

# Measles: It's Not Just a Rash

## Long-Term Risk from Infection and Benefits of the MMR Vaccine

*Measles is a highly contagious respiratory disease caused by the measles virus that can lead to life-threatening complications. There is no specific medicine to cure measles.*

### Measles Is Highly Contagious and Can be Particularly Dangerous for Babies, Young Children and Other At-Risk Populations

- Measles is extremely contagious. For those who do not have immunity to the disease (either from vaccination or prior infection), there is a **90% chance** they will contract the disease in close-contact settings.<sup>1</sup>
- Babies and infants younger than a year old are among the most at risk for measles, because the first dose of vaccine is recommended at 12 months.<sup>2</sup>
- Pregnant women, individuals with compromised immune systems and people who are unvaccinated are also at a higher risk of getting measles.<sup>3</sup>

**Vaccines are the best tool we have to prevent measles.**



*The measles virus can remain in the air for up to two hours after an infected person leaves a space.*

### Measles Begins with Rash and Fever, But Can Develop into Severe, Long-Term Complications

Measles can quickly develop into a life-threatening condition, particularly among children under five years old and others at risk.<sup>4</sup>

- Initial symptoms of measles present 7-14 days after exposure and can include fever, cough, runny nose and red eyes.<sup>5</sup>
- A few days after the onset of symptoms, a distinctive rash will appear, which may lead to a spike in fever, as well as other complications ranging from ear infection and diarrhea to more severe conditions including pneumonia and encephalitis (swelling of the brain)—and even death.<sup>6</sup>
- Measles is a viral infection with no specific treatment. Antibiotics may be used to treat bacterial infections like pneumonia that develop while an individual has measles, but otherwise, the typical treatment regimen includes rest and symptom relief. For those who are not immune to measles, getting vaccinated after exposure may still provide protection.<sup>7</sup>
- **Severe complications from measles include:**<sup>8</sup>
  - **Hospitalization:** 1 in 5 risk of hospitalization among unvaccinated people who get measles
  - **Pneumonia:** the most common cause of death from measles in young children
  - **Encephalitis (swelling of the brain):** can lead to convulsions, deafness or intellectual disabilities
  - **Death:** Nearly 1 to 3 of every 1,000 children who have measles will die from complications from the disease
- Measles can also lead to complex and devastating health effects years after the onset of disease:
  - People infected with measles virus can experience a condition known as **immune amnesia**, which involves the suppression of one's immune system, for up to three years post-measles infection.<sup>9</sup> This leaves infected people at a higher risk for contracting and retaining other illnesses.
  - **Subacute sclerosing panencephalitis (SSPE)** is a rare, degenerative and fatal brain disease that can occur seven to 11 years after a measles infection. SSPE is most commonly seen in children infected with measles before the age of 2.<sup>10</sup>

## VACCINES OFFER THE BEST PROTECTION AGAINST MEASLES

- The best way to protect children and families from the short and long-term impacts of measles is by getting the MMR (measles, mumps and rubella) or the MMRV (measles, mumps, rubella and varicella) vaccine.
- Prior to the MMR vaccine, over **90% of children** would contract measles by the age of 15, leading to 400-500 deaths per year and 3-4 million cases alongside additional risk of long-term complications.<sup>11</sup>
- The MMR vaccine significantly decreases the risk of children getting infected with measles. It is recommended that children get two doses of the MMR vaccine, the first at 12-15 months old and the second at 4-6 years old.<sup>12</sup>
- Two doses of the MMR vaccine are **97% effective** in protecting against measles, and one dose of vaccine is 93% effective.<sup>13</sup>
- There is overwhelming evidence from independent testing and studies that the benefits of the MMR vaccine outweigh the risks.<sup>14</sup> The MMR vaccine is subject to a rigorous process for review and approval and is continuously monitored after approval.<sup>15</sup>
- The MMRV vaccine provides protection against measles, mumps, rubella and a fourth disease not included in the MMR vaccine, varicella (chickenpox). Studies have shown that getting the MMRV vaccine is much safer than getting measles, mumps, rubella or varicella.<sup>16</sup>
  - The MMRV vaccine is only approved for children who are 12 months through 12 years old. It is recommended that children in this age range get the first dose at 12-15 months old and the second at 4-6 years old but can also be given 3 months after the first dose.<sup>17</sup>

## FAILING TO VACCINATE LEAVES CHILDREN AND COMMUNITIES VULNERABLE FOR INFECTION

- In 2000, measles was declared eliminated in the United States, in large part thanks to widespread vaccination. However, several measles outbreaks have occurred in the U.S. in recent years – mainly in communities with low vaccination rates – and as a result rates of measles are higher today than they've been since 1991.<sup>18</sup>
- Measles outbreaks are severe and costly. A recent outbreak in Ohio led to hospitalization for 42% of individuals infected. Almost all (94%) of the cases in this outbreak were among unvaccinated individuals.<sup>19</sup> And sadly, we are seeing unvaccinated children succumb to the virus – already two confirmed cases as of April 8, 2025.<sup>20</sup>

*To ensure children stay healthy and protected from the severe and lasting impacts associated with measles, it's critical that we continue to leverage the most powerful tool we have to protect against and stop the spread of disease: vaccines. Individuals should consult a health care provider or pharmacy on the best way to get vaccinated in their locality.*

<sup>1</sup> <https://www.uchicagomedicine.org/forefront/pediatrics-articles/measles-is-still-a-very-dangerous-disease>

<sup>2</sup> <https://www.nfid.org/resource/frequently-asked-questions-about-measles/>

<sup>3</sup> <https://www.nfid.org/resource/frequently-asked-questions-about-measles/>

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

<sup>5</sup> <https://www.cdc.gov/measles/signs-symptoms/index.html>

<sup>6</sup> <https://www.cdc.gov/measles/signs-symptoms/index.html>

<sup>7</sup> <https://www.mayoclinic.org/diseases-conditions/measles/diagnosis-treatment/drc-20374862>

<sup>8</sup> <https://www.cdc.gov/measles/signs-symptoms/index.html>

<sup>9</sup> <https://asm.org/articles/2019/may/measles-and-immune-amnesia>

<sup>10</sup> <https://www.uchicagomedicine.org/forefront/pediatrics-articles/measles-is-still-a-very-dangerous-disease>

<sup>11</sup> [https://academic.oup.com/jid/article-abstract/189/Supplement\\_1/S1/820569?login=false](https://academic.oup.com/jid/article-abstract/189/Supplement_1/S1/820569?login=false)

<sup>12</sup> <https://www.cdc.gov/measles/vaccines/>

<sup>13</sup> <https://www.cdc.gov/measles/vaccines/>

<sup>14</sup> <https://publichealth.jhu.edu/2025/what-to-know-about-measles-and-vaccines>

<sup>15</sup> <https://www.cdc.gov/vaccine-safety/vaccines/mmr.html>

<sup>16</sup> <https://www.cdc.gov/vaccine-safety/vaccines/mmr.html>

<sup>17</sup> <https://www.cdc.gov/measles/vaccines/>

<sup>18</sup> <https://www.cdc.gov/measles/data-research/>

<sup>19</sup> <https://www.cdc.gov/mmwr/volumes/72/wr/mm7231a3.htm>

<sup>20</sup> <https://www.cbsnews.com/texas/news/texas-measles-outbreak-second-child-death-unvaccinated/>