

# What to Know About Measles

Measles is a highly contagious respiratory disease that can lead to severe complications—and in some cases death. It often begins with a rash and fever, but can quickly become life-threatening, particularly for children under five years old.<sup>1</sup> There is no treatment for measles once infected, and the most effective way to prevent the disease is through vaccination.

## Measles Transmission



Measles is one of the world's most contagious diseases. It is spread through the air when an infected person coughs or sneezes and can linger in the area where an infected person has been for up to 2 hours.<sup>2</sup> This means measles can be contracted simply by being in a room where an infected person previously coughed. Because measles is highly contagious, if one person has it, up to 90% of people exposed will become infected if they are not protected.<sup>3</sup>

## Measles Symptoms and Complications



Measles symptoms appear 7 to 14 days after contact with the virus and may include high fever, cough, runny nose, watery eyes, and rash.<sup>4</sup> Measles can also lead to more serious health complications. Complications include:<sup>5</sup>

- ▶ **Ear infections** in 1 in every 10 children
- ▶ **Pneumonia** in 1 in every 20 children
- ▶ **Encephalitis** (inflammation of the brain) in 1 in every 1,000 children
- ▶ **Hospitalization** of 1 in 5 unvaccinated individuals
- ▶ **Death** of 1-3 in every 1,000 children infected with measles

## Long-term Measles Complications



Measles can lead to serious long-term health effects. Even after recovery, the virus can remain in your body for months and can continue to cause problems long after infection.<sup>6</sup>

- ▶ **Immune amnesia:** One major concern is a complication known as “immune amnesia,” which happens when measles weakens the immune system by destroying cells that “remember” how to fight off past infections.<sup>7</sup> The more severe the case of measles, the more damage it can do to your immune memory.
- ▶ **Subacute sclerosing panencephalitis (SSPE):** In rare cases, particularly in children, measles can also lead to a deadly brain disease called subacute sclerosing panencephalitis (SSPE). SSPE is a rare, degenerative, and fatal brain disease that can occur 7 to 11 years after a measles infection. It is seen most often in children infected with measles before the age of two.<sup>8</sup>

**Vaccination against measles significantly reduces the risk of developing these complications.**

# Cost of Measles



Measles has significant individual and societal costs. A study from the CDC estimated that the public health response to a single case of measles can cost between \$5,655–\$181,679.<sup>9</sup> This includes the hours spent contact tracing as well as any necessary containment measures. The urgency needed to address a measles case also results in delays in administering other public health services, resulting in a backlogged system. At the individual level, measles contributes to lost wages for parents and caregivers of children with measles, missed days of school for students recovering from the illness, as well as direct economic costs incurred from medical visits, hospitalizations, and any necessary specialized care.<sup>10</sup>

# Measles Vaccination



There is no specific treatment available for measles. Medical care can help relieve symptoms but does not “cure” the virus.<sup>11</sup> The best way to protect against measles infection is with the measles, mumps, and rubella (MMR) or measles, mumps, rubella, and varicella (MMRV) vaccine. Children are recommended to receive 2 doses of MMR vaccine to ensure adequate protection—the first dose at age 12 through 15 months and the second dose at age 4 through 6 years.<sup>12</sup> Two doses of MMR vaccine are 97% effective at preventing measles. The MMR vaccine has significantly reduced the prevalence of measles over the years. The number of cases has dropped from ~530,217 in the beginning of the 20th century to 266 cases in 2024—a 99% decrease.<sup>13</sup>

Although measles was declared eliminated in 2000, several measles outbreaks have occurred in the US in recent years, mainly in communities with low vaccination rates.<sup>16</sup> If you have any questions about measles, your measles vaccination status, or the measles vaccination status of your child(ren), talk to your healthcare provider. By staying up to date on vaccines, you build critical protection against this infectious disease and help to keep your community healthy.

## Vaccination is also recommended for adults and children:<sup>14</sup>

- ▶ Without documentation of MMR vaccination
- ▶ Without a past measles diagnosis confirmed by a lab
- ▶ Born before 1957, before vaccines were available

## Vaccination is also recommended for certain groups without evidence of immunity, including:<sup>15</sup>

- ▶ College students
- ▶ International travelers
- ▶ Healthcare personnel
- ▶ Those in close contact with immunocompromised individuals
- ▶ People with HIV
- ▶ Adults who received the inactivated measles vaccine\*
- ▶ Those at higher risk during a measles outbreak

\*For individuals who received the measles vaccine between 1963 and 1967, healthcare professionals recommend receiving at least one additional dose. The vaccine administered during this time period was an “inactivated” vaccine which is less effective than the live vaccine. If you aren’t sure which vaccine you received, please check with your healthcare provider.

See additional information on measles vaccination from CVEEP’s partners:  
<https://www.immunize.org/wp-content/uploads/catg.d/p4209.pdf>

<sup>1</sup> <https://www.cdc.gov/measles/about/index.html>

<sup>2</sup> <https://www.cdc.gov/measles/causes/index.html>

<sup>3</sup> <https://www.cdc.gov/measles/about/index.html>

<sup>4</sup> <https://www.cdc.gov/measles/signs-symptoms/index.html>

<sup>5</sup> <https://www.cdc.gov/measles/resources/measles-isnt-just-a-little-rash-infographic.html>

<sup>6</sup> <https://www.npr.org/sections/shots-health-news/2025/03/17/nx-s1-5328765/measles-outbreak-health-risk>

<sup>7</sup> <https://www.uchicagomedicine.org/forefront/pediatrics-articles/measles-is-still-a-very-dangerous-disease>

<sup>8</sup> <https://www.cdc.gov/mmwr/volumes/66/wr/mm6646a3.htm>

<sup>9</sup> <https://pmc.ncbi.nlm.nih.gov/articles/PMC9004490/>

<sup>10</sup> <https://www.cdc.gov/measles/hcp/clinical-overview/index.html>

<sup>11</sup> <https://www.aap.org/en/patient-care/measles/measles-vaccine/>

<sup>12</sup> <https://www.cdc.gov/vaccines/hcp/current-vis/mmr.html>

<sup>13</sup> <https://www.cdc.gov/ncird-surveillance/media/VPD-morbidity-slide1-mmwr-508.pdf>

<sup>14</sup> <https://www.cdc.gov/measles/vaccines/index.html>

<sup>15</sup> <https://www.cdc.gov/measles/data-research/index.html>

<sup>16</sup> <https://www.yalemedicine.org/news/should-you-get-a-measles-vaccine-booster>