Diabetes Basics

Glucose, a simple sugar, is the body’s main fuel. It is present in the bloodstream, but in people with diabetes it cannot get into the cells where it is needed. In type 1 diabetes (which was once referred to as childhood-onset diabetes), the problem is an inadequate supply of insulin, the hormone that ushers sugar into the cells of the body. Without insulin, the cell membranes keep sugar out. About 5 to 10 percent of people with diabetes have this type.1

The more common type of diabetes, type 2, usually does not occur until adulthood. In this form, there may be plenty of insulin in the bloodstream, but the cells are resistant to it. Glucose cannot easily get into the cells, and it backs up in the bloodstream. Over the short run, people with uncontrolled diabetes may experience fatigue, thirst, frequent urination, and blurred vision. In the long run, they are at risk for heart disease, kidney problems, disorders of vision, nerve damage, and other difficulties.

Dietary Approaches to Diabetes

Food can be powerful in preventing and reversing diabetes. However, dietary approaches have changed as we have learned more about the disease.

The traditional approach to diabetes focuses on limiting refined sugars and foods that release sugars during digestion—starches, breads, fruits, pasta, etc. With carbohydrates reduced, the diet may contain an unhealthful amount of fat and protein. So diabetes experts have taken care to limit fats—especially saturated fats that can raise cholesterol levels—and to limit protein for people with impaired kidney function.

The new approach focuses more attention on fat. Fat is a problem for people with diabetes. The more fat there is in the diet, the harder time insulin has in getting glucose into the cells.2 Conversely, minimizing fat intake and reducing body fat help insulin do its job much better. Newer treatment programs drastically reduce meats, high-fat dairy products, and oils. At the same time, they increase grains, legumes, fruits, and vegetables. One study found that 21 of 23 patients on oral medications and 13 of 17 patients on insulin were able to get off of their medications after 26 days on a near-vegetarian diet and exercise program.3 During two- and three-year follow-ups, most people with diabetes treated with this regimen have retained their gains.4 The dietary changes are simple, but profound, and they work. Low-fat, vegetarian diets are ideal for people with diabetes.

A 2006 study, conducted by the Physicians Committee for Responsible Medicine with the George Washington University and the University of Toronto, looked at the health benefits of a low-fat, unrefined, vegan diet (excluding all animal products) in people with type 2 diabetes.5 Portions of vegetables, grains, fruits, and legumes were unlimited. The vegan diet group was compared with a
group following a diet based on American Diabetes Association (ADA) guidelines. The results of this 22-week study were astounding:

- Forty-three percent of the vegan group and 26 percent of the ADA group reduced their diabetes medications. Among those whose medications remained constant, the vegan group lowered hemoglobin A1C, an index of long-term blood glucose control, by 1.2 points, three times the change in the ADA group.
- The vegan group lost an average of about 13 pounds, compared with only about 9 pounds in the ADA group.
- Among those participants who didn’t change their lipid-lowering medications, the vegan group also had more substantial decreases in their total and LDL cholesterol levels compared to the ADA group.

This study illustrates that a plant-based diet can dramatically improve the health of people with diabetes. It also showed that people found this way of eating highly acceptable and easy to follow.

Exercise plays an important role in diabetes management. Through regular exercise, the need for insulin injections or oral medications can often be reduced. This holds true not only for people with type 2 diabetes, but also to some extent for those with type 1. Exercising muscles have a voracious appetite for fuel. When an individual is engaged in regular aerobic exercise, glucose is able to enter the cells without the need for as much—or perhaps any—inulin.

While people with type 2 diabetes can often reduce (and sometimes eliminate) medications when their weight is reduced and food and exercise are better controlled, those with type 1 diabetes will always need a source of insulin. The cause of type 1 diabetes remains elusive. Several studies have implicated cow’s milk consumption as a possible contributor. When milk consumption patterns were examined across various nations, there was a strong correlation with the incidence of type 1 diabetes. It may be that milk proteins cause an autoimmune reaction in which the body mistakenly attacks its own insulin-producing cells. Even so, a good diet and regular exercise can minimize the amount of insulin required.

The New Dietary Approach to Diabetes

This new and effective approach to diabetes is remarkably simple. Here are four simple steps to managing your blood sugar (and weight, blood pressure, and cholesterol) with diet.

1. Begin a Vegan Diet: Avoid Animal Products

Animal products contain fat, especially saturated fat, which is linked to heart disease, insulin resistance, and certain forms of cancer. These products also contain cholesterol and, of course, animal protein. It may surprise you to learn that diets high in animal protein can aggravate kidney problems and calcium losses. Animal products never provide fiber or healthful carbohydrates.

A vegan diet is one that contains no animal products at all. So, you’ll want to avoid red meat, poultry, fish, dairy products, and eggs.

2. Avoid Added Vegetable Oils and Other High-Fat Foods

Although most vegetable oils are in some ways healthier than animal fats, you will still want to keep them to a minimum. All fats and oils are highly concentrated in calories. A gram of any fat or oil contains nine calories, compared with only four calories for a gram of carbohydrate.

Avoid foods fried in oil, oily toppings, and olives, avocados, and peanut butter. Aim for no more than 2–3 grams of fat per serving of food.

3. Favor Foods with a Low Glycemic Index

The glycemic index identifies foods that increase blood sugar rapidly. This handy tool allows you to favor foods that have much less effect on blood sugar. High-glycemic-index foods include sugar itself, white potatoes, most wheat flour products, and most cold cereals.

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<td><strong>High-GI (avoid)</strong></td>
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<td>White or wheat bread</td>
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<td>Watermelon, pineapple</td>
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<td>Baking potatoes</td>
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4. Go High Fiber

Aim for 40 grams of fiber a day, but start slowly. Load up on beans, vegetables, and fruits. Choose whole grains (try barley, oats, quinoa, millet, whole-wheat pasta, etc.). Aim for at least 3 grams per serving on food labels and at least 10 grams per meal.

To put these guidelines to work, focus on the New Four Food Groups. Choose unlimited amounts of grains, legumes, fruits, and vegetables. Modest amounts of nonfat condiments, alcohol, and coffee are also fine.

**Grains:** pasta, rice, high-fiber cereals, corn, oatmeal, couscous, bulgur wheat, millet, barley, rye, etc.

**Legumes:** beans (black, pinto, kidney, garbanzo, white, etc.), peas, split peas, lentils, nonfat soy products
**Fruits:** all, except avocados, olives, pineapple, and watermelon. Bananas, apples, grapes, pears, peaches, oranges, melons, grapefruit, kiwi, and berries, among others, are all good choices.

**Vegetables:** all, except white potatoes. Examples include tomatoes, cucumbers, carrots, broccoli, cauliflower, spinach, kale, collards, squash, green beans, bok choy, sweet potatoes, and artichokes.

**A note on vitamin B12:** Those following a diet free of animal products should take a B12 supplement of 5 micrograms per day. Any common multiple vitamin will provide this amount.

**Further Reading**
- *Dr. Neal Barnard’s Program for Reversing Diabetes: The Scientifically Proven System for Reversing Diabetes Without Drugs* by Neal D. Barnard, M.D.
- [www.pcrm.org/diabetes](http://www.pcrm.org/diabetes)
- *Breaking the Food Seduction: The Hidden Reasons Behind Food Cravings—and Seven Steps to End Them Naturally*, by Neal Barnard, M.D.
- *The McDougall Quick & Easy Cookbook: Over 300 Delicious Low-Fat Recipes You Can Prepare in Fifteen Minutes or Less*, by John A. McDougall, M.D. and Mary McDougall

### Pasta with Lentil Marinara Sauce

1 pound pasta of choice  
1 jar (26 ounces) fat-free low-sodium tomato-based pasta sauce  
1 can (15 ounces) lentils, rinsed and drained  
1/2 cup dry red wine (can be nonalcoholic) or low-sodium vegetarian broth  
Salt to taste  
Freshly ground black pepper  

Cook the pasta according to package directions. Meanwhile, combine the pasta sauce, lentils, and wine or broth in a medium saucepan. Heat gently and season with the salt and pepper. Serve over the drained pasta.

Makes 5 servings

Per serving: 470 calories, 19 g protein, 91 g carbohydrates, 9 g sugar, 2 g total fat, 3% calories from fat, 0 mg cholesterol, 173 mg sodium.

### Berry Mousse

This is so easy that it’s hardly a recipe! Your blender does most of the work. This can be eaten as a pudding or used as a topping for fruit.

1 package (12.3 ounces) reduced-fat extra-firm silken tofu, crumbled  
2 3/4 cups thawed frozen unsweetened berries of choice  
1 tablespoon berry liqueur (optional)  

Blend the tofu, berries, sugar or agave nectar, and liqueur, if using, in a blender or food processor until smooth. Spoon into 4 pudding dishes and refrigerate until chilled.

Makes 4 servings

Per serving: 123 calories, 7 g protein, 24 g carbohydrates, 17 g sugar, 1 g total fat, 5% calories from fat, 0 mg cholesterol, 4 g fiber, 376 mg sodium

Recipes from *Dr. Neal Barnard’s Program for Reversing Diabetes: The Scientifically Proven System for Reversing Diabetes Without Drugs* by Neal D. Barnard, M.D. Recipes by Bryanna Clark Grogan.
This fact sheet is not intended as a comprehensive program for diabetes. Be aware that a change in diet can produce big results. For some, there is a risk that low blood sugar can occur if diabetes medications are not lowered or eliminated. If you have diabetes, consult your health care provider and tailor a program for your needs.

References


