Measles FAQ from the CDC
Updated: April 26th, 2019

Q: Am I protected against measles?

A: CDC considers you protected from measles if you have written documentation (records) showing at least **one** of the following:

- You received **two** doses of measles-containing vaccine, and you are a(n) —
    - school-aged child (grades K-12)
    - adult who will be in a setting that poses a high risk for measles transmission, including students at post-high school education institutions, healthcare personnel, and international travelers.
- You received **one** dose of measles-containing vaccine, and you are a(n) —
    - preschool-aged child
    - adult who will not be in a high-risk setting for measles transmission.
- A laboratory confirmed that you had measles at some point in your life.
- A laboratory confirmed that you are immune to measles.
- You were born before 1957.

For international travelers, CDC considers you protected from measles if you have written documentation (records) showing at least one of the following:

- You received one dose of measles-containing vaccine, and you are an infant aged 6–11 months
- You received two doses of measles-containing vaccine, and you are a person 12 months or older
- A laboratory confirmed that you had measles at some point in your life
- A laboratory confirmed that you are immune to measles
- You were born before 1957

Q: Do I ever need a booster vaccine?

A: No. CDC considers people who received two doses of measles vaccine as children according to the U.S. vaccination schedule protected for life, and they do not ever need a booster dose

If you're not sure whether you are fully vaccinated, talk with your doctor.

Q: I am an adult now but only got one dose of measles vaccine as a child. Do I need a second dose?

A: If you were born after 1957 you need at least one dose of measles vaccine unless a laboratory confirmed that you had past measles infection or are immune to measles. Certain adults may need 2 doses. Adults who are going to be in a setting that poses a high risk for measles

transmission should make sure they have had two doses separated by at least 28 days. These adults include

- students at post-high school education institutions
- healthcare personnel
- international travelers
- people who public health authorities determine are at increased risk for getting measles during a measles outbreak

If you're not sure whether you are up to date on measles vaccine, talk with your doctor. More information about who needs measles vaccine.

Q: What should I do if I'm unsure whether I'm immune to measles?

A: If you're unsure whether you're immune to measles, you should first try to find your vaccination records or documentation of measles immunity. If you do not have written documentation of measles immunity, you should get vaccinated with measles-mumps-rubella (MMR) vaccine. Another option is to have a doctor test your blood to determine whether you're immune, but this option will take two doctor's visits. There is no harm in getting another dose of MMR vaccine if you may already be immune to measles (or mumps or rubella).

Q: How effective is the measles vaccine?

A: The measles vaccine is very effective. Two doses of measles vaccine are about 97% effective at preventing measles if exposed to the virus. One dose is about 93% effective.

Q: How long does it take for the measles vaccine to work in your body?

A: For the measles vaccine to work, the body needs time to produce protective antibodies in response to the vaccine. Detectable antibodies generally appear within just a few days after vaccination. People are usually fully protected after about 2 or 3 weeks. If you're traveling internationally, make sure to get up to date on all your MMR shots. You should plan to be fully vaccinated at least 2 weeks before you depart. If your trip is less than 2 weeks away and you're not protected against measles, you should still get a dose of MMR vaccine.

Q: How does the measles vaccine work?

A: When you get measles vaccine, your immune system makes protective virus-fighting antibodies against the harmless vaccine virus. Measles vaccine protects you from wild-type measles because if you have been vaccinated and then are exposed to someone with measles, your body remembers how to fight off the wild-type virus. That's because the vaccine trained your immune system.

Q: What is wild-type measles virus?

A: When an unvaccinated person gets measles, wild-type measles virus causes the infection. Scientists divide wild-type measles viruses into genetic groups called genotypes. Of 24 known genotypes, the World Health Organization (WHO) lists 5 genotypes that are known to currently circulate and are most commonly seen: B3, D4, D8, D9, and H1. MMR vaccine protects you against all types of measles.

Q: I've been exposed to someone who has measles. What should I do?

A: Immediately call your doctor and let them know that you have been exposed to someone who has measles. Your doctor can

- make special arrangements to evaluate you, if needed, without putting other patients and medical office staff at risk, and
- determine if you are immune to measles based on your vaccination record, age, or laboratory evidence.

If you are not immune to measles, MMR vaccine or a medicine called immune globulin may help reduce your risk developing measles. Your doctor can advise you, and monitor you for signs and symptoms of measles.

If you are not immune and do not get MMR or immune globulin, you should stay away from settings where there are susceptible people (such as school, hospital, or childcare) until your doctor says it's okay to return. This will help ensure that you do not spread it to others.

Q: Could I still get measles if I am fully vaccinated?

A: Very few people—about three out of 100—who get two doses of measles vaccine will still get measles if exposed to the virus. Experts aren't sure why. It could be that their immune systems didn't respond as well as they should have to the vaccine. But the good news is, fully vaccinated people who get measles are much more likely to have a milder illness. And fully vaccinated people are also less likely to spread the disease to other people, including people who can't get vaccinated because they are too young or have weakened immune systems.

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Q: I think I have measles. What should I do?

A: Immediately call your doctor and let them know about your symptoms so that they can tell you what to do next. Your doctor can make special arrangements to evaluate you, if needed, without putting other patients and medical office staff at risk.

Q: My doctor or someone from the health department told me that I have measles. What should I do?

A: If you have measles, you should stay home for four days after you develop the rash. Staying home is an important way to not spread measles to other people. Ask your doctor when it is safe to be around other people again.

You should also

- Cover your mouth and nose with a tissue when you cough or sneeze, and put your used tissue in the trash can. If you don't have a tissue, cough or sneeze into your upper sleeve or elbow, not your hands.
- Wash your hands often with soap and water.
- Avoid sharing drinks or eating utensils.
- Disinfect frequently touched surfaces, such as toys, doorknobs, tables, and counters. Standard household disinfectants will readily kill the measles virus.

Call your doctor if you are concerned about your symptoms.

Q: Do people who got the killed measles vaccine in the 1960s need to be revaccinated with the current, live measles vaccine?

A: Yes, people who know they got the killed measles vaccine (an earlier formulation of measles vaccine that is no longer used) should talk to their doctor about getting revaccinated with the current, live measles-mumps-rubella (MMR) vaccine.

Not many people fall into this group; the killed vaccine was given to less than 1 million people between 1963 and 1968. Also, most people don't know if they got the killed vaccine during this time. If you're unsure whether you fall into this group, you could ask your doctor to test your blood to determine whether you're immune. Or you can just get a dose of MMR vaccine. There is no harm in getting another dose of MMR vaccine if you may already be immune to measles (or mumps or rubella).

Q: How common was measles in the United States before the vaccine?

A: Before the measles vaccination program started in 1963, an estimated 3 to 4 million people got measles each year in the United States, of which 500,000 were reported. Among reported cases, 400 to 500 died, 48,000 were hospitalized, and 1,000 developed encephalitis (brain swelling) from measles.

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Q: What are the vaccine coverage levels like in the United States?

A: Nationally, the rates of people vaccinated against measles have been very stable since the Vaccines for Children (VFC) program began in 1994. In 2017, the overall national coverage for MMR vaccine among children aged 19—35 months was 92.7%. However, MMR vaccine coverage levels continue to vary by state, with 11 states in 2017 having MMR coverage levels of less than 90%. At the county or lower levels, vaccine coverage rates may vary considerably. Pockets of unvaccinated people can exist in states with high vaccination coverage, underscoring considerable measles susceptibility at some local levels.

For more information about childhood vaccination coverage, see CDC's Child Vaccination Coverage Reports.

Some states also post their state- or local-level school vaccination coverage assessment reports online. The local data may help parents understand the risks for vaccine-preventable diseases and the benefits of vaccinations for their children. See SchoolVaxView Resources for this data.

Q: Where do cases of measles that are brought into the United States come from?

A: Travelers can bring measles into the United States from any country where the disease still occurs or where outbreaks are occurring. In recent years, many measles cases came into the United States from common U.S. travel destinations. See CDC's Measles for Travelers website for more information.

Q: Why have there been more measles cases in the United States in some years?

A: Some years, states report more measles cases compared with previous post-elimination years. CDC experts attribute this to:

- measles outbreaks in some countries to which Americans often travel, and therefore more measles cases coming into the U.S., and/or
- more spread of measles in U.S. communities with pockets of unvaccinated people.

For details about the increase in cases by year, see Measles Outbreaks.

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Q: What is CDC's role in responding to measles cases and outbreaks?

A: State and local health departments have the lead in investigating measles cases and outbreaks when they occur. CDC helps and supports health departments in these investigations by—

- communicating with public health officials from states with reported measles cases and providing technical assistance.
- gathering data reported by states on confirmed measles cases and evaluating and monitoring these data from a national perspective.
- testing specimens for difficult diagnostic cases of suspected measles infection when requested by states.
- using Advanced Molecular Detection (AMD) methods to determine measles virus genotypes and strains.
- providing rapid assistance on the ground during outbreak investigations, often through a formal request by the state health department.
- investing in state and local health departments for public health infrastructure and laboratory capacity to support front-line response to suspected and confirmed measles cases.
- alerting clinicians, healthcare facilities, and public health officials around the country about current outbreaks and providing vaccine policy and clinical guidance for healthcare providers.
- providing information to public and healthcare providers through a variety of media including the CDC website.

More information about the surveillance of vaccine-preventable diseases, like measles.

Q: Has measles been eliminated from the United States?

A: Yes. In 2000, the United States declared that measles was eliminated from this country. The U.S. eliminated measles because it has a highly effective measles vaccine, a strong vaccination program that achieves high vaccine coverage in children, and a strong public health system for detecting and responding to measles cases and outbreaks.

Q: What does "measles elimination" mean?

A: CDC defines measles eliminationexternal icon as the absence of continuous disease transmission for 12 months or more in a specific geographic area. Measles is no longer endemic (constantly present) in the United States.

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Q: If measles is eliminated, why do people still get it in the United States?

A: Every year, unvaccinated travelers (Americans or foreign visitors) get measles while they are in other countries and bring it into the United States. Typically 2 out of 3 of these unvaccinated travelers are Americans. They can spread measles to other people who are not protected against measles, which sometimes leads to outbreaks. This can occur in communities with unvaccinated people.

Most people in the United States are protected against measles through vaccination. So measles cases in the U.S. are uncommon compared to the number of cases before a vaccine was available. Since 2000, when public health officials declared measles eliminated from the U.S., the annual number of people reported to have measles ranged from a low of 37 people in 2004 to a high of 667 people in 2014.

Q: Is measles a concern for the United States?

A: Yes. Since measles is still common in many countries, travelers will continue to bring this disease into the United States. Measles is highly contagious, so anyone who is not protected against measles is at risk of getting the disease. People who are unvaccinated for any reason, including those who delay or refuse vaccination, risk getting infected with measles and spreading it to others. And they may spread measles to people who cannot get vaccinated because they are too young or have specific health conditions.

Q: Could measles ever re-establish itself in the United States?

A: Yes, measles could become endemic (constant presence of a disease in an area) in the United States again, especially if vaccine coverage levels drop. This can happen when people

- don't get vaccinated on time,
- think they're immune when they're not, and can't find documentation of their vaccine status (this is most common among adults), or
- delay or refuse vaccines for religious, philosophical or personal reasons.

Research shows that there is clustering of people who delay or refuse vaccines in certain communities. When measles gets into communities with pockets of unvaccinated people, outbreaks are more likely to occur. These communities make it difficult to control the spread of the disease. And these communities make us vulnerable to having the virus re-establish itself in our country.

High sustained measles vaccine coverage and rapid public health response are critical for preventing and controlling measles cases and outbreaks.

Q: Will the United States ever get rid of measles completely?

A: Yes, it's possible. The first step is to eliminate measles from each country and region of the world. Once this happens, there will be no place from which measles can spread.

All member states in the six World Health Organization regionsexternal icon have adopted goals to eliminate measles by the year 2020. Once every country eliminates a disease, health officials consider the disease "eradicated" from the world. See the Measles and Rubella Initiativeexternal icon for more information.

Q: How is the type of measles virus identified?

A: Scientists identify the genotype in a laboratory using a method called nucleic acid sequencing. The genotype is based on the RNA (ribonucleic acid) sequence of the measles virus that caused the disease in an infected person. Learn about Genetic Analysis of Measles Viruses.

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