

Adult (-type 2-) Diabetes

[[Home](#)] [[Simple](#)] [[Français](#)] [[Good Food](#)] [[Bad Food](#)] [[Vitamins +](#)] [[Books & Links](#)] [[Email](#)]
 [[Diabetes & Weight](#)] [[Where](#)] [[Cholesterol](#)] [[Why](#)] [[More on Causes](#)] [[31 Tips & Info](#)] [[Index](#)]

Why a Type 2 Diabetes Page in a Heart-Health Site?

Well, both are related to nutrition and both can be **prevented** or **helped** by the *same* foods and supplements. **Type 2 diabetes is normally preceded by decades of slowly increasing insulin, blood sugar, and belt-size** (*.. and it is always healthier to sit on your fat than have your fat sit on you*). Early prevention is very effective but there come a point when insulin production permanently breaks down. Smart nutrition (and portion control) can first prevent **overweight** and **diabetes**, and therefore eventually **heart disease**.

Both conditions are epidemic with 1 in 13 Americans and 1 in 3 of those over age 60 developing 'adult' diabetes. *Most* will develop heart, kidney, nerve and blood vessel diseases for an amazing 1/4th of total health care costs! Other countries have similar increasing rates. Later-in-life diabetes (during pregnancy being a warning) is an eventual one-way track to heart disease.

What makes a diabetic? **Simply put: when your pre-breakfast blood sugar (*plasma glucose*) gets over 126 mg/dL or 7 mmol/L.** Another measure is when 2 hours *after* taking a dose of glucose the blood level is still over 200 mg/dL (11.1 mmol/L), with over 140 (7.8) *starting* to suggest a problem. Pre-breakfast 95 (5.3) is good, under 36 (2) is seriously low blood sugar, while above 180 (10) a safety-valve opens that sends glucose to the urine. To confuse anybody, the numbers changed from mg to the 18 times smaller mmole, they increase by 14% between 'blood' and 'plasma' in syringe samples - but the numbers for 'blood drop' and 'syringe-plasma' are similar. **However, it's the big picture that counts, not the decimal points of the reading.** This is *one* area where blood tests are important since serious organ and **foot damage (!)** can happen early.

In early-age 'type 1' diabetes the body stops making insulin [[see: Wikipedia](#)] needed to process sugar and starch. *Type 1* is about 5% of all diabetes. There is no cure and insulin, a protein, must be dosed by injection in proportion to sugar and starch intake. *Type 1* can sometimes be prevented with vitamin B-3 in people with declining insulin -which can show years before irreversible damage [[see ENDIT](#) or [here](#)].



In the now exploding 'type 2' diabetes, which develops in obese kids or at a more "mature" age [Non Insulin Dependent Diabetes Mellitus, NIDDM or maturity-onset], the problem is initially not a *lack* of insulin but body cells became insensitive (resistant) to its effects. Increasing amounts of insulin try to "push the gas pedal" but the system doesn't react (by taking fuel, glucose, into the cells). In type 2, blood-sugar and (therefore) blood-insulin *both* become high which is a double problem.

This double problem is that:

1. **High insulin** changes excess blood-sugar into fat around the belly, and worse, it keeps it there. Insulin makes and keeps you fat;
2. **High blood-sugar** makes blood vessels and blood components 'sticky', slowly destroying your 'arterial tree'. Using frying temperatures when making meals makes that effect worse.



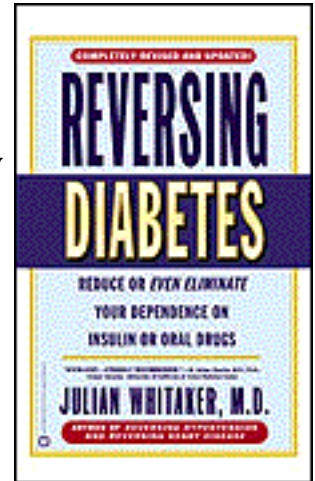
Both effects reduce blood flow to all areas of the body especially to the feet, eyes and kidneys. Fat, around the body or as triglycerides in the blood does nothing to promote blood circulation. **Good circulation is 50%-of-good-health.** This is why weight control, "shaking-up-the-fat" (exercise), a good multi-vitamin with minerals and extra magnesium, omega-3 [ω-3 or n-3] oils and high-fiber, low glycemic index foods are all-important. Unhelpful are omega-6 oils like corn, soy or sunflower while vitamin D works *better* than insulin drugs! High waist size (belt length, regardless of your height) with high blood triglycerides (fats), high sugar, high insulin and high blood pressure, all lead to ill-health. This group of symptoms is known as Syndrome X, the Metabolic Syndrome.



I remind you that this author is not a doctor and knows absolutely nothing about your specific situation. Keeping this in mind, here are some ideas that will help you see the global picture of diabetes (kidney, leg, eye and heart disease) more clearly.

1. **READ** two pieces of literature. First, the 2001 paperback *Reversing Diabetes* by Dr. Whitaker. His [website](#) is very commercial but his science is truly excellent: a *vital* \$15 investment. Second, read the [article \(PDF\)](#) from the Nurses' Study by Harvard that found **2.5 x** the risk getting diabetes is those eating most rapidly absorbed, low-fiber carbs.

The main 'offending' foods are: flour, boiled, baked or fried potatoes, *most* breakfast cereals and [the like](#) and noodles made from flour. Regular noodles made from semolina, gritty hard wheat core particles as in couscous, are low glycemic -- but also low in fiber and nutrients. Floury starches and carbs are high on the 'glycemic index' as they rapidly shoot glucose into your bloodstream for insulin to deal with, which eventually causes harm. **P.S.** Unlike some oils and proteins, no carbs are classified as 'essential nutrients'.



2. **INCREASE** fiber-rich vegetables and fruits that have not been processed much, beans and *partially whole kernel* grains (not finely ground) and omega-3 oils (flax, canola and fatty fish). Fiber, especially soluble fiber (gel or pectin-like fiber), is truly diabetes and heart healthy as it slows and regulates the speed of the uptake of foods-- which is what diabetes control is all about. *All* agree about the major benefit of fiber - and it's cheaper than a glucose test strip. Every 10 g/day increase in fiber reduces diabetes risk by up to 30%!

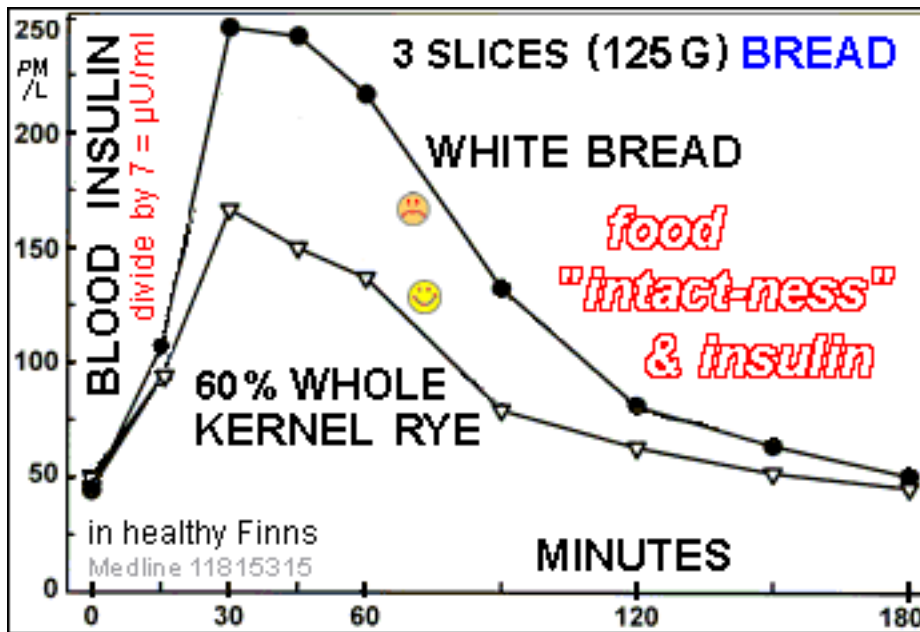
Glycemic Index (**blue**) of common servings:

- *Most fruits: 1-4 g fiber; **GI: 40-60**
- *Beans (cup, cooked): 5-14 g **35-50**
- *Broad(Fava) beans (cup): 9 g **110**
- *Large potato with peel: 6 g; **110**
- *Meat, eggs, fat & most dairy: 0 g **low**
- *Most breakfast cereals: 0 g; **80-100**
- *Hot whole cereal: 5-10 g; **85**
- *Some bran cereals: 5-10 g; **40-50**
- *Donuts, regular breads: 0 g; **100-110**

GLYCEMIC INDEX TRIAL (high index version of the same food)

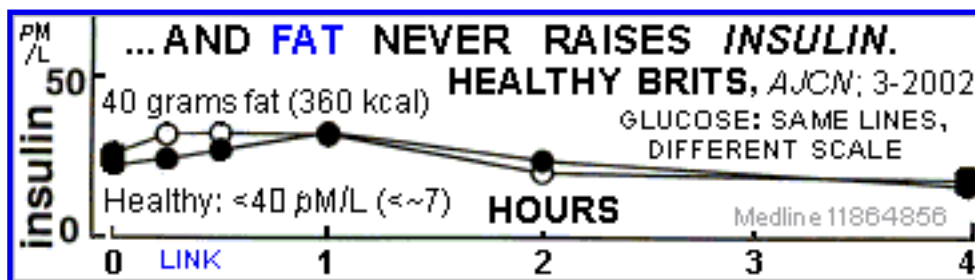
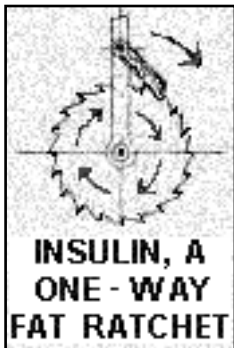
- * *Whole* grain barley bread 58 (as flour 100; like wheat *flour* bread)
- * Semolina [grainy wheat core] pasta** 57 (ground as flour 100)
- * Rice pre-boiled 65 (sticky rice 86)
- * Whole kernel barley porridge 35 (same, barley flour 98)
- * Whole lentils or red beans 36 (same, ground to flour 70)
- * Whole white or brown beans 40 (same, flour 74)

These foods were given to type 2 diabetics. Despite being *identical* in fiber and chemical composition, the 'less ground' more intact foods reduced the amounts of glucose and insulin by 30% and a blood clot factor (PAI) by 50%. A very important study in [Diabetes Care](#).



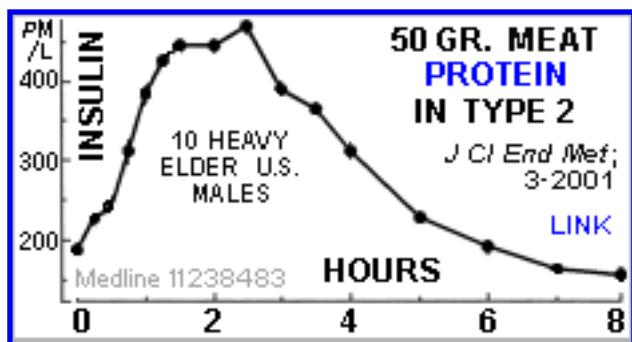
3. **LEARN ABOUT** low *glycemic index* foods and *glycemic load*. Not all foods release their sugars or starches at the same speed. The slow release foods, typically the least refined foods, have demonstrated benefits. Here is a full list of [glycemic indexes](#). A large portion of a high *glycemic index* food creates a large *glycemic load*. Not good. The graph was

simplified from [AJCN, Feb. 2002](#). The 45 minute long blood sugar peaks, from 15-60 minutes, were *identical* but the presence of intact whole grain structure reduced the *insulin* that was triggered by 50% [!]. This lingering high "white bread insulin" lowered the 1.5 to 3 hour blood sugar to *below* starting levels. This causes *cravings* and *jitters* precisely because, despite of low blood-sugar, insulin prevents you from using fat reserves to satisfy such energy craving. [And, logically, only sugar, flour, starch and maybe alcohol can fix such craving --but not fat or protein]. Remember: lingering insulin makes and keeps you fat, ratcheting fat into the cells --and then preventing its use for energy.



The good news about fat is that it *never* raises either insulin or glucose. This allows you to burn fat from food and from storage, if not swamped by

insulin made for sugar or starch, so you lose weight. *Carbs* make you *make* fat especially when you have high-insulin, and regardless your starting weight ([AJCN, Jan. 2003](#)).



Protein raises insulin, as shown, but while up to $\frac{1}{2}$ gets used like sugar, protein doesn't raise blood glucose. The only thing eaten here was 236 gr. (8 oz.) lean meat, providing 50 grams of protein. Similarly, also fructose (50% of plain sugar) has little effect on glucose but it raises insulin -and cholesterol. Notice in the last graph that type 2 diabetics have high

fasting (morning) insulin. **In type 2, the challenge is to keep insulin *and* glucose low. Yes, lowering carbs is safe and a valid option.**

4. DECREASE YOUR WEIGHT if it is high: **obesity** leads to **type 2** and **heart disease**. [Skinny diabetics, those *not* producing the fat-maker insulin, lose sugar-calories in the urine since they can't use sugar for fat or fuel.] ALL authorities agree with weight reduction benefits in type 2, as often blood-sugar returns *below* the cut-off point [and technically you're cured]. As fat-cells lose fats, there are relatively more insulin receptors active per unit of cell surface and the system works better. Moderate exercise (many benefits) and cutting down on (tasty and well-deserved) calories are ways to normalize weight. Easier said than done. Then there are changes in diet: try the wisdom in the books by *Whitaker*, *Challem*, *Atkins* and *Willet* (the 4 books in one frame in the [links](#) list). None of these books has all the answers but *combined* they provide a wealth of information about how weight loss can be part of a pleasant life-style. Low-carb [Atkins 'still' best for weight loss](#). Another low carb high nutrient diet is [Montignac](#). Obesity is stored fat, and you'll *never* lose fat if you over supply with starch, carbs and refined cereals...

5. ABOUT DRUGS... there are drugs that "raise insulin" [sic], make it work better or reduce blood-sugar by other means. In later stages of adult-diabetes [very high blood-sugar], injected insulin [at increased levels also a poison] is often added to drugs taken by mouth. On the surface this *seems* like good strategy as blood-sugar and therefore the blood marker HbA(1c) become more normal, for a while. This marker "A-one-C" tells how many "frosted" (sugar-damaged) red blood cells you have, evidently an important thing to reduce (less than 6% is normal, 4% is good but even [7.5 may not be such a bad target](#)).



The problem with drugs is that there are effectively no studies showing they actually postpone grief *and* improve [survival](#) [also, [2008 analysis](#)]. Many promising drugs and the patients on them are no longer with us. With drugs you can 'normalize-the-numbers' to make the lab report look better but there are few [studies](#) proving that this delivers a long-term health benefit. Drug *don't* fix underlying problems, have side-effects and decreasing effects with time. *Intuitively* you would think that any drug that

lowers blood-sugar [or cholesterol or blood pressure] *should* be beneficial but this is certainly not **evident** [UKPDS in *BMJ* '01-10-13: 854; changed into **recommendations** but further debated **here**]. Ask your doctor to explain this debate; it ain't easy for them either! **NEJM Sept. 9, 2004**: the big *new* class of drugs in 20 years [with names ending on *-azone* (*Avandia*, *Actos*, other) increase weight and promote **congestive heart failure** [a **2007 editorial**: 'not the answer'] and, finally, **bone fractures** ... while biguanide (metformin) and sulfonyl-urea (glipizide) **harden the aorta**; sulfonyl-urea increases **deaths**.

The **New England Journal** of Feb. 7 2002 had a land-mark study about the superiority of non-drug approaches: "*Since current methods of treating diabetes are inadequate... The hypothesis that type 2 diabetes is preventable is supported by observational studies and two clinical trials of diet, exercise, or both in persons at high risk for the disease but not by studies of drugs used to treat diabetes.*"

Later-in-life, type 2, diabetes becomes a hard to manage "condition" with much confusion and changing recommendations between individuals or expert groups. Mega-dollars are spent on and by each diabetic so the money interests are huge. Adding to the confusion, fundamental understandings (like the role of **inflammation**) are starting to emerge. It is a long way from studies to medical consensus and to supermarkets and restaurants --where the causes and solutions to diabetes and heart disease certainly lie. On a lighter note, there seems agreement (for people who are not driving, type 1, pregnant or alcoholic) that "...moderate **alcohol** consumption in the diet should not be discouraged", the benefit of a **drink-or-two**, and now **coffee!**

In California the *doubled* rate of type 2 diabetes in the 1990's was evidently *not* caused by a lack of drugs but, just maybe, by more low-fiber processed-foods [or by sitting in front of computers...]. But unlike your computer, you don't want your food to be *fast*. You can slow down digestion with high fiber-foods *without* the loss of taste or food appeal (you'd never know the difference). About 30 g of fiber per day, about double current intakes and *especially* the soluble mucus-like variety, is one of the main keys to heart, blood-sugar and cholesterol health. And so we return to the apple-a-day concept... [3.7g fiber/medium size apple with skin].



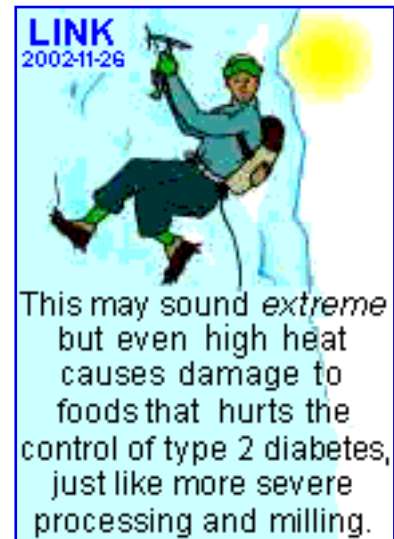
**American
Diabetes
Association**

The **2002** recommendations are **here** but you'll find few solutions and the word "may" is used over 150 times. In fact, they *may* be wrong that you should eat at most 1 egg worth of cholesterol per day [if LDL-cholesterol is over 100 (2.6)] and eat about 10% of your energy as polyunsaturates (*never before* in human history..., *way* in excess of the **ISSFAL** safe upper limit, *and* a probable cause of type 2 diabetes as part of the **Israeli**

Paradox). Nuts are *not* a good source of omega-3 oils, only walnuts are ... while avoiding saturated fat and cholesterol will certainly not prevent diabetes. Fact: **even saturated fat -with carb avoidance- may be helpful!**

The '**avoid cholesterol and fat**' idea was a marriage-condition of the American Heart Association, an alliance to unify advice, yet fats used to be the energy source of choice for diabetics. Fat does not generate insulin or glucose so you can see why this was and fat per se does not cause **obesity**. Diabetes causes heart disease but heart disease *never* causes diabetes [this author in: **DiabetesInControl.com** about cholesterol]. Too bad for diabetes prevention that the ADA caved-in to the AHA about fats and the high glycemic index junk-cereals they endorse, like *Cocoa Puffs & Count Chocula*. A massive *Lipitor* trial also showed no cholesterol-lowering benefit in diabetics: **Lancet 2003**. On a positive note, everybody agrees that weightloss, exercise and high fiber intakes are good --about 50g/day, now *that's* a lot of fiber [ensure your multivitamin has zinc].

Many groups suggest to follow your doctor's advice about drugs. This may be valid but *only* after you have both read and digested the book *Reversing Diabetes* that deals with the many benefits of the non-drug approaches. As in any such disease, why not keep copies of lab-reports (with **MedlinePlus** drug descriptions) and start a file on yourself. Knowledge is power, and unless *you* convince yourself about benefits, changes tend to be temporary while with drugs **the slide continues**. Oct. 22, 2010. **About the author**.



**Diabetes type 2 and Overweight
City ...**

photo: Dr. C. Rose

