IMMUNOBIOLOGICS

IMMUNOBIOLOGIC	PRIMARY IMMUNIZATION SCHEDULE	BOOSTER SCHEDULE	COMMENTS AND CONTRAINDICATIONS
Measles, Mumps, Rubella and Varicella Virus Vaccine Live (MMRV) **ProQuad®** Merck	**Children 12 months to 12 years[1]:** **Dose 1:** **0.5 mL SC[2]** **Dose 2:** **0.5 mL SC at 4-6 years of age, or at least 3 months after the first dose[3]** [1] The routinely recommended ages for measles, mumps, rubella and varicella vaccination continue to be 12 through 15 months of age for dose 1 and 4 through 6 years of age for dose 2. See Comments and Contraindications column for important information on determining risks and benefits of MMRV versus MMR and varicella vaccine administered separately at the same visit. [2] To reconstitute the vaccine: Withdraw the entire contents of the diluent vial into a syringe. Inject all of the diluent in the syringe into the vial of lyophilized vaccine and gently agitate to mix thoroughly. Withdraw the entire contents into a syringe and inject the total volume of reconstituted vaccine subcutaneously (SC). [3] If the second dose of varicella-containing vaccine is inadvertently administered at least 28 days following the first dose, the second dose does not need to be repeated. SC: Subcutaneous	None	MMRV is licensed for children 12 months through 12 years of age; however among children age 12 through 23 months, use of MMRV vaccine is associated with a higher risk for fever and febrile seizures 5 through 12 days after the first dose (about one extra febrile seizure for every 2,300-2,600 MMRV vaccine doses) compared with use of MMR and varicella vaccines administered separately at the same visit. CDC recommends the following: **Dose 1 at Ages 12 through 47* Months** • Providers who are considering administering MMRV vaccine at ages 12 through 47 months should discuss the benefits (one fewer injection) and risks (increased risk of fever and febrile seizures) of both vaccination options with the parents or caregivers. • Unless the parent or caregiver expresses a preference for MMRV vaccine, CDC recommends the MMR and varicella vaccine be administered for the first dose in this age group. • Providers who face barriers to clearly communicate these benefits and risks for any reason (e.g., language barriers) should administer MMR and varicella vaccine rather than MMRV. **Dose 1 at Ages 48 Months and Older and Dose 2 at any Age** • For the first dose of measles, mumps, rubella, and varicella vaccines at ages 48 months and older and for dose 2 at any age (15 months through 12 years), use of MMRV vaccine generally is preferred over separate injections of its equivalent component vaccines (i.e., MMR and varicella vaccines). Considerations should include provider assessment†, patient preference, and the potential for adverse events. **Tuberculin Skin Test:** If a TB skin test is to be done, administer it before, simultaneously, or at least 4 weeks after MMRV. **Adverse Reactions:** • Fever and febrile seizures (Parents and caregivers should be counseled about the possibility of fever after receipt of a measles-containing vaccine and educated on timing and measures to control it.) • Varicella-like rash at injection site, varicella-like rash (4%-6%), or measles-like rash (3.0%). (If a vaccinated person develops a rash close contact with persons who do not have evidence of varicella immunity and who are at high risk of complications of varicella should be avoided until the rash has resolved.) • The first dose of MMRV vaccine has been associated with rash and higher rates of fever than MMR and varicella vaccines given separately. Rash has been reported in about 1 person in 20 and fever in about 1 person in 5. Seizures caused by a fever are also reported more often after MMRV. • Injection site pain, • Rarely thrombocytopenia associated with MMR, • Lymphadenopathy sometimes reported after MMR or other rubella-containing vaccine, • Temporary pain and stiffness in the joints following receipt of MMR or other rubella-containing vaccine, • Rarely parotitis reported following MMR or other mumps-containing vaccine, • Zoster caused by varicella vaccine virus has been reported.

Measles, Mumps, Rubella and Varicella Virus Vaccine Live (MMRV) continued **ProQuad®** Merck			**Precautions:** • Moderate or severe acute illnesses until the condition has improved • Do not administer for 3-11 months after receipt of antibody containing blood products (see table 2, page 5)· • History of thrombocytopenia or thrombocytopenia purpura • A personal or family (i.e., sibling, parent) history of seizures is a precaution for MMRV vaccination. (Children with a personal or family history of seizures generally should be vaccinated with MMR and varicella vaccines because the risks of using MMRV vaccine in this group of children generally outweigh the benefit of MMRV vaccine.) **Contraindications:** • History of anaphylactic reaction to neomycin; allergic reaction to gelatin, other components of the vaccine, or after previous vaccination with MMRV vaccine, varicella vaccine, or MMR vaccine; • Altered immunity (i.e., blood dyscrasias, leukemia, lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic system; • Primary or acquired immunodeficiency including HIV infections/AIDS, cellular immune deficiencies, hypogammaglobulinemia, and dysgammaglobulinemia; • Family history of congenital or hereditary immunodeficiencies, unless the immune competence of the potential vaccine recipient has been demonstrated; • Systemic immunosuppressive therapy, including oral steroids ≥2 mg/kg of body weight or ≥20 mg/day of prednisone or equivalent for persons who weigh >10 kg, when administered for ≥2 weeks; and • Pregnancy