# Measles Post-Exposure Prophylaxis (PEP) for Non-Symptomatic Susceptible Contacts

## To determine appropriate post-exposure prophylaxis:

1. Determine patient's risk factor and identify time from first exposure to measles case.
2. Read the reminders and footnotes for definitions and special considerations.
3. Contact MDH with questions or if further guidance is needed (651-2014-5414 or 1-877-676-5414).

| Risk Factor | Time from first exposure[1] | |
|---|---|---|
| | < 72 hours | 72 hours through day 6 |
| Infant less than 6 months old | Give intramuscular IG[2] (IGIM): 0.5 mL/kg[3] | Give IGIM[2]: 0.5 mL/kg[3] |
| Infant age 6 through 11 months | Give IGIM[2]: 0.5 mL/kg[3] or Give MMR[1] vaccine | Give IGIM[2]: 0.5 mL/kg[3] |
| Susceptible[4] pregnant woman | Give intravenous IG[2] (IGIV): 400 mg/kg | Give IGIV[2]: 400 mg/kg |
| Severely immunocompromised[5] | Give IGIV[2]: 400 mg/kg | Give IGIV[2]: 400 mg/kg[3] |
| Susceptible close contact over 1 year old[6] | Give MMR[2] vaccine if no contraindications | Give IGIM[2]: 0.5 mL/kg to those <66 pounds (≥66 pounds, see footnote 6) |

## Reminders

- People at high risk for severe illness and complications from measles should be prioritized to receive immune globulin (IG). These include:
  - Infants <12 months,
  - Susceptible pregnant women, and
  - Severely immunocompromised individuals (regardless of previous measles vaccination status).
- IG is not indicated for persons who have received one or more doses of measles-containing vaccine at age 12 months or older, unless they are severely immunocompromised.
- Persons do not need IGIV if:
  - They have already received or are currently receiving IGIV therapy at a dose of 400 mg/kg within 3 weeks before measles exposure.
  - They received subcutaneous IG (IGSC) at a dose of ≥200 mg/kg for 2 consecutive weeks up to or through their measles exposure.

## Contraindications

- IG should not be given to people with immunoglobulin A (IgA) deficiency. Persons with IgA deficiencies have the potential for developing antibodies to IgA and therefore could experience an anaphylactic reaction when IG is administered.
- IGIM should not be administered to persons with severe thrombocytopenia or any coagulating disorder that would contraindicate intramuscular injections.
- History of anaphylactic reaction to a previous dose of IG.

## Precautions

- Pregnancy: It is unknown whether IG can cause fetal harm when administered to a pregnant woman or if it could affect reproduction.
- Careful administration in persons reporting a history of systemic allergic reaction following the administration of IG.

## Footnotes

1. **Timing of PEP and Public Health Monitoring:**
    - If PEP is given within the appropriate timeframe (within 72 hours for MMR, within 6 days for IG) MDH or local health department will monitor individual for symptoms through 21 days after exposure, but the individual may return to school, work and activities in most situations.
    - If PEP is not given or given too late (after 72 hours for MMR, on day 7 or later for IG), MDH or local health department will actively monitor individual and will recommend exclusion from public places and high risk settings such as child care (daycare or preschool), school (including day camps), church/synagogue/mosque classes, team activities and health care facilities.
    - There is evidence that the efficacy of either form of PEP for preventing measles disease is greatest when administered as soon as possible after exposure.
2. **Receipt of MMR after IG or IG after MMR:**
    - **MMR after IG:** Any susceptible person exposed to measles who received IG should subsequently receive MMR vaccine provided the person is 12 months of age or older and the vaccine is not otherwise contraindicated. MMR vaccine should be administered:
        - No earlier than 6 months after IGIM administration
        - No earlier than 8 months after IGIV administration
    - **IG after MMR:** If IG is administered within 2 weeks following the administration of MMR or varicella vaccine, the individual should be revaccinated. MMR vaccine should be administered:
        - No earlier than 6 months after IGIM administration
        - No earlier than 8 months after IGIV administration
3. **IGIM dosing:** Intended for use in persons weighing less than 30 kg (66 lbs).
    - Administer 0.5 mL/kg of intramuscular IG (IGIM) in the anterolateral aspect of the upper thigh(s). Do not follow package inserts that indicate a 0.25 mL/kg dose as this lower dose does not reflect current ACIP recommendations.
    - Do not administer more than 3mL of IGIM per injection site; for infants and children weighing >6 kg, multiple injections are required.
    - The maximum **total** dose per IGIM administration is 15 mL.
    - **Note:** Persons weighing >30 kg (66 lbs) who receive IGIM are unlikely to receive an effective dose and will still be recommended exclusion and social distancing; IGIV can be used, but only in special situations, see footnote 6.
4. **Susceptible:** PEP should only be given to a person without any evidence of immunity. Acceptable evidence of immunity (for purposes of PEP decision making) includes at least one of the following:
    - One or more documented doses of live measles virus-containing vaccine administered on or after the first birthday for children and adults who are not severely immunocompromised; **or**
    - Laboratory evidence of immunity; **or**
    - Birth before 1957 regardless of nationality; **or**
    - Laboratory evidence of disease.

5. **Severely immunocompromised, includes measles contacts with:**

   - Severe primary immunodeficiency (regardless of age, vaccination status, or type of exposure);
   - Bone marrow or stem cell transplant recipients who are receiving immunosuppressive treatment, or completed treatment within past 12 months (or longer if developed graft-versus-host disease);
   - Persons currently receiving treatment for Acute Lymphocytic Leukemia (ALL) or who completed chemotherapy for ALL within previous 6 months;
   - Persons living with AIDS and HIV-infected persons with CD4 T-lymphocyte percent less than 15 percent (any age) or CD4 T-lymphocyte count less than 200 lymphocytes/mm3 (over age 5 years), and
     - Persons who have not received MMR since starting to take Anti-Retroviral Therapy,
     - Also consider HIV-infected persons without recent confirmation of immunologic status or measles immunity;
   - Persons receiving daily corticosteroid therapy with a dose ≥20 mg (or >2 mg/kg/day for patients who weigh <10 kg) of prednisone or equivalent for ≥14 days; and
   - Persons receiving certain immunomodulatory medications (e.g., tumor necrosis factor-alpha (TNF-α) blockers).

6. **Susceptible close contact over 1 year old:** A susceptible contact (not pregnant or severely immunocompromised) exposed in settings with prolonged close contact (e.g., household, child care, classroom). MDH will help determine who is a close contact. IGIV may be considered in susceptible close contacts ≥66 pounds; however, priority for IGIV should be given to susceptible pregnant women and severely immunocompromised contacts, as IGIV is expensive and difficult to administer.

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