

A Quick Look at Using Measles, Mumps, Rubella (MMR) Vaccine

Indications for Use and Schedule for Persons Without Evidence of Immunity

- 2-dose series for children age 12 months – 18 years
 - Routinely given at age 12-15 months and 4-6 years
 - Minimum age for routine use is 12 months
- 1 dose for adults born in 1957 or later
 - High-risk adults should receive 2 doses: healthcare personnel (HCP), international travelers, students attending postsecondary education institutions, and household or close personal contacts of immunocompromised persons with no evidence of immunity to measles, mumps, or rubella
 - Non-high-risk adults may receive a 2nd dose
- Infants aged 6-11 months traveling internationally should receive 1 dose of MMR before departure, dose does not count toward routine 2-dose series
- Minimum interval between MMR doses is 4 weeks
- “Live/Live Vaccine Rule”
 - Live vaccines (i.e., MMR, Varicella, LAIV, ZVL) must be given on the same day or separated by 4 weeks
 - If minimum interval not met, vaccine(s) given last must be repeated in 4 weeks

Vaccine Administration

- Administer **subcutaneous (SC)** in the upper outer triceps area or the fatty tissue over the anterolateral thigh at a 45° angle
- 5/8-inch needle; 23-25 gauge
- Can be given with other vaccines at the same visit
 - Use separate sites, space at least 1-inch apart

Storage and Handling

- May store vaccine in either refrigerator or freezer
 - Refrigerator at **36°F to 46°F (2°C to 8°C)**
 - Freezer at **-58°F to +5°F (-50°C to -15°C)**
- Store diluent at room temperature or in the refrigerator; **do not freeze diluent**
- Pharmaceutical-grade (purpose-built) units are preferred for vaccine storage
- Keep in the original box and protect from light
- Reconstitute using **only** the Merck diluent

EVIDENCE OF IMMUNITY

- Documentation of age-appropriate vaccination (refer to schedule above)
- Persons born before 1957 (unless pregnant or HCP, refer to “Further Points”)
- Lab evidence of immunity to measles, mumps, **and** rubella
- Lab confirmation of measles, mumps, **and** rubella diseases

CONTRAINDICATIONS

- Anaphylactic reaction to a prior dose of MMR, a component of MMR vaccine (including gelatin and neomycin), or to single-antigen measles, mumps, or rubella vaccine
- Pregnant or planning to become pregnant in the next 4 weeks
- Severe immunosuppression due to either disease or therapy (e.g., chemotherapy, certain medications)
- Family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents and siblings), unless the immune competence of the potential vaccine recipient has been substantiated clinically or verified by a laboratory

PRECAUTIONS

- Moderate or severe illness with or without fever
- History of thrombocytopenia or thrombocytopenic purpura
- Receipt of blood or blood product within the last year (interval varies by type of blood product administered); for more information, see www.cdc.gov/vaccines/pubs/pinkbook/index.html (Appendix A) and General Best Practice Guidelines for Immunization (Timing and Spacing of Immunobiologics) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html
- Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing (see Further Points)

OUTBREAK GUIDANCE

- During measles, mumps, or rubella outbreaks, efforts should be made to ensure that all persons at risk for exposure and infection are vaccinated or have other acceptable evidence of immunity
- Refer to www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm for the Advisory Committee on Immunization Practices (ACIP) vaccine and immune globulin (IG) recommendations during outbreaks
- Persons previously vaccinated with 2 doses of mumps-containing vaccine identified by public health as being at increased risk for mumps during an outbreak should receive a 3rd dose of mumps-containing vaccine (i.e., MMR or MMRV); to determine who is at increased risk, consult your local health department

FURTHER POINTS

- All persons born before 1957 may receive 1-2 doses of MMR if no contraindications to vaccination
- HCP born in 1957 or later with no evidence of immunity to measles, mumps, or rubella should receive a 2-dose series of MMR at least 4 weeks apart for measles or mumps, or at least 1 dose of MMR for rubella; HCP born before 1957: consider a 2-dose series of MMR at least 4 weeks apart for measles or mumps, or 1 dose MMR for rubella
- Infants age 6-11 months should receive 1 dose of MMR prior to international travel; this dose does not count toward routine 2-dose childhood series (12-15 months and 4-6 years)
 - Revaccinate at 12 months ensuring minimum interval of 4 weeks is met
- For adults with HIV infection: if CD4 count is ≥ 200 cells/ μ L for at least 6 months and no evidence of immunity to measles, mumps, or rubella, give 2-dose series of MMR at least 4 weeks apart; MMR is contraindicated in HIV infection with CD4 count < 200 cells/ μ L
- MMR vaccine can be administered to persons with history of egg allergy without skin testing or using special protocols
- To protect susceptible pregnant women and persons with immunosuppression, MMR should be offered to all household and close contacts without evidence of immunity and with no contraindication to the vaccine
- Breastfeeding is not a contraindication to receiving MMR in either the mother or child
- Women of childbearing age who have 1 or 2 documented doses of rubella-containing vaccine and have rubella-specific IgG levels that are not clearly positive should receive 1 additional dose of MMR vaccine (maximum of 3 doses) and do not need additional serologic testing
- TB skin testing (TST): may give MMR and TST on same day and read TST 48-72 hours later
 - If MMR is given first (i.e., not on the same day TST is placed), wait at least 4 weeks before administering TST (ensures TST is not affected by vaccine)
 - If TST is done first (i.e., not on the same day MMR is given), delay vaccination until the TST is read
- Persons with 2 documented, valid doses of MMR are considered immune; **do not** draw a titer to check for immunity to measles, mumps, or rubella for anyone with 2 documented, valid MMR doses
- Document as “MMR” in MCIR, on the vaccine administration record, and on the immunization record card
- Refer to “A Quick Look at Using Measles, Mumps, Rubella, Varicella Vaccine (MMRV; ProQuad®)” at www.michigan.gov/immunize (Health Care Professionals/Providers, Provider Education Resources, Quick Looks & Other Resources) for more information about using MMRV

Publicly purchased MMR vaccine can be administered to eligible children 12 months through 18 years of age through the Vaccines for Children (VFC) Program. Eligible children include those who are uninsured, underinsured, Medicaid eligible, Native American, or Alaskan Natives. Contact your local health department for more information.

MMR is also available through the Michigan Adult Vaccine Replacement Program (MI-VRP) and through Adult Medicaid. For persons covered by Adult Medicaid, private stock should be used and billed to Medicaid.

For additional information: MMWRs: “Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the ACIP” (June 14, 2013) and “Recommendation of the ACIP for Use of a Third Dose of Mumps Virus-Containing Vaccine in Persons at Increased Risk for Mumps During an Outbreak” (January 12, 2018) at www.cdc.gov/vaccines.