



General Best Practice Guidelines for Immunization

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www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html

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General Best Practice Guidelines for Immunization



Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP)

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INTRODUCTION

Purpose and topics covered in this report...

METHODS

Method of development of: Timing and Spacing, Contraindications and Precautions, Preventing and Managing Adverse Reactions...

TIMING AND SPACING OF IMMUNOBIOLOGICS

Vaccine scheduling, supply and lapsed schedule, spacing of doses, simultaneous and nonsimultaneous administration, licensed combination



General Best Practice Guidelines for Immunization

- Timing and spacing
- Contraindications and precautions
- Preventing and managing adverse reactions to immunization
- Vaccine administration
- Storage and handling
- Altered immunocompetence
- Special situations
- Vaccination records
- Vaccination programs
- Vaccine information sources

General Best Practice Guidelines for Immunization

- Timing and spacing
- Vaccine Adverse Reactions
- Contraindications and precautions
- Vaccine Administration

TIMING AND SPACING OF IMMUNOBIOLOGICS



Timing and Spacing Issues

- **Interval between receipt of antibody- containing blood products and live vaccines**
- **Interval between subsequent doses of the same vaccine (same person)**

Antibody-containing Blood Products

- **Used to restore a needed component of blood or provide a passive immune response following disease exposure.**
- **Sometimes circumstance dictates the use of antibody-containing blood products along with a vaccine.**

Antibody and Live Vaccines

General Rule

- **Inactivated vaccines are generally not affected by circulating antibody to the antigen**
- **Live, attenuated vaccines might be affected by circulating antibody to the antigen – an effectiveness concern**

Antibody Products and Measles- and Varicella-containing Vaccines

Product given first

Action

Vaccine

Wait 2 weeks
before giving antibody

Antibody

Wait at least 3 months before giving
vaccine

Table 3-5: Interval Between Antibody-containing Products and Measles- and Varicella-containing Vaccines

<https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html>

https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html ACIP Timing and Spacing G...

TABLE 3-5. Recommended intervals between administration of antibody-containing products and measles- or varicella-containing vaccine, by product and indication for vaccination

Product/Indication	Dose (mg IgG/kg) and route ^(a)	Recommended interval before measles- or varicella-containing vaccine ^(b) administration (months)
Blood transfusion		
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 (hematocrit 65%) ^(c)	10 mL/kg (60 mg IgG/kg) IV	6
Whole blood (hematocrit 35%-50%) ^(c)	10 mL/kg (80-100 mg IgG/kg) IV	6
Plasma/platelet products	10 mL/kg (160 mg IgG/kg) IV	7
Botulinum Immune Globulin Intravenous (Human)	1.0 mL/kg (50 mg IgG/kg) IV	6
Cytomegalovirus IGIV	150 mg/kg maximum	6
Hepatitis A IG		
Contact prophylaxis	0.02 mL/kg (3.3 mg IgG/kg) IM	3
International travel, <3 month stay	0.02 mL/kg (3.3 mg IgG/kg) IM	3
International travel, ≥3 month stay	0.06 mL/kg (10 mg IgG/kg) IM	3
Hepatitis B IG	0.06 mL/kg (10 mg IgG/kg) IM	3
IGIV		
Replacement therapy for immune deficiencies ^(d)	300-400 mg/kg IV ^(d)	8

Spacing of Antibody-containing Products and MMR and Varicella Vaccines

<u>Product</u>	<u>Interval</u>
Washed red blood cells	0 months
Rabies IG	4 months
Measles prophylaxis (IG) (immunocompetent recipient)	6 months
Plasma/platelet products	7 months
Intravenous immune globulin (IGIV)	7-11 months

Intervals Between Doses of the Same Vaccine (Same Person)

General Rule

- Increasing the interval between doses of a multidose vaccine does not diminish the effectiveness of the vaccine.

Intervals Between Doses

General Rule

- Increasing the interval between doses of a multidose vaccine does not diminish the effectiveness of the vaccine.
- Decreasing the interval between doses of a multidose vaccine may interfere with antibody response and protection.

TABLE 3-1. Recommended and minimum ages and intervals between vaccine doses^{(a),(b),(c),(d)}

Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
DTaP-1 ^(e)	2 months	6 weeks	8 weeks	4 weeks
DTaP-2	4 months	10 weeks	8 weeks	4 weeks
DTaP-3	6 months	14 weeks	6-12 months ^(f)	6 months ^(f)
DTaP-4	15-18 months	15 months ^(f)	3 years	6 months
DTaP-5 ^(g)	4-6 years	4 years	—	—
HepA-1 ^(e)	12-23 months	12 months	6-18 months	6 months
HepA-2	≥18 months	18 months	—	—
HepB-1	Birth	Birth	4 weeks-4 months	4 weeks
HepB-2	1-2 months	4 weeks	8 weeks-17 months	8 weeks
HepB-3 ^(h)	6-18 months	24 weeks	—	—
Hib-1 ⁽ⁱ⁾	2 months	6 weeks	8 weeks	4 weeks
Hib-2	4 months	10 weeks	8 weeks	4 weeks
Hib-3 ^(j)	6 months	14 weeks	6-9 months	8 weeks
Hib-4	12-15 months	12 months	—	—
HPV-1 ^(k)	11-12 years	9 years	8 weeks	4 weeks

Minimum Intervals and Ages

- **Vaccine doses should not be administered at intervals less than the minimum intervals or earlier than the minimum age.**

When Can Minimum Intervals Be Used?

- **Catch-up for a lapsed vaccination schedule**
- **Impending international travel**
- **NOT to be used routinely**

The “Grace Period”

- **ACIP recommends that vaccine doses given up to four days before the minimum interval or age be counted as valid**
- **Should not be used for scheduling future vaccination visits**
- **Use for reviewing vaccination records**

Use of the “Grace Period”

- **Basic principles**
 - The recommended interval or age is preferred
 - The minimum interval can be used to catch up
 - The grace period is last resort

Violations of Minimum Intervals and Minimum Ages

- **Grace period may conflict with some state school entry requirements**
- **Immunization programs and/or school entry requirements may not accept some or all doses given earlier than the minimum age or interval, particularly varicella and/or MMR vaccines**
- **Providers should comply with local and/or state immunization requirements**

Violations of Minimum Intervals and Minimum Ages

- **Minimum interval/age has been violated**
 - Dose invalid
- **The repeat dose should be administered at least a minimum interval from the invalid dose**

Adverse Reactions and Adverse Events

Contraindications and Precautions



Vaccine Adverse Reaction

- **Adverse reaction**
 - Extraneous effect caused by vaccine
 - "Side effect"

Vaccine Adverse Event

- **Adverse event**
 - Any medical event following vaccination
 - May be true adverse reaction
 - May be only coincidental

Vaccine Adverse Reactions

- **Local**
 - Pain, swelling, redness at site of injection
 - Common with inactivated vaccines
 - Usually mild and self-limited

Vaccine Adverse Reactions

- **Systemic**

- Fever, malaise, headache
- Nonspecific
- May be unrelated to vaccine

Live, Attenuated Vaccines

- **Must replicate to produce immunity**
- **Symptoms usually mild**
- **Occur after an incubation period (usually 3-21 days)**

Vaccine Adverse Reactions

- **Allergic**
 - Due to vaccine or vaccine component
 - Rare
 - Risk minimized by screening

Contraindication

- A condition in a recipient that greatly increases the chance of a serious adverse event

Precaution

- A condition in a recipient that may increase the chance or severity of an adverse event
- May compromise the ability of the vaccine to produce immunity
- Might cause diagnostic confusion

Permanent Contraindications

- **Severe allergic reaction to a prior dose of vaccine or to a vaccine component**

Permanent Contraindications

- **Rotavirus vaccines only**

- Severe Combined Immunodeficiency disease (SCID)
- History of intussusception

- **Pertussis vaccines only**

- Encephalopathy not due to another identifiable cause occurring within 7 days of pertussis vaccination

TABLE 4-1. Contraindications and precautions^(a) to commonly used vaccines

Vaccine	Citation	Contraindications	Precautions
DT, Td	(4)	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	<p>GBS <6 weeks after previous dose of tetanus-toxoid-containing vaccine</p> <p>History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid-containing or tetanus-toxoid-containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine</p> <p>Moderate or severe acute illness with or without fever</p>
DTaP	(38)	<p>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component</p> <p>Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP or DTaP</p>	<p>Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy; defer DTaP until neurologic status clarified and stabilized</p> <p>Temperature of $\geq 105^{\circ}\text{F}$ ($\geq 40.5^{\circ}\text{C}$) within 48 hours after vaccination with a previous dose of DTP or DTaP</p> <p>Collapse or shock-like state (i.e., hypotonic hyporesponsive episode) within 48 hours after receiving a previous dose of DTP/DTaP</p> <p>Seizure ≤ 3 days after receiving a previous dose of DTP/DTaP</p> <p>Persistent, inconsolable crying lasting ≥ 3 hours within 48 hours after receiving a previous dose of DTP/DTaP</p>

VACCINE ADMINISTRATION



Vaccine Administration

- Wrong route
- “Different Anatomic Site”

Vaccine Administration Route

▪ Intramuscular (IM)

- DTaP
- Hib
- HepB
- HepA
- PCV13
- Influenza
- HPV
- MenACWY
- RZV
- Rabies
- Tdap

Subcutaneous (Subcut)

- Var
- MMR
- MMRV
- ZVL

Either IM or Subcut

- PPSV23
- IPV

Oral (PO)

- RV1, RV5
- Cholera

Intradermal (ID)

- One Influenza

Licensed Subcut Vaccines Given IM

- The vaccine dose can count and does not need to be repeated

Licensed IM Vaccine Given Subcut (or Other Route)

- **No need to repeat: (based on available data)**
 - MenACWY
 - HepA
 - RZV
- **Need to repeat (based on available data)**
 - HepB
 - Rabies
- **Need to repeat (no data to the contrary)**
 - Influenza
 - HPV
- **Provider discretion**
 - DTaP
 - PCV13
 - Hib
- **No CDC recommendation**
 - Other vaccines

QUESTIONS?

