

MODEL STANDING ORDERS

Single-Antigen Varicella Live Virus Vaccine

These model standing orders are current as of February 2010. All standing orders should be reviewed carefully against the most current recommendations and may be revised by the clinician signing them.

Two doses of varicella vaccine are recommended for all susceptible individuals \geq 12 months of age without a reliable history of immunity as outlined below.

- **Routine vaccination:** One dose at 12 through 15 months of age. The vaccine may be given to all children at this age regardless of prior history of varicella. Administer a second dose of varicella vaccine at 4 through 6 years of age.
 - **Children < 13 years of age:** Administer the second dose at least 3 months after the first dose.
 - **Adolescents and adults 13 years of age and older** who do not have evidence of varicella immunity: Administer 2 doses of varicella vaccine, at least 4 weeks apart.
- **Outbreak Control**

Administer one dose of varicella vaccine to everyone without a reliable history of immunity as outlined below. Administer a second dose of varicella vaccine to those who already have one dose.
- **Give special consideration for vaccination to those who might be at increased risk for exposure or transmission, including:**
 - Health care personnel.
 - Household contacts of immunocompromised persons.
 - Persons who live or work in environments in which transmission of varicella or zoster virus (VZV) is likely to be transmitted: teachers, day care providers, residents and staff of institutional settings; college students; inmates and staff of correctional facilities; military personnel.
 - Adolescents and adults who live in households with children;
 - Non-pregnant women of childbearing age; and
 - International travelers.

A reliable history of immunity consists of:

- Documentation of age-appropriate vaccination:
 - Preschool-aged children 12 months of age or older: one dose
 - School-aged children, adolescents, and adults: two doses
- History of varicella disease or herpes zoster (shingles) based on health care provider diagnosis
- Laboratory evidence of immunity or laboratory confirmation of disease.

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- Born in the U.S. before 1980. For healthcare providers and pregnant women, birth before 1980 should not be considered evidence of immunity. Persons born outside the U.S. should meet one of the other criteria for varicella immunity.

ORDER:

1. Provide patient or legal representative with a Vaccine Information Statement (VIS) and answer any questions. The VIS in English and other languages is available at www.immunize.org/vis.
2. Screen for contraindications according to Table 1.
3. Administer varicella vaccine 0.5 ml subcutaneously (SC) within 30 minutes of reconstitution. Administer subcutaneous vaccines at a 45° angle into the subcutaneous tissue of the deltoid region of the upper arm with a 5/8-inch, 23-25 gauge needle. **Always check the package insert prior to the administration of any vaccine.**
4. Give varicella vaccine simultaneously with all other live or killed immunizations according to the recommended schedule and patient's current vaccine status. Administer each vaccine using a separate syringe and at a different anatomic site.
 - If simultaneous administration is not possible, administer varicella vaccine any time before or after an inactivated vaccine, but at least 4 weeks before or after another live, attenuated vaccine.
5. If possible, observe patient for an allergic reaction for 15 - 20 minutes after administering vaccine.
6. Facilities and personnel should be available for treating immediate hypersensitivity reactions.
7. Report clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) at 1-800-338-2382, or via the VAERS website: <http://www.vaers.hhs.gov>.
8. Report administration errors to the Institute for Safe Medical Practices (ISMP) via the Medication Error Reporting Program (MERP) website: <http://www.ismp.org>
9. See the MDPH Immunization Program document General Protocols for Standing Orders for further recommendations and requirements regarding vaccine administration, documentation and consent.

Intervals between Doses:

- Minimum age is 12 months.
- For persons aged 12 months - 12 years, the minimum interval is 3 months. However, if the second dose was administered at least 28 days after the first dose, it can be accepted as valid.
- For persons aged 13 years and older, the minimum interval between doses is 28 days.
- Consider administering 2 doses of monovalent varicella vaccine, 3 months apart, to HIV-infected people who are not too immunosuppressed to be vaccinated (see Table 1).

Notes on varicella vaccine:

- Timing of administration of varicella vaccine and other live vaccines:
 - Give varicella and MMR vaccines not administered on the same day ≥ 4 weeks apart.
 - Do not give varicella and smallpox vaccines on the same day – separate them by ≥ 4 weeks
 - Live oral vaccines (Ty21a typhoid vaccine, oral polio vaccine) and varicella vaccine can be given at any time before, with, or after each other.
- IG-containing blood products can diminish the antibody response to varicella vaccine:
 - Do not give immune globulin (IG)-containing blood products and varicella vaccine simultaneously. If unavoidable, give at different sites and revaccinate or test for seroconversion

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at the recommended interval. The duration of interference of IG-containing blood products and varicella vaccine is dose-related. See Table 2.

- If varicella vaccine is given first, defer IG for ≥ 2 weeks. If IG is given first, the interval between IG and varicella vaccine depends on the product, dose, and indication. See Table 2.

Table 1. Contraindications and Precautions to Varicella Vaccine

Valid Contraindications and Precautions	Invalid Contraindications (Varicella Vaccine should be given)
Anaphylactic reactions to a previous dose of varicella vaccine, gelatin, neomycin, or to any other component of the vaccine (see package insert for specific components)	Mild illness with or without fever
	Non-anaphylactic reaction to any component of the vaccine
CD4+ T-lymphocyte $\leq 15\%$ in HIV-infected children. ¹ CD4+ T-lymphocyte < 200 cells/ μL in HIV-infected adolescents and adults ¹	Asymptomatic or mildly symptomatic HIV infection ¹
	Children with acute lymphoblastic leukemia (ALL) in remission for ≥ 12 consecutive months and conforming to certain other criteria ²
Cellular immunodeficiency. congenital immunodeficiency; blood dyscrasias; leukemia; lymphoma; other malignancies; cellular immune deficiencies ²	Persons with impaired humoral immunity (e.g., hypogammaglobulinemia, dysglobulinemia, agammaglobulinemia)
High-dose steroid therapy daily or on alternate days for ≥ 14 days (≥ 2 mg/kg/day or ≥ 20 mg/day of prednisone) ³ (See Table 3)	Low-dose or moderate-dose steroid therapy ³
	Physiologic maintenance steroid doses (See Table 3)
Family history of congenital or heredity immunodeficiency in parents or siblings ⁴	Immunodeficient family member or household contact ^{4,10}
Long-term salicylate therapy ⁵	Simultaneous TB skin testing ¹¹
Antiviral drugs active against herpesviruses (e.g., acyclovir or valacyclovir) ≤ 24 hrs before vaccination ⁶	TB or positive PPD (on treatment) ⁷
Active untreated tuberculosis ⁷	Breast-feeding
Pregnancy ⁸ (It is sufficient to ask a woman if she is pregnant; a pregnancy test is not necessary.)	Pregnancy in recipient's close contacts
<p>Precautions to Varicella Vaccine:</p> <ul style="list-style-type: none"> • Moderate or severe illness with or without fever (temporary precaution) • Recent (≤ 11 months) administration of an immunoglobulin (IG)-containing blood product. See Table 2. • Topical, aerosol, or local injection steroids⁹. See Table 3. 	

¹ **Children aged 1-8:** Consider 2 doses of single-antigen varicella vaccine, 3 months apart, for HIV-infected children with CD4+ T-lymphocyte percentage $> 15\%$. Because data are not available on safety, immunogenicity or efficacy of MMRV vaccine in HIV infected children, do not use MMRV.

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Adolescents and adults: While data are lacking weighing the risk for severe disease from wild VZV and potential benefit of vaccination, consider vaccination with monovalent varicella vaccine (2 doses, 3 months apart) for HIV-infected persons with CD4+T-lymphocyte count ≥ 200 cells/ μ L in these age groups. Encourage people with HIV infection to see a provider if they develop a post-vaccination rash.

- ² Vaccinate leukemic children who are in remission and who do not have evidence of immunity to varicella only with expert guidance and with antiviral therapy available should complications ensue.
- ³ Patients receiving high dose, short-term steroids can receive live virus vaccines immediately after discontinuation of treatment. However, some experts advise waiting until ≥ 2 weeks after cessation of therapy, if possible (e.g., if the patient's condition allows temporary cessation.) Persons without evidence of immunity who are receiving systemic steroids for certain conditions (e.g., asthma) and who are not otherwise immunocompromised may be vaccinated if they are receiving < 2 mg/kg of body weight or a total of < 20 mg/day of prednisone or its equivalent.
- ⁴ Do not administer varicella vaccine to a person with a family history of congenital or hereditary immunodeficiency in parents or siblings, unless that person's immune competence has been clinically substantiated or verified by a laboratory.
- ⁵ No adverse events following varicella vaccination related to the use of salicylates (e.g., aspirin) have been reported. However, the manufacturer recommends that vaccine recipients avoid the use of salicylates for 6 weeks after receiving varicella or MMRV vaccine because of the association between aspirin and Reye syndrome following chickenpox. Consider vaccination with close monitoring for children with rheumatoid arthritis and other conditions requiring therapeutic aspirin.
- ⁶ Antiviral drugs against herpesviruses (e.g. acyclovir or valacyclovir) might reduce the efficacy of varicella vaccine. Discontinue these drugs ≥ 24 hours before administering varicella vaccine, if possible.
- ⁷ Although there is no evidence that either varicella or varicella vaccine exacerbates tuberculosis, vaccination is not recommended for persons known to have untreated active tuberculosis. Initiate antituberculosis therapy before administering varicella to persons with untreated active tuberculosis. Tuberculosis skin testing is not a prerequisite for varicella vaccination.
- ⁸ Women should avoid pregnancy for ≥ 4 weeks post vaccination. Merck and CDC have established a registry to assess the outcomes of pregnancies when varicella vaccination occurred within 3 months of pregnancy. To report varicella vaccination during pregnancy, call (800) 986-8999.
- ⁹ Varicella vaccine can be given to patients receiving topical, aerosol, or injected steroids. However, if therapy is prolonged and there is any clinical or laboratory evidence of immunosuppression, varicella vaccine should be deferred for ≥ 1 month post treatment. See Table 2.
- ¹⁰ The benefits of administering varicella vaccine to household contacts of immunosuppressed individuals outweigh any potential risk.
- ¹¹ No precautions are needed after immunization of healthy children in whom a rash does not develop. Immunized people in whom a rash does develop should avoid direct contact with immunocompromised household members without evidence of immunity until the rash resolves.
- ¹² Varicella vaccination may temporarily suppress tuberculin reactivity. Varicella vaccine may be given after, or on the same day as, TB testing. Postpone the TB test until 4-6 weeks after administration of varicella vaccine. If giving varicella vaccine simultaneously with tuberculin skin test, use the Mantoux test, not multiple puncture tests, because the latter, if results are positive, require confirmation (and confirmation would then have to be postponed 4-6 weeks).

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Table 2. Suggested Intervals between Administration of Immunoglobulin Preparations and Measles-Containing and Varicella-Containing Vaccines

Product/Indication	Dose/Route	Recommended interval in Months
Tetanus IG (TIG)	250 units (10 mg IgG/kg) IM	3
Hepatitis A IG (IG)		
Contact prophylaxis	0.02 mL/kg (3.3 mg IgG/kg) IM	3
International travel 3 – 5 mos	0.06 mL/kg (10 mg IgG/kg) IM	3
Hepatitis B IG (HBIG)	0.06 mL/kg (10 mg IgG/kg) IM	3
Rabies IG (RIG)	20 IU/kg (22 mg IgG/kg) IM	4
Varicella IG (VariZIG)	125 units/10 kg (20-40 mg IgG/kg) IM, maximum 625 units	5
Measles prophylaxis IG (IG)		
Standard (i.e., nonimmunocompromised) host	0.25 mL/kg (40 mg IgG/kg) IM	5
Immunocompromised host	0.50 mL/kg (80 mg IgG/kg) IM	6
RSV prophylaxis (palivizumab monoclonal antibody)	15 mg/kg IM	None
Cytomegalovirus intravenous immune globulin	3.0 mL/kg (150 mg/IgG/kg) IV	6
Blood transfusion		
Red blood cells (RBCs), washed	10 mL/kg (negligible IgG/kg) IV	None
RBCs, adenine-saline added	10 mL/kg (10 mg IgG/kg) IV	3
Packed RBCs	10 mL/kg (20-60 mg IgG/kg) IV	5
Whole blood	10 mL/kg (80-100 mg IgG/kg) IV	6
Plasma/platelet products	10 mL/kg (160 mg IgG/kg) IV	7
IGIV		
Replacement therapy for immune deficiencies	300-400 mg/kg IV	8
Immune thrombocytopenic purpura (ITP) (as IGIV)	400 mg/kg I V	8
ITP	1,000 mg/kg IV	10
ITP or Kawasaki disease	1.6 – 2.0 grams/kg IV	11

Note on other live vaccines: Blood and other antibody-containing products (except washed red blood cells) can also diminish the response to rubella vaccine, and potentially to mumps vaccine. Therefore, after immune globulin preparations or other antibody-containing products are received, mumps and rubella vaccines should be deferred for ≥ 3 months.

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Table 3. Guidelines for Administration of Live Virus Vaccines and Steroid Therapy *

Steroid Therapy	Recommendations for Deferral
High dose systemic steroids daily or on alternate days for 14 days or more (≥ 2 mg/kg/day of prednisone or its equivalent, or ≥ 20 mg/day if they weigh 10 kg)	Defer live virus vaccines for ≥ 1 month after treatment has stopped
High dose systemic steroids daily or on alternate days for less than 14 days (≥ 2 mg/kg/day of prednisone or its equivalent, or ≥ 20 mg/day if they weigh 10 kg)	Can give live virus vaccines immediately after treatment is discontinued. However, some experts recommend deferring until ≥ 2 weeks after treatment has stopped, if possible
Low or moderate doses of systemic steroids given daily or on alternate days (< 2 mg/kg/day of prednisone or its equivalent, or < 20 mg/day if they weigh 10 kg)	Can give live virus vaccines on treatment
Physiologic maintenance doses of steroids (replacement therapy)	Can give live virus vaccines on treatment
Topical, aerosol or local injections of steroids (e.g., skin, aerosol, eyes, intra-articular, bursal, tendon injections)	Can give live virus vaccines on treatment. However, if this therapy is prolonged and there is any clinical or laboratory evidence of immunosuppression, defer for ≥ 1 month after treatment has stopped.
Individuals with a disease that, in itself, is considered to suppress the immune response and who are receiving systemic or locally acting steroids	Should not give live virus vaccines, except in special circumstances.

*Steroid therapy is not a contraindication for administration of killed vaccines.

References:

CDC. Guide to Vaccine Contraindications and Precautions. April 2009. <http://www.cdc.gov/vaccines/recs/vac-admin/downloads/contraindications-guide-508.pdf>

CDC. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP). MMWR 2002; 51 (No. RR-2):1-35.

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VARIVAX® Varicella Virus Vaccine Live prescribing information. June 2009.
http://www.merck.com/product/usa/pi_circulars/v/varivax/varivax_pi.pdf

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