



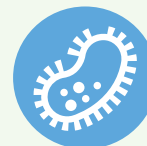
## Pregnancy-related deaths are on the rise...and sepsis is a big reason

NIH researchers are trying to reduce deadly infections around childbirth

**M**ore and more people each year are dying from complications related to pregnancy and delivery. In the United States, deaths from pregnancy, during delivery, or postpartum [rose](#) from 17.4 (per 100,000 live births) in January 2019 to 20.9 in January 2023. What's even more alarming is that most of these deaths could have been prevented.

Infections and sepsis are the second biggest [cause](#) of maternal deaths in the United States. Sepsis is life threatening and can happen to anyone, but pregnant people and infants are among the most likely to get it.

Sepsis is the body's extreme response to an infection someone already has. This infection triggers a chain reaction in their body. It can cause symptoms such as rapid heart rate, extreme pain, and feeling confused or disoriented.



### FAST FACT

Infection and sepsis accounted for around **14% of pregnancy-related deaths** in the United States from 2017 to 2019.

**SOURCE:** [CENTERS FOR DISEASE CONTROL AND PREVENTION](#)

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**Maternal sepsis** happens during pregnancy or after delivery. Your chances of developing maternal sepsis are higher if you have an infection from:

- [Cesarean delivery](#) (also known as a c-section) wounds
- Pregnancy loss or abortion
- Respiratory (affecting the lungs) illness
- [Meningitis](#) (swelling around the brain and spinal cord)
- Postpartum hemorrhage (excessive bleeding)
- [UTIs](#) (urinary tract infections)
- [Endometritis](#)

**Neonatal sepsis** is a blood infection in an infant younger than 90 days old. Group B streptococcus (GBS) and herpes simplex virus (HSV) are common causes of neonatal sepsis.

The good news is that there are ways to lower the risk of developing maternal and neonatal sepsis, including:

- Preventing and treating infections during pregnancy
- Getting screened for GBS and HSV during pregnancy
- Taking antibiotics if you are pregnant and have GBS or chorioamnionitis (an infection of the amniotic fluid) or have given birth to a baby with sepsis caused by bacteria
- Delivering within 12 to 24 hours of your water breaking (when the membranes of the amniotic sac rupture). A cesarean delivery should happen within [6 hours](#) of your water breaking.
- Giving birth in a clean place

NIH supports research around the world that seeks to prevent maternal deaths from sepsis.

### Better screening for sepsis during pregnancy

Screening for maternal sepsis can be challenging. Pregnancy-related changes such as a faster heart rate can mask signs of sepsis. [Researchers looked at](#) five screening tools that health care providers commonly use to check for maternal sepsis. Two of these tools were “pregnancy-adjusted.” That means they consider specific changes that occur in the body during pregnancy. The other three tools were designed for sepsis screening in general.



**It's important that pregnant patients and their health care providers screen for signs of sepsis before and after delivery.**

Researchers found that screenings done between 20 weeks (about five months) of pregnancy and three days after delivery were more accurate when the provider used a pregnancy-adjusted tool. Screenings done outside that timeframe should be done with the tools that are not pregnancy-adjusted.

The researchers recommend patients who screen positive for sepsis get follow-up health evaluations.

### Single-dose antibiotic reduces risk of sepsis after delivery

A study called [A-PLUS](#) tested whether giving the antibiotic [azithromycin](#) to women who delivered babies vaginally could help reduce their risk of sepsis.

Over two years, researchers studied more than 29,000 pregnant women living in low- and middle-income countries. These countries struggled with overcrowded health care facilities and fewer skilled birth attendants. They also had limited access to water and sanitation. These factors all increase the risk of sepsis and pregnancy-related death.

Women in the trial were randomly given either a single dose of azithromycin or a placebo during labor. Those who took the medicine were less likely to develop sepsis or die within six weeks of giving birth than those who got a placebo. They were also less likely to develop endometritis and need additional hospital visits. ■

**Screening for maternal sepsis can be challenging, partly because pregnancy-related changes such as a faster heart rate can mask the signs.**

# What is sepsis?

**S**epsis is the body's extreme response to an infection. It occurs when an infection you already have triggers a chain reaction that can lower your [blood pressure](#) to dangerous levels. This makes it hard for nutrients and oxygen to reach your organs.

Bacterial infections are the most common cause of [sepsis](#), but other types of infections can cause it, too. The infections are often in the lungs, stomach, kidneys, or bladder. It's possible for sepsis to begin with a small cut that gets infected or with an infection that develops after surgery. Sometimes sepsis can occur in people who didn't even know they had an infection.

No matter the cause, sepsis is life threatening. Without quick medical treatment, it can lead to tissue damage, organ failure, or death.

## What are symptoms of sepsis?

- Rapid breathing and heart rate
- Shortness of breath
- Confusion or disorientation
- Extreme pain or discomfort
- Fever, shivering, or feeling very cold
- Clammy or sweaty skin

## Who is at risk for sepsis?

Anyone with an infection could get sepsis. But people who are more likely to develop it include:

- Adults aged 65 or older
- People with chronic conditions (such as diabetes, lung disease, cancer, and kidney disease)
- People with weakened immune systems
- Pregnant people
- Children under 1 year old

People who have had sepsis before are also at higher risk of getting it again. If you have an infection that's not improving or getting worse, seek medical care immediately.

## How is sepsis diagnosed and treated?

A health care provider can diagnose sepsis by asking you about your current symptoms and medical history. They may check your temperature, blood pressure, heart rate, and breathing. They may also order lab tests or imaging tests such as an [X-ray](#) or a [CT scan](#) to check for signs of infection or organ damage.



**Sepsis is life threatening, and someone who has it needs immediate medical attention.**

If you have sepsis, your health care provider will prescribe treatments that may include:

- [Antibiotics](#)
- [Oxygen](#) and intravenous (IV) fluids
- Treating the source of the infection
- Medicines to increase your blood pressure

## What is it like to recover from sepsis?

The hospital or your health care provider will start a rehabilitation plan to help you recover from sepsis. The goal of this is to get you as close to your previous level of health as possible.

While you're recovering, you may have physical symptoms such as feeling tired, body aches, and feeling out of breath. It's also common to feel depressed, anxious, or confused. Tell your health care provider about any symptoms or feelings you have during recovery.

Expect this to go slowly—you've been seriously ill! And don't forget to rest when you need as you rebuild your strength.

## How can you prevent sepsis?

To avoid sepsis, it's important to [prevent](#) getting an infection.

- Take care of any chronic health conditions you may have.
- Get vaccines recommended by your health care provider.
- Maintain good hygiene by doing things such as washing your hands and sanitizing high-touch surfaces.
- Clean and cover your wounds until they heal. ■



**Bacterial infections are the most common cause of sepsis.**



# What triggers seasonal allergies?

Trees, weeds, and grasses are often to blame



Pollen allergy symptoms include coughing, sneezing, a runny or stuffy nose, and itchy, watery eyes.

**A**h, spring! It's the time of year when the cold goes away, sunshine warms your skin, trees and flowers blossom, and...your nose starts running, your eyes water, and you can't stop sneezing.

If this sounds familiar, you're not alone—seasonal allergies affect millions of people. If you're one of them, those pretty trees and plants may make you feel worse, not better.

That's because of [pollen](#), a powdery substance made by certain plants.

Pollen is harmless, but if you have seasonal allergies, your body mistakes the pollen for something dangerous. This reaction causes symptoms like coughing, sneezing, a runny or stuffy nose, and itchy, watery eyes. You might even feel like you have a cold.

## FAST FACT



Seasonal allergies—also known as allergic rhinitis or “hay fever”—may affect nearly **1 in 4** adults in the United States.

SOURCE: [CENTERS FOR DISEASE CONTROL AND PREVENTION](#)

## Diagnosing seasonal allergies

If you experience symptoms only at certain times of year, you may have a seasonal allergy. For example:

- Tree pollen (especially from birches, oaks, elms, and maples) typically appears in spring.
- Grasses usually shed pollen in late spring and summer.
- Ragweed, a plant that many people are allergic to, produces pollen from late summer through fall.
- [Mold](#) spores can cause seasonal allergies during the spring, summer, and fall. They may also cause year-round allergies for people who live in buildings with too much moisture.

Unlike colds, seasonal allergies usually last longer than a week or two. If you have allergy symptoms and are looking for relief, check with your health care provider. Knowing the specific cause of your allergies can help you prevent exposure and treat your reactions. Often, a [skin test](#) or allergen-specific [blood test](#) can help confirm which type of pollen you're allergic to.

## All in the family

Seasonal allergies often run in families. If your parents or siblings have allergies, you're more likely to have them.

Many people with seasonal allergies also have [asthma](#). Pollen can trigger asthma, causing symptoms such as shortness of breath, wheezing, and coughing.



Warmer weather can cause ragweed and other plants to release more pollen over a longer period, worsening allergy symptoms for many.

## Easing your symptoms

Although it's difficult to predict how bad an allergy season will be, paying attention to pollen counts in your area can help. Visit the [National Allergy Bureau](#) to find a local monitoring station or check your local news station for pollen counts in your area. Many weather websites and apps also include pollen forecasts. When pollen counts are high, try to stay indoors as much as possible.

Some medications work best when you start taking them before symptoms start. If you're taking medication for your allergies, checking pollen counts can help you time your first dose and control your symptoms.

Here are some other useful tips:

- **Save outdoor activities for late afternoon.** Pollen levels tend to dip when the sun goes down.
- **Mask up.** A face mask can help block pollen when you're outdoors. N95 masks offer the highest levels of protection.
- **Keep your windows closed.** While it's nice to air out your home in the spring, avoid doing so when pollen counts are high.
- **Shield your eyes.** Wraparound glasses can keep pollen out of your eyes.



Keeping your grass cut short can help reduce pollen.

- **Mow it down.** Keeping your grass cut short can help reduce pollen. Mowing can also stir up pollen, so don't forget to wear a mask and eye protection!
- **Rinse off.** Showering and changing clothes after being outside removes pollen from your skin and hair.
- **Pet patrol.** Brush off your furry friends after they've been outdoors to stop allergens from coming inside with them.

## Medication and other treatments

Your health care provider may suggest saline rinses to ease nasal congestion or antihistamines to relieve a runny nose, sneezing, and itchy eyes. Some antihistamines include decongestants, which can reduce congestion, but those medicines are not for everyone. Your provider may also suggest a nasal steroid spray.

For more serious cases, your health care provider may prescribe [allergy shots](#). Over time, these injections can provide relief by reducing your immune system's reaction to a specific pollen or other allergen.

## Weather watch and a changing climate

Warmer temperatures linked to [climate change](#) are extending pollen seasons, allowing plants like ragweed (a major allergy culprit) to produce more pollen for longer periods. Increased carbon dioxide levels, another consequence of climate change, may make pollen even more potent, which can cause stronger allergic reactions. Research also suggests that extreme weather events such as heat waves and even thunderstorms can trigger or worsen allergy symptoms.

While seasonal allergies can be frustrating, they can be managed. Get to know your triggers, take precautions, and get support from your health care provider so you can enjoy the season without the sniffles. ■

*\*This article was originally published in February 2022. It was updated in May 2024.*



# Making it easier to get HIV treatment

## How NIH researchers are helping remove barriers to necessary medications

**H**IV research has come a long way since the epidemic began in the 1980s. Today, people with [HIV](#) can live long and healthy lives with the right treatment.

The treatment for people living with HIV is known as [antiretroviral therapy](#) (ART), which is a combination of medicines taken together. Patients need to take ART for the rest of their lives. This can be hard for people who have financial and other barriers to accessing health care. Recent studies supported by the National Institute of Allergy and Infectious Diseases and the National Institute of Mental Health are helping expand people's access to ART.

### What is HIV?

HIV stands for “human immunodeficiency virus.” HIV harms the immune system by destroying a type of white blood cell that helps the body fight infections. As a result, HIV can put a person at risk for other infections and diseases.

HIV is the virus that causes AIDS, which stands for “acquired immunodeficiency syndrome.” AIDS is an advanced stage of HIV-related disease where the immune system can no longer protect the body. Not everyone with HIV develops AIDS. AIDS is also less common today thanks to advances in HIV treatment.

### How does HIV spread?

HIV is spread through having vaginal, anal, or in some cases oral sex without a barrier (such as condoms or dental dams) with someone who has the virus. HIV can also spread from sharing needles with someone who has the virus.

There are other ways to transmit HIV, but thanks to progress in medical care, they are becoming much more rare. Pregnant people with HIV can pass the virus [to their child](#) through the placenta, blood and other bodily fluids, or human milk. Blood donations in the U.S. have been tested for HIV since 1985 and the risk of getting HIV from blood donations is extremely low.

Anyone can have HIV, but the groups [most affected](#) include gay and bisexual men and Black and Latino people.



**HIV medication works best when taken exactly as prescribed. Missing a dose can cause the virus to become resistant to the medicines and damage the immune system.**



### FAST FACT

As of 2022, **76% of all people with HIV** (29.8 million people) were accessing antiretroviral therapy.

SOURCE: [HIV.GOV](#)

### What is ART?

While there is no cure for HIV, NIH researchers are working on an HIV vaccine to prevent infection. In the meantime, HIV can be managed with ART. It can reduce the amount of the virus in the body. ART gives the immune system a chance to recover and fight off infections or HIV-related cancers. It also reduces the risk of giving HIV to others.

ART works best when taken exactly as prescribed. Missing a dose can cause the virus to resist the medicines and damage the immune system.

### Needing ART less often

Most ART is taken daily. Taking ART every day can be hard for people who do not have reliable housing or food, who have mental illnesses or substance use disorders, or who are involved in the legal system. These groups may not have access to or be able to afford this treatment. They also may not have transportation to get to a health care provider's office.

Long-acting medications could help people overcome some of these barriers. Researchers in San Francisco [studied](#) 133 people with HIV who received long-acting ART injections. The study participants got injections every four to eight weeks between June 2021 and November 2022. Pharmacy staff also reminded them about taking their medication, and researchers checked their health frequently.

Everyone who began the study with HIV suppression—meaning ART kept the amount of HIV in their blood so low that it could not be detected with typical HIV tests—stayed that way, and for most people whose HIV was not suppressed when they enrolled, the virus was suppressed by the end of the study period.

### ART home delivery for patients in rural areas

Getting access to a clinic for ART can be hard for people who live in rural areas. Even if a person does find care, it may take a long time for them to see a provider. This is common in parts of South Africa, a country where about 1 in 5 adults have HIV.

[In a study](#) of 155 people from KwaZulu-Natal, South Africa, those who had ART delivered to their home for a year experienced better HIV suppression than those who went to the clinic. Participants paid a one-time fee, which was based on their income, for the delivery service. The fee came to about \$2 to \$6 (equal to about 38 to 114 South African rand).

Everyone who used the service said it helped them remember to take ART every day and said they would use the service again. ■

# Putting your best foot forward: Steps for happy, healthy feet



Foot health is often overlooked, but it's important for your overall well-being



Feet are made up of 26 bones, 33 joints, and more than 100 muscles, tendons, and ligaments.

Our feet are mechanical wonders. They support the weight of our bodies and allow us to stand, balance, and move through the world. Just like any other part of your body, your feet need care to stay healthy, active, and strong—and to prevent problems later!

## Common foot problems

Did you know that your feet are made up of 26 bones, 33 joints, and more than 100 muscles, tendons, and ligaments? These parts work together so you can walk, run, skip, dance, and more. But this complexity—and the stress your feet undergo each day—also means there's a lot that can go wrong.

Some common problems include:

- **Athlete's foot.** A fungal infection that causes itching, burning, and skin scaling.
- **Bunions.** Bony, painful bumps that form at the big toe joint.
- **Corns and calluses.** Thickened, often painful areas that form due to friction or pressure on the skin. These often develop on areas of the feet where bones rub against shoes.
- **Hammer toe.** A toe that curls downward at the middle joint.
- **Ingrown toenails.** Toenails that grow into the skin, causing pain and inflammation.

Your feet are your foundation.  
Treat them right, and they will  
take good care of you!

- **Plantar fasciitis.** Heel pain that's caused by inflammation of the tissue that supports the arch of your foot.
- **Diabetic foot ulcers.** Open sores that can form on the feet of people with diabetes.

Learn more about other injuries and disorders of the [feet](#), [ankles](#), [toes](#), and [heels](#).

## Listen to your feet

Foot problems can be more than just a pain in the...foot. They can sometimes signal other health issues such as arthritis, diabetes, or nerve damage. Left untreated, they can even cause pain and dysfunction in other parts of your body, including your back, hips, and knees.



## FAST FACT

Feet are made up of **26 bones, 33 joints,** and more than **100 muscles, tendons, and ligaments.**

SOURCE: [MEDLINEPLUS](#)

Catching foot problems early is key to preventing them from getting worse. Pay attention to:

- Changes in the skin or nails (such as cracks, cuts, sores, or discoloration)
- Pain, swelling, or redness
- Tingling, burning, or numbness
- Stiff or swollen joints in the foot or ankle
- Difficulty walking or balancing

If you notice any of these, or if you have new, severe pain that doesn't go away with rest or over-the-counter pain medication, it's time to talk to a doctor.

This is especially important if you have diabetes. Diabetes can lower the amount of blood flow and damage nerves in your feet, making problems more likely. Learn more about [how diabetes affects the feet](#) and how to prevent problems.

### Simple steps for happy feet

- **Wash your feet every day.** Use soap and water and dry them thoroughly, especially between the toes. A warm foot bath can be a relaxing treat! Moisturize any dry, rough, or cracked areas (such as the heels) and put on clean, dry socks when you're done.
- **Check your feet often.** Look for any cuts, sores, blisters, or changes in skin color. If you have diabetes, pay special attention to your feet, and see your doctor regularly for checkups.



Untreated foot problems can sometimes cause pain and dysfunction in other parts of the body.

- **Trim your toenails regularly.** Cut them straight across and not too short. This helps prevent cuts and ingrown toenails.
- **Wear comfortable, supportive shoes.** Choose footwear that fits you well—not too tight, not too loose. Your feet can change over time, so ask to have them measured each time you shop for new shoes.
- **Keep your feet active.** Stretches and exercise help improve blood flow, strengthen your feet, and help with flexibility. If you need to sit for a long time, put your feet up to improve blood flow and take frequent breaks to move your body.

Your feet are your foundation. Treat them right, and they will take good care of you! ■

Foot problems can be more than just a pain in the...foot. They can sometimes signal other health issues such as arthritis, diabetes, or nerve damage.

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