

Recommended Childhood and Adolescent Immunization Schedule UNITED STATES • JULY–DECEMBER 2004

Vaccine	Age	Birth	1 mo	2 mo	4 mo	6 mo	12 mo	15 mo	18 mo	24 mo	4-6 y	11-12 y	13-18 y
Hepatitis B ¹		HepB #1	HepB #2			HepB #3			HepB Series				
				DTaP	DTaP	DTaP	DTaP			DTaP	Td	Td	
<i>Haemophilus influenzae</i> type b ³			Hib	Hib	Hib	Hib							
Inactivated Poliovirus			IPV	IPV	IPV					IPV			
Measles, Mumps, Rubella ⁴						MMR #1				MMR #2	MMR #2		
Varicella ⁵						Varicella			Varicella				
Pneumococcal ⁶			PCV	PCV	PCV	PCV			PCV	PPV			
Influenza ⁷						Influenza (Yearly)			Influenza (Yearly)				
----- Vaccines below red line are for selected populations -----													
Hepatitis A ⁸										Hepatitis A Series			

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of April 1, 2004, for children through age 18 years. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible.

Indicates age groups that warrant special effort to administer those vaccines not previously given. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and the

vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations. 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 can be found on the Internet: www.vaers.org or by calling 800-822-7967.

- Range of recommended ages
- Preadolescent assessment
- Only if mother HBsAg(-)
- Catch-up immunization



DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION



The Childhood and Adolescent Immunization Schedule is approved by:
Advisory Committee on Immunization Practices www.cdc.gov/nip/acip
American Academy of Pediatrics www.aap.org
American Academy of Family Physicians www.aafp.org

North Carolina Footnotes | Recommended Childhood and Adolescent Immunization Schedule | July – December

1. Hepatitis B (Hep B) vaccine. All infants should receive the first dose of Hep B vaccine soon after birth and before hospital discharge; the first dose may also be given by age 2 months if the infant's mother is hepatitis B surface antigen (HBsAg) negative. Only monovalent Hep B can be used for the birth dose. Monovalent or combination vaccine containing Hep B may be used to complete the series. Four doses of vaccine may be administered when a birth dose is given. The second dose of hepatitis B should be given at least 4 weeks after the first dose, except for combination vaccines which cannot be administered before age 6 weeks. The third dose should be given at least 16 weeks after the first dose and at least 8 weeks after the second dose. The last dose in the vaccination series (third or fourth dose) should not be administered before age 24 weeks.

Infants born to HBsAg-positive mothers should receive Hep B and 0.5 mL of Hepatitis B Immune Globulin (HBIG) within 12 hours of birth at separate sites. The second dose of vaccine is recommended at age 1 to 2 months. The last dose in the immunization series should not be administered before age 24 weeks. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) at age 9 to 15 months.

Infants born to mothers whose HBsAg status is unknown should receive the first dose of the Hep B series within 12 hours of birth. Maternal blood should be drawn as soon as possible to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). The second dose is recommended at age 1 to 2 months. The last dose in the immunization series should not be administered before age 24 weeks.

North Carolina Immunization Law requires 3 doses of hepatitis B: one dose by age three months, a second dose before age five months and a third dose by age 19 months.

2. Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine. The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15 to 18 months. The final dose in the series should be given at age ≥4 years. **Tetanus and diphtheria toxoids (Td)** is recommended at age 11 to 12 years if at least 5 years have elapsed since the last dose of tetanus and diphtheria toxoid containing vaccine. Subsequent routine Td boosters are recommended every 10 years.

North Carolina Immunization Law requires at least one booster dose of DTaP be given on or after the 4th birthday and before enrolling in school (K-1) for the first time.

3. Haemophilus influenzae type b (Hib) conjugate vaccine. Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB or ComVax [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required. DTaP/Hib combination products should not be used for primary immunization in infants at ages 2, 4 or 6 months but can be used as boosters following any Hib vaccine. The final dose in the series should be given at age >12 months.

Inactivated polio vaccine (IPV). An all-IPV schedule is recommended for routine childhood polio vaccination in the United States. All children should receive four doses of IPV at ages 2 months, 4 months, 6-18 months, and 4-6 years.

North Carolina Immunization Law requires at least one booster dose of IPV be given on or after the 4th birthday and before enrolling in school (K-1) for the first time.

4. Measles, mumps, and rubella vaccine (MMR). The second dose of MMR is recommended routinely at age 4 to 6 years but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should complete the schedule by the 11- to 12 year-old visit.

North Carolina Immunization Law requires one dose of MMR on or after age 12 months and before age 16 months and a second dose of measles containing vaccine before enrolling in school (K-1) for the first time.

5. Varicella vaccine. Varicella vaccine is recommended at any visit at or after age 12 months for susceptible children (i.e., those who lack a reliable history of chickenpox). Susceptible persons age ≥13 years should receive 2 doses, given at least 4 weeks apart.

North Carolina Immunization Law requires one dose of Varicella be administered on or after age 12 months and before age 19 months, if born on or after April 1, 2001. However an individual with laboratory test indicating immunity or with a history of varicella disease, documented by a health care provider, parent, guardian or person in loco parentis shall not be required to receive varicella vaccine. Previous illness shall be documented by a written statement from a health care provider or the individual's parent guardian or person in loco parentis documenting the name of the individual with a history of varicella disease and the approximate date or age of infection. Documentation shall be on or attached to the lifetime immunization card or certificate of immunization.

6. Pneumococcal vaccine. The **pneumococcal conjugate vaccine (PCV-7)** is recommended for all children age 2 to 23 months. It is also recommended for certain children age 24 to 59 months. The final dose in the series should be given at age >12 months. **Pneumococcal polysaccharide vaccine (PPV 23)** is recommended in addition to PCV-7 for certain high-risk groups. See *MMWR* 2000;49(RR-9):1-38. *North Carolina state-supplied PCV-7 is available for all VFC eligible children and all underinsured children. Currently, children whose health insurance covers the full cost of PCV-7 are not eligible for state - supplied PCV-7.*

7. Influenza vaccine. Influenza vaccine is recommended annually for children aged >6 months with certain risk factors (including but not limited to asthma, cardiac disease, sickle cell disease, HIV, and diabetes), healthcare workers, and other persons (including household members) in close contact with persons in groups at high risk (see *MMWR* 2004;53;[RR-6]:1-40) and can be administered to all others wishing to obtain immunity. In addition, healthy children aged 6–23 months and close contacts of healthy children aged 0–23 months are recommended to receive influenza vaccine, because children in this age group are at substantially increased risk for influenza-related hospitalizations. For healthy persons aged 5–49 years, the intranasally administered live, attenuated influenza vaccine (LAIV) is an acceptable alternative to the intramuscular trivalent inactivated influenza vaccine (TIV). See *MMWR* 2004;53;[RR-6]:1-40. Children receiving TIV should be administered a dosage appropriate for their age (0.25 mL if 6–35 months or 0.5 mL if >3 years). Children aged <8 years who are receiving influenza vaccine for the first time should receive 2 doses (separated by at least 4 weeks for TIV and at least 6 weeks for LAIV).

8. Hepatitis A vaccine. Hepatitis A vaccine is recommended for children and adolescents in selected states and regions and for certain high-risk groups; consult your local public health authority. See *MMWR* 1999;48(RR-12):1-37.