

# ***How to Prevent Diabetes***

*How our Body Process Sugar*

*Dr. Douglas N. Graham*

The sugars we eat travel a ***three-stage*** journey through our bodies:

***Stage1:*** Sugars start out in the digestive tract when we eat them.

***Stage2:*** They pass through the intestinal wall, into the bloodstream.

***Stage3:*** They then move smoothly and easily out of the bloodstream into our cells.

***This occurs rapidly, often in minutes.***

***When we eat a high-fat diet,*** the sugar gets trapped in ***stage 2,*** and the body works overtime, sometimes to the point of ***exhaustion and disease,*** in an effort to move the sugar out of the bloodstream. Meanwhile, the sugar backs up in the blood, creating sustained, elevated blood sugar that wreaks havoc on the body in the form of ***Candida, fatigue, diabetes, etc.***

## ***The Role of Insulin***

What happens in the presence of fat that causes sugar to pile up in our bloodstream? It has to do with the pancreas. Under the direction of the brain, the pancreas is responsible for producing a hormone known as insulin.

One of insulin's roles is to attach it self to sugar molecules in the blood and then find an insulin receptor in the blood-vessel wall. The insulin can then transport the sugar molecule through the blood-vessel membrane to the interstitial fluid (the fluid between the cells) and continue to escort sugar across another barrier – the cell membrane – and into the cell itself.

***Excess dietary fat in the bloodstream creates some negative insulating effects. When we eat too much fatty food, a thin coating of fat lines the blood-vessel walls, the cells' insulin-receptor sites, the sugar molecules, as well as the insulin itself. These fats can take a full day or more to "clear" from the blood, all the while inhibiting normal metabolic activity, and preventing these various structures from communicating with each other.***

Too much fat in the blood impedes the movement of sugar out of the bloodstream. This results in an overall rise in blood sugar, as sugars continue to travel from the digestive tract:

(*Stage 1*) into the blood

(*Stage 2*) but cannot escape from the blood so they can be delivered to the cells

(*Stage 3*) which await their fuel.

### *Sugar and Fat at the Same Meal*

Raw-food experts give lectures, write books, videos that support their stance against fruit.

Their “scientific” information seems conclusive: Fruit is clearly the culprit in blood-sugar problems for raw fooders. But let’s step back for a minute: Take a look at the high-fat recipes in the books, newsletters, and websites of those so quick to tell you to avoid fruit. Note the fat-laden foods they serve guests at their institutes, retreats, and rejuvenation centers. Pay attention to the rich tasty morsels they serve up at food demos and festival booths.

Nuts, seeds, and avocados all run 75% fat or more, as a percentage of their calories. Oils are 100% fat. It takes very little of these foods to push us way over the edge in terms of blood fat, and raw fooders do not eat “very little” of these foods.

Unfortunately, taking care to avoid sugar/fat combinations at the same meal is not sufficient to alleviate blood-sugar problems. Eating a high-fat diet creates elevated blood sugar whenever fruit and other sweets are eaten, regardless of timing. Here’s why: Sugars require little time in the stomach. Immediately upon putting a simple sweet fruit into your mouth, some of the sugars are absorbed into the bloodstream from under the tongue.

Fruit eaten alone or in simple, well-chosen combination on an empty stomach requires only a few minutes in the stomach before passing to the small intestines, where the sugars can be quickly absorbed. Most of the sugar from fruit travels from the intestines, to the bloodstream, and then to the cells where they are needed within minutes of its consumption.

Fats, however, require a much longer period of time, often twelve to twenty-four hours or more, before they reach their destination, the cells. In the stomach, fats are subjected to a digestive process that usually takes several hours. When they finally do proceed to the small intestine, they are absorbed into the lymphatic system, where they often spend twelve hours or more before passing to the bloodstream. Most important, fats linger in the bloodstream for many hours longer than do sugars.

On a high-fat diet, therefore, the bloodstream always contains an excessive quantity of fat, and more is coming in at almost every meal. Essentially, even when you eat a fruit meal alone and wait hours before eating fat, those sugars are likely to mix in your bloodstream with the fats you ate the day before.

*Whether or not we eat fruit in the presence of such tremendously high levels of fat, we set ourselves up for health problems and inability to remain raw.*

### *Sugar + Fat = High Blood Sugar*

### *Fruit and Chronic Fatigue*

Abnormally high fat exists in the blood for several hours every time we eat a high-fat meal. As blood-fat levels rise, the “normal” level of pancreatic function is simply insufficient to clear sugars from the bloodstream. Eventually, if we eat a high-fat diet for a long enough period of time, the pancreas begins to fail at producing sufficient insulin to maintain healthy blood-sugar levels.

Rather than the typical gentle rise-and-fall fluctuations in blood sugar, we begin to experience increasingly higher peaks and deeper valleys. Blood-sugar levels become unstable due to the over consumption of fat in the diet.

This sets up a situation where most of us rely upon adrenal-assisted pancreatic function virtually every time we eat, placing constant excessive demands upon both our pancreas and adrenals.

### *Society of Adrenaline Junkies*

As a society, we have very much become adrenaline junkies. We are addicted to stimulation, and rely upon our next “fix” constantly.

This excessive adrenal demand, coupled with the high stress of our American lifestyle, result in such extreme overuse of the adrenals that they eventually begin to fail.

The symptoms of severe adrenal failure are referred to collectively as “chronic fatigue” in the US, or ME (myalgic encephalomyelitis) in Europe. Of course, many signs and symptoms usually lead up to chronic fatigue; it rarely comes as a complete surprise. Lack of motivation, malaise, reliance upon stimulants, excessive need for sleep, and bouts of mononucleosis are all indications of varying degrees of adrenal fatigue.

### *The Sugar Highs of Children*

The adrenal response also plays a key role in what commonly happens to children at birthday parties. They eat generous portions of extremely sugary foods, and shortly thereafter they are running about wildly, literally out of control and almost out of their minds. What happens, and why doesn't it happen to adults?

The answer is rather simple. Young children do not drink coffee, smoke cigarettes, use alarm clocks, or watch the eleven o'clock news. Life for them is interesting, full, and

never dull. They have a higher level of vitality than most adults, meaning that their adrenal glands still function well. They are, however, on the same high-fat diet as adults.

The fats remaining in their bloodstream from their previous day's meals block insulin function just as effectively as they do in adults. Then their young and not-yet-exhausted adrenal glands "kick in" with a jolt, releasing a good amount of epinephrine. The next thing you know, the children are running wild.

Adults do not show such a response because they simply no longer have the vitality to do so. Their adrenal glands are so fatigued that they require a true and serious emergency in order to function at all. Do not blame the children for running wild. Epinephrine is not to blame either, nor is the sugar.

Children on a low-fat diet do not show this same out-of-control response when permitted to eat great quantities of sugar. It is the fat, more than the sugar that is the culprit for their hyperactivity. In the same way, fat – not sugar – is responsible for the ever-increasing incidence of chronic fatigue syndrome in the world today.

To prevent diabetes, avoid eating sugar with fat or oil or seeds of any kind.

For more information, please download the e-book, "Diet by Design."