



Measles

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Measles

- Measles is a viral disease. It spreads very easily.
- Measles develops in stages over one to two weeks.
- Measles outbreaks commonly occur during late winter and early spring.
- Measles is a major public health concern. The virus spreads easily and the infection can be serious.

(CDC, 2026)



History of Measles

Measles has a long history.

- The first written account of measles disease was from a Persian doctor in the 9th century (801-900 AD).
- In 1757, Scottish doctor Francis Home found that an infectious agent in patients' blood caused measles.
- In 1912, US healthcare providers were required to report all diagnosed cases.
 - Within the first 10 years of reporting, an average of 6,000 measles-related deaths were reported each year. (CDC, 2026)

History of Measles

- Before a measles vaccine became available in 1963, about 3 to 4 million people in the United States got measles each year. Each year, measles caused about 400 to 500 deaths, 48,000 hospital stays, and 1,000 cases of brain swelling called encephalitis.
- In 2000, Measles was declared eliminated in the United States. There was more than 12 months without continuous spread of the disease. (CDC, 2026)
- However, measles outbreaks have reoccurred recently. Pennsylvania has reported outbreaks in several counties this year.
 - For current information on the number of reported cases, please see the Department of Health's (DOH) "2026 Overview: Pennsylvania Measles Cases" dashboard at <https://www.pa.gov/agencies/health/diseases-conditions/infectious-disease/measles> (PA DOH, 2026)

What is Measles?

Measles is more than a little rash and fever that clears up after a few days. It spreads very easily.

- It spreads through the air when an infected person coughs or sneezes.
- Measles can live for up to 2 hours in the air after an infected person leaves.
- Up to 9 out of 10 unprotected people who meet an infected person will get sick.

Some of the common ways the measles virus can spread include:

- Contact with an infected person when they cough or sneeze.
- Being in a room where an infected person has been.
- Contact with air droplets either by air or touching an infected surface.
- An infected person can spread measles to others. You can spread measles from 4 days before symptoms through 4 days after the rash appears.

(CDC, 2026)

What is Measles?

Anyone not protected against measles is at risk of getting the virus. Some groups of people are at higher risk of severe complications. These include:

- Children younger than age 5
- Adults older than age 20
- Pregnant women
- People with weakened immune systems
- Health care workers



Note: Measles only spreads from person to person.

Animals do not get or spread measles.

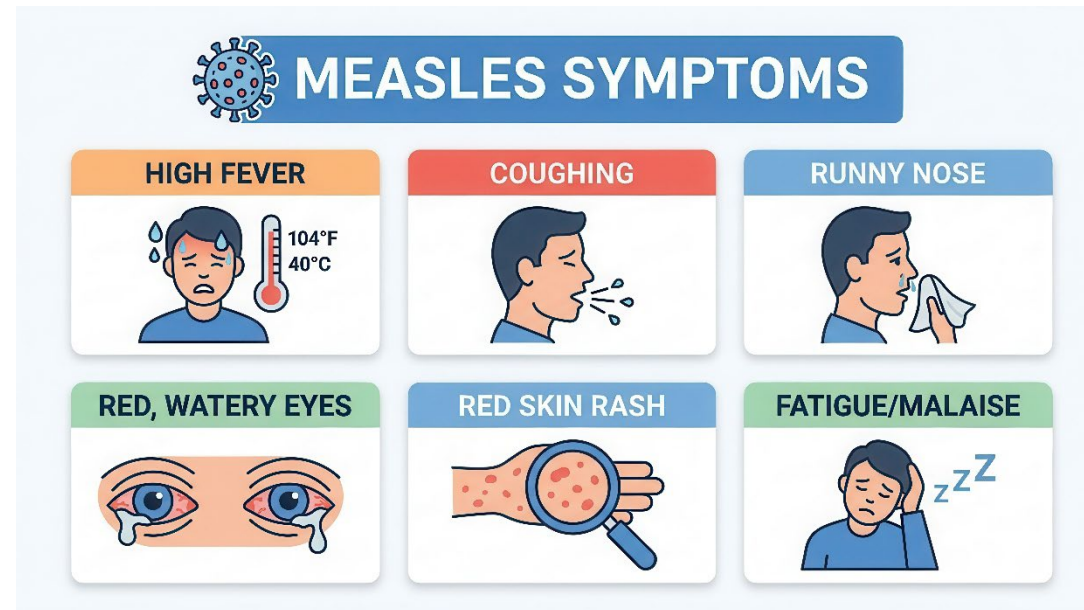
(CDC, 2026)

Diagnosis, Symptoms, and Complications

Measles is diagnosed based on the presence of flu-like symptoms and a rash that spreads from head to toe, and mouth lesions.

- A throat swab can confirm measles.
- There is also a blood test for immunity.

(ATS, 2026)



Diagnosis, Symptoms, and Complications

Measles symptoms will appear in stages.

7 to 14 days after contact with the virus, the first symptoms appear.

- High fever (may spike to more than 104 degrees)
- Cough
- Runny nose
- Red, watery eyes (conjunctivitis or pink eye)

2-3 days after symptoms begin.

- Koplik spots (tiny white spots) appear inside the mouth

(CDC, 2026)

Diagnosis, Symptoms and Complications

Measles symptoms will appear in stages (continued).

3-5 days after symptoms begin:

- A measles rash will appear. Usually, it begins as flat red spots on the face at the hairline. Then, it spreads to the neck, trunk, arms, legs, and feet.
 - Small, raised bumps may also appear on top of the red spots.
 - Spots may join together as they spread over the rest of the body.
 - When the rash appears, a person's fever may spike to more than 104 degrees.
- (CDC, 2026)

Diagnosis, Symptoms, and Complications

Complications of measles may include:

- Ear infections
- Diarrhea
- Hospitalization
- Pneumonia
- Swelling of the brain (encephalitis)
- In some cases, death
- In pregnancy, measles may cause premature births or low birth weight babies.

(CDC, 2026)



Treatment and Care

There's no antiviral treatment for measles. (Mayo Clinic, 2026)

Steps to take if you get sick with measles:

At-Home Care

- **Rest:** Get plenty of sleep to help the body fight the virus.
- **Hydration:** Drink lots of water, broth, or electrolyte solutions to prevent dehydration.
- **Fever Management:** Use over-the-counter medicines like acetaminophen or ibuprofen for fever and pain. Never give aspirin to children or teenagers because it can cause a dangerous condition called Reye's syndrome.
- **Comfort Measures:** Dim the lights if bright light hurts the eyes. Use a humidifier to soothe a cough.

(UVA Health Children's, 2026)

Treatment and Care

If you have measles symptoms:

- Call a doctor or hospital right away. Let them know that you may be sick with measles. They may make special arrangements to evaluate you, if needed. They may see you without putting other patients and staff at risk for getting measles.
- To protect other people, stay home until the fifth day after you develop the rash.
- While you're at home, stay away from other people who are not already confirmed to be sick with measles.

(CDC, 2026)



Treatment and Care

If you were near someone with measles:

If you were in the same place as someone who has measles, or who has signs and symptoms of measles but is undiagnosed, tell your healthcare provider immediately. The healthcare provider can:

- Tell if you are immune to measles based on your vaccination record, age, or laboratory evidence of prior infection.
- Make special arrangements to evaluate you, if needed. They may see you without putting other patients and staff at risk for getting measles.
- Advise you about ways to help reduce your risk for developing measles. This is only the case if you are not immune to measles and were exposed within the last few days. These include MMR vaccine and a medicine called immune globulin.
- Monitor you for signs and symptoms of measles.

(CDC, 2026)

Treatment and Care

After exposure to measles:

You can help protect other people by taking steps, so measles doesn't spread.

- Ask your healthcare provider when you can no longer make other people sick. This may be up to 21 days after you were near someone with measles.
- During that time, stay away from places where there are people who could easily get sick. These include schools, hospitals, and childcare centers.

(CDC, 2026)

Prevention

Vaccination is the only prevention!

Measles Vaccine Development:

- In 1954, researchers found and separated the measles virus from the blood of a 13-year-old patient named David Edmonston.
- In 1963, researchers use the Edmonston-B strain of the virus to make a measles vaccine.
- In 1968, an improved vaccine called Edmonston-Enders, also known as Moraten, became available. This is the type used today.
- Today, the measles vaccine is usually combined with vaccines for mumps and rubella (MMR). It may also include varicella, or chickenpox (MMRV).

(CDC, 2026)



Prevention

Accelerated/Catch-Up Vaccinations: During an outbreak, early or catch-up vaccines may be advised for people who live in or plan to visit an area with measles. (PA DOH, 2026)

Children's Schedule:

- Infants 6 through 11 months should get one early dose of measles, mumps, and rubella (MMR) vaccine.
 - They should still need the regular doses at 12–15 months and 4–6 years.
- Children older than 1 years old who have not yet received any measles vaccine should get two doses at least 28 days apart.
- Children who already received one dose should get their second dose now if it has been at least 28 days since their first dose.

Prevention

Adult Recommendations:

- Adults with no proof of protection should get two MMR doses at least 28 days apart.
- Adults and teens who have had one dose may need a second dose at least 28 days later.

PA DOH Guidance for Providers:

- Watch for measles in people with fever and rash, especially if they are not vaccinated.
- Report a possible measles case right away to local public health officials or the Pennsylvania Department of Health at 877-PA-HEALTH (877-724-3258).
- Do not wait for lab results before reporting a possible case.

Prevention

TRAVEL Accelerated/Catch-Up Vaccinations: Recommendations for Health Care Professionals for Persons in, or Planning to Travel to Areas with Measles (PA DOH, 2026):

Infants Ages 6 Months – 11 Months ('Dose Zero')

- Babies in areas with active measles spread, or babies traveling outside the United States, should get one MMR dose.
- This early dose does not count as one of the two regular doses. The child still needs a dose at ages 12 to 15 months and another at ages 4 to 6 years. This means the child may receive three doses in all.
- The MMR vaccine is not approved for babies younger than 6 months.

Prevention

Children Aged 12 Months – 6 Years (Accelerated Dosing)

- A child older than 12 months who has not been vaccinated should get the first MMR dose right away and the second dose at least 28 days later.
- A child older than 12 months who has had one MMR dose should get the second dose at least 28 days after the first dose.
 - The early second dose counts as the regular second dose. No extra dose is needed.

Prevention

TRAVEL Accelerated/Catch-Up Vaccinations: Recommendations for Health Care Professionals for Persons in, or Planning to Travel to Areas with Measles (PA DOH, 2026):

School-Aged Children, Adolescents, and Adults (“Catch-Up Dosing”)

- **All children in kindergarten through grade 12** should have records showing two MMR doses or other proof of protection.
- **Children and teens with only one dose** should get the second dose once at least 28 days have passed since the first dose.
- **Adults born in 1957 or later who do not have proof of** protection may need two MMR doses at least 28 days apart.
- **Adults born before 1957** are usually considered protected.
- **Health care workers born before 1957** who do not have lab proof of protection or past disease should ask about two MMR doses at least 28 days apart.
- **During an outbreak or before international travel**, adults who received the killed measles vaccine used from 1963 through 1967 should be treated as not vaccinated. They should receive two MMR doses made after 1967.

Prevention

Standard: Measles, Mumps, And Rubella (MMR) Vaccine Schedule and Recommendations

The CDC standard recommendation for the MMR vaccine is a two-dose series for children, with one dose for most adults lacking immunity. **(CDC, 2026)**

Children's Schedule:

- **First dose:** Ages 12 to 15 months.
- **Second dose:** Ages 4 to 6 years, before starting school.
- **Early travel dose:** Babies ages 6 to 11 months who travel outside the United States should get one early dose. This dose does not count as one of the two regular doses.

Adult Recommendations:

- **Born before 1957:** Usually considered protected.
- **Born in 1957 or later:** Need proof of at least one MMR dose, lab proof of protection, or a medical reason not to get the vaccine.
- **Two doses may be advised for people at higher risk.** This includes health care workers, international travelers, college students, some people with HIV, and people who have close contact with someone who has a weak immune system.

Prevention

Standard: Measles, Mumps, Rubella, and Varicella (MMRV) Vaccine Schedule and

Recommendations: For the first dose in children younger than age 4, current CDC guidance prefers separate MMR and varicella (chickenpox) shots. This helps lower the risk of seizures caused by fever.

Children Recommendations:

- **Ages 12 to 47 months (First Dose):** Health experts prefer separate MMR (measles, mumps, and rubella) and varicella (chickenpox) vaccines.
 - You can still choose the combined MMRV shot if you prefer fewer injections after talking to your doctor.
- **Ages 4 to 6 years (Second Dose):** Children may receive MMR and varicella shots or the combined MMRV shot.
- **Timing:** A second MMR dose may be given at least 28 days after the first. A second MMRV dose may be given at least three months after the first.



(CDC, 2026)

Prevention

- Two MMR or MMRV doses are about 97% effective at preventing measles. One dose is about 93% effective.
- Both MMR and MMRV vaccines may be given at the same time as other vaccines.
- Ask your health care provider whether you are fully vaccinated and which vaccine you may need.
- Health care workers born before 1957 who are not vaccinated should ask their health care provider for guidance.

(PA DOH, 2026)

State and National Measles Resources

Local and State Resources:

- **Pennsylvania Department of Health** toll-free hotline: 877-724-3258
- **Pennsylvania Updates:** View case numbers and public notices on the Pennsylvania Department of Health Measles Page. <https://www.pa.gov/agencies/health/diseases-conditions/infectious-disease/measles>
- **Local Health Departments:** Contact your county or city health office to report a possible case or ask about testing.
- **Immunization records:** Some Pennsylvania residents who received vaccines from 2000 through 2026 may be able to get their records online or by calling PA DOH at 877-774-4748.
- **PA Department of Health:** Measles Fact Sheet for Parents and Guardians. <https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/diseases-and-conditions/Measles%20Fact%20Sheet%20for%20Parents.pdf>

State and National Measles Resources

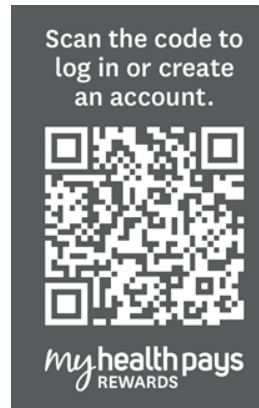
National and Federal Resources

- **CDC Guidance:** Learn about symptoms, testing, and vaccines at the CDC Measles Hub. <https://www.cdc.gov/measles/index.html>
- **Toolkits:** Find materials for communication and response in the 'Be Ready for Measles Toolkit'.
<https://www.cdc.gov/measles/resources/index.html>
- **Professional Advice:** Check clinical updates from the American Medical Association Measles Resources. <https://www.ama-assn.org/public-health/infectious-diseases/measles-resources>

PHW Resources

To learn more about My Health Pays® Rewards program or make a referral to disease management:

- Visit PAHealthWellness.com
- Call Participant Services: [1-844-626-6813](tel:1-844-626-6813) (TTY:711)
- Email: phwcasemanagement@pahealthwellness.com
- **My Health pays QR Code:**



References

American Medical Association (2026). Measles Resources. Weblink: <https://www.ama-assn.org/public-health/infectious-diseases/measles-resources>

American Thoracic Society (ATS) (2026). Measles. Weblink: <https://site.thoracic.org/advocacy-patients/patient-resources/measles>

Center for Disease Control (CDC) (2026). About Measles. Weblink: <https://www.cdc.gov/measles/about/index.html>

Center for Disease Control (CDC) (2026). History of Measles. Weblink: <https://www.cdc.gov/measles/about/history.html>

Center for Disease Control (CDC) (2026). How Measles Spreads. Weblink: <https://www.cdc.gov/measles/causes/index.html>

Center for Disease Control (CDC) (2026). CDC Measles Hub. Weblink: <https://www.cdc.gov/measles/index.html>

Center for Disease Control (CDC) (2026). Measles Symptoms and Complications. Weblink: <https://www.cdc.gov/measles/signs-symptoms/index.html>

References

Center for Disease Control (CDC) (2026). Measles Vaccine Recommendations. Weblink: <https://www.cdc.gov/measles/hcp/vaccine-considerations/index.html>

Center for Disease Control (CDC) (2026). Measles Vaccination. Weblink: <https://www.cdc.gov/measles/vaccines/index.html>

Center for Disease Control (CDC) (2026). Measles: What to do if you get Sick or Exposed. Weblink: <https://www.cdc.gov/measles/if-sick-exposed/index.html>

Center for Disease Control (CDC) (2026). Be Ready Measles Toolkit. Weblink: <https://www.cdc.gov/measles/resources/index.html>

Mayo Clinic (2026). Measles. Weblink: <https://www.mayoclinic.org/diseases-conditions/measles/diagnosis-treatment/drc-20374862>

Pa Department of Health (2026). Measles Fact Sheet. Weblink: <https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/diseases-and-conditions/Measles.pdf>

References

Pa Department of Health (2026). Measles Information to prevent spread in school and childcare settings. Weblink: https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/diseases-and-conditions/Measles%20Guidance%20Schools_ChildCare.pdf

Pa Department of Health (2026). Measles. Weblink: <https://www.pa.gov/agencies/health/diseases-conditions/infectious-disease/measles>

Pa Department of Health (2026). Recommendations for Catch-Up and Early MMR Vaccination in the Context of Measles Outbreak Activity. Weblink: https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/2026%20HAN/2026-831-06-24-ALT-Measles_Early%20MMR.pdf

Pa Department of Health (2026). Measles: Recommendations for Colleges and Universities. Weblink: <https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/diseases-and-conditions/Measles%20Recommendations%20for%20Colleges%20and%20Universities.pdf>

References

Pa Department of Health (2026). Measles: What you need to know. Weblink: <https://www.pa.gov/content/dam/copapwp-pagov/en/health/documents/topics/documents/diseases-and-conditions/Measles%20Need%20to%20Know.pdf>

UVA Health Children's (2026). Measles Weblink: <https://childrens.uvahealth.com/conditions/measles>

World Health Organization (2026). Measles. Weblink: <https://www.who.int/news-room/fact-sheets/detail/measles>

Questions



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