

Diet and Diabetes: Recipes for Success

PHYSICIANS COMMITTEE FOR RESPONSIBLE MEDICINE

5100 WISCONSIN AVE., N.W., SUITE 400 • WASHINGTON, DC 20016
PHONE (202) 686-2210 • FAX (202) 686-2216 • PCRM@PCRM.ORG • WWW.PCRM.ORG

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

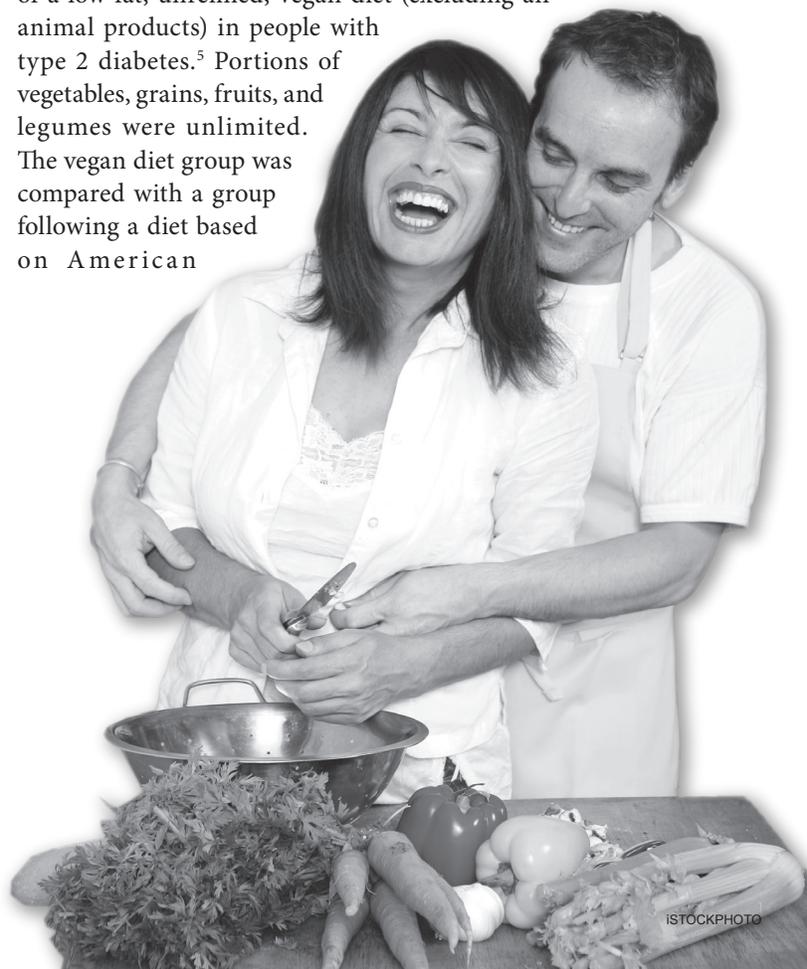
Food can be powerful in preventing and reversing diabetes. However, dietary approaches have changed as we have learned more about the disease.

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.^{6,7} 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—insulin.

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.^{8,9} 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.

| Quick Glycemic Guide | |
|-----------------------|---|
| High-GI (avoid) | Low-GI (enjoy) |
| White or wheat bread | Pumpernickel, rye, multigrain, or sourdough bread |
| Most cold cereals | Old-fashioned oatmeal, bran cereals, Grape-Nuts |
| Watermelon, pineapple | Most fruits |
| Baking potatoes | Sweet potatoes |
| Sugar | Pasta |
| | Rice, barley, couscous |
| | Beans, peas, lentils |
| | Most vegetables |

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
- *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, 8 g fiber, 173 mg sodium.

Cherry Tomato and Brown Rice Salad with Artichoke Hearts

This delicious salad is a complete meal and is a great picnic or potluck dish. Because neither tomatoes nor rice benefit from refrigeration, it should be served at room temperature.

- 3 cups warm brown basmati rice
- 6 ounces marinated artichoke hearts, rinsed in hot water, drained, and sliced

1 cup chopped scallions

1 1/2 pounds red, yellow, or mixed cherry tomatoes, halved

1/2 cup chopped fresh basil

1/2 cup fat-free Italian dressing

3 tablespoons lemon juice

2 cloves garlic, crushed

1/4 teaspoon salt

Freshly ground black pepper to taste

1 head crisp lettuce

Place the rice in a large salad bowl and add the artichoke hearts, scallions, tomatoes, and basil. Mix gently.

Combine the Italian dressing, lemon juice, garlic, salt, and pepper in a small bowl or jar. Whisk or shake until well blended. Pour over the salad and mix gently. Serve on beds of lettuce on individual plates.

Makes 6 servings

Per serving: 153 calories, 4 g protein, 32 g carbohydrates, 3 g sugar, 1 g total fat, 6% calories from fat, 0 mg cholesterol, 4 g fiber, 376 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

3 tablespoons sugar or 2 tablespoons agave nectar

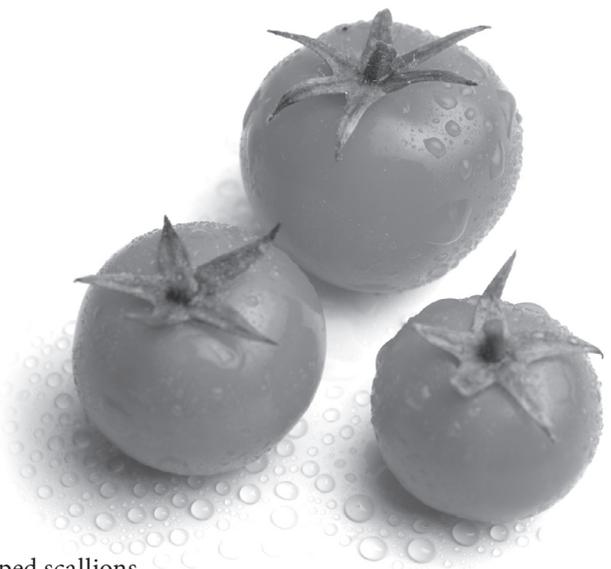
1 tablespoon berry liqueur (optional)

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, 3 g fiber, 89 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.



Meal Suggestions

Breakfast

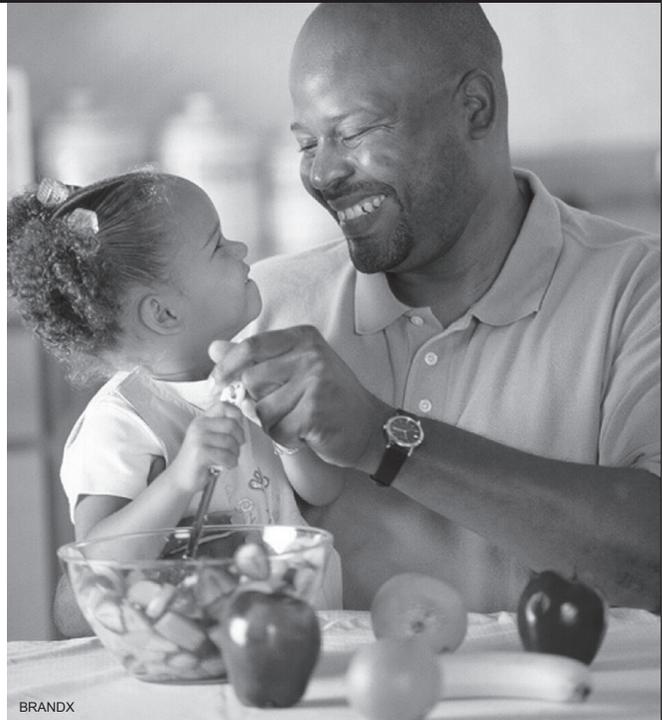
- Hot cereals: oatmeal with cinnamon, raisins, and/or applesauce
- All-Bran or muesli with nonfat soy or rice milk and/or berries, peach, or banana
- Apples, strawberries, bananas, oranges, or other fruit
- Pumpkin or rye toast topped with jam (no butter or margarine)
- Oven-roasted sweet potato home fries solo or smothered with sautéed mushrooms, peppers, and onions
- Tofu scrambler

Lunch

- Garden salad with lemon juice, fat-free dressing, or soy or teriyaki sauce
- Legume-based salads: three-bean, chickpea, lentil, or black bean and corn salads
- Grain-based salads: noodle, couscous, bulgur, or rice salads
- Soups: carrot-ginger, mixed vegetable, black bean, vegetarian chili, spinach lentil, minestrone, split pea, etc.
- Hummus spread into whole wheat pita with grated carrots, sprouts, and cucumbers
- Black bean and sweet potato burrito with corn and tomatoes
- Sandwich made with fat-free meat alternatives such as barbecue seitan, Lightlife Smart Deli turkey style, or Yves veggie pepperoni slices and your favorite sandwich veggies

Dinner

- Pasta marinara: can be made with many commercial sauces (any brand that has less than 2 grams fat per serving and is free of animal products)
- Beans and rice: black beans with salsa, vegetarian baked beans, or fat-free refried beans.
- Soft tacos: a flour tortilla filled with beans, lettuce, tomato, and salsa



- Fajitas: lightly sautéed sliced bell peppers, onion, and eggplant with fajita seasonings
- Chili: homemade, or vegetarian boxed or canned versions
- Veggie lasagna: low-fat tofu replaces the ricotta cheese, layered with grilled veggies
- Vegetable stir-fry: vegetables seasoned with soy sauce or other low-fat stir-fry sauce and served over pasta, beans, or rice

Snacks

- Fruit
- Carrot, celery, or other vegetables with low-fat hummus
- Baked tortilla chips with salsa or bean dip
- Air-popped popcorn
- Toast with jam

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

1. Centers for Disease Control and Prevention. *National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2005*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2005.
2. Peterson KF, Dufour S, Befroy D, Garcia R, Shulman GI. Impaired mitochondrial activity in the insulin-resistant offspring of patients with type 2 diabetes. *N Engl J Med*. 2004;350:554-671.

3. Barnard RJ, Lattimore L, Holly RG, Cherny S, Pritikin N. Response of non-insulin-dependent diabetic patients to an intensive program of diet and exercise. *Diabetes Care*. 1982;5(4):370-4.
4. Barnard RJ, Massey MR, Cherny S, O'Brien LT, Pritikin N. Long-term use of a high-complex-carbohydrate, high-fiber, low-fat diet and exercise in the treatment of NIDDM patients. *Diabetes Care*. 1983;6(3):268-73.
5. Barnard ND, Cohen J, Jenkins DJ, et al. A low-fat, vegan diet improves glycemic control and cardiovascular risk factors in a randomized clinical trial in individuals with type 2 diabetes. *Diabetes Care*. 2006;29(8):1777-83.
6. De Feo P, Di Loreto C, Ranchelli A, et al. Exercise and diabetes. *Acta Biomed Ateneo Parmense*. 2006;77 Suppl 1:14-7.
7. Thomas DE, Elliott EJ, Naughton GA. Exercise for type 2 diabetes mellitus. *Cochrane Database Syst Rev*. 2006;3:CD002968.
8. Scott FW. Cow milk and insulin-dependent diabetes mellitus: is there a relationship? *Am J Clin Nutr*. 1990;51:489-91.
9. Karjalainen J, Martin JM, Knip M, et al. A bovine albumin peptide as a possible trigger of insulin-dependent diabetes mellitus. *N Engl J Med*. 1992;327:302-7.