

2010 Recommended Immunization Schedule Ages Birth – 6 Years United States

Vaccine ▼	Age ►	Birth	1 Month	2 Months	4 Months	6 Months	12 Months	15 Months	18 Months	19- 23 Months	2- 3 Years	4- 6 Years
Hepatitis B ¹		HepB	HepB	see footnote 1	HepB							
Rotavirus ²			RV	RV	RV ²							
Diphtheria, Tetanus, Pertussis ³			DTaP	DTaP	DTaP	see footnote 3	DTaP					DTaP
Haemophilus influenzae type b ⁴			Hib	Hib	Hib ⁴	Hib						
Pneumococcal ⁵			PCV	PCV	PCV	PCV					PPSV	
Inactivated Poliovirus ⁶			IPV	IPV		IPV						IPV
Influenza ⁷						Influenza (Yearly)						
Measles, Mumps, Rubella ⁸						MMR		see footnote 8				MMR
Varicella ⁹						Varicella		see footnote 9				Varicella
Hepatitis A ¹⁰						HepA (2 doses)						HepA Series
Meningococcal ¹¹												MCV

 Age or range of recommended ages

 Certain high-risk groups

This schedule includes recommendations in effect as of December 15, 2009. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Considerations should include provider assessment, patient preference, and the potential for adverse events. Additional information is available at www.cdc.gov/vaccines/recs/schedules.

Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations, including for high risk conditions: www.cdc.gov/vaccines/pubs/ACIP-list.htm. Clinically significant adverse events that follow immunization should be reported to the **Vaccine Adverse Event Reporting System (VAERS)** at www.vaers.hhs.gov or by phone, 800-822-7967. This schedule is approved by the Advisory Committee on Immunization Practices www.cdc.gov/vaccines/recs/acip, the American Academy of Pediatrics www.aap.org, and the American Academy of Family Physicians www.aafp.org.

1. Hepatitis B vaccine (HepB) (Minimum age: birth)

At birth:

- Administer monovalent HepB to all newborns before hospital discharge.
- If mother is hepatitis B surface antigen (HBsAg)-positive, administer HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
- If mother's HBsAg status is unknown, administer HepB within 12 hours of birth. Determine mother's HBsAg status as soon as possible and, if HBsAg-positive, administer HBIG (no later than age 1 week).

After the birth dose:

- The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be administered at age 1 or 2 months. Monovalent HepB vaccine should be used for doses administered before age 6 weeks. The final dose should be administered no earlier than age 24 weeks.
- Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg 1 to 2 months after completion of at least 3 doses of the HepB series, at age 9 through 18 months (generally at the next well-child visit).

Four month dose:

- Administration of 4 doses of HepB to infants is permissible when a combination vaccine containing HepB is administered after the birth dose. The fourth dose should be administered no earlier than age 24 weeks.

2. Rotavirus vaccine (RV) (Minimum age: 6 weeks)

- Administer the first dose at age 6 through 14 weeks (maximum age: 14 weeks 6 days). Vaccination should not be initiated for infants aged 15 weeks 0 days or older.
- The maximum age for the final dose in the series is 8 months 0 days.
- If Rotarix® is administered at ages 2 and 4 months, a dose at 6 months is not indicated.

3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP) (Minimum age: 6 weeks)

- The fourth dose may be administered as early as age 12 months, provided at least 6 months have elapsed since the third dose.
- Administer the final dose in the series at age 4 through 6 years.

4. Haemophilus influenzae type b conjugate vaccine (Hib) (Minimum age: 6 weeks)

- If PRP-OMP (PedvaxHib® or Comvax® [HepB-Hib]) is administered at ages 2 and 4 months, a dose at age 6 months is not indicated.
- TriHibit (DTaP/Hib) and Hiberix (PRP-T) should not be used for doses at ages 2, 4, or 6 months for the primary series but can be used as the final dose in children aged 12 months through 4 years.

5. Pneumococcal vaccine (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])

- PCV is recommended for all children aged younger than 5 years. Administer 1 dose of PCV to all healthy children aged 24 through 59 months who are not completely vaccinated for their age.
- Administer PPSV 2 or more months after last dose of PCV to children aged 2 years or older with certain underlying medical conditions, including a cochlear implant.

6. Inactivated Poliovirus vaccine (IPV) (Minimum age: 6 weeks)

- The final dose in the series should be administered on or after the fourth birthday and at least 6 months following the previous dose.
- If 4 doses are administered prior to age 4 years a fifth dose should be administered at age 4 through 6 years.

7. Influenza vaccine (seasonal) (Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live, attenuated influenza vaccine [LAIV])

- Administer annually to children aged 6 months through 18 years.
- For healthy children aged 2 through 6 years (i.e., those who do not have underlying medical conditions that predispose them to influenza complications), either LAIV or TIV may be used, except LAIV should not be given to children aged 2 through 4 years who have had wheezing in the past 12 months.
- Children receiving TIV should receive 0.25 mL if aged 6 through 35 months or 0.5 mL if aged 3 years or older.
- Administer 2 doses (separated by at least 4 weeks) to children aged younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

- For recommendations for use of influenza A (H1N1) 2009 monovalent vaccine, see MMWR 2009;58(No. RR-10).

8. Measles, mumps, and rubella vaccine (MMR) (Minimum age: 12 months)

- Administer the second dose routinely at age 4 through 6 years. However, the second dose may be administered before age 4, provided at least 28 days have elapsed since the first dose.

9. Varicella vaccine (Var) (Minimum age: 12 months)

- Administer the second dose at age 4 through 6 years. However, the second dose may be administered before age 4, provided at least 3 months have elapsed since the first dose.
- For children aged 12 months through 12 years the minimum interval between doses is 3 months. However, if the second dose was administered at least 28 days after the first dose, it can be accepted as valid.

10. Hepatitis A vaccine (HepA) (Minimum age: 12 months)

- Administer to all children aged 1 year (i.e., aged 12 through 23 months). Administer 2 doses at least 6 months apart.
- Children not fully vaccinated by age 2 years can be vaccinated at subsequent visits.
- HepA also is recommended for older children who live in areas where vaccination programs target older children, who are at increased risk for infection, or for whom immunity against hepatitis A is desired.

11. Meningococcal vaccine (Minimum age: 2 years for meningococcal conjugate vaccine [MCV4] and for meningococcal polysaccharide vaccine [MPSV4])

- Administer MCV4 to children aged 2 through 10 years with persistent complement component deficiency, anatomic or functional asplenia, and certain other conditions placing them at high risk.
- Administer MCV4 to children previously vaccinated with MCV4 or MPSV4 after 3 years if first dose administered at age 2 through 6 years.

2010 Catch-up Immunization Schedule 4 Months – 6 Years

For children who start late or who are ≥ one month behind

Minimum Age for Dose 1 ▼	Minimum Interval Between Doses			
	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4-5
HepB - Birth ¹	4 weeks	8 weeks and at least 16 weeks after first dose		
RV - 6 wks ²	4 weeks	4 weeks ²		
DTaP - 6 wks ³	4 weeks	4 weeks	6 months	6 months ³
Hib - 6 wks ⁴	4 weeks if first dose given at younger than 12 months of age 8 weeks (as final dose) if first dose given at age 12 thru 14 months No further doses needed if first dose given at age 15 months or older	4 weeks ⁴ if current age is younger than 12 months 8 weeks (as final dose) ⁴ if current age is 12 months or older and second dose given at younger than age 15 months No further doses needed if previous dose given at age 15 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months	
PCV - 6 wks ⁵ PPSV - 2 years ⁵	4 weeks if first dose given at younger than 12 months of age 8 weeks (as final dose for healthy children) if first dose given at age 12 months or older or current age is 24-59 months No further doses needed for healthy children if first dose given at age 24 months or older	4 weeks if current age is younger than 12 months 8 weeks (as final dose) if current age is 12 months or older No further doses needed for healthy children if previous dose given at age 24 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months or for high-risk children who received 3 doses at any age.	
IPV - 6 wks ⁶	4 weeks	4 weeks	6 months	
MMR - 12 mos ⁷	4 weeks			
Var - 12 mos ⁸	3 months			
HepA - 12 mos ⁹	6 months			

1. Hepatitis B vaccine (HepB)

- Administer the 3-dose series to those not previously vaccinated.

2. Rotavirus vaccine (RV)

- The maximum age for the first dose is 14 weeks 6 days. Vaccination should not be initiated for infants aged 15 weeks 0 days or older.
- The maximum age for the final dose in the series is 8 months 0 days.

3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP)

- The fifth dose is not necessary if the fourth dose was administered at age 4 years or older.

4. Haemophilus influenzae type b conjugate vaccine (Hib)

- Hib vaccine is not generally recommended for persons aged 5 years or older. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in persons who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy; administering 1 dose of Hib vaccine to these persons is not contraindicated.

- If the first 2 doses were PRP-OMP (PedvaxHib® or Comvax®) and administered at age 11 months or younger, the third (and final) dose should be administered at age 12 through 15 months and at least 8 weeks after the second dose.

- If the first dose was administered at age 7 through 11 months, administer the second dose at least 4 weeks later and a final dose at age 12 through 15 months.

5. Pneumococcal vaccine (PCV, PPSV)

- Administer 1 dose of pneumococcal conjugate vaccine (PCV) to all healthy children aged 24 through 59 months who have not received at least 1 dose of PCV on or after age 12 months.
- For children aged 24 through 59 months with underlying medical conditions, administer 1 dose of PCV if 3 doses were received

previously or administer 2 doses of PCV at least 8 weeks apart if fewer than 3 doses were received previously.

- Administer pneumococcal polysaccharide vaccine (PPSV) to children aged 2 years or older with certain underlying medical conditions, including a cochlear implant, at least 8 weeks after the last dose of PCV.

6. Inactivated poliovirus vaccine (IPV)

- The final dose in the series should be administered on or after the fourth birthday and at least 6 months following the previous dose.

- A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months following the previous dose.

- In the first 6 months of life, minimum age and minimum intervals are only recommended if the person is at risk for imminent exposure to circulating poliovirus (i.e., travel to a polio-endemic region or during an outbreak).

7. Measles, mumps, and rubella vaccine (MMR)

- Administer the second dose at age 4 through 6 years.
- However, the second dose may be administered before age 4, provided at least 28 days have elapsed since the first dose.
- If not previously vaccinated, administer 2 doses with at least 28 days between doses.

8. Varicella vaccine (Var)

- Administer the second dose at age 4 through 6 years.
- However, the second dose may be administered before age 4, provided at least 3 months have elapsed since the first dose.

- For persons aged 12 months through 12 years, the minimum interval between doses is 3 months. However, if the second dose was administered at least 28 days after the first dose, it can be accepted as valid.

9. Hepatitis A vaccine (HepA)

- HepA is recommended for children aged older than 23 months who live in areas where vaccination programs target older children, who are at increased risk for infection, or for whom immunity against hepatitis A is desired.

2010 Recommended Immunization Schedule Ages 7 – 18 Years

United States

Vaccine ▼	Age ▶	7 – 10 Years	11 – 12 Years	13 – 18 Years
Tetanus, Diphtheria, Pertussis ¹			Tdap	Tdap
Human Papillomavirus ²	see footnote 2		HPV (3 doses)	HPV Series
Meningococcal ³		MCV	MCV	MCV
Influenza ⁴		Influenza (Yearly)		
Pneumococcal ⁵		PPSV		
Hepatitis A ⁶		HepA Series		
Hepatitis B ⁷		HepB Series		
Inactivated Poliovirus ⁸		IPV Series		
Measles, Mumps, Rubella ⁹		MMR Series		
Varicella ¹⁰		Varicella Series		

	Range of recommended ages		Catch-up immunization		Certain high-risk groups
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This schedule includes recommendations in effect as of December 15, 2009. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Considerations should include provider assessment, patient preference, and the potential for adverse events. Additional information is available at www.cdc.gov/vaccines/recs/schedules.

Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations: www.cdc.gov/vaccines/pubs/ACIP-list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.hhs.gov or by phone, 800-822-7967.

1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap) (Minimum age: 10 years for BOOSTRIX® and 11 years for ADACEL®)

- Administer at age 11 or 12 years for those who have completed the recommended childhood DTP/DTaP vaccination series and have not received a tetanus and diphtheria toxoid (Td) booster dose.
- Persons aged 13 through 18 years who have not received Tdap should receive a dose.
- A 5-year interval from the last Td dose is encouraged when Tdap is used as a booster dose; however, a shorter interval may be used if pertussis immunity is needed.

2. Human papillomavirus vaccine (HPV) (Minimum age: 9 years)

- Two HPV vaccines are licensed: a quadrivalent vaccine (HPV4) for the prevention of cervical, vaginal and vulvar cancers (in females) and genital warts (in females and males), and a bivalent vaccine (HPV2) for the prevention of cervical cancers in females.
- HPV vaccines are most effective for both males and females when given before exposure to HPV through sexual contact.
- HPV4 or HPV2 is recommended for the prevention of cervical precancers and cancers in females.
- HPV4 is recommended for the prevention of cervical, vaginal and vulvar precancers and cancers and genital warts in females.
- Administer the first dose to females at age 11 or 12 years.
- Administer the second dose 1 to 2 months after the first dose and the third dose 6 months after the first dose (at least 24 weeks after the first dose).
- Administer the series to females at age 13 through 18 years if not previously vaccinated.
- HPV4 may be administered in a 3-dose series to males aged 9 through 18 years to reduce their likelihood of acquiring genital warts.

3. Meningococcal conjugate vaccine (MCV4)

- Administer at age 11 or 12 years, or at age 13 through 18 years if not previously vaccinated.
- Administer to previously unvaccinated college freshmen living in a dormitory.
- Administer MCV4 to children aged 2 through 10 years with terminal persistent component deficiency, anatomic or functional asplenia, and certain other conditions placing them at high risk.
- Administer to children previously vaccinated with MCV4 or MPSV4 who remain at increased risk after 3 years (if first dose administered at age 2 through 6 years) or after 5 years (if first dose administered at age 7 years or older). Persons whose only risk factor is living in on-campus housing are not recommended to receive an additional dose.

4. Influenza vaccine (seasonal)

- Administer annually to children aged 6 months through 18 years.
- For healthy nonpregnant persons aged 7 through 18 years (i.e., those who do not have underlying medical conditions that predispose them to influenza complications), either LAIV or TIV may be used.
- Administer 2 doses (separated by at least 4 weeks) to children aged younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.
- For recommendations for use of influenza A (H1N1) 2009 monovalent vaccine, see MMWR 2009;58(No. RR-10).

5. Pneumococcal polysaccharide vaccine (PPSV)

- Administer to children with certain underlying medical conditions, including a cochlear implant. A single revaccination should be administered after 5 years to children with functional or anatomic asplenia or other immuno-compromising condition.

6. Hepatitis A vaccine (HepA)

- Administer 2 doses at least 6 months apart.
- HepA is recommended for children older than 23 months who live in areas where vaccination programs target older children, who are at increased risk for infection, or for whom immunity against hepatitis A is desired.

7. Hepatitis B vaccine (HepB)

- Administer the 3-dose series to those not previously vaccinated.
- A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB® is licensed for children aged 11 through 15 years.

8. Inactivated poliovirus vaccine (IPV)

- The final dose in the series should be administered on or after the fourth birthday and at least 6 months following the previous dose.
- If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child's current age.

9. Measles, mumps, and rubella vaccine (MMR)

- If not previously vaccinated, administer 2 doses of the second dose for those who have received only 1 dose, with at least 28 days between doses.

10. Varicella vaccine (Var)

- For persons aged 7 through 18 years without evidence of immunity, administer 2 doses if not previously vaccinated or the second dose if only 1 dose has been administered.
- For persons aged 7 through 12 years, the minimum interval between doses 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.

2010 Catch-up Immunization Schedule for Ages 7–18 Years

For children or adolescents who start late or who are ≥ one month behind

Minimum Age for Dose 1 ▼	Minimum Interval Between Doses		
	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4
Td - 7 yrs ¹ Tdap - 10 yrs ¹	4 weeks	4 weeks if first dose given at younger than 12 months 6 months if first dose given at age 12 months or older	6 months if first dose given at younger than age 12 months
HPV - 9 yrs ²	Routine dosing intervals are recommended ²		
HepA - 12 mos ³	6 months		
HepB - Birth ⁴	4 weeks	8 weeks and at least 16 weeks after first dose	
IPV - 6 wks ⁵	4 weeks	4 weeks	6 months
MMR - 12 mos ⁶	4 weeks		
Var - 12 mos ⁷	3 months if the person is younger than 13 years 4 weeks if the person is aged 13 years or older		

1. Tetanus and diphtheria toxoids vaccine (Td) and tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap)

- Doses of DTaP are counted as part of the Td/Tdap series
- Tdap should be substituted for a single dose of Td in the catch-up series or as a booster for children aged 10 through 18 years; use Td for other doses.

2. Human papillomavirus vaccine (HPV)

- Administer the series to females at age 13 through 18 years if not previously vaccinated.
- Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses should be administered at 1 to 2 and 6 months after the first dose). The minimum interval between the first and second doses is 4 weeks. The minimum interval between the second and third doses is 12 weeks, and the third dose should be administered at least 24 weeks after the first dose.

3. Hepatitis A vaccine (HepA)

- HepA is recommended for children aged older than 23 months who live in areas where vaccination programs target older children, who are at increased risk for infection, or for whom immunity

4. Hepatitis B vaccine (HepB)

- Administer the 3-dose series to those not previously vaccinated.
- A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB® is licensed for children aged 11 through 15 years.

5. Inactivated poliovirus vaccine (IPV)

- The final dose in the series should be administered on or after the fourth birthday and at least 6 months following the previous dose.
- A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months following the previous dose.

6. Measles, mumps, and rubella vaccine (MMR)

- If not previously vaccinated, administer 2 doses with at least 28 days between doses.

7. Varicella vaccine (Var)

- For persons aged 12 months through 12 years, the minimum interval between doses 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.

GENERAL RULES OF CHILDHOOD VACCINATION

Rule #1: It is **not necessary to restart** the series of any vaccine due to extended intervals between doses (except oral typhoid).

Rule #2: Vaccine doses given ≤4 days before the minimum interval or age can be counted as valid. This 4-day "grace period" should be used **ONLY for the purpose of meeting minimum requirements, assessment of records, and record reviews, NOT for appointment scheduling.**

Rule #3: If MMR, varicella and LAIV are not administered at the same visit, they should be separated by at least 28 days. **The 4-day grace period does not apply.**

Rule #4: Adverse events following **live** attenuated vaccines are similar to a mild form of the natural illness. **Adverse events** following **inactivated** vaccines are mostly

local (redness, pain or swelling at injection site), with or without fever.

Rule #5: There are no contraindications to the **simultaneous administration** of any vaccines.

Rule #6: Any vaccination using **less** than the standard dose **should not be counted**, and the person should be revaccinated according to age.

Rule #7: Infants or children with **pregnant household contacts** may receive all vaccines, including live vaccines (LAIV, MMR, rotavirus, varicella and yellow fever).

Rule #8: **Breastfeeding is not a contraindication** to the administration of any vaccine, to either the mother or the child.

See General Recommendations in MMWR 2006;55(RR-15). www.cdc.gov/mmwr/preview/mmrhtml/rr5515a1.htm

NEED ANSWERS TO YOUR VACCINE QUESTIONS?

- CDC's National Immunization Program: www.cdc.gov/vaccines 1-800-CDC-INFO (1-800-232-4636) email: nipinfo@cdc.gov
- Vaccine Adverse Event Reporting System (VAERS): www.vaers.hhs.gov 1-800-822-7967
- Advisory Committee on Immunization Practices: www.cdc.gov/vaccines/recs/acip
- Morbidity and Mortality Weekly Report: www.cdc.gov/mmwr
- Immunization Action Coalition: www.immunize.org
- National Network for Immunization Information: www.immunizationinfo.org
- American Academy of Pediatrics: www.aap.org
- American Academy of Family Physicians: www.aafp.org
- Washington State Department of Health: www.doh.wa.gov/cfh/immunize

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