

Chapter 1

What It Means to Thrive with Diabetes

In This Chapter

- ▶ Getting a grip on diabetes
 - ▶ Controlling calories
 - ▶ Working exercise into your schedule
 - ▶ Keeping your blood pressure down
 - ▶ Making lifestyle changes that count
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A few months after the first edition of *Diabetes Cookbook For Dummies* came out, we received an e-mail from someone who told us that she had never felt as good as she did now that she was diagnosed with diabetes. As a result of the diagnosis and following the recommendations in that book, she had lost weight, was much more active, and generally felt better physically and mentally.

In this chapter, you get the latest information about what diabetes means, how diabetes is diagnosed, and the things you need to do to thrive just like her. Don't waste another minute. Get started right away. We love getting happy e-mails.

Recognizing Diabetes

With so much diabetes around these days, you may think that recognizing it should be easy. The truth is that it's not easy, because diabetes is defined by blood tests. You can't just look at someone and know the level of glucose in his or her blood.



Glucose is the name of the type of sugar found in our bodies that provides all the energy needed by your cells and organs to carry on all the chemical reactions that permit you to live and move.

Diabetes by the numbers

The level of glucose that means you have diabetes is as follows:

- ✓ A *casual* blood glucose of 200 milligrams per deciliter (mg/dl) or more at any time of day or night, along with symptoms such as fatigue, frequent urination and thirst, slow healing of skin, urinary infections, and vaginal itching in women. A normal casual blood glucose should be between 70 and 139 mg/dl.
- ✓ A *fasting* blood glucose of 126 mg/dl or more after no food for at least eight hours. A normal fasting blood glucose should be less than 100 mg/dl.
- ✓ A blood glucose of 200 mg/dl or greater 2 hours after consuming 75 grams of glucose.



A diagnosis of diabetes requires at least two abnormal levels on two different occasions. Don't accept a lifelong diagnosis of diabetes on the basis of a single test.

The United States uses milligrams/deciliter (mg/dl) for units of measurement of the concentration of something in a liquid. Most of the rest of the world uses the International System (SI) of units, in which the concentration in a liquid is designated millimoles per liter (mmol/L). To convert mg/dl to mmol/L, divide the value of mg/dl by 18. For example, 126 mg/dl becomes 7 mmol/L.

A fasting blood glucose between 100 and 125 mg/dl or casual blood glucose between 140 and 199 mg/dl is *pre-diabetes*. Most people with pre-diabetes will develop diabetes within ten years. Although people with pre-diabetes don't usually develop small blood vessel complications of diabetes like blindness, kidney failure, and nerve damage, they're more prone to large vessel disease like heart attacks and strokes, so you want to get that level of glucose down. Forty-one million people in the United States have pre-diabetes.

Types of diabetes

Three main types of diabetes exist:

- ✓ **Type 1 diabetes:** This used to be called *juvenile diabetes* or *insulin-dependent diabetes*. It mostly begins in childhood and results from the body's self-destruction of its own pancreas. The pancreas is an organ of the body that sits behind the stomach and makes insulin, the chemical or "hormone" that gets glucose into cells where it can be used. You can't live without insulin, so people with type 1 diabetes must take insulin shots (inhaled insulin will be available in the near future). Of the 18 million Americans with diabetes, about 10 percent have type 1.

- ✓ **Type 2 diabetes:** Once called *adult-onset diabetes*, type 2 used to begin around the age of 40, but it is occurring more often in children, many of whom are getting heavier and heavier and exercising less and less. The problem in type 2 diabetes is not a total lack of insulin, as occurs in type 1, but a resistance to the insulin, so that the glucose still doesn't get into cells but remains in the blood.
- ✓ **Gestational diabetes:** This type of diabetes is like type 2 diabetes but occurs in women during pregnancy, when a lot of chemicals in the mother's blood oppose the action of insulin. About 4 percent of all pregnancies are complicated by gestational diabetes. If the mother isn't treated to lower the blood glucose, the glucose gets into the baby's bloodstream. The baby produces plenty of insulin and begins to store the excess glucose as fat in all the wrong places. If this happens, the baby may be larger than usual and therefore may be hard to deliver. When the baby is born, he is cut off from the large sugar supply but is still making lots of insulin, so his blood glucose can drop severely after birth. The mother is at risk of gestational diabetes in later pregnancies and of type 2 diabetes as she gets older.

Consequences of diabetes

If your blood glucose isn't controlled — that is, kept between 70 and 139 mg/dl after eating or under 100 mg/dl fasting — damage can occur to your body. This damage can be temporary or permanent depending on how long it goes on. The damage can be divided into three categories: irritations, short-term complications, and long-term complications.

Irritations

Irritations are mild and reversible but still unpleasant results of high blood glucose levels. The levels aren't so high that the person is in immediate life-threatening danger. The most important of these irritations are the following:

- ✓ Blurred vision
- ✓ Fatigue
- ✓ Frequent urination and thirst
- ✓ Genital itching, especially in females
- ✓ Gum and urinary tract infections
- ✓ Obesity
- ✓ Slow healing of the skin

Short-term complications

These complications can be very serious and lead to death if not treated. They're associated with very high levels of blood glucose — in the 400s and above. The three main short-term complications are the following:

- ✔ **Ketoacidosis:** This complication is found mostly in type 1 diabetes. Without insulin, the glucose rises very high, and the body begins to use fat for energy. As fat breaks down, it produces chemicals called *ketones* that make the blood very acid. The acid condition makes the patient nauseated and unable to eat or drink. He or she becomes very dehydrated but continues to lose fluids due to excessive urination or vomiting. The increased urine takes important body constituents, such as potassium, with it. The patient becomes very sick and will die if not treated with large volumes of fluids and large amounts of insulin. After the situation is reversed, however, the patient is fine.
- ✔ **Hyperosmolar syndrome:** This condition is often seen in neglected older people. Their blood glucose rises due to severe dehydration and the fact that the kidneys of the older population can't get rid of glucose the way younger kidneys can. The blood becomes like thick syrup. The person can die if large amounts of fluids aren't restored, but replenishing fluids is tricky in older people, who often have heart failure already. When heart failure is present, the heart can't handle too much fluid at one time. The excess fluid can get into the lungs and cause swelling of the legs. They don't need that much insulin to recover. After the condition is reversed, these people can return to a normal state.
- ✔ **Hypoglycemia or low blood glucose:** This complication happens when the patient is on a drug like insulin or a pill that drives the glucose down but isn't getting enough food or is getting too much exercise. After it falls below 70 mg/dl, the patient begins to feel bad. Typical symptoms include sweating, rapid heartbeat, hunger, nervousness, confusion, and coma if the low glucose is prolonged. Glucose by mouth, or by venous injection if the person is unconscious, is the usual treatment. This complication usually causes no permanent damage.

Long-term complications

These problems occur after ten or more years of poorly controlled diabetes or, in the case of the macrovascular complications, after years of pre-diabetes or diabetes. They have a substantial impact on quality of life. After these complications become established, reversing them is hard, but treatment is available for them early in their course, so watch for them five years after your initial diagnosis of diabetes. See Dr. Rubin's book *Diabetes For Dummies*, 2nd Edition (Wiley), for information on screening for these complications.

The long-term complications are divided into two groups: *microvascular*, which are due at least in part to small blood vessel damage, and *macrovascular*, associated with damage to large blood vessels.

Microvascular complications include the following:

- ✔ **Diabetic retinopathy:** Eye damage that leads to blindness if untreated.
- ✔ **Diabetic nephropathy:** Kidney damage that can lead to kidney failure.
- ✔ **Diabetic neuropathy:** Nerve damage that results in many clinical symptoms, the most common of which are tingling and numbness in the feet. Lack of sensation in the feet can result in severe injury without awareness unless you carefully look at your feet regularly. Such injury can result in infection and even amputation.

Macrovascular complications also occur in pre-diabetes and consist of the following:

- ✔ **Arteriosclerotic heart disease:** Blockage of the blood vessels of the heart. This is the most common cause of death in diabetes due to a heart attack.
- ✔ **Arteriosclerotic cerebrovascular disease:** Blockage of blood vessels to the brain, resulting in a stroke.
- ✔ **Arteriosclerotic peripheral vascular disease involving the blood vessels of the legs:** These vessels can become clogged and result in amputation of the feet or legs.



If you control your blood glucose, none of these complications need ever occur. Controlling your blood pressure and your cholesterol also helps prevent these complications.

Treating diabetes

Treatment of diabetes involves three essential elements:

- ✔ **Diet:** If you follow the recommendations in this book, you can lower your average blood glucose by as much as 30 to 50 mg/dl. Doing so can reduce the complication rate by as much as 33 percent.
- ✔ **Exercise:** We touch on exercise in Chapter 3 and cover it more extensively in *Diabetes For Dummies*, 2nd Edition (Wiley).
- ✔ **Medication:** Diabetes medications abound — there are far too many to discuss here, but you can find out about them in *Diabetes For Dummies*, 2nd Edition.

Controlling Calories

Just as the three most important factors in the value of a house are location, location, location, the three most important factors in diet for people with diabetes are moderation, moderation, moderation. If you're overweight or obese, which is true of most people with type 2 diabetes and a lot of people with type 1 diabetes who are on intensive insulin treatment (four shots of insulin daily), weight loss will make a huge difference in your blood glucose levels. If you maintain the weight loss, you'll avoid the complications of diabetes discussed earlier in this chapter.

To successfully lose weight, you need to control your total calories. You must burn up the same amount of calories you take in by mouth, or you will gain weight. To lose weight, you need to burn up more calories than you eat. Sounds simple, eh!



As you reduce your portions, reduce your intake of added sugars, fats, and alcohol. These items contain no nutrients such as vitamins and minerals and are simply sources of empty calories.



If you are predisposed to have diabetes because, for example, your parents both had diabetes, you can prevent it by maintaining a healthy weight. If you already have diabetes, you can minimize its impact by losing weight and keeping it off.

Do you need a highly complicated formula to figure out how to moderate your food intake? No! It's as simple as looking at the portions you currently eat and cutting them in half. At home, where you control the amount of food on your plate, you can start with a small portion, so you may not need to reduce it by half. However, in restaurants, where more and more people are eating their meals, especially the fast food restaurants, discussed extensively in Chapters 17 and 18, the rule of eating half may not be strong enough. There you may need to eat only a third of the portion. You may need to apply the same portion control when you eat at someone else's home. Figure 1-1 shows you the difference between reasonably sized portions and ones that are too big.



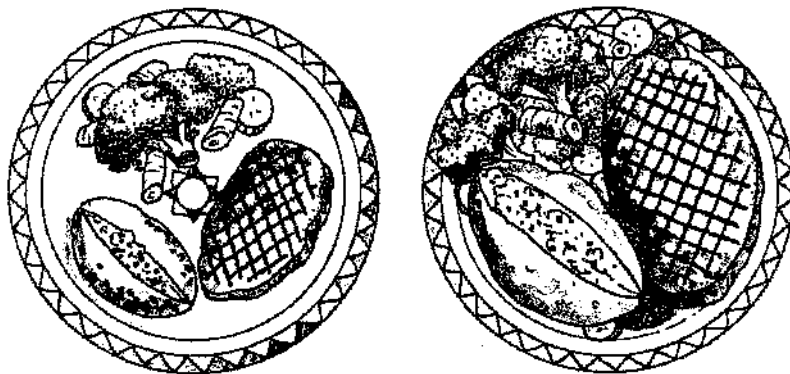
Controlling calories isn't easy when TV commercials suggest that eating certain foods will make you sexier and more beautiful. Another challenge is eating in a restaurant where the menu makes everything sound like the food eaten by the Greek gods. And when the portions arrive at your table, they're about twice what you should be eating. Use these tips to help you visualize portion sizes:

- ✓ An ounce of meat is the size of a pack of matches.
- ✓ Three ounces of meat is the size of a deck of cards.

- ✓ A medium fruit is the size of a tennis ball.
- ✓ A medium potato is the size of a computer mouse.
- ✓ A medium bagel is the size of a hockey puck.
- ✓ An ounce of cheese is the size of a domino.
- ✓ A cup of fruit is the size of a baseball.
- ✓ A cup of broccoli is the size of a light bulb.

The European chefs who worked on some of the recipes in this book told me again and again that, compared to Europeans, people in the United States expect huge portions. And they eat it all! Think about a hockey puck the next time you buy bagels that each look like a small cake. Even if you cut the bagel in half, you'll still be eating more than the correct portion. You may think that you're eating the right amount, but you're most likely eating two to three times more than you need.

Figure 1-1:
Eating in moderation means choosing the portion sizes on the left, rather than those on the right.



You don't need to take in many extra calories over time to gain weight. Just 100 extra kilocalories (see the "Kilocalories versus calories" sidebar for an explanation of kilocalories) on a daily basis results in a weight gain of 12 pounds in a year. An extra glass of wine is that many kilocalories. On the other hand, if you reduce your daily intake by 100 kilocalories, you can lose those 12 pounds over a year.

Look at a few examples of the portion sizes provided today compared to 20 years ago. Table 1-1 shows the kilocalories in the portions of 20 years ago and today and how much exercise you have to do to burn up the extra kilocalories so you don't gain weight.

Kilocalories versus calories

We use the term *kilocalories* (or *kcalories*) rather than calories because experts in health and medicine measure energy in a diet plan or in food in kilocalories (a kilocalorie is 1,000 times greater than a calorie). Unfortunately, the term *calories* has been established on food labels and in diets, and health officials don't want to

confuse the public by attempting to correct this error.

Calorie counts in the text of this book and in the nutritional analyses of the recipes are given in kilocalories.

<i>Food</i>	<i>Kilocalories 20 years ago</i>	<i>Kilocalories today</i>	<i>Exercise to burn the difference</i>
Bagel	140	350	50 minutes raking leaves
Cheeseburger	333	590	90 minutes lifting weights
French fries	210	610	80 minutes walking
Turkey sandwich	320	820	85 minutes biking
Coffee	45	350	70 minutes walking
Chicken Caesar salad	390	790	80 minutes walking
Popcorn	270	630	75 minutes of water aerobics
Chocolate chip cookie	55	275	75 minutes washing the car

Including Exercise (And Rest)

Exercise is just as important as diet in controlling your blood glucose. A group of people who were expected to develop diabetes because their parents both had diabetes was asked to walk 30 minutes a day. Eighty percent of those who did walk did not develop the disease. These people didn't necessarily lose weight, but they did exercise.

Exercise isn't only for the person with diabetes. Anyone who wants a healthy lifestyle should exercise, but for the diabetic, exercise is especially important because it protects against both the microvascular and the macrovascular complications of diabetes.

You don't have to spend hours exercising. About 30 minutes a day of moderate exercise, such as walking, gives you all that you need. If walking doesn't interest you, you can bike, swim, jog, play a sport, or just about anything that gets your heart pumping faster and your muscles moving. Don't let winter weather stop you from exercising — try cross-country skiing, for example.



Too many people complain that they just can't find the time to exercise. This excuse isn't acceptable, especially when you realize how much difference exercise can make in your life and your diabetes. Here are some ways that different amounts of exercise can help you:

- ✔ Thirty minutes of exercise a day will get you in excellent physical shape and reduce your blood glucose substantially.
- ✔ Sixty minutes of exercise a day will help you to maintain a weight loss and get you in even better physical shape (and probably allow you to discontinue all medications for diabetes unless you have type 1 diabetes).
- ✔ Ninety minutes of exercise a day will cause you to lose weight.

If you say that you can't find 90 extra minutes in your day, that's probably not an unreasonable assessment of your schedule, but do consider the benefits before ruling out the possibility!



An exercise partner helps ensure that you get out and do your thing. We find it extremely helpful to have someone waiting for us so that we can exercise together.

Here are some more facts about exercise to keep in mind:

- ✔ You don't have to get in all your minutes of exercise in one session. Two 30-minute workouts are just as good as and possibly better than one 60-minute workout.
- ✔ Although walking is excellent exercise, especially for the older population, the benefits of more vigorous exercise and for a longer time are greater still.
- ✔ Everything counts when it comes to exercise. Your decision to take the stairs instead of the elevator may not seem like much, but if you do so day after day, it makes a profound difference. Another suggestion that may help over time is to park your car farther from your office.
- ✔ A pedometer (a small gadget worn on your belt that counts your steps) may help you to achieve your exercise goals. The objective is to get up to 10,000 steps a day by increasing your step count every week.

Keeping up to speed on treatment developments

By the time you read this book, several months will have passed since we wrote these words. Several important discoveries about diabetes or related medical information may have occurred that you need to know about. How can you keep up with the latest and greatest treatments?

- ✔ Take a course with a certified diabetes educator (CDE). Here you learn how to manage your diabetes right now and find out about what's coming up.
- ✔ Go to the Web and do a search for diabetes. If you want to be sure that the sites you
- come up with are both accurate and helpful, go to Dr. Rubin's Web site, www.dr.rubin.com, where you'll find a page on Useful Diabetes Related Web sites. He has checked all of them out for you, so you know you can rely on them.
- ✔ Come to your doctor prepared to ask questions. If you don't get a satisfactory answer, see a specialist.
- ✔ Take another certified course after several years. You'll be amazed at the changes.

You also want to do something to strengthen your muscles. Larger muscles take in more glucose, providing another way of keeping it under control. A program of light weight training may be all you need. You may want to have a trainer show you a routine at the start and then take over on your own. You can buy hand-held weights very inexpensively at most sport shops. You don't need to do weight training exercises every day, as we suggest for walking — three or four times a week is enough. You'll be surprised by how much your stamina will increase and how much your blood glucose will fall.



Place a daily limit on activities that are completely sedentary, such as watching television or surfing the Web. Use the time you might have once spent on these activities to exercise. This advice is especially helpful for overweight children.

You want to be active, but don't do it at the cost of getting plenty of rest each day. People who sleep eight hours a night tend to be less hungry and leaner than people who sleep less.

Controlling Your Blood Pressure

Keeping your blood pressure in check is particularly important in preventing the macrovascular complications of diabetes. But elevated blood pressure also plays a role in bringing on eye disease, kidney disease, and neuropathy. You should have your blood pressure tested every time you see your doctor. The goal is to keep your blood pressure under 130/80. (See Dr. Rubin's book

High Blood Pressure For Dummies, published by Wiley, for a complete explanation of the meaning of these numbers.) You may want to get your own blood pressure monitor so that you can check it at home yourself.

The statistics about diabetes and high blood pressure are daunting. Seventy-one percent of diabetics have high blood pressure, but almost a third are unaware of it. Almost half of them weren't being treated for high blood pressure. Among the treated patients, less than half were treated in a way that reduced their pressure to lower than 130/80.

You can do plenty of things to lower your blood pressure, including losing weight, avoiding salt, eating more fruits and vegetables, and, of course, exercising. But if all else fails, your doctor may prescribe medication. Many blood pressure medicines are available, and one or two will be exactly right for you. See *High Blood Pressure For Dummies* for an extensive discussion of the large number of blood pressure medications.



One class of drugs in particular is very useful for diabetics with high blood pressure: angiotensin converting enzyme inhibitors (ACE inhibitors), which are especially protective of your kidneys. If kidney damage is detected early, ACE inhibitors can reverse the damage. Some experts believe that all diabetics should take ACE inhibitors. We believe that if there's no evidence of kidney damage and the diabetes is well controlled, this isn't necessary.

Considering the Rest of Your Lifestyle

Diabetes is just one part of your life. It can affect the rest of your lifestyle, however, and your lifestyle certainly affects your diabetes. In this section, we take up some of these other parts of your lifestyle, all of which you can alter to the benefit of your health and your diabetes. Try making changes one at a time, and when you think you have that one under control, move on to the next.

Drinking alcohol safely

A glass of wine is a pleasant addition to dinner, and studies show that alcohol in moderation can lower the risk of a heart attack (see the sidebar "How alcohol helps heart disease" in this chapter). For a diabetic, it is especially important that food accompany the wine because alcohol reduces the blood glucose; a complication called hypoglycemia may occur (see the section "Short-term complications," earlier in this chapter).



Never drink alcohol without food, especially when you're taking glucose-lowering medication.



The following people should not drink alcohol at all:

- ✓ Pregnant women
- ✓ Women who are breastfeeding
- ✓ Children and adolescents
- ✓ People who take medications that interact with alcohol
- ✓ People with medical conditions that are worsened by alcohol, such as liver disease and certain diseases of the pancreas

The amount of wine that is safe on a daily basis is a maximum of two 4-ounce glasses for a man or one 4-ounce glass for a woman. Men metabolize alcohol more rapidly than women, so they can drink more. But you should drink no more than a maximum of five days out of seven.

In terms of alcohol content, 1½ ounces of hard liquor, such as gin, rum, vodka, or whisky, or 12 ounces of light beer are the equivalent of a 4-ounce glass of wine.



Alcohol adds calories without any nutrition. Alcohol has no vitamins or minerals, but you do have to account for the calories in your diet. If you stop drinking alcohol, you may lose a significant amount of weight. For example, a person who has been drinking three drinks a night and stops will lose 26 pounds in a year.

Alcohol can cause cirrhosis of the liver and raises blood pressure. It also worsens diabetic neuropathy. Do you need any more reasons not to drink alcohol?

Avoiding tobacco



Whether you smoke it, chew it, or inhale it because someone else is using it, tobacco shortens your life and makes you a prime candidate for many types of cancer. The connection between cancer and tobacco is a scientific fact. Just why tobacco is not a banned substance like heroin or crack cocaine is a mystery (although the tobacco companies know the solution to this one).

Everything about tobacco is negative. It stains your teeth and fingers, gives you bad breath, causes wrinkles, and ruins your heart, lungs, and many other organs. And people are dumb enough to pay for it! People with diabetes who smoke are much more prone to amputations of their feet and legs.

There are numerous ways to stop if you already smoke. Unfortunately many smokers quit only after the first major event, such as a heart attack or a cancer they're lucky enough to survive. Don't be in that group. Give it up, now!

How alcohol helps heart disease

When taken in moderation, alcohol has a number of effects that help prevent heart disease and heart attacks. Alcohol can do the following:

- ✓ Decrease insulin resistance
- ✓ Increase the level of the good cholesterol, called HDL cholesterol
- ✓ Decrease the tendency of blood platelets to form clots that block arteries in the heart
- ✓ Increase the tendency of chemicals in the blood to break down clots that form

Staying away from illicit drugs



Do you really want to screw up your life and make your diabetes almost impossible to control? Add illicit drugs to the mix. Some of them interact with your diabetes drugs, causing high or low blood glucose levels. If you use needles to inject these drugs, you'll have infections, hepatitis, and even AIDS sooner or later.

You can get high without illegal drugs. Try exercise instead. Climb those steps up to your office and enjoy the feeling that comes when you're no longer carrying those extra 20 pounds of weight on your stomach. These highs will benefit your diabetes at the same time.

Driving safely

Having diabetes means you need to take special precautions before you drive. You should test your blood glucose before driving for more than a half-hour and raise it to normal before you get behind the wheel. Always carry a source of glucose in your car to take should your glucose fall. When it falls below 70 or so while driving, you begin to drive as though you were drunk.

Wear a seat belt when you drive. Doing so prevents major injury if you get into an accident. Of course, we're sure that *you'll* never drive faster than the speed limit, but it is the other driver that we're concerned about. You never know what he or she is going to do.

Benefiting from relationships

People in relationships live longer than those who live alone. This is especially true for diabetics, many of whom depend to some extent on support from someone else. For example, your spouse or significant other may be the one who buys or prepares the food that you eat. He or she can be your exercise partner. On the rare occasions when your blood glucose falls very low, he or she can help you to get the nutrition that will restore you.



Belonging to some special-interest group also is helpful. For example, maybe you're a biker or a stamp collector or a bridge player. Getting together with others who share your interest is a great stress reducer, which can benefit your diabetes.

The person with diabetes may want to join a diabetes support group. Here you can discover that you're not alone in your troubles and that others may have helpful suggestions on managing their diabetes that you can use as well.

Maintaining your sense of humor

If you have diabetes, or any other chronic disease for that matter, keeping a sense of humor makes the inconveniences and associated complications much easier to bear. Author and editor Norman Cousins claimed in several books that he reversed a disease he had that was considered irreversible by exposing himself to all kinds of funny experiences. He listened to audiotapes of the comedians whom he found the funniest. He read humor books that kept him laughing. He watched movies that made him roar with laughter.

Someone wrote that life is a human comedy. Surely there are things in your life, even associated with your diabetes, that you can laugh about.

Dr. Rubin went to a conference a few years ago on the healing qualities of humor. The opening speaker asked everyone to write down his or her favorite comedian. Then the participants mingled and shared their selections. Everyone was amazed at the variety of choices. If Woody Allen or the Marx Brothers don't do it for you, maybe Jerry Seinfeld or Bill Cosby or Will Smith gets you going. Like beauty, humor is in the eyes of the beholder.

Find your favorites and get their performances in any media available. Watch or listen to them regularly. It may be time to change that old saying to "a laugh a day keeps the doctor away."