

Natural Care of Diabetes & Hypoglycemia

by Howard Woodwind Morningstar, MD

When we eat, our digestive system chemically transforms our food's energy into simple sugars such as glucose, needed for energy metabolism throughout the body. Sugar is stored in the liver as glycogen, a polymer of glucose. As we go through our daily activities, the blood's sugar level drops as the glucose is transformed into energy. Our adrenal glands respond by secreting adrenaline, which signals the liver to release glucose so that metabolism can continue. As blood glucose levels rise, the pancreas secretes insulin, which transports a variety of nutrients including glucose, potassium, fatty acids, amino acids and vitamins into cells throughout the body.

This system is fine tuned by a balance of hormonal signals: insulin from the pancreas, glucagon from the liver and adrenaline from the adrenals. All this is controlled by the thyroid, which regulates the body's "thermostat", or metabolic rate. It aims for a stable blood sugar level of around 70 to 100 milligrams per deciliter. This is the equivalent of only five grams—about one teaspoon of available glucose in all of your blood at any one time!

When sugar levels drop too low, one becomes tired, weak and dizzy. If uncorrected seizures, coma and death result. If it rises too high, weakened immunity and damage to red blood cells, blood vessels and nerves result.

Diabetes is a chronic disorder of sugar, protein and fat metabolism that affects at least 15 million Americans. It's very likely that either you or someone very close to you has diabetes, but only 50% of people with diabetes know they have the disease. That's because in its early stages the symptoms of diabetes can be vague, including fatigue, mood swings and difficulty concentrating. Later symptoms include increased thirst & appetite, frequent urination and visual problems.

Uncontrolled diabetes often results in premature death or disability from heart attacks, kidney failure and strokes. It's the leading cause of blindness in the Western world. Diabetes can lead to peripheral vascular disease, foot ulcers, gangrene, and leg amputations, and is a frequent cause of painful nerve problems and impotence.

Most people with diabetes have adult onset, also known as "type 2" diabetes. This illness is linked with obesity, a sedentary lifestyle, and a processed food diet. It's almost unknown in primitive cultures until they adopt "Western" eating habits. The current epidemic of type 2 diabetes is rapidly increasing, and at this rate will double by the year 2010.

Fortunately, type 2 diabetes can usually be controlled with proper diet, weight control and regular exercise. Most overweight type 2 diabetics who achieve their ideal body weight will completely eliminate the disease, but any weight loss will make it easier to control.

“Insulin dependent”, also called juvenile onset or type 1 diabetes accounts for about 10% of all diabetes. This illness was fatal until injectable insulin became available, but now is a chronic disease requiring a lifetime of care.

Type 1 diabetes is caused by an auto-immune attack by the body’s own defense system on insulin producing cells of the pancreas. This form of diabetes may be prevented by measures that reduce inflammation. These include breast feeding, maintaining a balanced digestive ecology of beneficial micro-organisms, and minimizing exposure to environmental toxins.

Diabetes can also result from chronic pancreatitis and liver disease, the use of certain drugs and from thyroid and adrenal gland imbalances. When diabetes is triggered by pregnancy, it’s called gestational diabetes, and can harm the fetus.

Reactive hypoglycemia is a chronic condition in which sugar levels become unstable after one eats sweet or starchy foods. There’s a sharp rise in blood sugar, followed by excessive secretion of insulin by the pancreas. This results in an abnormal drop in sugar levels, causing sugar cravings, fatigue after meals, headaches, anxiety and irritability.

Reactive hypoglycemia can be an early phase of type 2 diabetes. It’s often related to lifestyle factors, including a diet high in simple sugars and refined carbohydrates. It may be caused by nutritional deficiencies, especially lack of fiber and chromium. It can be worsened by chronic stress as well as by smoking, excess caffeine, and other habits that weaken the liver. It can also be a symptom of hidden medical problems, such as hypothyroidism, adrenal exhaustion, and chronic candidiasis.

Natural medicines Both types of diabetes and hypoglycemia can be greatly improved and often (except for type 1 diabetes) completely eliminated through weight control, regular aerobic exercise and dietary modifications. In addition, natural herbal medicines and nutritional supplements can be very helpful in regulating blood sugar and preventing complications.

Aerobic exercise improves glucose tolerance for 12 hours or more, so exercise early in the day for maximum benefits. Regular exercise also helps to control weight, prevent heart disease and osteoporosis. It also releases brain chemicals called endorphins, which increase ones’ overall sense of well being.

Diet: Make changes in your diet gradually, so they will become lifelong habits. It’s important to recognize the often hidden connections between identity, body image and food cravings. Sugar cravings are often a substitute for unmet emotional needs. Just as “We are what we eat”, also “We eat what we are”.

The ideal diet for diabetes and hypoglycemia varies with the individual, but in all cases emphasizes unprocessed “primitive” foods, high fiber foods, foods with a low glycemic index and

specific foods that help regulate blood sugar.

Complex carbohydrates should make up at least 60% of total calories. That's about ten servings of whole grains, *plus* ten servings of vegetables and fruits a day. The diet should be also be low fat to protect the heart and vegetarian to protect the kidneys. It's also important to avoid hydrogenated oils and other artificial foods that inhibit metabolism.

People who eat a typical "Western" diet get only a quarter of the 100 grams of water soluble fiber a day needed for optimal sugar regulation. Good sources of water soluble fiber include beans and other legumes, oats, barley and other whole grains, seeds, nuts, psyllium husks and most vegetables and fruits.

The "glycemic index" of a food measures how much it will cause blood sugar to rise compared to glucose. So, when choosing from among the complex carbohydrates and high fiber foods, choose foods with a low glycemic index. This reduces the rise in blood sugar following a meal, and minimizes sugar fluctuations in both diabetes and hypoglycemia.

It's also helpful to eat foods that contain specific sugar regulating substances. For example, apples are rich in pectin, which slows glucose absorption in the intestines. Artichokes help regulate blood sugar, and are also a great liver tonic. Garlic and onions, as well as cabbage and broccoli contain sulfur compounds that regulate glucose metabolism. Barley, oats and legumes help control blood sugar through the action of water soluble fibers and gums, while kelp and other sea vegetables contain enzyme supporting trace minerals.

The diet for reactive hypoglycemia is very similar to that for diabetes. In addition, it's best to eat frequent small meals throughout the day. Wait an hour or two before eating dessert, as this will help minimize drops in blood sugar. Avocados have a unique sugar structure that inhibits insulin release, smoothing out fluctuations in blood sugar. Avoid refined sugars and starches, caffeine, alcohol and fruit juices.

Herbal and natural medicines: A few of the over 1200 herbs known to help regulate sugar include Bilberry (*Vaccinium myrtillus*) which is also an antioxidant that can improve capillary circulation and prevent retinal disease. Another antioxidant herb that helps balance sugar is Green tea. Aloe vera juice lowers blood sugar, while externally, it can help heal diabetic skin ulcers.

Bitter melon (*Momordica charantia*), has been used in Ayurvedic medicine to treat diabetes since ancient times. Its sugar lowering effects are gradual and cumulative. Devil's Club (*Oplopanax horridus*), Ginseng (*Panax ginseng*) and Fenugreek (*Trigonella foenum*) can also help improve glucose tolerance.

Gymnema sylvestre is an Ayurvedic herb that helps increase the pancreas' insulin production, especially helpful for type 2 diabetes. Inulin, found in Burdock (*Arctium lappa*); Dandelion

(*Taraxacum officinalis*) and Jerusalem artichoke helps regulate blood sugar.

Nutritional supplements helpful for diabetes and hypoglycemia include chromium GTF, B vitamins and coenzyme Q10, which help regulate blood sugar. L-carnitine may improve fat metabolism, while the anti-oxidant vitamins C and E help prevent the damaging effects of elevated blood sugar on blood vessels and nerve cells.

Since sugar metabolism is controlled by the coordinated actions of the pancreas, liver and adrenal glands, it's important to support the function of these organs.

If the adrenals are depleted, the adrenaline response to hypoglycemia and stress becomes erratic, causing fluctuating sugar levels. Important adrenal tonics include Wild Yam (*Dioscorea villosa*), Borage (*Borago officinalis*), Licorice (*Glycyrrhiza glabra*) and Ginseng (*Panax ginseng*).

Don't use Licorice or Ginseng if you have heart disease or high blood pressure. Zinc and vitamins B and C supplements also help support adrenal function.

It's best to nourish the liver by eating plenty of fresh fruits, vegetables and whole grains. Organic foods, which are free of pesticide and herbicide residues can help your liver function optimally. They also frequently contain trace minerals deficient in foods grown using chemical agricultural methods.

Liver tonics include Dandelion, Burdock, Yellow Dock (*Rumex crispus*), Nettles (*Urtica dioica*), Red Clover (*Trifolium pratense*) and carrot juice. Burdock and Dandelion are especially valuable, as these also support the pancreas and help regulate sugar metabolism. Wild Yam and Bilberry can help regulate insulin production, while Ginger (*Zingiber officinale*) is a helpful digestive tonic.

Herbs to prevent and treat complications of diabetes: The complications of diabetes include heart and vascular disease, neuropathy, kidney failure, retinopathy, and skin ulcers and infections. Most of these are caused by "glycosylation", which is oxidative damage to cells caused by excess blood sugar.

The bioflavonoids Quercetin and Bromelain, as well as Grape seed extract, vitamin E, Pycnogenol and Bilberry are potent antioxidants that help prevent glycosylation, protecting the retina, nerve cells and capillary circulation. Garlic and onions also contain bioflavonoids and other substances that are protective against heart and vascular disease. Bilberry is especially valuable for preventing retinal damage and blindness. Ginkgo biloba helps improve both brain and peripheral circulation.

St. John's Wort (*Hypericum perforatum*) tincture is used internally as a tonic for nerve problems, while the oil is applied externally to relieve painful neuropathy. Capsaicin, an extract of Cayenne (*Capsicum minimum*) is used topically for diabetic neuropathy. Gamma-linoleic acid (GLA), found in Flax seed, Borage (*Borago officinalis*) and Evening Primrose (*Oenothera biennis*) oils,

along with B vitamin supplements can help prevent this complication.

When we take personal charge of our health with herbal and natural medicines, we have a chance to experience Gaia's healing presence directly. As we renew our connection to the source, to Mother Earth, we grow aware of the consequences of our actions on this planet, for better or for worse. May they be for better!

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