



Reversing Diabetes & Obesity: Eating For Health™ Nutrition Super Stars

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Diabetes: Bad Food and Sedentary Living in Action

Diabetes, along with its evil twin obesity – collectively known as “**Diabesity**” – is epidemic in the United States. According to the *American Diabetes Association*, 20.8 million children and adults – 7.0 percent of the population – have diabetes, almost half of which is undiagnosed (*American Diabetes Association [ADA], 2006*). In addition they estimate that 54 million people have pre-diabetes. Most disturbing of all is that there are 176,500 cases of diabetes in the population that is under 20 years of age, with the overwhelming majority of these cases being Type 2, or non-insulin dependent diabetes mellitus [NIDDM] (ADA, 2006), the occurrence of which among children has increased 10-fold within the past 20 years (Olshansky et al, 2005).

Type 2 diabetes – formerly referred to as adult-onset – is the most prevalent, its occurrence increasing at an unprecedented rate. It can occur at any age and is regarded as a disease of metabolic imbalance brought about by diet and lifestyle choices, specifically too many refined carbohydrates, too few nutritious foods, and not enough exercise. There may, as well, be inherited factors that contribute to it, though this is not as clear as in Type 1, which usually manifests in childhood through early adulthood, and is an auto-immune disorder characterized by the inability of the beta cells of the pancreas to produce insulin (NDIC, 2006). Type 2 diabetes typically

begins with *insulin resistance*, when the body's cells can no longer “hear” insulin's signaling messages and cannot use it efficiently to get glucose into the cells (NDIC, 2006). The pancreas will produce more and more insulin to keep up with the body's energy demands, but it will eventually lose its ability to produce enough in response to meals, and diabetes then sets in (NDIC, 2006).

There is also a sub-set of NIDDM called gestational diabetes that some women develop in the late stages of pregnancy, and though it generally resolves after the baby's birth, these women tend to be more likely to develop Type 2 diabetes later in life (NDIC, 2006). The consequences of Type 2 diabetes include kidney damage, poor circulation, numbness in the feet, dangerous infections and erectile dysfunction. More importantly, though, it often results in cardiovascular disease, which claims the lives of 80 percent of diabetics (Mateljian, 2006).

Want to Reverse Type 2 Diabetes? Commit to Be Well™

Numerous drugs are prescribed to control both Type 1 and Type 2 diabetes, which can be life saving, but often fail to heal underlying metabolic imbalances. The **Bauman Nutrition** approach provided by our dynamic **Commit To Be Well – Six Month Mentored Health Building Program** teaches people with health challenges such as diabetes a 5 -Step, life-changing process to regularly and joyfully:



Reversing Diabetes & Obesity: Eating For Health™ Nutrition Super Stars

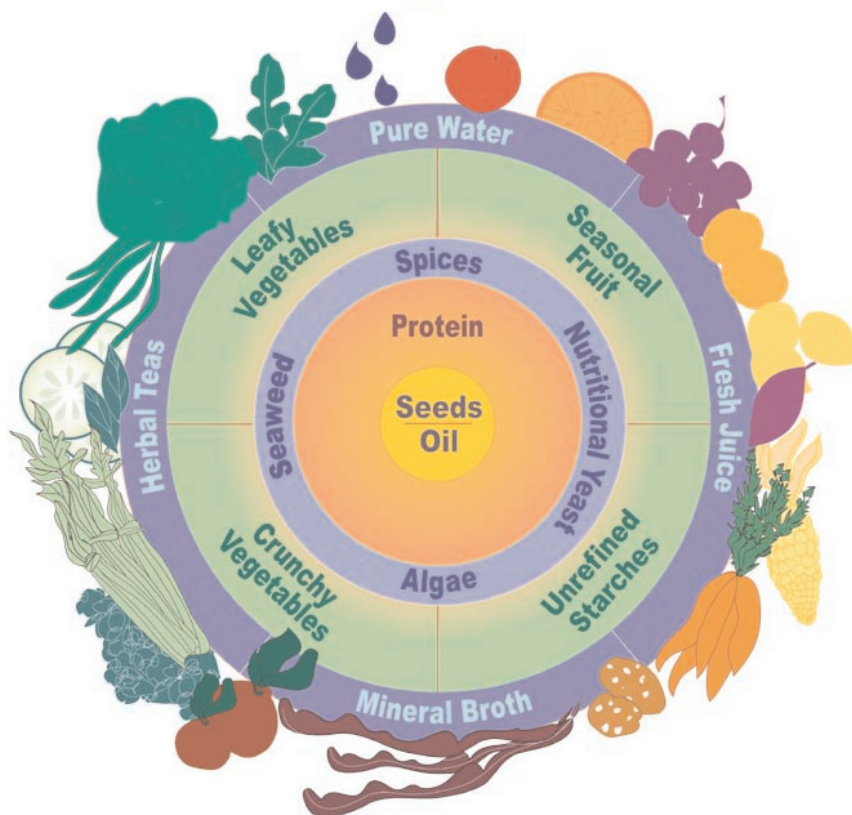
- ▶ Eat for Health™
- ▶ Identify and avoid food and environmental toxins
- ▶ Engage in a cross training exercise program
- ▶ Add key booster foods and supplemental nutrients
- ▶ Practice positive coping when stressed

Eating For Health™ – Not a Diet, but an Optimally Healthy Eating Decision

Eating For Health™ (Bauman, 2006) is a diversified, whole foods nutritional approach that is based upon fresh, local, seasonal, colorful, whole foods, that are as chemical free as possible, prepared with love and care and eating in a spirit of gratitude. Moderation is the meditation when eating for health. By eating the best foods available in a consistent way at regular intervals, blood sugar needs are met, digestive function can be restored as stress and toxins are minimized while peace and nutrients are maximized. This is in stark contrast to eating for convenience which is typical of the meals and milieu of a person with diabetes who is often snacking throughout the day on process, prepared snack foods and restaurant fare that is laced with artificial colors, flavors, preservatives and stabilizers. Food addiction is an underlying problem for many people with blood sugar disorders. They crave foods, such as diet soda's, coffee, refined carbohydrates such as pastries, pasta and poor quality meats and dairy products as a way of dealing with a cellular survival signal for blood sugar. These addictive pseudo-foods provide a temporary lift and predictable fall with aggravating withdrawal symptoms often diagnosed as anxiety, depression, attention and learning disorder. Neuro-degeneration and neuro-toxicity are the consequences of eating for energy and not for health. Not a pretty picture!

The change to eating complex carbohydrates, quality proteins and fats and healthy beverages change the neuro-endocrine response to foods from one of stress and inflammation to stability and regulated cellular nourishment and function. Our experience is that when people with diabetes understand the controllable variables in their condition, such as diet, exercise, attitude and stress management, they rise to the task of reversing a life time of poor eating and lifestyle habits with eating and acting for health. Having a personal nutrition mentor in the **Commit To Be Well™** (www.baumannutrition.com) program provides the balance of education, support and acknowledgement that success is the reward for daily practice. In reversing an unhealthy diet and lifestyle, a person can take great pride in watching their elevated blood sugar, insulin numbers and scale weight fall as their natural vitality rises, marking the reversal of diabetes and obesity.

Eating 4 Health



Feed Your Cells Nutritional Super Stars

A growing body of scientific research has revealed many single nutrients, herbs and foods – nutritional “super-stars”— as part of an *Eating For Health™* diet provide substantial health benefits to slow and reverse diabetes and other inflammatory disorders, such as progressive neurological and cardiovascular disease.

It should come as no surprise that because diabetes can lead to circulatory and cardiovascular complications, a Mediterranean-type diet – which is highly recommended for heart health – also offers the most healthful options for a diabetic's diet. This diet, traditionally followed in Greece, Crete, southern France and parts of Italy, is more of a diet concept than a single diet. It is comprised of the many foods indigenous to the region and can be adapted to reflect the offerings of any area of the world. Its main staples include foods rich in mono- and Omega-3 poly-unsaturated fats; lean proteins; and fruits, vegetables and whole grains that contain fiber and essential vitamins and minerals. In addition, scientific studies have also indicated the usefulness of a number of culinary spices and medicinal herbs that may contribute to metabolic balance (Bruno, 2001; Kane, 1999; Mateljan, 2006; National Library of Medicine [NLM], 2005; Price, 2003). While it is possible to supplement a diet with fatty acids, dietary fibers, and vitamins and minerals, due to the possibility of further damaging the metabolism from nutrient overdoses and imbalances, and because of known and as yet unknown synergistic effects, it is probably better to obtain as many of these nutrients as possible from foods.

Chili Peppers: Australian research published this year in the *American Journal of Clinical Nutrition* has shown that using chili peppers as a flavorful addition to foods, as opposed to the high doses one might find in supplements, allows the body to produce less insulin to transport glucose into cells. This prevents hyperinsulinemia, the condition of excessive blood levels and decreased hepatic clearance of insulin, associated with Type 2 diabetes. (Ahuja et al, 2006). Positive results were obtained in this

study when chilies were fed to subjects after a bland meal, but better results were obtained when the chilies were added to a background diet that regularly included them as a spice, despite the fact that all the test diets (including the control diet) produced equivalent elevations in blood glucose. These beneficial effects on insulin improved as *body mass index* (BMI) increased, so that in very overweight people, the chili-containing meals had a greater effect. They not only lowered the amount of insulin required to decrease postprandial blood sugar levels, they also resulted in a lower C-peptide/insulin quotient, indicating the liver's ability to clear insulin had improved. (C-peptide is an indication of how much insulin is being released). The exact mechanism of action for this result is not completely understood, but the researchers believe that the lower glycemic response after the chili meals may have been due to reduced absorption and slower gastric emptying caused by the spice.

Cinnamon: The world's most-used spice, cinnamon has traditionally been used as a blood sugar lowering agent. Little has been understood about how it works, though many scientists have recognized the ability of some spices, especially cinnamon, to lower glucose levels. Recent research, though, done by the Agricultural Research Services division of the *United States Department of Agriculture* (USDA) has discovered the compound responsible for cinnamon's ability to enhance cells' insulin sensitivity (Anderson et al, 2000). These scientists, working with water extracts (not the oil extracts used as food additives) found that cinnamon's most active compound is a flavonoid called *methylhydroxy chalcone polymer* (MHCP), which was found to increase glucose metabolism 20-fold in in-vitro fat cells. In a blood platelet assay, MHCP prevented the formation of damaging oxygen radicals, and it was also found to reduce blood pressure in test rats before it produced its blood sugar results. This is a truly beneficial spice, and though the research was done with water extracts, using the ground spice would contain not only the active agents but would also provide a little fiber and the synergistic benefits that whole foods confer.



Squash Stew with Chilies, Spices and Ground Nut

Adapted from Deborah Madison's *The Greens Cook Book*

Roasted chilies, ground almonds, and sesame seeds give this stew a rich, earthy flavor. The vegetables used are primarily autumnal, but summer squash can be used instead of the winter squash. Serve over millet or polenta.

1 1/2 teaspoons cumin seeds	Sea Salt
2 teaspoons dried oregano	1/2 cauliflower, broken into florets
3 tablespoons sesame seeds	2 pounds tomatoes, fresh or canned, peeled, seeded, and puréed
1 ounce (about 24) whole almonds	3 cups pre-baked winter squash*, peeled and cut into 3/4" chunks
3 to 4 tablespoons mild chili powder	1 cup corn kernels, fresh or frozen
2 tablespoons extra virgin olive oil	1 cup peas, fresh or frozen
2 yellow onions, cut into 1/2" squares	1 bunch kale or chard, sliced into 1" ribbons
1 pound skinless, boneless chicken breasts, cut into bite-size pieces (or 1 pound cubed tempeh)	2 tablespoons chopped cilantro leaves
4 cloves garlic, finely chopped	2 cups cooked black beans (canned is OK)
6 to 8 ounces mushrooms, wiped clean and halved or quartered	Sour cream or crème fraîche (optional)
3 to 4 cups water, juice from the tomatoes, or vegetable stock	Sprigs of cilantro, for garnish

Toast the cumin seeds in a dry pan over medium-low heat for several minutes until they begin to brown and the aroma is strong. Shake the pan back and forth frequently so they won't burn. Add the oregano, toast for 5 seconds more, and remove to a bowl. Using the same pan, toast the sesame seeds until they are lightly browned and fragrant. Set them aside; then toast the almonds. When they are lightly browned, remove the almonds to a cutting board and roughly chop them. Grind the cumin and oregano to a powder in a spice mill; then grind the almonds and sesame seeds to a fine meal.

Heat the oil in a casserole, add the onions and sauté over medium heat for 5 minutes. Then add the chicken (or tempeh) and sauté until the chicken has just begun to cook through or the onions are soft. Add the garlic, cumin, oregano and 2 tablespoons of the chili powder, and cook another minute. Next add the mushrooms, cauliflower, a sprinkling of salt, and 3 cups water, tomato, juice, or stock. Bring to a boil, then lower the heat, cover, and cook slowly about 20 minutes.

Add the ground almonds and sesame seeds, squash, corn and peas, puréed tomato, and the greens. Check for salt, and season with additional ground chili, to taste. Add the black beans and the chopped cilantro and let stew a few more minutes. Serve with the sour cream or crème fraîche, if desired, and a garnish of cilantro sprigs.

Note: This dish is a bit time-intensive, but served over rice, millet, or polenta, with the addition of a fresh, green salad, this dish will feed two people for at least a couple of dinners and leftovers for lunches. Or freeze the extras for another time.

***To pre-bake the squash, cut it in half, lengthwise, scoop out the seeds, and place cut side down in a baking pan filled with ?" of water. Bake at 350 till tender but still firm, about 40 minutes, depending on size.**



Cold Water Fish: Eating more wild-caught, cold-water fish such as salmon, cod, halibut, and herring provides some of the only food sources for the Omega-3 long-chain fatty acids, *eicosapentaenoic acid* (EPA) and *docosahexaenoic acid* (DHA). Omega-3 fats, including alpha-linolenic acid from plant sources, have long been recognized as having beneficial effects on the cardiovascular system. They may also help prevent diabetes. Previous population studies done on overweight Eskimos who did not have diabetes or heart disease indicated that it was the Omega-3 fats portion of their traditional diet that provided protection from these conditions. In 2002, a small research study provided its overweight, insulin-resistant subjects with a moderate dose (1.8 gm) of DHA for three weeks (in Mercola, 2002). The results showed improvement in insulin sensitivity in 70 percent of its subjects, and in 50 percent the change was statistically significant. In addition, EPA has been shown to stimulate secretion of the hormone leptin, which helps regulate food intake, metabolism, and body weight (Mateljian, 2006). These fish are good sources of protein and also contain many of the nutrients often lacking in diabetics: Vitamin B6, magnesium, zinc and chromium (Mooradian et al, 1987). Other lean sources of protein also offer these other nutrients, and because animals are one of the best sources of chromium — an important factor in blood sugar regulation as part of the *Glucose Tolerance Factor* (GTF) molecule — they are highly recommended. Good sources include not only fish, but also turkey, chicken, and either lean organic, or grass-fed, beef.

Olive Oil and Avocados: Eating avocados and replacing other dietary fats with olive oil may be one of the best, tastiest, and least known ways to manage blood sugar. Much attention is paid to the health benefits of supplemental fish oils, but just-published research has shown that very high doses can elevate blood glucose levels and decrease insulin sensitivity (Mostad et al, 2006). The authors of this study admit that the negative effects were minor and that ingested in quantities found in the diet, no significant effects would be expected. But this study

serves to illuminate how important it can be to supplement moderately, and that one set of nutrients cannot be expected to be a cure-all. Other research has clearly shown that the *monounsaturated fatty acids* (MUFA's), the main fatty acids in olive oil, and in avocados, may be an even more effective means of protecting the heart and preventing diabetes. Garg (1998), in a meta-analysis of studies done on the effects of MUFA's on subjects with diabetes mellitus, found that high-monounsaturated fat diets — up to 30 percent in the diet — consistently reduced fasting plasma triacylglycerol and VLDL-cholesterol concentrations by 19 percent and 22%, respectively. He also found improved glycemic control and modestly elevated HDL concentrations. Garg surmises that high-monounsaturated fat diets improve lipid profiles because they may "reduce the susceptibility of LDL particles to oxidation and thereby reduce their atherogenic potential". On why they improve glycemic control, he's not sure but thinks it may simply be due to lower carbohydrate intake. Another study looked at research done comparing low-fat, high-carbohydrate diets to high-monounsaturated fat diets and found similar positive effects on glycemic control (Ros, 2003). Like Garg, Ros found improved lipid profiles in the MUFA diets and noted that low-fat diets "are associated with atherogenic, dense LDL particles, while normal, buoyant LDL predominate with high-fat diets irrespective of fatty acid composition". In addition to being one of the only food sources of MUFA's, avocados also provide B vitamins, magnesium, copper, and manganese in meaningful quantities.

Walnuts, Almonds and Peanuts: While differing slightly in their specific nutrient profiles, these nuts (though peanuts are technically a legume) provide good sources of monounsaturated fats. Almonds and peanuts also contain Omega-6 fatty acids, one of the essential fats, meaning we need them in our diets because our bodies do not make them. Walnuts are a good a good source of the Omega-3 essential polyunsaturated fat, alpha-linolenic acid. The small amounts of saturated fat these nuts contain help ensure that the alpha-linolenic acid will adequately be converted to the longer-chain fatty



acids, EPA and DHA, in the body (Enig, 2000. p.107). In a study of 84,000 women in the Nurse's Health Study, eating nuts and peanut butter was inversely associated with Type 2 diabetes (Jiang, 2002). It is the researchers' belief that the unsaturated fats in nuts allow the body to utilize insulin more effectively and to regulate blood glucose. All nuts also contain small amounts of protein, loads of necessary fiber, and substantial quantities of many of the trace elements mentioned that are often deficient in diabetics: zinc, magnesium, and copper and manganese (Mooradian et al, 1987).

Legumes and Whole Grains, Buckwheat and Oats:

These are high fiber carbohydrates, loaded with nutrients. Much research has been done over the years on food fibers and most, if not all researchers are in agreement that high-fiber diets (soluble fiber) are necessary to keep cholesterol and blood sugar levels under control (Fung et al, 2002; Hagander et al, 1988; Ou et al, 2001; Trowell, 1978;). Whole grains appear to be particularly helpful, and this may be because of their relatively high levels of magnesium, which is associated with a lowered risk of Type 2 diabetes (Fung et al, 2002). Oats have often been touted for their ability to lower cholesterol levels, and they also help maintain glycemic control, but it looks as though barley, which contains four times the soluble fiber of oats, does a better job (Mateljian, 2006). Buckwheat, the grain often used in pancakes and soba noodles, has also come to the forefront of blood sugar control. A recent Canadian study found that extracts of buckwheat, fed to Type 1 diabetic rats, lowered glucose levels 12 percent to 19 percent (Przybylski, 2003). Previous findings led the study's researchers to believe that the active component in the buckwheat, other than its fiber content, is chiro-inositol. Rarely found in other foods, this substance is believed to either make cells more insulin sensitive or to act as an insulin mimic, though only preliminary research exists at this time (Przybylski, 2003). These two grains, along with brown rice, which is probably a more popular food, all contain significant amounts of the B vitamins, as well as the minerals copper, magnesium and

manganese, and moderate amounts of zinc. Beans and legumes are also good sources of the B vitamins, including B6, are good sources of lean protein and fiber, and provide much-needed magnesium.

Garlic: Both onions and garlic have been recognized as beneficial to health—especially heart health, but it looks like garlic may be the better food to control blood sugar levels. An Iranian study done in 2005 compared the glycemic controlling properties of garlic, onions, and fenugreek, all of these recommended in Persian folklore medicine as beneficial in the treatment of diabetes (Jelodhar et al, 2005). A previous study, in 1996, found that fenugreek seed powder significantly lowered fasting blood glucose, improved glucose tolerance, and decreased insulin levels (Sharma et al, 1996). The spice also reduced urinary sugar excretion, and the researchers deemed it beneficial to diabetics. This more recent study, however, found that only the garlic, in relation to the control group, caused any lowering of blood sugar, and that garlic's benefit was statistically significant (Jelodhar et al, 2005). This refutes the previous findings on fenugreek and also questions claims concerning onion's lowering effect on blood sugar. Garlic's mechanism of action is unknown, but the researchers believe that plants may exert hypoglycemic effects due to:

1. insulin-like substances in plants
2. stimulation of beta cells to produce more insulin,
3. high levels of fiber that slow carbohydrate digestion,
OR
4. the ability of plants to regenerate pancreatic cells.

Bitter melon: A tropical fruit from Asia, East Africa and South America, bitter melon can be found fresh in Asian markets, or can be purchased in extract form from natural foods stores. Several studies have shown that it can significantly lower both blood glucose and cholesterol levels (Price, 2003). Though researchers are not sure how bitter melon affects cholesterol, it is believed the effect on blood sugar is due to an increase in the activ-



ity of hexokinase and glucokinase, enzymes that convert sugar into glycogen, which can be stored in the liver for future energy use (Price, 2003).

Eating For Health™: The rainbow provides the "pot of gold"

This list is by no means exhaustive. In fact, in general a varied whole foods diet, with or without these foods, will provide enormous benefits for regaining and maintaining overall health. In addition, please keep in mind that fruits, and especially vegetables, contain some of the highest levels of vitamins and minerals, as well as large amounts of fiber and other phytonutrients – healthful substances found only in plants – of any foods, and that they should be consumed several times daily. "Eating For Health™ is eating from the rainbow", i.e., eating a wide variety of colorful vegetables, fruits and other foods, will provide the widest spectrum of health-giving nutrients and may help us all find our way to the "pot of gold" – our good health.

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BIOGRAPHIES

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