

Understanding blood sugar levels

Diabetes is a very common but serious condition. Learning to live with diabetes can be challenging. There are many things you can do to help manage the condition.

What is diabetes?¹

Diabetes is a condition in which the body doesn't properly process food for use as energy. There are two key players:

- Glucose (sugar) is fuel for the body's cells.
- Insulin takes glucose from the blood to the cells. In people with diabetes, the body doesn't make enough insulin or doesn't use it as well as it should.



There are two main types of diabetes:

- **Type 1 diabetes:** The pancreas does not produce insulin, which causes a buildup of glucose (sugar) in your bloodstream.
- **Type 2 diabetes:** The pancreas still makes insulin, but the insulin doesn't do its job as it should. Glucose just hangs around and builds up in the blood. The pancreas makes even more insulin to get glucose to go into the cells, but eventually gets worn out from working so hard and doesn't produce as much insulin.
- **Prediabetes** is when a person's blood sugar level is higher than normal, but not high enough to constitute a diabetes diagnosis. This puts a person at a greater risk for developing type 2 diabetes in the future.


Who is at risk for diabetes?²

There are many risk factors for diabetes. Some you can't do anything about, meaning they are uncontrollable; others are controllable. According to the National Institute of Diabetes and Digestive and Kidney Diseases, the following increases your risk of developing diabetes: (Check all that apply to you)

- Family history of diabetes
- Being overweight or obese
- Race/ ethnicity
- Not being active
- Age (>45)
- Other health conditions (high blood pressure, prediabetes, low HDL Cholesterol, or high triglycerides)

Diagnosing and managing diabetes

The National Institute of Diabetes and Digestive and Kidney Diseases recommends the following guidelines for screening for diabetes:²



	A1c (percent)	Fasting plasma glucose (mg/dL)	Oral glucose tolerance test (mg/dL)
Diabetes	6.5 or above	126 or above	200 or above
Prediabetes	5.7 to 6.4	100 to 125	140 to 199
Normal	Below 5.7	99 or below	139 or below

If you have been diagnosed with diabetes, then your doctor may want you to check your blood sugars.



Below range: hypoglycemia (<70) Blood glucose levels below your healthy range can be dangerous if not treated immediately.²

These symptoms need immediate attention if blood sugar is below 70: headache, dizziness, sweaty, hungry, fast heartbeat, shaky, anxious, weak or tired, upset or nervous.



Rule of 15

If your blood sugar is below healthy range, follow the rule of 15: Eat 15 grams of fast-acting carbohydrates. Wait 15 minutes and check your blood glucose again to see if it's in a healthy range.

Examples of 15 grams of fast acting carbohydrates:

- 1 tablespoon of sugar or honey
- 3 glucose tablets
- 4 ounces (1/2 cup) of fruit juice (orange, apple or grape)
- 4 ounces (1/2 cup) of regular soda (not diet)
- 4 hard candies you can chew quickly



Above range: hyperglycemia (>180): Blood glucose levels above your healthy range can cause several health problems if left unmanaged.²

Long-term effects: stroke, diabetic retinopathy, heart disease, kidney disease, nerve damage, amputation.

If your blood sugar is high:

- Drink plenty of water or drinks with no calories
- Follow procedure advised by your doctor for high blood sugar, like taking prescribed medications or insulin.
- Take a walk
- Skip a snack or choose a low-carb snack

Tips to help manage diabetes

An important part of managing diabetes may be making some healthy lifestyle changes.



Keep a healthy body weight: Even losing just a few pounds may help you control your diabetes and reduce your risk for complications.

According to the 2023 Standards of Care from the American Diabetes Association, a modest, sustained weight loss of just 5% of initial body weight has been shown to improve blood sugar control in people who are overweight or obese.⁶

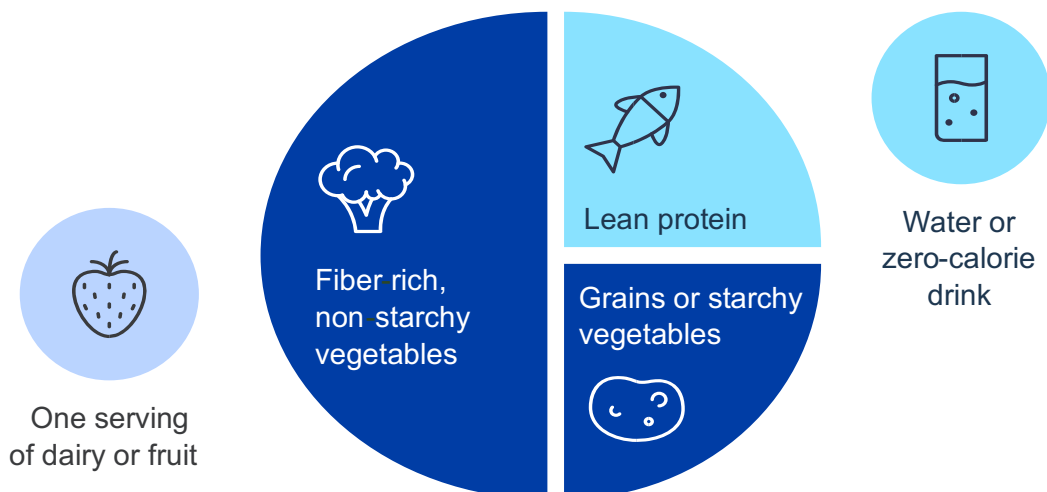
A realistic, achievable weight-loss plan that addresses changes in your diet and activity level may help increase your chance for success.⁷ Take it slow and be patient—long-term results usually don't happen overnight.



Eat a healthy diet: There's no one diet that's best for managing blood glucose levels, but there are some nutrition guidelines that can help.

Eating meals and snacks at certain times of the day can help keep your blood sugar stable. It may help to spread out the carbohydrates you eat by having a little bit of carbs with each meal and snack.⁸ Talk with your healthcare provider about when you should eat meals and snacks. Meal timing can also affect how some diabetes medications work.

Features of a balanced diabetes plate:⁹ This diagram shows how to fill the different portions of a plate to help manage blood sugar levels and lose weight.





Stay active: Exercise helps improve your body’s sensitivity to insulin, which helps cells take in more glucose to prevent it from building up in the blood.⁸

The Centers for Disease Control and Prevention recommends:

- Cardiovascular activity: Aim for at least 30 minutes, five days a week.
- Strength training: Aim for twice per week. (Muscle burns more calories throughout the day even when your body is at rest).

Note: It is best to do some activity every day rather than doing it once per week.¹⁰



Practice healthy sleep habits: Diabetes may lead to sleep problems and poor sleep may lead to higher blood sugar levels the next day.¹²

There are many things you can do to try to get better sleep, including:

- Go to bed and wake up at the same time every day.
- Have a nightly relaxation ritual to do before bed.
- Keep your bedroom cool, dark and quiet.
- Talk to your healthcare provider about your sleep problems.



Insulin and medications

In addition to lifestyle changes, your healthcare provider may prescribe insulin or an oral medication to help maintain your blood sugar level.

There are many different types of insulin (as shown in the table below).¹³

Type of insulin	How fast it works	When it peaks	How long it lasts
Rapid acting	15 minutes after injection	1 hour	2-4 hours
Short acting	30 minutes after injection	2-3 hours	3-6 hours
Intermediate acting	2-4 hours after injection	4-12 hours	12–18 hours
Long acting	Several hours after injection	Does not peak	24 hours or more

Possible complications of diabetes

There are several long-term complications that can develop from diabetes. These tend to happen gradually over time. According to the Mayo Clinic, possible complications include:³

- Cardiovascular disease
- Nerve damage
- Eye damage
- Kidney damage
- Foot damage
- Alzheimer’s disease

Regular checkups

To help prevent complications from occurring, it's important to have regular health checkups and tests. These may help screen for and prevent complications. This may include the following:

- A1c test**
(every three months or as directed by your provider)
- Cholesterol screenin**
(at least once a year)
- Dental cleanings and exams**
(every three to six months)
- Eye exam**
(at least once a year)
- Foot exam**
(self-check daily, provider to check routinely at visits)
- Kidney test**
(at least once a year)

Talk to your healthcare provider about how often you need these tests.



Manage your emotions: Managing diabetes can leave you feeling run down, emotionally drained and overwhelmed.

There's a lot to think about after all—tracking your blood sugar levels, taking insulin, planning your meals, staying active ... the list goes on.

When it comes to your mental health, the American Diabetes Association says there are a few things to watch out for.¹¹

1. **Know that anger is a natural reaction.** Some people start to feel angry right when they're diagnosed and may ask "Why me?". The key to dealing with your anger starts with figuring out what is making you angry. Are you scared? Do you feel a loss of control? Are you mad at yourself?

Once you've identified why you're angry, work to overcome it. When you feel anger, try to short circuit it by taking deep breaths, calming that angry voice in your head and/or taking a walk.
2. **Next, beware of denial.** You may think things like "not me" or "there must be some sort of mistake" but at some point, you have to accept your diagnoses and take action. If you continue to deny it, your health may suffer.
3. **Lastly, watch for signs of depression.** Learn the symptoms of depression and watch for them. Be sure to talk to your doctor if you suspect you are experiencing depression.

Self-reflection:

How has diabetes impacted your life?

What would your ideal day of health look like? What do you need to do to achieve that?

What unhealthy patterns have you noticed in the past 14 days that you think need addressed?

What or who inspires you to be healthier?

What are three activities you can do to help you feel better when you are having a tough diabetes day?

List five things your body does that you are grateful for.

This information is provided for educational purposes only. It is not to be used for medical advice, diagnosis or treatment. Consult your healthcare provider if you have questions or concerns. Can remove from this communication: Talk to your doctor before beginning an exercise program or making any changes to your diet.

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Sources

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