



CLINICAL STUDIES OF CHICORY ROOT INULIN IN JUST LIKE SUGAR ON HUMAN BLOOD SUGAR

Few people realize that stable blood sugar levels are one of the most important foundations of sound health. Over time, chronically high or heavily fluctuating blood sugar levels can inflict enormous hidden damage as the excess glucose combines with proteins, collagen, and enzymes, and reacts with cellular DNA. This can trigger serious negative long-term effects that can shave years or even decades off life (Cerami et al., 1987; Gillery et al., 1991).

"Contrary to the opinion of some clinicians that the well-controlled diabetic has a life expectancy approximating that of the normal individual, insurance and clinical studies indicate that the diabetic is a heavily substandard risk with a mortality ratio far in excess of the normal." -Goodkin, 1975

The longer that blood sugar remains out of control, the shorter your life. Insurance statistics compiled by Equitable Life Insurance indicate that 29-year-old diabetics lived 16 years less than non-diabetics, 39-year-olds lived 11 years less, and 49-year-olds lived 10 years less (Goodkin, 1975).

Even if you aren't diagnosed as a diabetic, poor blood sugar control can have just as devastating an effect on your health and lifespan. In fact, people who are undiagnosed or borderline diabetics may have almost the same mortality as regular diabetics.

How exactly does persistent high blood sugar damage the body? Excess glucose spurs an elevated production of "glycated proteins," which are proteins that have been damaged by binding with sugar. Such glycated proteins react with oxygen to form superoxide free radicals that can degrade collagen, the structural matrix of our body. They also trigger an escalating accumulation of "advanced glycation endproducts"--one of the hallmarks of aging. Even worse, glycated proteins can also transform themselves into hydrogen peroxide and hydroxyl radicals, which are far more potent free radicals than superoxides and far more destructive to the proteins of our tissues, organs, immune system, and muscles (Gillery et al., 1996).

Studies have shown that elevated blood sugar levels are a major cause of kidney failure, cardiovascular disease, and arteriosclerosis. Perhaps this is one reason why diabetics have twice the mortality risk as non-diabetics (Lancet, 1999; Shaw et al., 1999). Moreover, diabetics with poorly controlled blood sugar have over four times the risk of dying.

Studies by Rabinowitz, Ziebler, and other researchers showed that high blood glucose levels are directly linked with a stunted production of growth hormone (Rabinowitz et al., 1963). A deficiency of growth hormone can accelerate the aging process.

How do you balance blood sugar levels to maintain a constant supply of energy to the cells without glucose overkill. By eating a low-glycemic, high-fiber diet. This results in a steady stream of glucose into the blood. The best foods include rolled oats, dried apricots (which have one of the lowest percentages of sugar among fruits), cracked barley, buckwheat, millet, and brown rice. There are also two sweet-tasting dietary supplements that are virtually calorie-free have a glycemic index of 0, and are packed with other health benefits: Stevia and FOS Chicory Root. These supplements are not just ideal for diabetics but for anyone interested in managing erratic blood sugar levels, such as those with reactive hypoglycemia.

In fact, eating the right foods can have a bigger impact on blood sugar control and lifespan than either insulin or hypoglycemic drugs, such as sulfonylureas. In a large study of insurance mortality statistics, researchers found that the mortality rate was lowest in diabetics treated by diet alone, rather than diet and hypoglycemic drugs or diet and insulin.

Are Low-glycemic Foods the Answer?

The glycemic index measures the impact a food has on blood sugar levels two to three hours after ingestion. A low-glycemic food is one that has a minimal impact on blood sugar levels. The lower its glycemic index, the lower the rise in blood sugar levels a food causes.

Low-glycemic foods are indispensable to diabetics. They can also help pre-diabetics, borderline diabetics, and even non-diabetics avoid dangerous spikes in blood sugar that can damage cells, blood vessels, tissues, and organs.

With a glycemic index of only 20, fructose has one of the lowest impacts on blood sugar of any food. Its glycemic index is only a third of glucose, a fourth of white bread, and a fifth of boiled potatoes. Other low-glycemic foods include:

Dried apricots	44	Brown rice	79
Buckwheat	78	Barley (cracked)	72
Fructose	32	Stevia	0
FOS	0		

Noncaloric Natural Sugar Fights Premature Aging

A naturally sweet, indigestible sugar derived from chicory roots (chicory Inulin), (the main ingredient in Jusgt Like Sugar), fiuctooligosaccharides (FOS) is more than just a natural, noncaloric, non-glycemic sweetener: It is one of the most powerful prebiotics to be researched in the last decade. The subject of over 100

clinical studies, FOS is one of the best-documented natural nutrients for improving the healthy balance of bacteria in intestines and stimulating the growth of the beneficial bifidobacteria- also called "friendly flora"-that reside in the colon.

How important to good health are these so-called "friendly flora" that populate our intestines? They are literally our front-line defense against invading disease-causing organisms, combating premature aging caused by the toxin-producing bacteria and fungi that reside in our intestines.

Subjects	Dose g/day	Duration	Fecal Bifidobacteria # bacteria (total per gram)		Reference
			Start of Study	End of Study	
9	1	14	9.8	10.2	Tokunaga, 92
9	3	14	9.9	10.4	Tokunaga, 92
9	5	14	9.7	10.3	Tokunaga, 92
20	12.5	12	7.9	9.1	Bouhalk, 93
38	8	14	5.2	6.2	Rochat, 94
12	4	25	9.5	9.8	Buddington, 96

Seven Reasons Why Bifidobacteria Are Vital to Health

1. They produce substances that stop the growth of harmful, toxic gram-negative and positive bacteria in the intestines (Kawase 1982, Rasic 1983, Gibson and Wang 1994a&b).
2. They crowd out invasive toxin-generating microorganisms, such as Clostridia perfringens.
3. They slow down the production of damaging protein breakdown products, such as ammonia. This lowers blood ammonia levels that can be toxic to the human body (Bezkoravainy et al., 1989).
4. They produce B vitamins and folic acid (Nishizawa 1960, Liescher 1961).
5. They produce digestive enzymes, like phosphatases and lysozymes (Kawase 1982, Minagawa 1970).
6. They stimulate the immunity and spur immune attack against tumor cells (Mitsuoka 1980, Sekine et al., 1985).
7. They increase the absorption of the essential minerals magnesium and calcium. As we age, magnesium levels in the body decline, contributing to high blood pressure and diabetes.

Technically a fiber rather than a sugar, FOS is totally unlike conventional sugars because it feeds the beneficial Bifidobacteria while selectively starving the parasitical yeast, fungi, and bacteria that contribute to disease. Most toxin-producing microorganisms in the intestines are unable to use FOS as food. Conventional sugars, on the other hand, do the opposite: Sugars, like sucrose and lactose, tend to feed harmful bacteria and beneficial bacteria alike.

Other Benefits of FOS

Besides building up the beneficial bacteria in the body, FOS has also been shown to improve blood sugar control, liver function, and calcium and magnesium absorption.

A 1997 animal study conducted at the Nutritional Research Center in Japan found that a 5 percent FOS diet increased magnesium and calcium absorption substantially. A 1998 Showa University study obtained similar results (Ohta et al., 1998, 1997, 1995; Morohashi et al., 1998).

Magnesium is one of the most important nutrients we obtain from our diet, being involved in over 300 enzyme reactions in the body. As we age, magnesium levels drop, creating a deficiency that increases the risk of angina, atherosclerosis, cardiac arrhythmias, depression, and diabetes (Schauss, 1998; Jansson, 1981). A study conducted by the National Research Council of Canada showed that marginal magnesium deficiency can reduce the life span of laboratory animals by 40 percent (Heroux et al., 1977).

FOS also improves liver health. A 1999 Louvain Catholic University study found that a 10 percent diet of FOS can protect against fat accumulating in the liver and lower both blood glucose and insulin levels.

Because the Chicory Inulin (FOS) in Just Like Sugar is indigestible, it triggers no spikes in blood sugar levels the way sucrose and glucose do. About 40 to 60 percent as sweet as sugar, FOS is found in low quantities in many types of foods. However, to obtain just a quarter teaspoon of FOS from the diet, you would have to consume 13 bananas, 16 tomatoes, or 16 onions. Chicory root Inulin in Just Like Sugar has one of the highest amounts of FOS of any plant, and most natural FOS is commercially derived from water-extraction of the roots the process used in Just Like Sugar.

