteract the consumption of high carb foods. This is true for both type 1 and type 2 diabetics. **A recent paper by Feinman et al lays out the science supporting the obvious choice of a low carbohydrate diet for diabetics.**

Although type 1 and type 2 diabetes have different causes, limiting carb intake is the key to blood sugar control for both camps. This is especially important for children with type 1 diabetes. The **danger of the type 1 diabetes diet** recommended by the ADA is compounded by the fact that the ADA tells parents that children must have carbs for growth. This directive has no basis in fact and actually makes achieving blood sugar control impossible.

Treatment Goals

Let's look at the facts. The primary goals of a diabetes treatment plan are to:

- **Lower high blood sugars and stabilize average blood sugar levels:** keeping blood sugar low and at even levels throughout the day reduces the organ damage done by high blood sugar levels. Your doctor may track this with an Hemoglobin A1C or HbA1c test. This test is a measure of your average blood sugars over a 3-4 month time period.
- **Reduce the need for large influxes of insulin:** lowering insulin levels reduces the inflammatory damage which uncontrolled insulin causes to the coronary vascular system. This reduces the risk of the heart disease issues so commonly associated with diabetes. This can be tracked with a fasting insulin test, although doctors don't usually order this test.

Controlling diabetes and managing blood sugar levels is not an easy task. It involves serious lifestyle and psychological changes, and newly diagnosed diabetics don't always get the correct information they need to make the best decisions.

For example, identifying and switching to the most effective **diabetic diet** is a challenge because as mentioned, **the American Diabetes Association diet is too high in carbohydrates and makes blood sugar control very difficult.** Maybe the ADA recommends a higher carb diet because they know it's impossible to control blood sugars adequately eating the ADA way, and they don't want to be responsible for deadly hypoglycemic episodes. However, their advice just condemns those with diabetes to diabetic complications from high blood sugar instead.

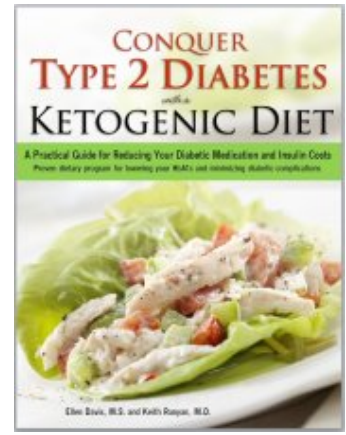
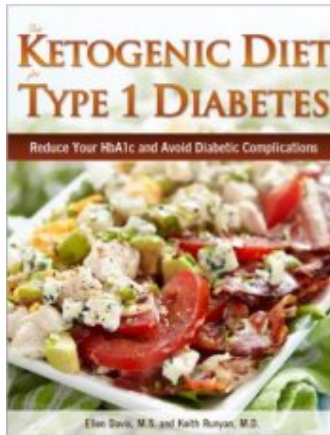
The solution is really so simple, it makes you wonder why the ADA doesn't embrace it. If carb intake is lowered gradually and medications or insulin doses are reduced at the same time, the patient can get off the blood sugar roller coaster that the ADA's high-carb diet worsens.

Implementing the ketogenic solution may take some work, but it is worth it. People who are newly diagnosed with diabetes are probably used to eating higher carb foods and may be used to being to convenience fast foods. After diagnosis, they have to learn how to put together and cook a **diabetic meal plan** and switch to a way of eating. Hopefully, they learn about and choose to eat a low carb diet. Then they also have to learn to use new tools such as glucometer to track their blood sugar, and learn new terms such as **ketosis**, **ketoacidosis**, gluconeogenesis, **insulin resistance**, **dawn phenomenon** and a long list of other new concepts that now impact their lives.

A Ketogenic Diet is an Effective Diabetes Treatment

Although it may be difficult at first, people with diabetes learn from hard experience that permanently restricting carbohydrate intake by adopting a low carb diet makes life on a diabetes treatment plan easier because:

- **Restricting dietary carb intake results in improved blood sugar control and insulin levels**, and in addition, has been shown to improve the health markers for heart disease and metabolic disorders. And the effects can be maintained. [This study](#) followed a group of type 2 diabetics for almost two years, showing that improved blood sugar control with a low carb diet was possible over the long term. Here's another [long term study](#) with positive results on diabetic blood sugar control. And [this more recent study](#) shows that a **very low carb**, ketogenic diet is even more effective. [This study](#) provides similar results for those with type 1 diabetes.
- **It eliminates the foods which worsen diabetic blood sugar control:** a ketogenic diet plan eliminates the unhealthy high carb foods which lead to blood sugar control and insulin resistance problems. Eliminating sugars and grain based foods is an especially powerful diabetes treatment step.
- **It helps to reverse the insulin resistance at the root of type 2 diabetes:** A ketogenic diet is very effective for treating the health issues associated with being [insulin resistant](#) and for reversing the symptoms of a condition known as [metabolic syndrome](#). Lowering carb intake lowers blood sugar, which in turn, lowers the need for insulin. As insulin levels drop, the severity of insulin resistance gets better.



For more information on using a low carb, high fat diet as a diabetes treatment plan, check out the [new book on type 2 diabetes](#) that I've written with Dr. Keith Runyan, a type 1 diabetic himself. We also wrote a book on [Type 1 diabetes](#) as well. He uses a ketogenic diet to keep his HbA1c at 5.0, and he has a lot to say about why the diet is the best choice for those with diabetes.

Here's a great presentation on how Type 2 diabetes can be reversed with a low carb, high fat diet from Dr. Sarah Hallberg.

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[Try watching this video on www.youtube.com](#), or enable JavaScript if it is disabled in your browser.

Resources for Further Reading

- [Diabetes: Types and Treatments](#): more in depth explanations about the 4 different types of diabetes on my other site, plus a blood sugar chart and other information on diabetes treatment.

- [Dr. Bernstein's Diabetes Solution: The Complete Guide to Achieving Normal Blood Sugars](#) by Richard Bernstein, MD.
- [The Diabetes Diet: Dr. Bernstein's Low-Carbohydrate Solution](#) by Richard Bernstein, MD.
- [Atkins Diabetes Revolution : The Groundbreaking Approach to Preventing and Controlling Type 2 Diabetes](#) with Mary C. Vernon MD, CMD.