How to Thrive: A Guide for Your Journey with Diabetes

You are not alone in this fight—and there’s nothing we can’t accomplish when we’re Connected for Life.
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Managing diabetes is no small task, but each step you take makes a big difference

The good news is managing your blood glucose (also called blood sugar), blood pressure, and cholesterol will protect your body from head to toe. By learning all you can, making good choices, and working closely with your diabetes care team, you can prevent or delay the complications that can come from diabetes.

It’s possible to not just live but thrive with diabetes—and this guide will help you do just that.
When you eat, your body breaks food down into glucose and sends it into the blood. Insulin then helps move the glucose from the blood into your cells. When glucose enters your cells, it is either used as fuel for energy right away or stored for later use. Your blood glucose will be affected in different ways depending on what type of diabetes you have.

The three different types of diabetes are type 1, type 2, and gestational diabetes. If you have diabetes, your body either doesn’t make enough insulin, can’t use the insulin it does make well, or both.

**Type 1**
In type 1 diabetes, your immune system mistakenly treats your cells that make insulin like invaders and destroys them. This can happen over a few weeks, months, or years.

When enough beta cells are destroyed, your pancreas stops making insulin, or it makes so little insulin that you need to take insulin to live. Type 1 diabetes develops most often in young people but can appear in adults.

**Type 2**
In type 2 diabetes, your body does not use insulin properly—this is called insulin resistance. At first, your beta cells make extra insulin to make up for it. Over time your pancreas can’t make enough insulin to keep your blood glucose at normal levels. Type 2 diabetes develops most often in middle-aged and older adults but can appear in young people.

Some people with type 2 diabetes can manage their diabetes with healthy eating and exercise. However, your doctor may need to also prescribe oral and injectable medications (including insulin) to help you meet your target blood glucose levels.

Type 2 diabetes is a progressive disease. Even if you don’t need to treat your diabetes with medications at first, you may need to over time.

**Gestational diabetes**
Gestational diabetes (GDM) is a condition that can develop during pregnancy. For most women, blood glucose levels will return to normal after giving birth. If you’ve had GDM your risk for developing type 2 diabetes is higher, so you will need to be tested for it regularly.

**How can diabetes affect me?**
High blood glucose levels can damage small blood vessels in your body, such as in your eyes, kidneys and nerves. High blood glucose may also harm large blood vessels, leading to heart disease or stroke.
ABCs of Diabetes

Work with your diabetes care team to make a plan that helps you manage your diabetes. Your diabetes care team can include you and your:

- Doctor (primary care or endocrinologist)
- Nurse
- Registered dietitian nutritionist (RDN)
- Diabetes educator
- Eye doctor (optometrist or ophthalmologist)
- Foot doctor (podiatrist)
- Pharmacist
- Dentist
- Social worker
- Therapist
- Personal trainer

Together, you’ll keep track of the ABCs of diabetes:

A is for A1C

Your A1C test tells you your average blood glucose for the past 2 to 3 months. Your health care provider may call this your estimated average glucose, or eAG. The eAG gives your A1C results in the same units (mg/dL) as a blood glucose meter.

B is for blood pressure

Your blood pressure numbers tell you the force of blood inside your blood vessels. When your blood pressure is high, your heart has to work harder.

C is for cholesterol

Your cholesterol numbers tell you the amount of fat in your blood. Some kinds of cholesterol can raise your risk for a heart attack or stroke.

What are the goals of treating diabetes?

The two goals of diabetes treatment are to make sure you feel well day-to-day and to prevent or delay long-term health problems.

The best way to reach those goals is by:

- Taking medications, if your doctor prescribes them.
- Planning your meals—choosing what, how much, and when to eat.
- Being physically active.

If you are not reaching your goals, your health care team will help you change your plan as needed to stay on target. You can learn more about the ABCs of diabetes below:

A1C/eAG

What is the suggested target for A1C/eAG?

ADA’s target for A1C for most adults with diabetes is 7% (eAG of 154 mg/dl). Your doctor may give you a higher or lower target based on how old you are and other factors. Your risk of long-term complications is much lower when your A1C is at or below your target.

What does my A1C/eAG result mean?

Usually, your A1C reflects general trends you see with your day-to-day blood glucose checks. Sometimes, however, your A1C result may seem higher or lower than you expected. That may be because you aren’t checking your blood glucose at times when it’s very high or very low.
An important part of taking care of yourself is managing your blood pressure. High blood pressure, also called hypertension, raises your risk for heart attack, stroke, eye problems, and kidney disease.

What is high blood pressure?
When a member of your diabetes care team checks your blood pressure, they report it as two numbers, such as 120/80. You’ll hear them say this as “120 over 80.” Both numbers are important.

High blood pressure is a condition that won’t go away without treatment.

What should my blood pressure target be?
ADA recommends a target blood pressure below 140/90 for people with diabetes. When you keep your blood pressure below 140/90, you’ll help lower your risk for diabetes complications.

To interpret your result, first find your A1C number on the left. Then read across to learn your average blood glucose for the past 2 to 3 months.

<table>
<thead>
<tr>
<th>Your A1C Number</th>
<th>Your Average Blood Glucose for the Past 2 to 3 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0%</td>
<td>126 mg/dL</td>
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<tr>
<td>6.5%</td>
<td>140 mg/dL</td>
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<tr>
<td>7.0%</td>
<td>154 mg/dL</td>
</tr>
<tr>
<td>7.5%</td>
<td>169 mg/dL</td>
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<td>10.0%</td>
<td>240 mg/dL</td>
</tr>
<tr>
<td>10.5%</td>
<td>255 mg/dl</td>
</tr>
</tbody>
</table>

If your A1C/eAG is different from what you expect, talk to your doctor.

Your Blood Pressure Numbers

- The first number is the pressure as your heart beats and pushes blood through the blood vessels. It’s called the “systolic” pressure.
- The second number is the pressure when the vessels relax between heartbeats. It’s called the “diastolic” pressure.

It is important to know your blood pressure number and track it.
Working with your diabetes care team.

You are the most important member of your diabetes care team. You do the day-to-day things to manage diabetes, like choosing healthy foods, being physically active, taking your medication, and checking your blood glucose to see if you’re reaching your blood glucose targets.

The other members of your diabetes care team are your advisors and coaches. They can tell you about your treatment options and keep track of your physical exams and lab tests. Together, you and your team can make sure you’re getting the very best care for your diabetes.

What to do before my visit

☐ Keep a list of your questions.

☐ Make a list of the medications, vitamins, and supplements you take for all medical conditions.

☐ Include over-the-counter medications.

☐ List when, why, and how much you take of each medication and if you need any refills.

What to bring with me

☐ Your blood glucose meter, blood glucose log, and questions.

☐ Your lists of medications, vitamins, and anything else you are taking.

☐ If you keep a food or exercise log, bring it to your visit too.

What to expect at visits

At every office visit:

☐ Talk about your blood glucose meter readings.

☐ Discuss any unusually high or low blood glucose levels and the situation if you can remember.

☐ Check your blood pressure.

☐ Check your weight and talk about ways to reach a reasonable weight if you’re overweight.

☐ Talk about what you eat.

☐ Discuss any lifestyle, work, or emotional changes.

☐ Discuss your physical activity.

☐ If you use nicotine, talk about ways to quit.

☐ Talk about all of your medications including over the counter pills, herbs, vitamins, or supplements.

☐ Bring up any physical or emotional issues you are having such as trouble sleeping or feeling stress.

☐ Ask any questions you have.
At least every 3 to 6 months
☐ Check your A1C/eAG.

At least once a year
☐ Check your cholesterol.
☐ Have a dilated eye exam.
☐ Get a flu shot.
☐ Have a complete foot exam.
☐ Check your kidney function.

At least once in a lifetime and again after turning 65
☐ Get a pneumonia vaccine.

Other vaccinations you may need:
☐ Tdap vaccine: A booster shot for adults that immunizes against tetanus, diphtheria, and pertussis.
☐ Hepatitis B vaccine: Protects against hepatitis B, a highly contagious virus that causes lifelong illness.
☐ Zoster vaccine: Also known as the shingles vaccine, is recommended for anyone 50 or older.
Review how you use your meter with your doctor or diabetes educator once a year. Check the back of your meter for the meter manufacturer’s phone number in case questions arise.
Checking Your Blood Glucose

Checking your blood glucose is important. You can use the results to make decisions about food, physical activity, and medication. These decisions can help you feel better day-to-day and delay or prevent diabetes complications such as heart attack, stroke, kidney disease, or blindness.

How do I check my blood glucose?

Many people use a blood glucose meter to check their blood glucose several times a day. A meter is a small device that tests a tiny drop of blood and then displays your blood glucose level at that moment. A lancet is a device used to prick the skin to get the drop of blood which touches a strip inserted in the meter.

Continuous Glucose Monitors (CGMs) are becoming more common and are a way to track glucose trends day and night. They show your current level and if your blood glucose levels are trending up, down, or stable. This gives you a more complete look at how your blood glucose levels are changing throughout the day and night.

When are the best times to check blood glucose?

Many people check blood glucose first thing in the morning before they eat. You also may want to check after meals.

Other times you may be told to check include:

- When you're having symptoms of high or low blood glucose.
- When you're ill, especially if you're throwing up or dehydrated.
- Before, during, and after physical activity.
- Before you drive.
- Before you go to sleep.

How often do I need to check?

If you’re using your blood glucose results to decide how much insulin to take, you’ll need to check several times a day. You will probably need to check more often if you’re pregnant or you make changes to your medications, activity, or meal plan. Otherwise you may be able to check less often. Talk it over with your doctor.

How can I make sure that my meter provides accurate results?

Follow your meter’s instructions for the most accurate results. This includes:

- Keeping your meter clean.
- Making sure your test strips haven’t passed their expiration date.
- Storing your strips as recommended.
- Making sure your blood sample is big enough.

What are the blood glucose targets for people with diabetes?

The general targets recommended by the ADA are listed below. Talk with your doctor about whether these targets are right for you. ADA’s general targets:

- When you wake up and before meals: 80 to 130 mg/dL
- One to two hours after starting a meal: below 180 mg/dL
Low Blood Glucose (Hypoglycemia)

Low blood glucose, sometimes just called a low, is when your blood glucose levels have fallen low enough that you need to take action to bring them back to your target range. This is usually when your blood glucose is less than 70 mg/dL. However, talk to your doctor about your own blood glucose targets, if you’re at risk for your blood glucose going too low, and what level is too low for you.

If you don’t take steps to bring glucose levels back to normal, you could pass out or have other serious complications.

What are the symptoms?
Each person’s reaction to low blood glucose is different. Learn your own signs and symptoms of when your blood glucose is low. Taking time to write the symptoms you experience down may help you learn your own symptoms so that it’s easier to recognize them.

Sometimes, if you have lows too often you may become less likely to feel the symptoms. This is called hypoglycemia unawareness. Talk to your doctor if you start having trouble noticing that your blood glucose is low.

Talk to a co-worker, friend, or loved one about hypoglycemia symptoms. Make sure someone close to you knows what to do in case of low blood glucose.

Signs and symptoms of low blood glucose include:

- Feeling shaky
- Being nervous or anxious
- Sweating, chills, clamminess
- Mood swings, irritability, impatience
- Fast heartbeat
- Confusion
- Feeling light-headed or dizzy
- Hunger
- Nausea
- Color draining from skin (pallor)
- Feeling weak, having no energy
- Blurred/impaired vision
- Tingling or numbness in lips, tongue, cheeks
- Headaches
- Coordination problems, clumsiness
- Nightmares or crying out in sleep
- Seizures
What should I do?

If you think your blood glucose is low, check it. If your blood glucose is 70 mg/dL or below, follow the “15-15 rule.”

The 15-15 rule—have 15 grams of carbohydrate to raise your blood glucose and check it after 15 minutes. If it’s still below 70 mg/dL, have another serving.

Repeat these steps until your blood glucose is at least 70 mg/dL.

Sources of 15 grams of carbohydrate:

- Glucose tablets (see instructions)
- Glucose gel tube (see instructions)
- 1/2 cup (4 ounces) of juice or regular soda (not diet)
- 1 tablespoon of sugar, honey, or corn syrup
- Hard candies, jellybeans, or gumdrops – see food label for how many to eat

Make a note about any episodes of low blood glucose and talk with your diabetes care team about why it happened. They can suggest ways to prevent low blood glucose in the future.
High Blood Glucose (Hyperglycemia)

This occurs when the body has too little insulin or when the body can’t use insulin properly.

What are the symptoms?
The signs and symptoms include the following:

- Frequent urination
- Increased thirst
- Irritability
- Hunger
- Blurred vision
- Feeling sleepy
- Concentration problems

What should I do?
Talk with your diabetes care team about what to do when your blood glucose levels are too high. Drink water to stay hydrated and take your medication as needed. You may need to check your urine for ketones or avoid exercise. Make a note in your blood glucose log when your blood glucose is high along with what you think may have caused it.

If your blood glucose is regularly high, cutting down on the amount of food you eat might help. Work with your dietitian to make changes in your meal plan. If exercise and changes in your diet don’t work, your diabetes care team may change the amount of your medication or possibly the timing of when you take it.

Preparing for sick days
When you get sick with things like colds or flu, the illness and stress from it causes your body to release hormones that raise blood glucose levels, making it harder to keep your blood glucose in your target range. Having a plan for sick days ahead of time will help manage your diabetes.

One thing to keep in mind is to be sure you’re getting enough water—so drink plenty of it. If you’re having trouble keeping water down, have small sips every 15 minutes or so throughout the day.

Being sick can make it hard to eat, so having simple carbs handy like regular soda, Jell-O, or popsicles will help keep your blood glucose up if you are at risk for lows. See page 13 for the 15-15 rule to treat lows.

Before you get sick, decide on an action plan with your diabetes care team.

Before you get sick, decide on an action plan with your health care team.

This plan should include the following:

- When to call your doctor (in most cases if you are vomiting or have diarrhea more than three times over 24 hours or have had a fever over 101 for 24 hours)
- How often to check your blood glucose
- What foods and fluids to take during your illness
- How to adjust your insulin or oral medication if you need to
- Discuss what over the counter medications you should use for colds, flu, etc. Some can raise your blood glucose or affect your usual medications.
Planning Healthy Meals

Choosing what to eat
In the past, eating plans for people with diabetes were very restrictive. Things are different now. There isn’t a one-size-fits-all diabetes diet.

While you may need to make some changes in what and how much you eat, you have flexibility in deciding what’s on the menu. With a little planning, you can still include your favorite foods.

Create your plate
Are you trying to figure out how you’re supposed to eat? A good place to begin is the Plate Method. You don’t need any special tools and don’t need to do any counting. Focus on filling your plate with more nonstarchy vegetables while aiming for less starchy foods and high fat processed meats. It really works! Find out how to use the Plate Method on the next page.

Weight loss
If you are overweight or obese, your doctor or diabetes care team may suggest that you lose weight.

Losing weight can improve your blood glucose, blood pressure, and cholesterol levels. You don’t have to lose a lot of weight to start seeing results. Losing just 10-15 pounds can make a difference. The key to losing weight in a healthy way is by making small changes that reduce your overall calorie intake and you can maintain long term.

Avoid crash diets, and above all, follow the guidance of your provider or dietitian to create a meal plan that will work for you.

There are many types of weight loss plans to choose from. Even using the Plate Method for meal planning can help with weight loss. If you’re having trouble losing weight, talk with your doctor or a registered dietitian.

What about alcohol?
If you choose to drink, do so in moderation. Alcohol contains calories that can add to weight gain. Alcohol can also cause hypoglycemia up to 24 hours after you drink. Having more than is recommended can also lead to other health problems. Limit yourself to one serving a day (for women) or two servings a day (for men). One serving is equal to a 12 oz beer, 5 oz glass of wine, or 1 ½ oz distilled spirits (vodka, whiskey, gin, etc.).

The Living With Type 2 Diabetes® program from the American Diabetes Association® includes more information about weight loss. Begin your journey at diabetes.org/living.

If you need help finding a dietitian in your area, talk to your doctor or contact a local ADA recognized diabetes education program at 1-800-DIABETES (800-342-2383) or diabetes.org/findaprogram.
1. Fill half your plate with nonstarchy veggies.
2. Fill a quarter of your plate with protein.
3. Fill a quarter of your plate with grains or starchy veggies

* Choose water or a 0-calorie drink.

Use a 9-inch plate to help guide your portions.
Getting Active

Being active is another part of living healthy and managing diabetes. Any type of physical activity you do helps manage your blood glucose.

Other benefits of physical activity include:

- Having more energy.
- Relieving stress.
- Keeping your joints flexible.
- Lowering your risk for heart disease and stroke.
- Feeling great.

Aerobic activity

Aerobic activity makes your heart and bones strong, relieves stress, helps your insulin work better, and improves blood flow. For most people, it’s best to aim for a total of 30 minutes of this type of exercise a day, at least 5 days a week.

If you haven’t been very active recently, that can seem like a lot. But start slowly and add minutes as you are able. You can start out with 5 or 10 minutes a day and work up to more time each week. You can also split up your activity for the day: For example, take a 10-minute walk before or after each meal instead of 30 minutes all at once. Remember, some activity is always better than none.

Being active throughout the day

Reducing the amount of time spent sitting or being still is important for everyone. Set your alarm to get up and stretch or walk around the house or office at least every 30 minutes throughout the day.

Here are some ways to be more active throughout the day:

- Walk instead of drive.
- Get off the bus a stop early and walk the rest of the way.
- Work in the garden, rake leaves or wash the car.
- Play actively with kids.
- Walk around while talking on the phone.
- Park at the far end of the lot and walk.
Setting goals
Having diabetes is not easy—there are many things you need to do to manage your disease. Focus on one goal at a time.

Example:
“I will walk for 20 minutes with my husband after dinner on Monday, Wednesday, and Friday.”

Make a goal for the next week.

☐ How will I do this?
☐ When will I do this?
☐ Where will I do this?
☐ How important is this goal in helping me manage my diabetes?
☐ How sure am I that I can get to this goal?
☐ What could happen that stops me from getting to this goal?
☐ What can I do to overcome these things and get to my goal?
Medications

Diabetes medications
The first way to treat type 2 diabetes is often meal planning, weight loss, and exercise. Often these steps are not enough to bring your ABCs to a healthy range. The next step is taking medication.

Your doctor will decide which medication is right for you. This depends on:

- Your lifestyle
- Physical condition
- How you respond to the medication
- Insurance coverage

There are different types, or classes, of drugs that work in different ways to lower blood glucose.

Combination therapy
Because the medications starting on page 22 act in different ways to lower blood glucose levels, they may be used together. For example, a biguanide and a sulfonylurea may be used together. Many treatment combinations are made into a single pill for convenience.

Insulin
There are different types of insulin that vary in how quickly they lower blood glucose levels. Some work very quickly and are taken with meals. Others are long-acting and are used just once or twice a day.

Important note
The generic names and brand names are shown to help you know what you take. The American Diabetes Association does not recommend or endorse any specific medication.

You might take a medication that is not on this list. Your diabetes care team is your best source of information. Talk to them about all the medications you take. Never stop taking a medication or change your dose without talking with your doctor.

Aspirin
If you are at high risk for or if you have heart disease, taking a low dose aspirin every day may help. Aspirin can also help people who have had a heart attack or stroke. Ask your doctor whether you should take aspirin.

Blood pressure medications
Not everyone takes the same blood pressure medicine. Many people take two or more medications. The ones you take will depend on your blood pressure and other factors.

Cholesterol medications
Most adults with diabetes who are 40 years or older should be taking a statin. Statins help lower LDL levels and reduce your risk for heart attack or stroke.

There are other medications that improve cholesterol. Ask your doctor about whether you should take a statin or other drug to lower your risk for heart attack or stroke.

Although previously recommended for lipid control, we no longer recommend the use of niacin.

Diabetes and pregnancy
If you’re pregnant, talk with your doctor about what medications are right for you.

What if my blood glucose stays too high?
If your blood glucose levels stay too high, your medication may need to be adjusted. Do not adjust your medication on your own. Talk to your doctor about possible changes.
<table>
<thead>
<tr>
<th>DRUG CLASS</th>
<th>TYPE</th>
<th>GENERIC NAME</th>
<th>BRAND NAME</th>
<th>COST*</th>
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<tbody>
<tr>
<td>Alpha-Glucosidase Inhibitors</td>
<td>Oral</td>
<td>meglitol</td>
<td>Glyset</td>
<td>Moderate</td>
</tr>
<tr>
<td>Block the breakdown of starches, such as potatoes and pasta in intestine.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amylin</td>
<td>Injected</td>
<td>pramlintide</td>
<td>Symlin</td>
<td>High</td>
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<tr>
<td>Slows food moving through the stomach.</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Biguanides</td>
<td>Oral</td>
<td>metformin</td>
<td>Available as generic only</td>
<td></td>
</tr>
<tr>
<td>Decrease amount of glucose produced by the liver.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bile Acid Sequestrants</td>
<td>Oral</td>
<td>colesevelam</td>
<td>Welchol</td>
<td>High</td>
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<tr>
<td>Lower cholesterol and blood glucose levels.</td>
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<tr>
<td>Dopamine-2 Agonists</td>
<td>Oral</td>
<td>bromocriptine</td>
<td>Cycloset</td>
<td>High</td>
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<tr>
<td>Help lower blood glucose levels after a meal.</td>
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<tr>
<td>DPP-4 Inhibitors</td>
<td>Oral</td>
<td>alogliptin</td>
<td>Nesina</td>
<td>High</td>
</tr>
<tr>
<td>Prevent breakdown of GLP-1, a compound in the body that lowers blood glucose levels.</td>
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<tr>
<td>GLP-1 Receptor Agonists</td>
<td>Injected</td>
<td>dulaglutide</td>
<td>Trulicity</td>
<td>High</td>
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<tr>
<td>Helps release insulin when blood glucose is high and lower the amount of glucose produced by the liver.</td>
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<tr>
<td>Meglitinides</td>
<td>Oral</td>
<td>nateglinide</td>
<td>Starlix</td>
<td>Moderate</td>
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<tr>
<td>Help beta cells in pancreas release more insulin.</td>
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<td></td>
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<tr>
<td>SGLT2 Inhibitors</td>
<td>Oral</td>
<td>canagliflozin</td>
<td>Invokana</td>
<td>High</td>
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<tr>
<td>Blocks glucose from being reabsorbed in the kidney.</td>
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<tr>
<td>Sulfonylureas</td>
<td>Oral</td>
<td>glipizide</td>
<td>Glucotrol/Glucotrol XL</td>
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<td>Help beta cells in pancreas release more insulin.</td>
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<tr>
<td>TZDs</td>
<td>Oral</td>
<td>pioglitazone</td>
<td>Actos</td>
<td>Low</td>
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<tr>
<td>Help insulin work better in muscle and fat. Lower glucose production in liver.</td>
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</tbody>
</table>

*Cost is based on the lowest-price drug in its class. **The sulfonylureas chlorpropamide (Diabinese) and tolazamide and the TZD rosiglitazone (Avandia) are available but rarely prescribed.
# INSULIN

<table>
<thead>
<tr>
<th>INSULIN TYPE*</th>
<th>GENERIC NAME</th>
<th>BRAND NAME</th>
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</thead>
<tbody>
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<td><strong>Rapid-Acting</strong></td>
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<tr>
<td>Onset: about 15 minutes</td>
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<td></td>
</tr>
<tr>
<td>Peak: about 1 or 2 hours</td>
<td></td>
<td></td>
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<tr>
<td>after injection</td>
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<td>Duration: last between 2-4 hours</td>
<td>aspart</td>
<td>Flasp</td>
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<tr>
<td></td>
<td>glulisine</td>
<td>NovoLog</td>
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<tr>
<td></td>
<td>lispro</td>
<td>Apidra</td>
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<tr>
<td></td>
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<td>Admelog</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Humalog</td>
</tr>
<tr>
<td><strong>Regular- or Short-Acting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset: about 30 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak: about 2 to 3 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>after injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration: last between 3-6 hours</td>
<td>human regular</td>
<td>Humulin R</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Novolin R</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Velosulin R</td>
</tr>
<tr>
<td><strong>Intermediate-Acting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset: about 2 to 4 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak: 4 to 12 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>after injection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration: it is effective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for about 12 to 18 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>human nph</td>
<td>Humulin N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Novolin N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ReliOn</td>
</tr>
<tr>
<td><strong>Long-Acting or Basal Insulin Analogs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset: between 2 and 4 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak: continuous, “peakless” action that acts the way your body normally releases insulin</td>
<td>detemir</td>
<td>Leveirm</td>
</tr>
<tr>
<td>Duration: last up to 24 hours</td>
<td>glargine</td>
<td>Basaglar</td>
</tr>
<tr>
<td></td>
<td>degludec</td>
<td>Lantus</td>
</tr>
<tr>
<td><strong>Ultra Long-Acting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset: 6 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak: No peak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration: last up to 36 hours or longer</td>
<td>glargine u-300</td>
<td>Tresiba</td>
</tr>
<tr>
<td><strong>Inhaled Insulin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onset: Within 12 to 15 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak: 30 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration: Out of your system in 180 minutes</td>
<td>technosphere</td>
<td>Afrezza</td>
</tr>
<tr>
<td>Note: Must be used with injectable long-acting insulin in patients with type 1 diabetes and in type 2 diabetes patients who use long-acting insulin.</td>
<td>insulin-inhalation system</td>
<td></td>
</tr>
</tbody>
</table>

*Costs for insulin vary due to types and doses.

### COMMON BLOOD PRESSURE MEDICATIONS

<table>
<thead>
<tr>
<th>DRUG CLASS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE Inhibitors</td>
<td>Lower blood pressure by keeping your blood vessels relaxed. ACE inhibitors prevent a hormone from forming in your body and narrowing your blood vessels. They also help protect your kidneys and reduce your risk of heart attack and stroke.</td>
</tr>
<tr>
<td>ARBs</td>
<td>Keep the blood vessels open and relaxed to help lower blood pressure. Like ACE inhibitors, ARBs also protect your kidneys.</td>
</tr>
<tr>
<td>Beta Blockers</td>
<td>Help lower blood pressure and relax your heart by allowing it to beat slower and with less force. Beta blockers help prevent heart attack and stroke.</td>
</tr>
<tr>
<td>Calcium Channel Blockers</td>
<td>Help the blood vessels relax by keeping calcium out of your blood vessels and heart.</td>
</tr>
<tr>
<td>Diuretics</td>
<td>Help rid your body of extra water and sodium through urine. Sometimes called “water pills.”</td>
</tr>
</tbody>
</table>

### CHOLESTEROL MEDICATIONS

<table>
<thead>
<tr>
<th>DRUG CLASS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statins</td>
<td></td>
</tr>
<tr>
<td>Sterol Transport Inhibitor</td>
<td></td>
</tr>
<tr>
<td>PCSK9</td>
<td></td>
</tr>
<tr>
<td>ApoB Inhibitor</td>
<td></td>
</tr>
<tr>
<td>MTP Inhibitor</td>
<td></td>
</tr>
</tbody>
</table>
Diabetes and Your Eyes

What is Diabetic Eye Disease?

Though it sounds like a single condition, diabetic eye disease is actually a group of vision-related problems that can result from various factors, including chronically high blood glucose and blood pressure.

Diabetes affects the entire body and if it’s not properly managed, can lead to complications such as damage to your blood vessels (the arteries, veins, and capillaries that the heart moves blood through) and nerves, including those in your eyes.

Over time, diabetes can damage the capillaries in the retina—a layer at the back of the eye—causing changes to your vision. This is called diabetic retinopathy and causes blurred or cloudy vision or, left untreated, complete loss of vision. There are two major stages of diabetic retinopathy: the first is early-stage nonproliferative that can progress to the more advanced proliferative.

Nonproliferative retinopathy

In nonproliferative retinopathy, small areas of swelling occur and the capillaries found in the retina begin to leak. When this leaking starts, areas of the eye don’t have adequate circulation, oxygen, and other nutrients.

Proliferative retinopathy

In proliferative retinopathy, the closed off capillaries kick off a series of events. Because the oxygen and nutrients aren’t getting to the cells in your eye, new abnormal capillaries start to form in the retina. These fragile
new capillaries bleed and leak even more fluid into the eye, affecting your vision. If left unchecked, they can grow into the center of the retina responsible for central vision, called the macula, and affect your field of vision.

Macular edema
In either stage of retinopathy, fluid leaking from the capillaries can cause the macula to thicken or swell. The resulting condition, called macular edema, can lead to mild to severe vision loss in the center of your vision. Macular edema is the most common cause of vision loss in people with diabetes.

How do I know if I have eye problems?
The only way to be sure whether you have eye problems is to have an eye doctor check your eyes. You can have eye damage even if your vision is fine. It has nothing to do with needing glasses. Regular checkups with an eye doctor can detect eye disease early and prevent blindness.

Can diabetes cause other eye problems?
Some eye problems are more common in people with diabetes:

- Glaucoma is an increase in fluid pressure inside the eye.
- Cataract is a clouding of the eye’s lens.
- Retinal detachment occurs when the retina is lifted or pulled from its normal position.

If left untreated, eye disease can lead to vision loss. If you notice changes to your vision or believe you have an eye problem, see an eye doctor right away.

What can I do to protect my eyes?

- Visit your eye doctor regularly.
- Manage your blood glucose.
- Manage your blood pressure.
- Manage your cholesterol and triglycerides.
- Avoid extreme high or low blood glucose.
- Take steps to protect your eyes, like wearing sunglasses to reduce UV light exposure.
Preventing or Delaying Kidney Disease

Who gets kidney disease?

Not everyone with diabetes develops kidney disease. Risk factors include genetics, blood glucose management, and blood pressure. The better a person manages their diabetes and blood pressure, the lower their chance of getting kidney disease.

How can I prevent or delay kidney disease?

There are steps you can take to prevent or delay kidney disease. If you already have kidney disease, these steps also help slow it down.

You can:

- Keep your blood pressure and blood glucose levels in your target range.
- Take medications as prescribed.
- Have regular checkups and get your kidney function checked once a year.

Blood pressure

Keeping your blood pressure on target helps you avoid kidney disease. Most people with diabetes should aim for a blood pressure level of less than 140 over 90.

There are many types of medications to control blood pressure but one type in particular, called an ACE inhibitor, has been proven to slow the progression of kidney disease. In fact, it’s so effective that doctors also prescribe it for people who don’t have high blood pressure so that they can protect their kidneys. Another type of medication, called an ARB, can also help protect kidney function.

Blood glucose

Another important thing you can do is reach your blood glucose targets as often as possible. Talk with your doctor about the best blood glucose targets for you.
Nerve Damage and Diabetes

Nerves send messages to and from your brain about pain, temperature, and touch. They also tell your muscles when and how to move and control body systems that digest food and pass urine. 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. It can lead to many kinds of problems.

The two most common types of nerve damage are:

**Peripheral Neuropathy**
This can cause tingling, pain, numbness, and weakness in your feet and hands.

**Autonomic Neuropathy**
This type can lead to:
- Digestive problems—feeling full, nausea, vomiting, diarrhea, or constipation.
- Problems with how well your bladder works.
- Problems having sex.
- Dizziness or faintness.
- Increased or decreased sweating.
- Loss of the typical warning signs of a heart attack.
- Not feeling the warning signs of low blood glucose.
- Changes in how your eyes react to light and dark.

People with diabetes can also have what is called focal neuropathy. This kind of nerve damage causes sudden weakness or pain. It can lead to double vision or a paralysis on one side of the face called Bell’s palsy. It also can cause pain in the front of the thigh or other parts of the body.

People with diabetes are also at risk for compressed nerves, which is when something in the body presses against a nerve preventing it from sending a signal. Carpal tunnel syndrome is an example of this and is a common cause of numbness and tingling in the fingers.

Nerve damage can be hard to diagnose because its symptoms can be very mild or thought to be caused by other conditions. If you’re having problems that you think are related to neuropathy, make a list of your symptoms and bring them to your doctor.

### How can I prevent diabetic neuropathy?

- Managing blood glucose helps prevent or delay nerve problems.
Taking Care of Your Feet

Manage your diabetes and get a complete foot exam once a year. Report any changes in how your feet look or feel.

Caring for your feet will help you avoid serious foot problems.

- Wash your feet thoroughly every day.
- Dry your feet thoroughly (be sure to dry between the toes, too).
- Apply moisturizer to your feet (not between the toes).
- Keep your toenails neat and trim. Gently use an emery board to file any sharp edges.
- Check your feet for sores, cuts, blisters, corns or redness every day.
- Let your doctor know if you see anything unusual.
- Wear moisture-wicking socks.
- Check inside your shoes for any hard objects every time you put them on.
- Wear shoes that fit well and don’t rub your feet. Shoes shouldn’t need a “breaking in” period.

Avoid the following to lower your risk for foot problems

- Do not walk around barefoot.
- Do not soak your feet.
- Do not smoke.
Get Help to **Quit Smoking**

Are you ready to quit smoking? Once you’ve quit, you’ll feel healthier right away. And you’ll be healthier for the rest of your life.

**What are the benefits of quitting smoking?**

When you quit smoking, you will:

- Lower your risk for a heart attack or a stroke
- Reduce your risk for some kinds of cancer
- Cut your risk for emphysema (a lung disease), chronic bronchitis, and cataracts
- Be able to breathe easier
- (For pregnant women) lower your risk for delivering your baby too early and having a baby with a low birth weight
- Stop exposing your family and friends to secondhand smoke
- Save money

**Tips to help you quit smoking**

**Things to do before you quit**

- Make a list of your own reasons for quitting. Put this list where you’ll see it every day.
- Tell your family and friends about your plan to quit. Ask them for their help and understanding.
- Ask a friend who smokes to think about quitting with you.

**Ways to quit**

**There are lots of ways to quit smoking. Some people use a combination of ways**

- Talk with your doctor about what would work best for you.
- Get free telephone counseling by calling your state’s “Quitline.” Find your state’s program by calling 1-800-QUIT-NOW (800-784-8669).
- Quit all at once—also called “going cold turkey.” Throw away your cigarettes, matches, lighters, and ashtrays.
- Taper off. Quit smoking by cutting back over several weeks.
- Use a nicotine patch or gum.
- Ask your doctor for a prescription to help you quit.
- Talk with your doctor about whether counseling, acupuncture, or hypnosis would be helpful.
- Take a quit-smoking class or join a support group.
My plan for quitting smoking.

Get started with your plan to quit smoking by adding your answers.

☐ I want to quit smoking because

________________________________________________________________________

Example: I want to stay healthy and be around for my family.

☐ I haven’t quit smoking before because

________________________________________________________________________

Example: I didn’t think I could do it.

[Or] ☐ I’ve tried to quit smoking before but

________________________________________________________________________

Example: I started smoking again when I was stressed out.

☐ To keep from starting smoking again, I’ll:

________________________________________________________________________

Example: find new ways to cope with stress.

☐ Instead of smoking, I’ll cope with stress by:

________________________________________________________________________

Example: taking deep breaths for several minutes and relax.

☐ The following people can help me quit smoking:

________________________________________________________________________

Example: my kids will be my “cheerleaders.”

☐ I’ll take these steps to quit:

________________________________________________________________________

________________________________________________________________________

Example: I’ll use a nicotine patch and take a quit-smoking class.

☐ The hardest times to not smoke will be:

________________________________________________________________________

________________________________________________________________________

Example: right after meals.

☐ When I feel like smoking, I’ll:

________________________________________________________________________

________________________________________________________________________

Example: brush my teeth after meals.

☐ To reward myself, I’ll:

________________________________________________________________________

________________________________________________________________________

Example: save the money I would have spent on cigarettes and spend it on something special.

☐ I’ll quit smoking on this date:

________________________________________________________________________

________________________________________________________________________
Skin Care and Infections

Diabetes can affect every part of the body, including the skin.

Most skin conditions can be prevented or easily treated if caught early. Talk to your doctor if you have questions or concerns about skin changes or infection.

What can I do to prevent skin problems?

☐ Manage your diabetes.

☐ Keep skin clean and dry. Use talcum powder in areas where skin touches skin, such as armpits and groin.

☐ Avoid very hot baths and showers. If your skin is dry, don’t use bubble baths. Moisturizing soaps may help. Afterward, use a standard skin lotion, but don’t put lotions between toes. The extra moisture there can encourage fungus to grow.

☐ Prevent dry skin. Scratching dry or itchy skin can open it up and allow infection to set in. Moisturize your skin to prevent chapping, especially in cold or windy weather.

☐ Treat cuts right away. Wash minor cuts with soap and water. Only use an antibiotic cream or ointment if your doctor says it’s okay. Cover minor cuts with sterile gauze. See a doctor right away if you get a major cut, burn, or infection.

☐ During cold, dry months, keep your home more humid. Bathe less during this weather, if possible.

☐ Use mild shampoos.

☐ Do not use feminine hygiene sprays.

☐ Talk to your doctor or dermatologist (skin doctor) if you are not able to solve a skin problem yourself.
Sexuality and Childbirth

Will diabetes affect my sex life?
Having diabetes doesn’t mean you can’t have a good sex life and raise healthy children. However, it does call for watching your blood glucose levels, working with your diabetes care team, and helping your partner understand your diabetes.

Problems women may experience
Vaginal and urinary tract infections often occur when blood glucose levels are high. Managing your blood glucose will help keep you healthy. Having diabetes also increases your chance of sexual problems.

Some women with diabetes have dryness and pain during sex. Your doctor can treat this by giving you estrogen or a lubricant. If you have these or other related problems, talk with your diabetes care team. They may refer you to a specialist who can help.

Problems men may experience
Some men with diabetes may have erectile dysfunction (ED). This means that the penis does not become or stay hard enough for sex. Managing blood glucose is the best way to help avoid ED. ED can be caused by not managing your diabetes, use of alcohol, certain prescription drugs, nerve or blood vessel damage, low male hormone levels, stress, or depression. Your doctor can pinpoint the cause. Many treatments are available.

How will diabetes affect me if I become pregnant?
Most women with diabetes have healthy babies. If you are a woman wanting to get pregnant, talk to your doctor about blood glucose targets you should reach before you even try to get pregnant.

Why? The time when you first become pregnant is an important time for your growing baby. High blood glucose during early pregnancy can hurt your baby. If you wait until you know you are pregnant to manage your blood glucose, your baby could already be harmed. Reaching the targets your doctor sets before you get pregnant gives your baby the best chance for a healthy start.

If you don’t want to get pregnant or if you’re not ready for pregnancy, use birth control. An unplanned pregnancy could hurt you and your baby. Ask your doctor which birth control method would work best for you.

If you are taking diabetes pills or other injectable medications, you will need to switch to using insulin while you are pregnant for the baby’s health.
Cuban Sandwich

2 Servings
Serving Size 1/2 sandwich and 1/2 salad
Amount per serving
Calories 190
Total Fat 6g
Saturated Fat 2g
Trans Fat 0g
Cholesterol 30mg
Sodium 510mg
Total Carbohydrate 16g
Dietary Fiber 3g
Total Sugars 5g
Protein 20g
Potassium 420mg
Phosphorus 290mg

Explore ADA's new home for easy, delicious recipes and more for healthy living.
- Hundreds of easy-to-make recipes
- Healthy tips from food and nutrition experts
- Interactive Meal Planner
- Grocery List generator

Let's get cooking at diabetesfoodhub.org
# Eggs Benedict

6 Servings

<table>
<thead>
<tr>
<th>Amount per serving</th>
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<tbody>
<tr>
<td>Calories</td>
<td>190</td>
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<tr>
<td>Total Fat</td>
<td>7g</td>
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<tr>
<td>Saturated Fat</td>
<td>2.5g</td>
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<tr>
<td>Trans Fat</td>
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<tr>
<td>Cholesterol</td>
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<tr>
<td>Sodium</td>
<td>530mg</td>
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<tr>
<td>Total Carbohydrate</td>
<td>17g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
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<tr>
<td>Total Sugars</td>
<td>4g</td>
</tr>
<tr>
<td>Protein</td>
<td>14g</td>
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<tr>
<td>Potassium</td>
<td>260mg</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>240mg</td>
</tr>
</tbody>
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Kick Start Breakfast
Good Health for Life.
Resources

Living With Type 2 Diabetes
Living With Type 2 Diabetes program—For a person learning to live with type 2 diabetes, the journey with it can sometimes be overwhelming. ADA is here to provide support every step of the way. Through the ADA's Living With Type 2 Diabetes program, participants receive guidance on emotional well-being, healthy eating, getting active, and more through six informational e-booklets, a monthly e-newsletter, and a subscription to Diabetes Forecast® magazine. Sign up at diabetes.org/living.

Ask the Experts
Living With Diabetes. Ask the Experts Q&A—ADA’s Q&A series aims to educate people living with type 2 diabetes about healthy lifestyle solutions. Topics include nutrition, how to manage stress, and getting active. The phone-in and online format allows people to ask questions of ADA diabetes experts and hear from others who might share similar experiences. Hear full programs and audio clips at diabetes.org/experts.

Diabetes Self-Management Education and Support Services
Start here to find local ADA recognized diabetes education programs. These services focus on your concerns about diabetes. They will also empower you with the knowledge and skills to manage it. You can find a program in your area at diabetes.org/findaprogram.

Center for Information
Representatives at the American Diabetes Association’s Center for Information are available to guide you to diabetes information and resources, as well as local programs and events. To reach these representatives, call 1-800-DIABETES (800-342-2383) or email askada@diabetes.org.

Diabetes Food Hub
ADA’s Diabetes Food Hub is a brand new cooking and recipe destination made for people living with diabetes and their families. Save time during your busy week using the interactive Meal Planner, a Grocery List you can edit, and Heathy Tips from ADA food and nutrition experts at diabetesfoodhub.org.

Take Action
Stand up for diabetes research, treatments, prevention, and more by becoming an Advocate! We need your voice to help bend the curve on the diabetes epidemic and help families thrive. Join us at diabetes.org/advocatesignup.

Order more copies of How to Thrive: A Guide to Your Journey with Diabetes at shopdiabetes.org/Journey
There's nothing we can't accomplish when we're Connected for Life.