Post-exposure prophylaxis (PEP) for measles exposures who are NOT pregnant or immunocompromised*

Age range	Measles immune status[a]	PEP type depending on time after initial exposure		
		≤3 days (≤72 hours)	4-6 days	>6 days
All ages	Immune *(IgG positive, 2 MMR doses, or born before 1957[b])*	• PEP not indicated. Exposed person has documented immunity		
<6 months	Non-immune *(due to age)*	• Give intramuscular immunoglobulin (IMIG)[cd] • Home quarantine[e] for 28 days after last exposure		• PEP not indicated (too late)[f] • Home quarantine[e] for 21 days after last exposure
6-11 months	Non-immune *(due to age)*	• Give MMR vaccine *(preferred over IG)* • No quarantine needed if MMR PEP given	• Give intramuscular immunoglobulin (IMIG)[cd] • Home quarantine[e] for 28 days after last exposure	• PEP not indicated (too late)[f] • Home quarantine[e] for 21 days last after exposure
≥12 months	Non-immune *(0 MMR doses or IgG negative)*	• Give MMR vaccine • No quarantine needed if MMR PEP[bg] given	• PEP not indicated (too late)[f] • Home quarantine[e] for 21 days after last exposure, then give MMR vaccine to protect from future exposures	
≥12 months	1 dose of MMR[b]	• Give 2nd MMR dose if ≥28 days from last dose of live vaccine • No quarantine needed if MMR PEP[bg] given	• Give 2nd MMR if not up-to-date.[h] No quarantine needed.	
Adults	Unknown measles immune status	• Give MMR vaccine • No quarantine needed if MMR PEP[bg] given	<u>Household member of a confirmed/suspected case</u> • Obtain IgG titers to determine immunity. Home quarantine[e] while awaiting results; if IgG negative, quarantine for 21 days after last exposure (too late for PEP)[e,f]	
			<u>Healthcare worker or Daycare worker</u> • Obtain titers to determine immunity. Furlough while awaiting results; if IgG negative, quarantine for 21 days after last exposure (too late for PEP)[e,f,g]	
			<u>Other</u> • Consider titers to determine immunity; if IgG negative, quarantine for 21 days after last exposure (too late for PEP)[e,f]	

[a] All persons exposed to measles must be notified of their exposure.

[b] Birth before 1957 or 1 dose of MMR should not be considered sufficient for household members of confirmed measles cases; without documented positive measles IgG titers or 2 MMR doses, consider them to have unknown immunity.

[c] For patients who receive IG, provide these instructions: www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-non-cases.pdf (includes extended quarantine of 28 days)

[d] Dosing of intramuscular IG for infants aged <12 months is 0.5 mL/kg of body weight (max dose 15mL). Administration of MMR or varicella vaccines must be delayed by 6 months after administration of intramuscular IG and by 8 months after intravenous IG.

[e] When instructing home quarantine, ensure that all household members of the exposed individual are immune to measles. IG prolongs the incubation period to 28 days.

[f] For patients who do not receive PEP, provide these instructions: www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-cases.pdf

[g] Healthcare workers who are non-immune should be excluded from work from day 5 after 1st exposure through day 21 after last exposure, regardless of receipt of PEP.

[H] Acceptable presumptive evidence of immunity definitions: www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm#Tab3; Note, 2 MMR doses or positive IgG titers are recommended for healthcare workers and other high-risk adults and is a requirement for child care staff in NYC.

* References: CDC. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013. MMWR. 2013:62(4);
Rubin et. al. 201 Rubin et. al. 2013 IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host. CID. 2014:58.

Post-exposure prophylaxis (PEP) for measles exposures who ARE pregnant or immunocompromised

Category	Age range	Measles immune status[a]	PEP type depending on time after initial exposure		
			≤3 days (≤72 hours)	4-6 days	>6 days
Severely Immuno-compromised[b]	<12 months	Will need IG regardless of measles immune status	• Give intramuscular immunoglobulin (IMIG)[cd] • Home quarantine[e] for 28 days after last exposure		• PEP not indicated (too late)[f] • Home quarantine[e] for 21 days after last exposure
	≥12 months		• Give intravenous immunoglobulin (IVIG)[cd] • Home quarantine[e] for 28 days after last exposure		
Pregnant	n/a	Immune *(IgG positive or 2 MMR doses)*	• PEP not indicated Exposed person has documented immunity.		
		Non-immune *(IgG negative)*	• Give intravenous immunoglobulin (IVIG)[cd] • Home quarantine[e] for 28 days after last exposure		• PEP not indicated (too late)[f] • Home quarantinee for 21 days after last exposure
		Unknown immunity	• Draw titers (measles IgG) STAT to determine immunity; proceed as above based on titer results		• PEP not indicated (too late)[f] • Consider titers to determine risk of infection/risk to infant; proceed as above based on titer result

[a] All persons exposed to measles must be notified of their exposure.

[b] Management of immunocompromised persons can be challenging and may require individualized decisions with provider based on immunocompromising condition or medications.

Severely immunocompromising conditions (per ACIP and IDSA)* include:

- Severe primary immunodeficiency;
- Bone marrow transplant until ≥12 months after finishing all immunosuppressive treatment, and maybe longer in patients who have developed graft-versus-host disease;
- On treatment for acute lymphoblastic leukemia (ALL) within and until ≥6 months after completion of immunosuppressive chemotherapy;
- On cancer chemotherapy**
- Post solid organ transplantation**
- Receiving daily corticosteroid therapy with a dose ≥20mg (or >2 mg/kg/day for patients who weigh <10kg) of prednisone or equivalent for ≥14 days
- Receiving certain biologic immune modulators, such as tumor necrosis factor-alpha (TNF-α) blockers or rituximab**
- After hematopoetic stem cell transplant, duration of high-level immunosuppression is highly variable and depends on type of transplant (longer for allogenic than autologous), type of donor and stem cell source, and post-transplant complications such as graft vs. host disease and their treatments**
- AIDS or HIV with severe immunosuppression defined as CD4 <15% (all ages) or CD4 count <200 lymphocytes/mm^3 (aged >5 years).

Low-level immunosuppression: In the absence of published guidance on exposed persons with low-level immunosuppression, consider assessing presumptive immunity to measles (measles IgG positive or 2 MMR vaccine doses) to determine if PEP is indicated. If not immune to measles, give PEP as MMR (if not contraindicated[^] and within 72 hours of initial exposure). Consider intravenous IG[c] if MMR is contraindicated[^] or if it is too late for MMR (day 4-6 after initial exposure) with home quarantine for 28 days after last exposure. If no PEP is given because it is too late, home quarantine for 21 days after last exposure[e].

[c] For patients who receive IG, provide these instructions: www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-non-cases.pdf

[d] Dosing of intramuscular IG for infants aged <12 months: 0.5 mL/kg of body weight (max dose 15mL). Dosing of intravenous IG for pregnant women not immune to measles and immunocompromised persons: 400 mg/kg. MMR or varicella vaccine administration must be delayed by 6 months and 8 months after intramuscular and intravenous IG, respectively. Reference: www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm

[e] When implementing home quarantine, ensure that all household members of the exposed individual are immune to measles. IG prolongs the incubation period to 28 days.

[f] For patients who do not receive PEP, provide these instructions: www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-cases.pdf

* References: CDC. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013. MMWR. 2013:62(4);
Rubin et. al. 2013 IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host. CID. 2014:58.

** Check guidance/discuss with treating provider as duration of immunosuppression during or following chemotherapy, transplants, or biologic immune modulators may vary.