



## **Diabetes Superfoods**

Ever see the top 10 lists for foods everyone should eat to superpower your diet? Ever wonder which will mesh with your diabetes meal plan? Wonder no more. Your list of the top 10 diabetes superfoods has arrived.

As with all foods, you need to work the diabetes superfoods into your individualized meal plan in appropriate portions.

All of the foods in our list have a low glycemic index or GI and provide key nutrients that are lacking in the typical western diet such as:

- calcium
- potassium
- fiber
- magnesium
- vitamins A (as carotenoids), C, and E.

There isn't research that clearly points to supplementation, so always think first about getting your nutrients from foods. Below is your list of superfoods to include in your diet.

### **Beans**

Whether you prefer kidney, pinto, navy or black beans, you can't find better nutrition than that provided by beans. They are very high in fiber giving you about 1/3 of your daily requirement in just a ½ cup and are also good sources of magnesium, and potassium.

They are considered starchy vegetables but a ½ cup provides as much protein as an ounce of meat without the saturated fat. To save time you can use canned beans, but be sure to drain and rinse them to get rid of as much sodium as possible.

### **Dark Green Leafy Vegetables**

Spinach, collards, kale – these powerhouse foods are so low in calories and carbohydrates, you can't eat too much.

### **Citrus Fruit**

Grapefruit, oranges, lemons and limes. Pick your favorites and get part of your daily dose of soluble fiber and vitamin C.



## **Sweet Potatoes**

A starchy vegetable packed full of vitamin A and fiber. Try in place of regular potatoes for a lower GI alternative.

## **Berries**

Which are your favorites: blueberries, strawberries or another variety? Regardless, they are all packed with antioxidants, vitamins and fiber. Make a parfait alternating the fruit with light, non-fat yogurt for a new favorite dessert.

## **Tomatoes**

An old standby where everyone can find a favorite. The good news is that no matter how you like your tomatoes, pureed, raw, or in a sauce, you're eating vital nutrients like vitamin C, iron, vitamin E.

## **Fish High in Omega-3 Fatty Acids**

Salmon is a favorite in this category. Stay away from the breaded and deep fat fried variety... they don't count in your goal of 6-9 ounces of fish per week.

## **Whole Grains**

It's the germ and bran of the whole grain you're after. It contains all the nutrients a grain product has to offer. When you purchase processed grains like bread made from enriched wheat flour, you don't get these. A few more of the nutrients these foods offer are magnesium, chromium, omega 3 fatty acids and folate.

Pearled barley and oatmeal are a source of fiber and potassium.

## **Nuts**

An ounce of nuts can go a long way in providing key healthy fats along with hunger management. Other benefits are a dose of magnesium and fiber.

Some nuts and seeds, such as walnuts and flax seeds, also contain omega-3 fatty acids.

## **Fat-free Milk and Yogurt**

Everyone knows dairy can help build strong bones and teeth. In addition to calcium, many fortified dairy products are a good source of vitamin D. More research is emerging on the connection between vitamin D and good health.

Some of the above list can be tough on the budget depending on the season and where you live. Look for lower cost options such as fruit and vegetables in season or frozen or canned fish.

Foods that every budget can live with year round are beans and rolled oats or barley that you



cook from scratch.

Of course, you probably don't want to limit yourself to just these items for every meal. [The American Diabetes Association's book \*What Do I Eat Now?\*](#) provides a step-by-step guide to eating right.



## **Diet recommendations for Diabetes type 2**

1. Eat lots of vegetables and fruits. Preferably, those which contain less sugar.
2. Eat non-starchy vegetables such as spinach, carrots, broccoli or green beans with meals.
3. Choose whole grain foods over processed grain products. Try brown rice with your stir fry or whole wheat spaghetti with your favorite pasta sauce.
4. Include dried beans (like kidney or pinto beans) and lentils into your meals.
5. Include fish in your meals 2-3 times a week. Poultry is also a lean meat that should be present in your diet. Remember "anything that can swim or fly".
6. Choose lean meats like cuts of beef and pork that end in "loin" such as pork loin and sirloin. Remove the skin from chicken and turkey.
7. Choose non-fat dairy such as skim milk, non-fat yogurt and non-fat cheese. Choose water and calorie-free "diet" drinks instead of regular soda, fruit punch, sweet tea and other sugar-sweetened drinks.
8. Choose liquid oils for cooking instead of solid fats that can be high in saturated and *trans* fats. Remember that fats are high in calories. If you're trying to lose weight, watch your portion sizes of added fats.
9. Cut back on high calorie snack foods and desserts like chips, cookies, cakes, and full-fat ice cream. Eating too much of even healthful foods can lead to weight gain. Watch your portion sizes.



How much exercise do the experts say I need?

The Dietary Guidelines for Americans suggest how much activity Americans should do. Keep in mind they are goals, not the place to start.

- People with pre-diabetes, diabetes, or the general adult public should aim for a minimum of 30 minutes most days. Walking, gardening, doing yard work, swimming, or cleaning house will all work to meet this goal. Anything that increases your heart rate and causes you to break a light sweat. Gradual increase of intensity is also recommended.
- Exercise intensity and time should be tailored to your baseline exercise capacity.
- Children and teens should aim for at least 60 minutes most days.

In addition, the Diabetes Prevention Program—a large study done in people with pre-diabetes—showed that 150 minutes of physical activity a week (30 minutes, five times a week) helped prevent or delay type 2 diabetes. In this study, people also lost 10 to 20 pounds by making changes in their eating habits.

Do these guidelines seem hard to fit in to your busy life? It's not easy to find the time. You won't go from zero to thirty or sixty (minutes), in a day or week. Take one step at a time. Slowly build up to your goal.

## **Loosen up with gentle, simple S-T-R-E-T-C-H-E-S!**

Before you start exercising, it is very important to stretch your muscles effectively. Proper stretching will increase your flexibility and minimize your chances of pulling a muscle.

By following this simple routine, you can become loose and limber in a few minutes. Perform all stretches slowly with controlled movements for 10-20 seconds taking slow deep breaths. Do not bounce or stretch to the point of pain.

### **Standing Hip Stretch**

Start from a standing position. Take a full step forward with your left foot. Gently bend left knee to lower hips, keeping right heel on ground and right knee straight. Switch and repeat.

### **Standing Quad Stretch**

While standing, bend your left leg and reach back to grasp you left ankle. Pull you foot toward your buttocks while placing other hand on a bench or chair for support. Switch and repeat.

### **Standing Wall Pushes**

Stand arms length from a sturdy pole or wall. Place your hands on the wall at shoulder height, bend the elbows, lean in from the ankles, and press your body upright until you feel a slight strain in your legs.



### **Standing Calf Stretch**

While standing, extend one leg in front of you and place the heel on the floor, toes in the air. Keeping the back straight, bend forward at the hips until you feel the stretch of the calves. Switch and repeat.

Repeat this entire sequence when you finish exercising to prevent undue stiffness and soreness later.

### **Types of Exercise**

A comprehensive physical activity routine includes three kinds of activities:

- Aerobic Exercise
- Strength Training
- Flexibility Exercises

You should also look for additional ways to be active throughout the day. See our tips below for ideas to be more active throughout the day.

### **Aerobic Exercise**

Aerobic exercise increases your heart rate, works your muscles, and raises your breathing rate. For most people, it's best to aim for a total of about 30 minutes a day, at least 5 days a week. If you haven't been very active recently, you can start out with 5 or 10 minutes a day. Increase your activity sessions by a few minutes each week.

If your schedule doesn't allow for 30 minutes straight of exercise throughout the day, you can break it up into no less than 10-minute spurts to get the same health benefits. For example, you might take a brisk 10-minute walk after each meal.

If you're trying to lose weight, you may want to exercise more than 30 minutes a day.

Here are some examples of aerobic exercise:

- Take a brisk walk (outside or inside on a treadmill)
- Go dancing
- Take a low-impact aerobics class
- Swim or do water aerobic exercises
- Try ice-skating or roller-skating
- Play tennis



- Ride your bicycle outside
- Stationary bicycle indoors

### **Strength Training**

Strength training, done 2-3 times a week, helps build strong bones and muscles. It makes everyday chores like carrying groceries easier for you. With more muscle, you burn more calories, even at rest. Strength training can also help to prevent weight gain. Here are some ways to do it:

- Join a class to do strength training with weights, elastic bands, or plastic tubes
- Lift light weights at home
- Try calisthenics

### **Flexibility Exercises**

Flexibility exercises, also called stretching, help keep your joints flexible and reduce your chance of injury during other activities. Gentle stretching for 5 to 10 minutes helps your body warm up and get ready for aerobic activities such as walking or swimming. Your health care team can provide information on how to stretch. Improve your flexibility by:

- Taking an aerobics or fitness classes that includes stretching
- Doing yoga or Pilates
- Stretching on your own before and after exercising

### **Being Active Throughout The Day**

In addition to formal exercise, there are many opportunities to be active throughout the day. Any activity will burn calories. The more you move around, the more energy you'll have. Some ways that you can be more active throughout the day include:

- Walk instead of drive whenever possible
- Take the stairs instead of the elevator
- Work in the garden, rake leaves, or do some housecleaning every day
- Park at the far end of the shopping center lot and walk to the store
- Walk down every aisle of the grocery store
- Walk in place or stretch while you watch TV
- Walk around the house or up and down stairs while you talk on the phone



- Get up from your desk and take a lap around the office once each hour while you are at work

## **Intensity matters**

There are 1,440 minutes in every day. Set aside 30 of them to exercise!

Start small, but eventually, you should do at least 30 minutes of moderate physical activity 5 days per week. The number of calories you burn in that amount of time depends on the intensity of the activity you do.

- Higher intensity activities require less time spent to burn calories
- Lower intensity activities require more time spent to burn the same amount of calories

## **Light-Intensity**

One minute burns 3.5 calories. 30 minutes burns 105 calories.

- Walking slowly
- Golf, powered cart
- Slow treading in the swimming pool
- Light gardening or pruning
- Bicycling, very light effort
- Dusting or vaccuming
- Gentle stretching

## **Moderate-Intensity**

One minute burns 3.5 to 7 calories. 30 minutes burns 105 to 210 calories.

- Walking briskly
- Golf, pulling or carrying clubs
- Swimming, recreational
- Mowing lawn, power motor
- Tennis, doubles
- Bicycling (or using a stationay bike) 5 to 9 mph, level terrain, or with a few hills



- Scrubbing floors or washing windows
- Weight lifting, machines or free weights

### **High-Intensity**

One minute burns more than 7 calories. 30 minutes burns more than 210 calories.

- Race walking, jogging or running
- Swimming laps
- Mowing lawn, handmower
- Tennis, singles
- Bicycling more than 10 mph, or on steep uphill terrain
- Moving or pushing furniture
- Circuit training

[http://forecast.diabetes.org/magazine/features/2012-blood-glucose-meters/?loc=rightrail1\\_forecast-consumer-guide-meters\\_jan2012](http://forecast.diabetes.org/magazine/features/2012-blood-glucose-meters/?loc=rightrail1_forecast-consumer-guide-meters_jan2012)



## What is Hemoglobin A1C (HA1c)

- The A1C test measures your average blood glucose control for the past 2 to 3 months.
- It is determined by measuring the percentage of glycated hemoglobin, or HbA1c, in the blood.
- Check your A1C twice year at a minimum, or more frequently when necessary.
- It does not replace daily self-testing of blood glucose.

Checking your blood glucose at home with a meter tells you what your blood sugar level is at any one time, but suppose you want to know how you're doing overall. The A1C test gives you a picture of your average blood glucose control for the past 2 to 3 months. The results give you a good idea of how well your diabetes treatment plan is working.

## How does it help diabetes control?

These are some ways the A1C test can help you manage your diabetes:

- Confirm self-testing results or blood test results by the doctor.
- Judge whether a treatment plan is working.
- Show you how healthy choices can make a difference in diabetes control.

Here are two real-life scenarios of how the information from your A1C test can help:

### Type 2 Scenario

Bob D., age 49, has type 2 diabetes. For the past seven years, he and his doctor have worked to control his blood sugar levels with diet and diabetes pills. Recently, Bob's control has been getting worse, so his doctor said that Bob might have to start insulin shots. But first, they agreed that Bob would try an exercise program to improve control.

After 3 months of sticking to his exercise plan, Bob returned to the doctor to check his blood sugar. It was near the normal range, but the doctor knew a single blood test only showed Bob's control at that time. It didn't say much about Bob's overall blood sugar control.

The doctor sent a sample of Bob's blood to the lab for an A1C test to learn how well Bob's blood sugar had been controlled, on average, for the past few months. The A1C test showed that Bob's control had improved. With the A1C results, Bob and his doctor had proof that the exercise program was working. The test results also helped Bob know that he could make a difference in his blood sugar control.



## **Type 1 Scenario**

Nine-year-old Lisa J. and her parents were proud that she could do her own insulin shots and urine tests. Her doctor advised her to begin a routine of two shots a day and regular blood glucose checks.

Lisa kept records of all her test results. Most were close to the ideal range. But at her next checkup, the doctor checked her blood and found her blood sugar level was high. The doctor sent a sample of Lisa's blood for an A1C test. The results showed that Lisa's blood glucose control had in fact been poor for the last few months.

Lisa's doctor asked Lisa to do a blood sugar check. To the doctor's surprise, Lisa turned on the timer of her meter before pricking her finger and putting the blood drop on the test strip. The doctor explained to Lisa and her parents that the way Lisa was testing was probably causing the blood sugar test errors.

With time, and more accurate blood sugar results, Lisa and her parents got better at using her results to keep food, insulin, and exercise in balance. At later checkups, her blood sugar records and the A1C test results showed good news about her control.

## **How does it work?**

Hemoglobin, a protein that links up with sugars such as glucose, is found inside red blood cells. Its job is to carry oxygen from the lungs to all the cells of the body. When diabetes is uncontrolled, you end up with too much glucose in the bloodstream. This extra glucose enters your red blood cells and links up (or glyicates) with molecules of hemoglobin. The more excess glucose in your blood, the more hemoglobin gets glyicated. By measuring the percentage of A1C in the blood, you get an overview of your average blood glucose control for the past few months.

## **How does the A1C test look backward?**

Suppose your blood sugar was high last week. What happened? More glucose hooked up (glycated) with your hemoglobin. This week, your blood glucose is back under control. Still, your red blood cells carry the "memory" of last week's high blood glucose in the form of more A1C.

This record changes as old red blood cells in your body die and new red blood cells (with fresh hemoglobin) replace them. The amount of A1C in your blood reflects blood sugar control for the past 120 days, or the lifespan of a red blood cell.

In a person who does not have diabetes, about 5% of all hemoglobin is glyicated. For someone with diabetes and high blood glucose levels, the A1C level is higher than normal. How high the A1C level rises depends on what the average blood glucose level was during the past weeks and months. Levels can range from normal to as high as 25% if diabetes is badly out of control for a long time.

You should have had your A1C level measured when your diabetes was diagnosed or when



treatment for diabetes was started. To watch your overall glucose control, your doctor should measure your A1C level at least twice a year -- minimum. There are times when you need to have your A1C level tested about every 3 months. If you change diabetes treatment, such as start a new medicine, or if you are not meeting your blood glucose goals, you and your doctor will want to keep a closer eye on your control.

### **What are the limitations?**

Although the A1C test is an important tool, it can't replace daily self-testing of blood glucose for those who need it. A1C tests don't measure your day-to-day control. You can't adjust your insulin on the basis of your A1C tests. That's why your blood sugar checks and your log of results are so important to staying in effective control.



### **How should I use my Glucometer?**

1. Make sure fingertip is cleaned with an alcohol pad.
2. Test strip should be placed on the glucometer slot as directed by manufacturer.
3. Use lancet to puncture fingertip and obtain a large drop of blood.
4. With your fingertip facing down, place drop on the glucometer test strip as indicated by manufacturer.
5. Await for computer reading and keep log of results in a chronological fashion.

It is of great value for your physician when your results are logged in an orderly and chronological fashion, as this will help him determine the times of the day your blood sugars are out of range, if that's the case. Further medication adjustment is made accurately but looking at the trends reflected by your log.

### **When should I check it?**

It is best when checked before meals - three times a day and bedtime. This is particularly useful if you are a newly diagnosed Diabetic or your sugars are consistently out of range. Further changes or fewer checks may be recommended by your physician depending on your progress.



## What you need to know about insulin.-

Although it is a common practice to try pills before insulin, you may start on insulin based on several factors, including the following:

- How long you have had diabetes
- How high your blood glucose level is
- What other medicines you take
- Your overall health

Because diabetes pills seem to help the body use insulin better, some people take them along with insulin shots. The idea behind this "combination" therapy is to try to help insulin work better.

- There are different types of insulin depending on how quickly they work, when they peak, and how long they last.
- Insulin is available in different strengths; the most common is U-100.
- All insulin available in the United States is manufactured in a laboratory, but animal insulin can still be imported for personal use.

Inside the pancreas, beta cells make the hormone insulin. With each meal, beta cells release insulin to help the body use or store the blood glucose it gets from food. In people with type 1 diabetes, the pancreas no longer makes insulin. The beta cells have been destroyed and they need insulin shots to use glucose from meals. People with type 2 diabetes make insulin, but their bodies don't respond well to it. Some people with type 2 diabetes need diabetes pills or insulin shots to help their bodies use glucose for energy. Insulin cannot be taken as a pill because it would be broken down during digestion just like the protein in food. It must be injected into the fat under your skin for it to get into your blood.

## Types of Insulin

- **Rapid-acting insulin**, such as insulin lispro (Eli Lilly), insulin aspart (Novo Nordisk), or insulin glulisine (sanofi-aventis), begins to work about 5 minutes after injection, peaks in about 1 hour, and continues to work for 2 to 4 hours.
- **Regular or Short-acting insulin** (human) usually reaches the bloodstream within 30 minutes after injection, peaks anywhere from 2 to 3 hours after injection, and is effective for approximately 3 to 6 hours.
- **Intermediate-acting insulin** (human) generally reaches the bloodstream about 2 to 4 hours after injection, peaks 4 to 12 hours later, and is effective for about 12 to 18 hours.



- **Long-acting insulin** (ultralente) reaches the bloodstream 6 to 10 hours after injection and is usually effective for 20 to 24 hours. There are also two long-acting insulin analogues: glargine and detemir. They both tend to lower glucose levels fairly evenly over a 24-hour period with less of a peak of action than ultralente.

Premixed insulin can be helpful for people who have trouble drawing up insulin out of two bottles and reading the correct directions and dosages. It is also useful for those who have poor eyesight or dexterity and is convenient for people whose diabetes has been stabilized on this combination.

## Insulin Therapy

With the help of your health care team, you can find an insulin routine that will keep your blood glucose near normal, help you feel good, and fit your lifestyle.

### Type 1

People diagnosed with type 1 diabetes usually start with two injections of insulin per day of two different types of insulin and generally progress to three or four injections per day of insulin of different types. The types of insulin used depend on their blood glucose levels. Studies have shown that three or four injections of insulin a day give the best blood glucose control and can prevent or delay the eye, kidney, and nerve damage caused by diabetes.

### Type 2

Most people with type 2 diabetes may need one injection per day without any diabetes pills. Some may need a single injection of insulin in the evening (at supper or bedtime) along with diabetes pills. Sometimes diabetes pills stop working, and people with type 2 diabetes will start with two injections per day of two different types of insulin. They may progress to three or four injections of insulin per day.

## Fine-Tuning Your Blood Glucose

Many factors affect your blood glucose levels, including the following:

- What you eat
- How much and when you exercise
- Where you inject your insulin
- When you take your insulin injections
- Illness



- Stress

## **Self Monitoring**

Checking your blood glucose and looking over results can help you understand how exercise, an exciting event, or different foods affect your blood glucose level. You can use it to predict and avoid low or high blood glucose levels. You can also use this information to make decisions about your insulin dose, food, and activity.

For more information, see our [Blood Glucose Control](#) section.

## **Insulin Delivery**

Many people who take insulin use a syringe, but there are other options as well.

### **Insulin Pens**

Some insulin pens contain a cartridge of insulin that is inserted into the pen and some are pre-filled with insulin and discarded after all the insulin has been used. The insulin dose is dialed on the pen, and the insulin is injected through a needle, much like using a syringe. Cartridges and pre-filled insulin pens only contain one type of insulin. Two injections must be given with an insulin pen if using two types of insulin.

### **Pump Therapy**

Insulin pumps help you manage diabetes by delivering insulin 24 hours a day through a catheter placed under the skin. Read more about [insulin pumps](#).

## **Site Rotation**

The place on your body where you inject insulin affects your blood glucose level. Insulin enters the blood at different speeds when injected at different sites. Insulin shots work fastest when given in the abdomen. Insulin arrives in the blood a little more slowly from the upper arms and even more slowly from the thighs and buttocks. Injecting insulin in the same general area (for example, your abdomen) will give you the best results from your insulin. This is because the insulin will reach the blood with about the same speed with each insulin shot.

Don't inject the insulin in exactly the same place each time, but move around the same area. Each mealtime injection of insulin should be given in the same general area for best results. For example, giving your before-breakfast insulin injection in the abdomen and your before-supper insulin injection in the leg each day give more similar blood glucose results. If you inject insulin near the same place each time, hard lumps or extra fatty deposits may develop. Both of these problems are unsightly and make the insulin action less reliable. Ask your health care provider if you aren't sure where to inject your insulin.

## **Timing**

Insulin shots are most effective when you take them so that insulin goes to work when glucose from your food starts to enter your blood. For example, regular insulin works best if you take it



30 minutes before you eat.

### **Too much insulin or not enough?**

High morning blood glucose levels before breakfast can be a puzzle. If you haven't eaten, why did your blood glucose level go up? There are two common reasons for high before-breakfast blood glucose levels. One relates to hormones that are released in the early part of sleep (called the [Dawn Phenomenon](#)). The other is from taking too little insulin in the evening. To see which one is the cause, set your alarm to self-monitor around 2 or 3 a.m. for several nights and discuss the results with your health care provider.



## **Insulin storage and syringe safety**

- Store your current bottle of insulin at room temperature to avoid painful injections, but keep extra supplies in the refrigerator.
- Syringes can be reused safely, but it must be done carefully to avoid contamination.
- Dispose of syringes in containers that prevent the needles from causing harm and check medical waste requirements for your area.

## **Insulin Storage**

Although manufacturers recommend storing your insulin in the refrigerator, injecting cold insulin can sometimes make the injection more painful. To avoid this, many providers suggest storing the bottle of insulin you are using at room temperature. Insulin kept at room temperature will last approximately 1 month. Remember though, if you buy more than one bottle at a time to save money, store the extra bottles in the refrigerator. Then, take out the bottle ahead of time so it is ready for your next injection.

Here are some other tips for storing insulin:

- Do not store your insulin near extreme heat or extreme cold.
- Never store insulin in the freezer, direct sunlight, or in the glove compartment of a car.
- Check the expiration date before using, and don't use any insulin beyond its expiration date.
- Examine the bottle closely to make sure the insulin looks normal before you draw the insulin into the syringe.

If you use regular, check for particles or discoloration of the insulin. If you use NPH or lente, check for "frosting" or crystals in the insulin on the inside of the bottle or for small particles or clumps in the insulin. If you find any of these in your insulin, do not use it, and return the unopened bottle to the pharmacy for an exchange and/or refund.

## **Syringe Reuse**

Reusing syringes may help you cut costs, avoid buying large supplies of syringes, and reduce waste. However, talk with your doctor or nurse before you begin reusing. They can help you decide whether it would be a safe choice for you. If you are ill, have open wounds on your hands, or have poor resistance to infection, you should not risk insulin syringe reuse. Syringe makers will not guarantee the sterility of syringes that are reused.

Here are some tips to keep in mind when reusing syringes:



- Keep the needle clean by keeping it capped when you're not using it.
- Never let the needle touch anything but clean skin and the top of the insulin bottle.
- Never let anyone use a syringe you've already used, and don't use anyone else's syringe.
- Cleaning it with alcohol removes the coating that helps the needle slide into the skin easily.

## **Syringe Disposal**

It's time to dispose of an insulin syringe when the needle is dull or bent or has come in contact with anything other than clean skin.

If you can do it safely, clip the needles off the syringes so no one can use them. It's best to buy a device that clips, catches, and contains the needle. Do not use scissors to clip off needles — the flying needle could hurt someone or become lost.

If you don't destroy your needles, recap them. Place the needle or entire syringe in an opaque (not clear) heavy-duty plastic bottle with a screw cap or a plastic or metal box that closes firmly. Do not use a container that will allow the needle to break through, and do not recycle your syringe container.

Your area may have rules for getting rid of medical waste such as used syringes. Ask your refuse company or city or county waste authority what method meets their rules. The CDC has more information about [safe needle disposal in your area](#).

When traveling, bring your used syringes home. Pack them in a heavy-duty holder, such as a hard plastic pencil box, for transport.



## Taking a Closer Look at Labels

The information on the left side of the label provides total amounts of different nutrients per serving. To make wise food choices, check the total amounts for:

- [calories](#)
- [total fat](#)
- [sodium](#)
- [total carbohydrate](#)
- [fiber](#)
- [sugar alcohol](#)
- [list of ingredients](#)

### Using the information found in total amounts

Total amounts are shown in grams, abbreviated as g, or in milligrams, shown as mg. A gram is a very small amount and a milligram is one-thousandth of that. For example, a nickel weighs about 5 grams. So does a teaspoonful of margarine. Use the label to compare labels of similar foods. For example, choose the product with a smaller amount of saturated fat, cholesterol, and sodium and try to select foods with more fiber.

### Calories

If you are trying to lose or maintain your weight, the number of calories you eat counts. To lose weight you need to eat fewer calories than your body burns. You can use the labels to compare similar products and determine which contains fewer calories. To find out how many calories you need each day, talk ask your physician.

### Total Fat

Total fat tells you how much fat is in a food per serving. It includes fats that are good for you such as mono and polyunsaturated fats, and fats that are not so good such as saturated and trans fats. Mono and polyunsaturated fats can help to lower your blood cholesterol and protect your heart. Saturated and trans fat can raise your blood cholesterol and increase your risk of heart disease. The cholesterol in food may also increase your blood cholesterol.

Fat is calorie-dense. Per gram, it has more than twice the calories of carbohydrate or protein. Although some types of fats, such as mono and polyunsaturated fats provide your body with healthy fats, it is still important to pay attention to the overall number of calories that you



consume to maintain a healthy weight.

## **Sodium**

Sodium does not affect blood glucose levels. However, many people eat much more sodium than they need and this may increase your blood pressure. Table salt is very high in sodium. You might hear people use "sodium" in lieu of "table salt," or vice versa.

With many foods, you can taste how salty they are, such as pickles or bacon. But there is also hidden salt in many foods, like cheeses, salad dressings, canned soups and other packaged foods. Reading labels can help you compare the sodium in different foods. You can also try using herbs and spices in your cooking instead of adding salt. Adults should aim for less than 2300 mg per day. If you have high blood pressure, it may be helpful to eat less.

## **Total Carbohydrate**

If you are carbohydrate counting, the food label can provide you with the information you need for meal planning. Look at the grams of total carbohydrate, rather than the grams of sugar. Total carbohydrate on the label includes sugar, complex carbohydrate, and fiber. If you look only at the sugar number, you may end up excluding nutritious foods such as fruits and milks thinking they are too high in sugar. You might also overeat foods such as cereals and grains that have no natural or added sugar, but do contain a lot of carbohydrate.

The grams of sugar and fiber are counted as part of the grams of total carbohydrate. If a food has 5 grams or more fiber in a serving, subtract half the fiber grams from the total grams of carbohydrate for a more accurate estimate of the carbohydrate content.

## **Fiber**

Fiber is part of plant foods that is not digested – or for some types, only partially digested. Dried beans such as kidney or pinto beans, fruits, vegetables and grains are all good sources of fiber. The recommendation is to eat 25-30 grams of fiber per day. People with diabetes need the same amount of fiber as everyone else for good health.

## **Sugar Alcohols**

Sugar alcohols (also known as polyols) include sorbitol, xylitol and mannitol, and have fewer calories than sugars and starches. Use of sugar alcohols in a product does not necessarily mean the product is low in carbohydrate or calories. And, just because a package says "sugar-free" on the outside, that does not mean that it is calorie or carbohydrate-free. Always remember to check the label for the grams of carbohydrate and calories.

## **List of Ingredients**

Ingredients are listed in descending order by weight, meaning the first ingredient makes up the largest proportion of the food. Check the ingredient list to spot things you'd like to avoid, such as coconut oil or palm oil, which are high in saturated fat. Also try to avoid hydrogenated oils that



are high in trans fat. They are not listed by total amount on the label, but you can choose foods that don't list hydrogenated or partially hydrogenated oil in the ingredient list.

The ingredient list is also a good place to look for heart-healthy ingredients such as soy; monounsaturated fats such as olive, canola or peanut oils; or whole grains, like whole wheat flour and oats.



## **Long term complications of Diabetes**

### **Heart Disease and Stroke**

If you have diabetes, you are at risk for having a heart attack or stroke. These strike people with diabetes more than twice as often as people without diabetes.

Coronary artery disease is caused by a narrowing or blocking of the blood vessels that go to your heart. It's the most common form of heart disease. Your blood carries oxygen and other needed materials to your heart. Blood vessels to your heart can become partially or totally blocked by fatty deposits. A heart attack occurs when the blood supply to your heart is suddenly reduced or cut off. A stroke occurs when blood vessels to a part of your brain is suddenly cut off by fatty deposits or a blood clot.

Making changes to your lifestyle can help prevent against heart disease and stroke. Make healthy food choices and get active.

### **Kidney Failure**

The kidneys contain millions of tiny blood vessel clusters that filter waste from your blood. Diabetes can damage this delicate filtering system. Severe damage can lead to kidney failure or irreversible end-stage kidney disease, requiring dialysis or a kidney transplant.

The kidneys work hard to make up for the failing capillaries so kidney disease produces no symptoms until almost all function is gone. Also, the symptoms of kidney disease are not specific. The first symptom of kidney disease is often fluid buildup. Other symptoms of advanced kidney disease include loss of sleep, poor appetite, upset stomach, weakness, and difficulty concentrating.

Diabetic kidney disease can be prevented by keeping blood glucose in your target range. Research has shown that good blood glucose control reduces the risk of early kidney disease and reduces the risk of progressing to more severe kidney problems by half.

Another important factor to prevent kidney disease is good blood pressure control. High blood pressure has a dramatic effect on the rate at which the disease progresses. Four ways to lower your blood pressure are losing weight, eating less salt, avoiding alcohol and tobacco, and getting regular exercise. In addition, most men with diabetes need medications to treat their high blood pressure. Several types of blood pressure medication can specifically protect the kidneys from ongoing damage.

It is vital to see your health care team regularly. They can check your blood pressure, urine (for protein), blood (for waste products), and help you manage your diabetes to protect your kidneys.



## **Diabetic neuropathy**

Nerves are the messengers of the body. They provide your brain with information about pain, temperature and touch. They talk to your muscles and tell them how and when to move and they control body systems that digest food, pass urine and they control erections. Over time excess glucose can injure the walls of the tiny blood vessels that nourish your nerves, especially in the legs. This can cause tingling, numbness, burning or pain that usually begins at the tips of the toes or fingers and over a period of months or years gradually spreads upward. About half of all people with diabetes have some form of nerve damage. It is more common in those who have had the disease for a number of years. Nerve damage from diabetes is called diabetic neuropathy.

### **Take the following steps to prevent or delay nerve damage:**

- Meal planning, physical activity and medications, if needed, all can help you reach your average glucose target range.
- Track your blood glucose levels. Use a blood glucose meter to help you make decisions about day-to-day care. Get an A1C test at least twice a year to find out your average blood glucose for the past 2-to-3 months.
- Report any possible signs of diabetic neuropathy, such as pain or numbness in your feet. It is especially important to report any sore or break in the skin of your feet.
- If you have problems, get treatment right away. Early treatment can help prevent more problems later on. For example, if you take care of a foot infection early, it can help prevent amputation.
- Take good care of your feet. Check your feet every day. If you no longer can feel pain in your feet, you might not notice a foot injury. Instead, use your eyes to look for problems. Use your hands to feel for hot or cold spots, bumps or dry skin. Look for sores, cuts or breaks in the skin. Also check for corns, calluses, blisters, red areas, swelling, ingrown toenails and toenail infections.
- Protect your feet. If your feet are dry, use a lotion on your skin but not between your toes. Wear shoes and socks that fit well and wear them indoors and out. Use warm water to wash your feet, and dry them carefully afterward.
- Get special shoes if needed. If you have foot problems, Medicare or other insurance may pay for shoes. Ask your health care team about it.
- If you have diabetic neuropathy, talk to a diabetes clinical exercise expert who can guide you, as some physical activities are not safe for people with neuropathy.
- Make sure your health care provider checks your feet at every visit.



## Diabetic eye problems

Diabetes can damage the blood vessels of the eye, potentially leading to blindness. While those with diabetes are at an increased risk of vision problems, most people with diabetes have no or only minor eye disorders.

Eye Disorders include:

- **Retinopathy** – Also known as damage to the blood vessels in the back of the eye, is more common if you have had diabetes a long time, or if your blood glucose or blood pressure haven't been under good control.
- **Glaucoma** – Occurs when pressure builds up in the eye. Vision is gradually lost because the retina and nerve are damaged. People with diabetes are 40% more likely to suffer from glaucoma than people without diabetes. The longer someone has had diabetes, the more common glaucoma is. Risk also increases with age. There are several treatments for glaucoma, including drugs that reduce pressure in the eye as well as surgical options.
- **Cataracts** – People with diabetes are 60% more likely to develop cataracts. People with diabetes also tend to get cataracts at a younger age and have them progress faster. With cataracts, the eye clouds, blocking OUT light. To help prevent and deal with mild cataracts, wear sunglasses outside and use glare-control lenses in your glasses.

Don't forget to get an annual dilated eye exam by an optometrist or ophthalmologist. Many eye problems are silent until they are advanced, but early detection and treatment truly saves vision.



## **Oral medications for Diabetes.-**

Only people with type 2 diabetes can use pills to manage their diabetes. These pills work best when used with meal planning and exercise; this way you have three therapies working together to lower your blood glucose levels.

Diabetes pills don't work for everyone. Although most people find that their blood glucose levels go down when they begin taking pills, their blood glucose levels may not go near the normal range.

What are the chances that diabetes pills will work for you? Your chances are low if you have had diabetes for more than 10 years or already take more than 20 units of insulin each day. On the other hand, your chances are good if you developed diabetes recently or have needed little or no insulin to keep your blood glucose levels near normal.

Diabetes pills sometimes stop working after a few months or years. The cause is often unknown. This doesn't mean your diabetes is worse. When this happens, oral combination therapy can help.

Even if diabetes pills do bring your blood glucose levels near the normal range, you may still need to take insulin if you have a severe infection or need surgery. Pills may not be able to control blood glucose levels during these stressful times when blood glucose levels shoot up.

Also, if you plan to become pregnant, you will need to control your diabetes with diet and exercise or with insulin. It is not safe for pregnant women to take oral diabetes medications.

There is no "best" pill or treatment for type 2 diabetes. You may need to try more than one type of pill, combination of pills, or pills plus insulin.



## **How Can Diabetics Prevent Heart Disease and Strokes?**

Keeping your ABCs in check can also help you lower your risk for heart disease and stroke. The ABCs are an easy way to remember some of the most important health issues related to diabetes. As a man with diabetes, it's important to stay informed about related health complications, take a look at the ABCs, and speak with your healthcare provider to see if these issues are affecting you.

### **A is for A1C**

Your A1C reflects your average blood glucose level for the two to three month period before the test. Your healthcare provider uses it to determine how well you are managing your blood sugar. A goal of less than 7 percent is desirable, which corresponds to an average blood glucose level of 150 mg/dL.

### **B is blood pressure**

Men with diabetes should aim for a blood pressure level below 130/80 mm Hg. You should monitor blood pressure at each routine diabetes visit.

### **C is for cholesterol (lipids)**

A complete cholesterol test, referred to as a lipid panel or lipid profile, includes the measurement of four types of fats (lipids) in your blood, low-density lipoprotein (LDL), high-density lipoprotein (HDL) cholesterol, total cholesterol and triglycerides. LDL is sometimes called the "bad" cholesterol. Too much of it in your blood causes the accumulation of fatty deposits (plaques) in your arteries (atherosclerosis), which reduces blood flow. HDL is sometimes called the "good" cholesterol because it helps carry away LDL cholesterol, thus keeping arteries open and blood flowing more freely. Total cholesterol is the sum of your blood's cholesterol content. Triglycerides are another type of fat in the blood. When you eat, your body converts any calories it doesn't need to use right away into triglycerides, which are stored in fat cells and released later for energy.

*Note:* Now you know your ABCs. Speak with your healthcare provider about ways to keep your ABCs in control.

[http://forecast.diabetes.org/magazine/features/2012-insulin-pumps/?loc=rightrail1\\_forecast-consumer-guide-pumps\\_jan2012](http://forecast.diabetes.org/magazine/features/2012-insulin-pumps/?loc=rightrail1_forecast-consumer-guide-pumps_jan2012)



## **Blood glucose meters (Glucometer)**

- Meters are vital to keeping track of day-to-day blood glucose levels.
- They're accurate, but improper use or faulty materials can cause incorrect readings.
- Many options are available, so consider your needs before buying.

Blood glucose meters are small computerized machines that "read" your blood glucose. In all types of meters, your blood glucose level shows up as a number on a screen (like that on your pocket calculator). Be sure your doctor or nurse educator shows you the correct way to use your meter. With all the advances in blood glucose meters, use of a meter is better than visual checking.

## **How accurate are they?**

Experts testing meters in the lab setting found them accurate and precise. That's the good news. The bad: meter mistakes most often come from the person doing the blood checks. For good results you need to do each step correctly. Here are some other things that can cause your meter to give a poor reading:

- Dirty meter
- Meter or strip that's not at room temperature
- Outdated test strip
- Meter not calibrated (set up for) the current box of test strips
- Blood drop that is too small

Ask your health care team to check your skills at least once a year. Error can creep in over time.

## **How do I choose a meter?**

There are many meters to choose from. Some meters are made for those with poor eyesight. Others come with memory so you can store your results in the meter itself. The American Diabetes Association does not endorse any products or recommend one meter over another. If you plan to buy a meter, here are some questions to think about:

- What meter does your doctor or diabetes educator suggest? They may have meters that they use often and know best.
- What will it cost? Some insurance companies will only pay for a certain meter. Call your insurance company before you purchase a meter and ask how to get a meter and supplies. If your insurance company does not pay for blood glucose checking supplies, rebates are often available toward the purchase of your meter. You still have to consider the cost of



the matching strips and lancets. Shop around.

- How easy is the meter to use? Methods vary. Some have fewer steps than others.
- How simple is the meter to maintain? Is it easy to clean? How is the meter calibrated (set correctly for the batch of strips you are using)?

### **For More Information**

Go to American Diabetes Association at [www.diabetes.org](http://www.diabetes.org)