

MMR Vaccine

MMR Vaccines	Number of Doses	Age	Minimum Age For 1 st Dose	Dose & Route
M-M-R II ^A (Merck)	2 (An additional dose may be indicated in outbreak situations and foreign travel where measles exposure is likely*)	<u>12 months – 18 years</u>	12 months* (doses given before 12 months are invalid)	M-M-R II ^A 0.5 mL Subcutaneous (SQ) or Intramuscular (IM) ⁴
PRIORIX ^B (GlaxoSmithKline)		<u>19 year and over</u>		
		1 st dose: 12-15 months 2 nd dose: 4-6 years and/or at least 4 weeks after 1 st dose		
		1 st dose: ≥ 19 years 2 nd dose: At least 4 weeks after the 1 st dose		PRIORIX ^B 0.5 mL SQ Single-dose vial of lyophilized antigen component to be reconstituted with the accompanying prefilled syringe of sterile water diluent

ACIP MMR Vaccine Recommendations^{1,3}

- Two doses of MMR vaccine (M-M-R-II or PRIORIX) are routinely recommended for all children 12 months of age and older.
- Individuals vaccinated at 12 months or older should receive the 2nd dose prior to elementary school entry at 4-6 years of age.
- A dose of MMR administered before the 1st birthday is not counted as a valid dose. Repeat the dose any time after the 1st birthday as long as it is separated from the 1st dose by at least 4 weeks.
- Adults born during or after 1957 should have documentation of at least 1 dose of MMR administered on or after the 1st birthday or other evidence of measles, mumps and rubella immunity. Documentation of provider-diagnosed disease is not considered acceptable evidence of immunity for measles, mumps, or rubella (laboratory confirmation of immunity or disease is acceptable).
- Certain groups at increased risk of measles or mumps exposure should have 2 doses, including persons attending colleges and other post-high school educational institutions, persons working in medical facilities, and international travelers.
- A 2nd dose is recommended for adults entering college or other post high school educational institutions, international travelers, health care workers born in 1957 or later, and for unvaccinated healthcare personnel born before 1957 who lack laboratory confirmation of immunity or disease during an outbreak of measles or mumps.
- All persons with perinatal HIV infection who were vaccinated prior to establishment of an effective anti-retroviral course of treatment and to those ≥12 months with HIV infection who do not have evidence of current severe immunosuppression should receive two appropriately spaced doses of MMR. Revaccinate persons who received inactivated (killed) measles vaccine or measles vaccine of unknown type during 1963-1967 with 2 doses of MMR vaccine.
- [Measles outbreak and foreign travel schedule for infants between 6-12 months of age:](#)
During a measles outbreak, infants aged 6–11 months should receive a single dose of MMR vaccine. This population may fail to respond to the other components of the vaccine as safety and effectiveness of mumps and rubella vaccine in infants less than 12 months of age have not been established. *Such infants should receive a 2nd dose of MMR between 12-15 months of age followed by a 3rd dose between 4-6 years of age.



Interchangeability

- PRIORIX and M-M-R II are fully Interchangeable

Timing of Vaccination/
Coadministration with Other
Vaccines

- Administer MMR vaccines concomitantly with other:
 - Routine child vaccines at different anatomic sites
 - Live and non-live vaccines
- Separate live virus vaccines not administered on the same day by ≥4 weeks

Contraindications

- A severe allergic reaction (e.g. anaphylaxis) following a prior dose or to a vaccine component (e.g. gelatin, neomycin) or any other measles, mumps & rubella containing vaccine
- Severe humoral or cellular immunodeficiency or immunosuppressed due to disease or medical therapy
- Pregnant women. Pregnancy should be avoided for 1 month after receipt of MMR vaccine.
- ^AFebrile illness with fever >101.3°F (>38.5°C)
- Active Untreated Tuberculosis
- ^AFamily history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent

Non-pregnant Adolescent and Adult Females:

Immunization of non-pregnant adolescent and adult females of childbearing age with MMR (for the rubella component) is indicated because it confers individual protection against subsequently acquiring rubella infection during pregnancy. This, in turn, prevents infection of the fetus and consequent congenital rubella injury. Advise women of childbearing age not to become pregnant for 1 month after vaccination.

Measles Revaccination Recommendations:

The following groups are considered unvaccinated and should receive MMR vaccine according to the following recommendations:

- Persons vaccinated before the 1st birthday
- Persons vaccinated with killed measles vaccine (KMV)
- Persons vaccinated with KMV followed by live vaccine less than 4 months after the last dose of KMV
- Persons vaccinated before 1968 with an unknown type of vaccine
- Persons vaccinated with immune globulin (IG) in addition to a further attenuated strain or vaccine of unknown type (revaccination not necessary if IG was given with Edmonston B vaccine)

Post-exposure and Outbreak Recommendations:

Measles: M-M-R II and PRIORIX may prevent disease if given within 72 hours of exposure. PRIORIX is indicated for off-label use for measles postexposure prophylaxis; M-M-R II is not³. IG is recommended for high-risk susceptible or severely compromised persons including those for whom MMR is contraindicated. It must be given within 6 days of first exposure to measles case. See the [IG for Treatment of Measles](#) fact sheet for more details.

Mumps: Persons previously vaccinated with 2 doses of a mumps virus containing vaccine who are identified by public health authorities as being at increased risk for acquiring mumps because of an outbreak should receive a 3rd dose of a mumps virus-containing vaccine to improve protection against mumps disease and related complications. No additional dose is recommended for persons in outbreak settings who have already received 3 doses of a mumps virus-containing vaccine².

Rubella: Neither rubella-containing vaccine nor immune globulin is effective for post-exposure prophylaxis of rubella.

Healthcare Personnel (HCP)

- Consider vaccinating unvaccinated HCP born before 1957 who lack laboratory confirmation of measles, mumps or rubella immunity or disease with 2 doses of MMR vaccine at appropriate intervals and 1 dose of MMR vaccine for rubella immunity.
- Recommend 2 doses of MMR during a measles or mumps outbreak for all unvaccinated HCP born before 1957 who lack laboratory evidence of immunity or laboratory confirmation of disease; 1 dose for protection during a rubella outbreak.

Precautions

- Always have appropriate medical treatment available to manage anaphylactic reactions
- ^ARecent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product)
- ^AHistory of thrombocytopenic purpura or thrombocytopenia
- ^ANeed for tuberculin skin or interferon-gamma release assay (IGRA) testing
- ^AModerate or severe acute illness with or without fever
- ^APersonal or family history of seizures of any etiology.
- ^BRisk of febrile seizures
- Syncope
- Latex allergic reaction from syringe
- Risk of vaccine virus transmission

Adverse Reactions

- Pain, redness, swelling
- Thrombocytopenia, drowsiness, irritability, loss of appetite, Fever
- Transient rashes
- Parotitis
- Arthralgias

Tuberculin Skin Tests (TST)

- Measles-containing vaccines can interfere with the TST response
- TST if indicated, & administration of a measles containing vaccine can occur on the same day or 4-6 weeks later

Vaccine Storage & Handling

- Lyophilized vaccine—less than 5° F but no colder than -58° F (aim for 0° F)
- Diluent—may store at room temperature or refrigerated
- Only use the diluent supplied with the vaccine

References:

1. Centers for Disease Control and Prevention (CDC). Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2013;62(No. RR-4):1-24. Accessed on 3/15/18 from www.cdc.gov/mmwr/pdf/rr/rr6204.pdf
2. CDC. Recommendation of the Advisory Committee on Immunization Practices for Use of a Third Dose of Mumps Virus-Containing Vaccine in Persons at Increased Risk for Mumps During an Outbreak. *MMWR* 2018;67:33-38. DOI: [dx.doi.org/10.15585/mmwr.mm6701a7](https://doi.org/10.15585/mmwr.mm6701a7). Accessed on January 30, 2018 from www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm
3. Krow-Lucal E, Marin M, Shepersky L, Bahta L, Loehr J, Dooling K. Measles, Mumps, Rubella Vaccine (PRIORIX): Recommendations of the Advisory Committee on Immunization Practices — United States, 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:1465-1470. DOI: <http://dx.doi.org/10.15585/mmwr.mm7146a1>
4. M-M-R II. Package insert. Merck; 2023. Accessed March 14, 2023 from https://www.merck.com/product/usa/pi_circulars/m/mmr_ii/mmr_ii_pi.pdf

