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AN EPIDEMIOLOGY PUBLICATION OF THE OREGON DEPARTMENT OF HUMAN SERVICES

RECOMMENDED CHILDHOOD AND ADOLESCENT IMMUNIZATION SCHEDULE

CDC's Advisory Committee on Immunization Practices (ACIP) conducted its annual review of the immunization schedule recommended for children and adolescents and made a few small changes.[1] First, the minimum age for the last dose in the hepatitis B vaccination series is now 24 weeks rather than 6 months, a minor distinction. Second, the range of recommended ages for the adolescent dose of tetanus and diphtheria toxoids (Td) is now 11–12 years, down from 13–18 years. Third, the timing for completing doses of DTaP (at age ⩾4 years), *Haemophilus influenzae* type b conjugate (at age ⩾12 months), and pneumococcal conjugate vaccines (also at age ⩾12 months) was clarified in the footnotes. Fourth, later this year influenza vaccine will be recommended for *all* children, not just those with conditions like asthma. The 2004 immunization schedule will be reissued in July to reflect the new influenza recommendation. The 2004 recommendations also mention that the intranasal live, attenuated influenza vaccine was approved in June 2003 as an acceptable alternative to the intramuscular trivalent inactivated influenza vaccine for healthy persons aged 5–49 years.[2]

A catch-up immunization schedule for children and adolescents who start late or who are more than one month behind was published in *MMWR* in 2003.[3] The catch-up schedule remains the same and can be found at *http://www.cdc.gov/nip/recs/child-schedule.htm*.

Due to Oregon's historically high incidence of hepatitis A disease, ACIP and Oregon recommend routine childhood immunization with hepatitis A vaccine for 2–18 year-olds. Currently there is a national shortage of pneumococcal conjugate vaccine (PCV) or Prevnar®. On March 5, 2004, ACIP issued a recommendation to temporarily defer the 3rd and 4th doses of PCV; however, at this time do continue with the full 4-dose series for children at highest risk of disease.

Please check the DHS website for the most up-to-date recommendations for Oregon at *http://www.healthoregon.org/imm/index.cfm*. Detailed recommendations for using vaccines are available in the manufacturers' package inserts, ACIP statements on specific vaccines (search the *MMWR* web site for these), and the 2003 Red Book.

REFERENCES

1. CDC. Recommended childhood and adolescent immunization schedule—United States, January-June 2004. MMWR 2004;53:Q1–4.
2. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2003;52(No. RR-8).
3. CDC. Recommended childhood and adolescent immunization schedule. MMWR 2003;52:Q1–4.

Recommended Childhood Immunization Schedule for January – June, 2004

Approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP), not to mention Oregon Health Services.

Range of recommended ages | Catch-up vaccination | Preadolescent assessment | Only if mother is HBsAg(–)

age ▶ / ▼ vaccine	birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	24 months	4–6 years	11–12 years	13–18 years
hepatitis B[1]	Hep B #1	Hep B #2			Hep B #3				Hep B series			
diphtheria tetanus pertussis[2]			DTaP	DTaP	DTaP		DTaP			DTaP	Td	Td
H. influenzae type b[3]			Hib	Hib	Hib	Hib						
inactivated polio			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			
Vaccines below this line are for selected populations												
hepatitis A[7]									Hep A series			
influenza[8]					Influenza (yearly)							

- This schedule indicates the recommended age for routine administration of currently licensed childhood vaccines as of December 1, 2003, for children through age 18 years. 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.
- The grey bars indicate preferred age ranges for certain vaccine doses. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible. Catch-up immunizations indicate age groups that warrant special effort to administer those vaccines not given previously.
- The footnotes (*verso*) are a critical part of the beauty of the Grand Immunization Plan.

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1. Hepatitis B (HepB) vaccine. All infants should receive the first dose of HepB vaccine soon after birth and before hospital discharge; the first dose also may be given by age 2 months if the infant's mother is HBsAg-negative. Only monovalent HepB vaccine can be used for the birth dose. Monovalent or combination vaccine containing HepB may be used to complete the series; 4 doses of vaccine may be administered when a birth dose is given. The second dose 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 HepB vaccine and 0.5 mL hepatitis B immune globulin (HBIG) within 12 hours of birth at separate sites. The second dose is recommended at age 1–2 months. The last dose in the vaccination series should not be administered before age 24 weeks. These infants should be tested for HBsAg and anti-HBs at age 9–15 months. Infants born to mothers whose HBsAg status is unknown should receive the first dose of the HepB vaccine 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 1–2 months. The last dose in the vaccination series should not be administered before age 24 weeks.

2. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). The fourth dose of DTaP may be administered at age 12 months provided that 6 months have elapsed since the third dose and the child is unlikely to return at age 15–18 months. The final dose in the series should be given at age ⩾4 years. **Tetanus and diphtheria toxoids (Td)** is recommended at age 11–12 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.

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 vaccination in infants at ages 2, 4, or 6 months but can be used as boosters after any Hib vaccine. The final dose in the series should be given at age ⩾12 months.

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

5. Varicella vaccine (VAR). 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 aged ⩾13 years should receive 2 doses given at least 4 weeks apart.

6. Pneumococcal vaccine. The heptavalent **pneumococcal conjugate vaccine (PCV)** is recommended for all children aged 2–23 months and for certain children aged 24–59 months. The final dose in the series should be given at age ⩾12 months. **Pneumococcal polysaccharide vaccine (PPV)** is recommended in addition to PCV for certain high-risk groups. See *MMWR* 2000;49 RR-9:1–35.

7. Hepatitis A vaccine. Hepatitis A vaccine is recommended for children and adolescents in selected states (including Oregon) and regions, and for certain high-risk groups. Consult local public health authority and *MMWR* 1999;48 RR-12:1–37. Children and adolescents in these regions, and high-risk groups who have not been vaccinated against hepatitis A can begin the hepatitis A vaccination series during any visit. The two doses in the series should be administered at least 6 months apart.

8. 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), and household members of persons in groups at high risk (see *MMWR* 2003;52 RR-8:1–36), and can be administered to all others wishing to obtain immunity. In addition, healthy children aged 6–23 months are encouraged to receive influenza vaccine if feasible 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* 2003;52(RR-13):1–8. 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).

Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance on how to obtain and complete a VAERS form is available at *http://www.vaers.org* or by telephone, 800/822-7967.

Additional information about vaccines, including precautions and contraindications for vaccination and vaccine shortages, is available at *http://www.cdc.gov/nip/* or from the National Immunization information hotline, telephone 800/232-2522 (English) or 800/232-0233 (Spanish). Approved by the Advisory Committee on Immunization Practices (*http://www.cdc.gov/nip/acip*), the American Academy of Pediatrics (*http://www.aap.org*), and the American Academy of Family Physicians (*http://www.aafp.org*).