

# 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 last exposure to measles case.
2. Read the reminders and footnotes for definitions and special considerations.
3. Contact KDPH with questions or if further guidance is needed please call 1-888-9REPORT

Risk Factor	Time From Last Exposure <sup>1</sup>	
	<72 Hours	72 Hours through day 6
Infant less than 6 months old	Give intramuscular IG <sup>2</sup> (IGIM): 0.5 mL/kg <sup>3</sup>	Give IGIM <sup>2</sup> : 0.5 mL/kg <sup>3</sup>
Infant age 6 through 11 months	Give IGIM <sup>2</sup> : 0.5 mL/kg <sup>3</sup> or Give MMR <sup>1</sup> vaccine	Give IGIM <sup>2</sup> : 0.5 mL/kg <sup>3</sup>
Susceptible close contact over 1 year old <sup>6</sup>	Give MMR <sup>2</sup> vaccine if no contraindications	Contact KDPH
Susceptible pregnant woman <sup>4</sup>	Give intravenous IG (IVIG): 400 mg/kg <sup>2</sup>	Give IVIG <sup>2</sup> : 400 mg/kg
Severely immunocompromised <sup>5</sup>	Give IVIG <sup>2</sup> : 400 mg/kg	Give IVIG: 400mg/kg

### Note:

- IVIG- Intravenous immune globulin (immune globulin, intravenous [human]) will be referred to as "IVIG" in this guide. The abbreviation used by industry and various regulatory agencies is "IGIV" (immune globulin intravenous).

## 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,
  - 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 IVIG if:
  - They have already received or are currently receiving IVIG therapy at a dose of 400 mg/kg within 3 weeks before measles exposure.
  - They received subcutaneous IG (IGSC) at a dose of  $\geq 200$  mg/kg for 2 consecutive weeks up to or through their measles exposure

## Contradictions

- 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) KDPH 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), KDPH 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 for 21 days post exposure.

- 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 IVIG 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 IVIG 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; IVIG 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. (Expedited IgG testing in someone with likely immunity should be attempted before IVIG or IGIM administration)

## 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/mm<sup>3</sup> (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  $\geq 20$  mg (or  $> 2$  mg/kg/day for patients who weigh  $< 10$  kg) of prednisone or equivalent for  $\geq 14$  days; and
- Persons receiving certain immunomodulatory medications (e.g., tumor necrosis factor-alpha (TNF- $\alpha$ ) 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). KDPH will help determine who is a close contact. IVIG may be considered in susceptible close contacts  $\geq 66$  pounds who are high risk for complications from measles; however, priority for IVIG should be given to susceptible pregnant women and severely immunocompromised contacts, as IVIG is expensive and difficult to administer.

## References

- <https://www.cdc.gov/mmwr/pdf/rr/rr6204.pdf>