

TYPE 2

DIABETES

A Runaway Train

by Margy Squires

Diabetes is one of the few diseases that we know a lot about, perhaps due to its life threatening nature or the ease with which it can be diagnosed with a simple blood test. In fact, a fasting blood sugar is a routine part of most medical exams. What's more, studies show that avoiding the known risk factors can cut your chances of developing diabetes by 50%. Then why is diabetes like a runaway train, one of the fastest growing disorders in the past decade? And why is the age at diagnosis getting younger every year?

Who's on the Train?

Approximately 25.8 million Americans have diabetes; however, about 7 million do not even know they have it. Another 79 million are in a pre-diabetes state, ready to board, paying their ticket with risk factors such as age, family history, lifestyle and diet. African Americans, Hispanics, Latinos and American Indians are buying more tickets than Caucasians. If you don't know your risk factors or whether you even have diabetes, you may end up on the train.

The Price of a Ticket

A malfunction in insulin; whether in production, regulation or uptake by the blood cells causes an abnormally high amount of glucose in the blood stream. The effects of runaway sugar cause coronary artery disease, stroke, blindness, nerve disorders, kidney disease, cancer and premature death. Diabetes is the seventh leading cause of death in the U.S.; the leading cause for end stage renal disease and blindness over the age of 20. It accounts for more than 60% of non-traumatic lower limb amputations and carries a 2-3 times higher risk of stroke. The longer blood sugar levels are elevated, the higher your risk for these complications. The longer you stay on the train, the higher the price of the ticket.

Don't Get on the Train

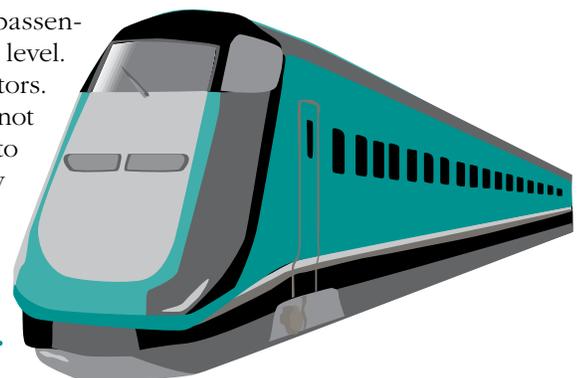
There are two types of diabetes, both characterized by high glucose levels for different reasons. Type 1 occurs when the body's immune system attacks the insulin-producing beta cells in the pancreas and destroys them. The pancreas then produces little or no insulin. Type 1 must be on insulin for life to stay alive. Only 5-10% of diabetics are this type. Our focus will be on Type 2, which comprises the other 90-95%.

Type 2 is caused by either a lack of insulin or the body's inability to use insulin efficiently, often termed *insulin resistance*. Although once a middle aged or older diagnosis, age levels for Type 2 are dropping. Type 2 may be insulin or non-insulin dependent, controlled by oral medications or by diet alone. Unlike Type 1, you can decide not to board the diabetes train.

Be Pro-Active

There are three ways not to end up as a passenger. 1) Get tested and know your blood sugar level. 2) Know your personal and nutritional risk factors. 3) Change the risk factors. Every day choices cannot be underestimated. In general, change your diet to reduce the amount of processed foods, especially those high in the glycemic index, the rate at which sugar is released. Include plenty of raw veggies,

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Type 2 Diabetes *continued*



flaxseed oil and EFAs, whole grains and fiber. Drink non-chlorinated water to spare vitamin E. Mild to moderate exercise 2-3 times a week also increases the cell's response to insulin. Finally, lose any excessive weight since obesity is a major risk factor.

Vitamins and minerals are catalysts for many cellular functions. Diabetes, like other diseases, may have deficiencies of the ones you need the most. Since diet is critical in diabetes, these supplements can cut your risk factors and put on the brakes for developing diabetes.

Chromium GTF

According to Michael Murray, N.D., chromium "decreases glucose levels, improves glucose tolerance, lowers insulin levels and decreases total cholesterol and triglyceride levels while raising HDL levels". It may do this by increasing insulin binding and receptor sites. Chromium levels are decreased 40% in diabetics. In one study, people at high risk for developing Type 2, based on family history and obesity, were given 1000 mcg of CP daily with a 40% decrease in insulin resistance. The chelate GTF form maximizes absorption. Suggested dose in studies is 200 mcg to 1000 mcg per day. Chromium has a strong safety record even at high doses. Some studies suggest that CP at 600 mcg a day (in a divided dose) also assists weight loss. Taking soy isolates and high phytic acid foods (seeds, and nuts) may decrease the absorption of chromium.

Alpha Lipoic Acid (ALA)

ALA's action mainly involves mitochondrial energy but it is also a powerful antioxidant. ALA expert, Lester Packer, states lipoic acid "boosts the entire antioxidant defense network. By taking lipoic acid, you are in effect increasing your levels of vitamin E and C, glutathione and coenzyme Q₁₀." These nutrients are low in diabetes. Diabetic neuropathy is the result of damage to nerve endings, with a loss of feeling, increased pain and tingling in extremities. ALA has been available in German as a drug to treat diabetic

neuropathy for the past two decades. The typical dose is 600-1000 mg a day.

Vitamin C & E

Vitamin C may prevent glucose from abnormally binding to proteins which damages blood vessels and healthy kidneys, and contributes to coronary artery disease. Vitamins C and E help get blood sugar into the cells and out of the blood stream. Vitamin E is heart healthy in lipid regulation to keep vessels clear, which is important given that heart attack is the number one cause of death in diabetes. Teamed with B vitamins, E is neuroprotective. Vitamin C also increases the action of other vitamins.

Magnesium

Magnesium is another mineral that's low in diabetes (1 out of 3) and the lower your magnesium level, the higher your risk of developing diabetes. With regulation of more than 300 enzyme reactions in its job description, magnesium is critical for all cells. Its role in diabetes is not clear; a deficiency may impair the secretion of insulin or affect binding sites which increases insulin resistance. Additionally, magnesium is needed for healthy blood pressure and heart function. It's little wonder that hypertension and heart disease are diabetic complications, given a magnesium deficiency! Considerable data links low magnesium with heart problems from arrhythmia to sudden cardiac death. *Caution: Those with renal failure should supplement magnesium only under direct medical supervision.* Cofactors for magnesium (B2, B6, manganese) can be found in Fibro-Care™ and by taking a good multiple. A minimum of 400 mg a day is needed.

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Multi-Vitamin

A good multiple can safeguard you from the nutritional deficiencies of diabetes for chromium, magnesium and zinc. Additionally, several B vitamins assist chromium, vitamin E and C in regulating glucose levels (biotin, B6, B12, niacin) and protect nerve cells. Bioflavonoids (quercetin, rutin) boost antioxidant activity to reduce free radical damage to cells and blood vessels. Other critical nutrients are explained above.

Get Tested

Two blood sugar tests will determine if you're getting on the train and how fast it may be going. One is the IFG; the other an IGF. The IFG or *Impaired Fasting Glucose* shows your blood level after an 8-12 hour fast. A result of 110-125 mg/dL is considered pre-diabetes. The IGF or *Impaired Glucose Tolerance* tests your blood levels after a 2 hour oral glucose test. A result of 144-199 mg/dL is considered pre-diabetes. These test values are important to know since most people

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diagnosed with pre-diabetes are at high risk for developing Type 2 and getting on the train.

SUMMARY

You can lower your risk for developing diabetes or prevent it altogether despite the fact that it's the fastest growing disorder. The right lifestyle choices and diet, including filling any nutritional voids, will reduce your risk factors, keeping you off the runaway train.

Resources

1. American Diabetes Association Fact Sheets at www.diabetes.org.
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3. Anderson, RA. Chromium glucose intolerance and diabetes. *J Amer Coll Nutr* 1998; 17:548-555.

4. Challem, J. *User's Guide to Nutritional Supplements*. Basic Health Publications, 2001.
5. Medical Economics. *PDR for Nutritional Supplements*, 2001.
6. Merz, W. Chromium in human nutrition; a review. *J Nutr*. 1998; 123:626-633.
7. Murray, M. *Encyclopedia of Nutritional Supplements*, Prima Pub. 1996
8. Packer, L. *The Antioxidant Miracle*. John Wiley & Sons, 2000.

WARNING: *Diabetes, either Type 1 or Type 2, is a life threatening disease which should not be self diagnosed or self treated. If you are diabetic, on insulin medication or drugs, you should not take any glucose lowering supplements without medical supervision!*

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WARNING SIGNS

HYPERGLYCEMIA (high blood sugar)

Excessive Thirst & Urination

Lightheadedness

Nausea

Increased Hunger

Fatigue

Blurred Vision

HYPOGLYCEMIA (low blood sugar)

Shakiness

Anxiety

Mood & Energy Swings

Sugar Cravings

Warning: *For Type 1, prolonged hypoglycemia can result in coma and death.*

Health POINTS

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