What You Need to Know about the Measles

The measles, mumps, and rubella vaccine is recommended for children 12 months to 12 years old. It is a single shot, often given at the same doctor visit as the varicella (chickenpox) vaccine.

There is one MMR vaccine, M-M-R II, licensed in the United States.

The safety record of the MMR vaccine is good. Most children who get the vaccine do not have any problems. As with all medicine, some side effects—usually very minor—can happen. The MMR vaccine sometimes causes pain where the shot is given, fever, a mild rash, or swelling of the neck or cheek. On very rare occasions, the vaccine’s ingredients cause severe (anaphylactic) allergic reactions.

In addition, the MMR vaccine has been linked with a very small risk of febrile seizures (seizures or jerking caused by fever). This happens most often in children between 12-23 months old. Febrile seizures can happen any time a child gets sick and has a fever. Most happen in children 14-18 months old. Because the risk of febrile seizures increases as infants get older, it is recommended that children get vaccinated as soon as recommended (12-15 months old for the MMR vaccine).

Other rare risks linked with MMR vaccine include joint pain, temporary arthritis, and immune thrombocytopenic purpura (ITP), a disorder that decreases the blood platelet count.

How CDC Monitors the Safety of MMR Vaccine

CDC and FDA monitor the safety of vaccines after they are licensed. Any problems detected with these vaccines will be reported to health officials, health care providers, and the public. Needed action will be taken to ensure the public’s health and safety.

The CDC uses three systems to monitor vaccine safety:

1. The Vaccine Adverse Event Reporting System (VAERS)—an early warning system that helps CDC and FDA monitor problems following vaccination. Anyone can report suspected vaccine reactions and issues to VAERS.

2. The Vaccine Safety Datalink (VSD)—a collaboration between CDC and several health care organizations that allows ongoing monitoring and proactive searches of vaccine-related data.

3. The Clinical Immunization Safety Assessment (CISA)—a partnership between CDC and several medical centers that conduct clinical research on vaccine-associated health risks in certain groups of people.
A Closer Look at the Safety Data

› Two recent studies indicate that for every 10,000 children who get their first MMR and varicella vaccines as separate shots when they are 12-23 months old, about 4 will have a febrile seizure during the 5-12 days following vaccination. Children of the same age who get the combined measles, mumps, rubella and varicella (MMRV) vaccine as their first vaccine against these diseases are twice as likely to have a febrile seizure during the same time period.

› Studies have shown that for children younger than 7 years old, there is a small increased risk of febrile seizures approximately 8 to 14 days after the MMR shot; this happens in about 1 in 3,000-4,000 children.

› Immune thrombocytopenic purpura (ITP) is a disorder that decreases the body’s ability to stop bleeding. It can happen after both natural measles infection as well as after receipt of MMR vaccine. It is usually not life threatening, however; treatment can include blood transfusion. The risk of ITP has been shown to be increased in the six weeks following an MMR vaccine, with one study estimating 1 case per 40,000 vaccinated children.

› Joint pain is linked with the rubella portion of MMR vaccine. Joint pain and temporary arthritis happen more often after MMR vaccination in adults than in children. Females after puberty also experience this issue more often than males. Joint pain or stiffness occurs in up to 25% of females past puberty; their symptoms generally begin 1 to 3 weeks after vaccination, are usually mild and last about two days. These symptoms rarely come back.

› Measles inclusion body encephalitis, or severe brain swelling caused by the measles virus, is a complication of getting infected with the wild measles virus. While rare, this almost always happens in patients with low immune systems. The illness usually develops within one year after initial measles infection and has a high death rate. There have been 3 published reports of this complication happening to vaccinated people. In these cases, encephalitis developed between 4 and 9 months after the MMR shot. In one case, the measles vaccine strain was identified as the cause.

› Signs of autism typically appear around the same time that children are recommended to receive the MMR vaccine. Some parents might worry that the vaccine causes autism. Vaccine safety experts, including experts at CDC and the American Academy of Pediatrics (AAP), agree that MMR vaccine is not responsible for increases in the number of children with autism.