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# **NIH** MedlinePlus

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MAGAZINE



## The country music star is inspiring others to live life to the fullest

still helping kids. Paslay has recorded hit songs and written for other country music stars like Amy Grant and Lady A. He also loves his role as an advocate for people with type 1 diabetes—and sharing his own journey with the disease. He spoke with NIH MedlinePlus Magazine about life with type 1 and his message of hope for others who have it.

# How old were you when you were diagnosed with type 1 diabetes? Were you experiencing symptoms that led you to get checked?

I was 10 years old when I was diagnosed. I did have some classic diabetic symptoms: I was thirsty and drinking a lot of fluids. I remember walking down my school hallway and feeling

dizzy and everyone looking fuzzy. My grandmother, who was a nurse's assistant, noticed it pretty quickly and took me to the doctor to get tested. Sure enough, my blood glucose levels were very high, and I was diagnosed with type 1 diabetes.

#### How did type 1 diabetes affect you as a kid?

When I had low blood sugar levels at school, I would have to raise my hand and ask to get a juice box and crackers. Even though it was for my medical condition, I was afraid to do it because I didn't want to upset the class. The same thing would happen running around training for my baseball team. But my coach would say, "Look at Paslay. He just had low glucose and he's passing you up." So it also pushed me harder. It also gave me more responsibilities to be aware of my body and health, including eating healthier. I am grateful for that.



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I am also grateful that I had such great doctors who made sure I got the right care. I grew up in the little town of Temple, Texas, which is near Baylor University. I was lucky to have amazing doctors and nurses who were experts in caring for kids with type 1 diabetes.

#### How do you manage your condition now? How has that changed during your lifetime?

Thanks to scientific research, we have had amazing advances in technology in the last 30 years. The continuous glucose monitoring (CGM) system and insulin pump I use are mindblowing. I wear a patch that constantly monitors my blood glucose levels. The patch then communicates with my insulin pump to keep my insulin at healthy levels. The CGM also sends the information to an app on my smartphone so I know exactly where my blood glucose level is headed.

I'm very grateful that I can afford this new technology. It's definitely adding life to my life. I get to live more by keeping my diabetes controlled.

Another big benefit is that I get to sleep through the night a lot more. Before this technology, when I was a kid, my parents would regularly come in to ask how I was feeling and test my blood. Now parents can just check their phone app and know their kid is OK.

#### How do diet, exercise, and a healthy lifestyle play into managing your type 1 diabetes?

I stay very aware of what I'm eating, and I try to stay healthy. We've got a farm, so I'm always active out there. As a songwriter and a musician, my job is to "move air" for a living. So it's nice to move dirt, grow roots, and pick fruit and other things for a change.

I can still enjoy great food, but I try to make wise choices, eat things in moderation, and monitor my glucose levels. Diabetes has taught me how everything in life truly needs a balance and how every action has an effect.

#### Does your diabetes affect your music and performing?

Before I had my CGM and insulin pump, it did affect my career a lot. There were times when I was on stage performing that I came very close to not being able to continue with the show. My manager had to run and get orange juice for me to drink to raise my blood glucose levels. But now when I'm performing, my tour manager is looking at the phone app tied to my CGM. And we always have a cup full of orange juice ready on stage that he signals me to drink if needed.



When meeting children who also have type 1 diabetes, Paslay says he tells them to not let their condition stop their dreams.

#### What led you to become an advocate, particularly for children with type 1 diabetes?

Before I went into music, I was planning to become a pediatric endocrinologist (a doctor who treats children with hormone disorders, including diabetes). I thought to myself, "I'm a kid with diabetes, and my doctor has diabetes. I trust him because he has what I have. Maybe this is what God wants me to do, to go help kids with diabetes?"

But then I started writing songs and singing, and people encouraged me to pursue a career in music. They said, "Dude, you probably should move to Nashville. You're pretty good!" Well, now I make music, and I'm getting to meet with and talk with kids who have type 1 diabetes. I urge them to make those decisions that lead to happiness. I love doing that, so I'm glad my plan worked out!

#### What message do you have for others living with type 1 diabetes?

Live your life to the fullest. Don't let diabetes rule your life. If you have a dream, pursue it. There is nothing you can't be in life...except maybe be in the military. Go chase your dreams, have fun doing it, and realize the race is part of life. We all have obstacles. Hopefully whatever struggles are in your life teach you empathy, sympathy, and love and make you even stronger on the other side.

#### What are you up to professionally?

I put out a new EP in December called Perfect Stranger. And I wrapped up the Perfect Stranger European tour right before Christmas. I plan on staying busy in 2024 with more new music. I'm always touring! ■



"[Having type 1 diabetes] also gave me more responsibilities to be aware of my body and health, including eating healthier. I am grateful for that."

# Type 1 diabetes: What you need to know

ore than 37 million Americans have diabetes, which causes high blood sugar. Normally, your body produces insulin, a hormone that helps regulate levels of blood glucose, also called blood sugar. With diabetes, your body either can't produce enough insulin or can't properly use the insulin it does produce. For people with type 1 diabetes, the immune system destroys cells in the pancreas that make insulin. This causes sugar to build up in the blood. Over time, high blood sugar can damage your nerves, heart, eyes, kidneys, gums and teeth, and other organs.

While type 2 is the most common type of diabetes, 5% of people in the United States with diabetes have type 1. This disease is usually diagnosed in children and young adults, but it can appear at any age. Having a parent or sibling with this disease may increase your chance of developing it.

We don't know for sure what causes type 1 diabetes, but experts think it may be caused by genes and environmental factors that might trigger the disease. Recent research shows we can also delay the onset of type 1 diabetes and even detect early stages, before clinical symptoms appear.

#### What are the symptoms?

Symptoms of type 1 diabetes are serious and usually start over a few days to weeks. They may include:

- Being very thirsty
- Peeing often
- Feeling very hungry or tired
- Losing weight without trying
- Having dry, itchy skin
- Losing feeling in your feet or feeling tingling in your feet
- Having blurry eyesight

Type 1 diabetes also affects blood flow around a wound, which can make it harder for your skin to heal from injuries. Chronic diabetic wounds that don't heal within a few weeks or months may lead to limb amputations, disability, and even death.

Sometimes symptoms of type 1 diabetes are signs of a life-threatening condition called diabetic ketoacidosis (DKA). If you or your child have symptoms of DKA, contact your health care professional immediately or go to the nearest emergency room.

These symptoms include:

- Breath that smells sweet or like fruit
- Dry or flushed skin
- Nausea or vomiting
- Stomach pain
- Trouble breathing
- Trouble paying attention or feeling confused





People with type 1 diabetes need to check their blood sugar daily to make decisions about food, physical activity, and medicines.

#### How is it diagnosed?

A blood test can show whether you have diabetes. But these tests cannot tell the type of diabetes you have. To tell if your diabetes is type 1, your health care provider may test your blood for certain autoantibodies. Autoantibodies attack your healthy tissues and cells by mistake. Because type 1 diabetes can run in families, your health care provider may also want to test your family members for autoantibodies.

#### How is it treated?

People with type 1 diabetes must take insulin every day. There are multiple types of insulin, and each works for different lengths of time. Your health care provider can determine what type of insulin you need and whether you need to use more than one type.

You can take insulin in different ways, including injections or an insulin pump. Injections are needed several times during the day, while a pump gives you small, steady doses throughout the day.

People with type 1 diabetes also need to check their blood sugar daily to make decisions about food, physical activity, and medicines. Research shows that people with type 1 diabetes may benefit from a continuous glucose monitor—a device that automatically checks blood sugar levels throughout the day and night—or an artificial pancreas.



#### **FAST FACT**

About **5% of Americans with diabetes** have type 1.

SOURCE: NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

An artificial pancreas combines a continuous glucose monitor, an insulin pump, and a software program to automatically check your blood sugar levels. It also delivers insulin to your body when you need it.

For people ages 8 and older with autoantibodies and an early stage of type 1 diabetes, an injectable medication called <u>teplizumab</u> may slow the progress of the disease.

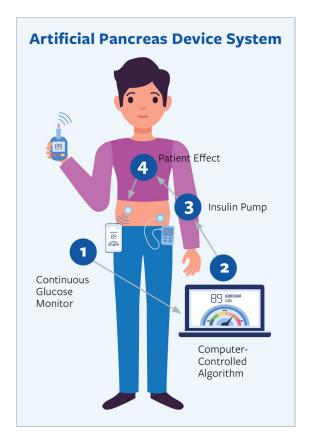


People with type 1 diabetes must take insulin every day. One way to do this is with an insulin pen injection.

No matter what treatments you use to manage type 1 diabetes, it's important to eat a healthy diet, avoid smoking, and get regular physical activity. Some people also follow a special meal plan to manage their blood sugar.

Talk with your health care provider about creating a treatment plan that works for you. Don't change it without first talking to your provider. Also, talk to them about whether diabetes medicines will give you side effects or interact with other medicines you take.

By following a treatment plan and making positive lifestyle changes, people with type 1 diabetes can lead full, healthy lives.





#### Your feedback is needed!

The National Institutes of Health's (NIH's) Office of Science Policy wants to hear your thoughts about returning individual research results to participants.

Your valuable insights may help shape future research practices.

If you are interested in participating in a brief, virtual focus group, please complete this interest form: https://bit.ly/3UQKQjo

Please respond by May 31, 2024, if you are interested.

Compensation will be provided for your participation.



# Not seeing clearly? Cataracts might be the problem

ike a camera, your eyes rely on a lens—the clear part of the eye that helps focus light on the retina. A cataract is a clouding of that lens, which can affect your vision. Most cataracts develop from aging. By age 80, more than half of Americans either have a cataract or have had cataract surgery.

You may be at a higher risk if you smoke, consume alcohol excessively, or have a family history of cataracts. Spending a lot of time in the sun without sunglasses can also raise your chances of cataracts. Diabetes and steroid use can also cause cataracts.

The National Eye Institute (NEI) has helpful resources on the condition, its symptoms, and treatment options.

#### What are the most common symptoms of a cataract?

- Cloudy or blurry vision
- Changes to how colors look (they may seem faded)
- Seeing a glare (headlights, lamps, or sunlight may appear too bright or you might see a halo around lights)
- Poor night vision
- Double vision or seeing multiple images in one eye (this symptom may clear as the cataract gets larger)
- Frequent prescription changes to your eyeglasses or contact lenses

These symptoms aren't always specific to cataracts—they can also signal other eye problems. If you have any of these symptoms, be sure to check with your eye care professional.

#### See what it's like to have cataracts... with your phone!



The **NEI-VR: See What I See** smartphone app uses virtual reality to demonstrate what the world looks like with cataracts. The free app also has quizzes to test your knowledge about cataracts and other eye diseases. Download the app through your device's app store.

Disclaimer: The NEI-VR: See What I See mobile application does not currently comply with the Web Content Accessibility Guidelines.



If you have any of these symptoms, be sure to check with your eye care professional.

#### Are there different types of cataracts?

Although most cataracts are related to aging, there are other types:

- **Secondary cataracts** can form after surgery for other eye problems (such as glaucoma).
- Traumatic cataracts can develop after an eye injury, sometimes even years later.
- **Pediatric cataracts** are present at birth or develop in childhood, often in both eyes. These cataracts may be so small that they do not affect vision. If they do, the lenses may need to be replaced.
- Radiation cataracts can develop after exposure to some types of radiation.

#### How is a cataract treated?

The symptoms of an early cataract may improve with new eyeglasses, brighter lighting, antiglare sunglasses, or magnifying lenses. If these measures do not help, surgery is the only effective treatment. Surgery involves removing the cloudy lens and replacing it with an artificial lens.

#### Can cataracts be prevented?

There are some things you can do to lower your chances of cataracts. They include:

- Wearing sunglasses and a hat with a brim to protect your eyes from the sun
- Wearing protective eyewear while doing activities such as using power tools or playing certain sports
- Quitting smoking (or don't start!)
- Eating fruits, leafy green vegetables, fish, nuts, whole grains, and other foods rich in vitamins that are good for eye health

#### What research is being done on cataracts?

NEI conducts and supports studies on factors associated with cataracts. These studies explore:

- Effects of the sun's ultraviolet rays on eyes
- Effects on the brain after cataract surgery to restore vision
- Biological factors that lead to cataracts ■

<sup>\*</sup>This article was originally published in July 2017. It was updated in April 2024.



#### **FAST FACT**

By age 80, more than half of all Americans either have a cataract or have had cataract surgery.

**SOURCE: NATIONAL EYE INSTITUTE** 

# Glaucoma: What you need to know

laucoma is the name for a group of diseases that can damage the optic nerve in the eye. Glaucoma usually happens when the fluid pressure inside the eyes slowly rises and increases pressure inside the eye. About 3 million Americans have glaucoma, and it's the second-leading cause of blindness worldwide.

If you have glaucoma, you may not have symptoms right away. But over time, you may slowly lose your peripheral (side) vision. It may seem like you're looking through a tunnel. Over time, your central (straight-ahead) vision may decrease until you eventually lose your ability to see.

An eye exam can determine whether you have glaucoma. Your eye doctor will give you eye drops to dilate (to widen your pupils) so the eye doctor can better see inside your eyes. They will also check your side vision.

People ages 60 and older, especially Hispanic and Latino people, are at higher risk for glaucoma. Black people older than 40 and anyone with a family history of glaucoma are also at higher risk for the condition. The National Eye Institute (NEI) recommends getting a comprehensive dilated eye exam every one to two years if you are higher risk.

#### What are the types of glaucoma?

There are many different types of glaucoma, but the most common in the United States is open-angle glaucoma. Some other types are angle-closure glaucoma and congenital or pediatric glaucoma, which babies can be born with. Cataracts and tumors can also cause glaucoma, but this is less common.

#### See what it's like to have glaucoma... with your phone!



The NEI-VR: See What I See smartphone app uses virtual reality to demonstrate what the world looks like with glaucoma. The free app also has quizzes to test your knowledge about glaucoma and other eye diseases. Download the app through your device's app store.

Disclaimer: The NEI-VR: See What I See mobile application does not currently comply with the Web Content Accessibility Guidelines.



Anyone with a family history of glaucoma is at higher risk for the condition.

#### How is glaucoma treated?

There is no cure for glaucoma, but treatments can control it. Prescription eye drops and laser treatments can reduce eye pressure. If these don't work, your doctor may recommend surgery. Specific treatments depend on the type of glaucoma.

#### Recent glaucoma research highlights

NEI supports many different research studies and clinical trials to better understand glaucoma.

#### Study: Is eye pigment connected to glaucoma?

Researchers followed 379 women for 15 years and found that less pigment in the macula of the eye may be an early warning sign of glaucoma. The macula is in the back of the eye and gives you clear central vision. Currently, glaucoma screenings only measure pressure inside the eye. But the condition can also happen in people with normal pressure in their eyes. The researchers suggested that eating foods rich in certain antioxidants can boost your macular pigment. These include foods like egg yolk, corn, red seedless grapes, carrots, squash, dark leafy greens, and broccoli.

#### Study: Can your metabolism help spot glaucoma?

Scientists are studying small molecules called metabolites to find out whether they can predict your risk of developing glaucoma. Metabolites form during metabolism, which is the process your body uses to break down nutrients in food or medicine. Researchers examined metabolites in blood samples from about 1,200 study participants. Those with higher levels of certain fats in their blood were more likely to develop glaucoma. If scientists can spot people at higher risk of glaucoma based on their metabolic profile, it could help doctors spot the disease before vision is completely lost. ■



#### FAST FACT

About **3 million Americans** have glaucoma. It is the second-leading cause of blindness worldwide.

**SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION** 

# H<sub>2</sub>O for healthy aging

### Could staying hydrated help you live a longer, healthier life?

ater is essential for just about every function in our bodies, from keeping our organs working properly to regulating our body temperature. Losing more water than we take in can lead to dehydration, which happens when your body doesn't have enough fluid to function properly.

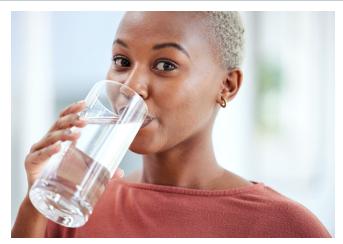
Our bodies are constantly losing fluids. Sweating during exercise or in hot weather, dealing with an illness such as diarrhea or vomiting, and even breathing and going to the bathroom all cause our bodies to lose water. And as we age, our bodies don't retain fluids as well. We may also become less aware of our thirst. This makes staying hydrated even more important.

But here's a splash of good news! A study from the National Heart, Lung, and Blood Institute (NHLBI) found that people who stay hydrated throughout their lives are less likely to develop chronic diseases and may even live longer, healthier lives.

#### **Linking hydration to long-term health**

The research was part of the Atherosclerosis Risk in Communities (ARIC) study, which investigates heart health in adults living in different U.S. communities. The researchers tracked the health of more than 11,000 adults for 30 years. This included measuring levels of blood sodium, an electrolyte that helps regulate fluids in the body. When we're dehydrated, our blood sodium levels tend to go up.

Researchers found that people with higher sodium levels were more likely to develop chronic diseases (such as heart failure, diabetes, and dementia) later in life. They also tended to show more signs of advanced biological aging, such as raised systolic



Try to drink about eight glasses of fluids every day.

blood pressure, cholesterol, and blood sugar—signs that indicate how well your body is functioning. These participants were more likely to die at younger ages, but those who stayed well hydrated developed fewer chronic health conditions and tended to live longer.

#### Will you live longer if you drink more water?

Not necessarily. While these findings show a link between staying hydrated and healthy aging, they don't prove cause and effect. We need more research to know whether good hydration actually prevents disease or extends your life. In the meantime, this study is a good reminder that staying hydrated is a simple (but impactful!) way you can invest in your health and well-being.

#### How much fluid should you drink?

It depends on factors like your age, activity level, and climate. But a good general rule is to aim for about eight glasses of fluids every day. Water is the best choice, but fluids from other sources (such as juices, herbal teas, and fruits and vegetables with high water content) can also help you stay hydrated.

Learn more about hydrating for health, including tips for staying hydrated.

#### **WHO WE ARE**

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