

Vermont Recommended Child & Teen Vaccination Schedule

2011

							Prior to Kindergarten	Prior to 7th Grade		
							4-6 Years	11-12 Years	13-18 Years	
							4-6 Years	11-12 Years	13-18 Years	
Required for child care Required for school	Vaccine	Birth	2 Months	4 Months	6 Months	12-15 Months	15-18 Months			
	<i>Haemophilus influenzae</i> type b (Hib)		Hib	Hib	Hib	Hib				
	Pneumococcal (PCV)		PCV	PCV	PCV	PCV				
	Hepatitis B (HepB)	HepB	HepB		HepB					
	Diphtheria, Tetanus, Pertussis (DTaP)		DTaP	DTaP	DTaP			DTaP		
	Poliovirus (Polio) (IPV)		IPV	IPV	IPV			IPV		
	Measles, Mumps, Rubella (MMR)					MMR		MMR		
Varicella (Chicken pox)					Varicella		Varicella			
Tetanus, Diphtheria, Pertussis (Tdap)								Tdap		
*	Meningococcal (MCV4)								MCV4	MCV4 second dose, after age 16
Recommended	Hepatitis A (HepA)					HepA	HepA			
	Rotavirus (RV)		RV	RV						
	Human Papillomavirus (HPV)								HPV 3 doses over 6 months	
	Influenza				Influenza	Every flu season				

Assure your child is up to date by age 2

* Recommended for all. Required only for residential students entering 7th grade, newly enrolled in grades 8-12, and college freshmen living in dorms.

Vermont's immunization schedule is compatible with the current recommendations of the Advisory Committee on Immunization Practice (ACIP) of the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP).

For more information, contact the Vermont Department of Health Immunization Program:

Phone: **802-863-7638** toll free (in VT): **800-640-7374** website: **HealthVermont.gov**



5.2011

Recommended Immunization Schedules for Persons Aged 0 Through 18 Years — United States, 2011

Each year, the Advisory Committee on Immunization Practices (ACIP) publishes immunization schedules for persons aged 0 through 18 years. These schedules summarize recommendations for currently licensed vaccines for children aged 18 years and younger and include recommendations in effect as of December 21, 2010. Changes to the previous schedules (1) include the following:

- Guidance has been added for the hepatitis B vaccine schedule for children who did not receive a birth dose (2).
- Information on use of 13-valent pneumococcal conjugate vaccine has been added (3).
- Guidance has been added for administration of 1 or 2 doses of seasonal influenza vaccine based upon the child's history of monovalent 2009 H1N1 vaccination (4).
- Use of tetanus and diphtheria toxoids, and acellular pertussis (Tdap) vaccine among children aged 7 through 10 years who are incompletely vaccinated against pertussis is addressed, and reference to a specified interval between tetanus and diphtheria toxoids (Td) and Tdap vaccination has been removed (5).
- Footnotes for the use of human papillomavirus (HPV) vaccine have been condensed.
- A routine 2-dose schedule of quadrivalent meningococcal conjugate vaccine (MCV4) for certain persons at high risk for meningococcal disease, and recommendations for a booster dose of MCV4 have been added (6).
- Guidance for use of *Haemophilus influenzae* type b (Hib) vaccine in persons aged 5 years and older in the catch-up schedule has been condensed.

The National Childhood Vaccine Injury Act requires that health-care providers provide parents or patients with copies of Vaccine Information Statements before administering each dose of the vaccines listed in the schedules. Additional information is available from state health departments and from CDC at <http://www.cdc.gov/vaccines/pubs/vis/default.htm>.

Detailed recommendations for using vaccines are available from ACIP statements (available at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>) and the 2009 Red Book (7). Guidance regarding the Vaccine Adverse Event Reporting System form is available online (<http://www.vaers.hhs.gov>) or by telephone (800-822-7967).

References

1. CDC. Recommended immunization schedules for persons aged 0–18 years—United States, 2010. *MMWR* 2009;58(51&52).
2. CDC. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States. Recommendations of the Advisory Committee on Immunization Practices (ACIP): part 1: immunization of infants, children, and adolescents. *MMWR* 2005;54(No. RR-16):10.
3. CDC. Prevention of pneumococcal disease among infants and children—use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2010;59(No. RR-11).
4. CDC. Prevention and control of influenza with vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2010. *MMWR* 2010;59(No. RR-8).
5. CDC. Updated recommendations for use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis (Tdap) vaccine from the Advisory Committee on Immunization Practices, 2010. *MMWR* 2011;60:13–5.
6. CDC. Updated recommendations for use of meningococcal conjugate vaccines—Advisory Committee on Immunization Practices (ACIP), 2010. *MMWR* 2011;60:72–6.
7. American Academy of Pediatrics. Active and passive immunization. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds. 2009 red book: report of the Committee on Infectious Diseases. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009.

The recommended immunization schedules for persons aged 0 through 18 years and the catch-up immunization schedule for 2011 have been approved by the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians.

Suggested citation: Centers for Disease Control and Prevention. Recommended immunization schedules for persons aged 0–18 years—United States, 2011. *MMWR* 2011;60(5).

FIGURE 1. Recommended immunization schedule for persons aged 0 through 6 years — United States, 2011 (for those who fall behind or start late, see the catch-up schedule [Table])

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			HepB						
Rotavirus ²				RV	RV	RV ²						
Diphtheria, Tetanus, Pertussis ³				DTaP	DTaP	DTaP	see footnote ³	DTaP				DTaP
<i>Haemophilus influenzae</i> 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												MCV4

Range of recommended ages for all children

Range of recommended ages for certain high-risk groups

This schedule includes recommendations in effect as of December 21, 2010. 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. Providers should consult

the relevant Advisory Committee on Immunization Practices statement for detailed recommendations: <http://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 <http://www.vaers.hhs.gov> or by telephone, 800-822-7967.

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).

Doses following the birth dose:

- The second dose should be administered at age 1 or 2 months. Monovalent HepB should be used for doses administered before age 6 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).
- Administration of 4 doses of HepB to infants is permissible when a combination vaccine containing HepB is administered after the birth dose.
- Infants who did not receive a birth dose should receive 3 doses of HepB on a schedule of 0, 1, and 6 months.
- The final (3rd or 4th) dose in the HepB series 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.

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.
- Hiberix 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.
- A PCV series begun with 7-valent PCV (PCV7) should be completed with 13-valent PCV (PCV13).
- A single supplemental dose of PCV13 is recommended for all children aged 14 through 59 months who have received an age-appropriate series of PCV7.
- A single supplemental dose of PCV13 is recommended for all children aged 60 through 71 months with underlying medical conditions who have received an age-appropriate series of PCV7.
- The supplemental dose of PCV13 should be administered at least 8 weeks after the previous dose of PCV7. See MMWR 2010;59(No. RR-11).

- Administer PPSV at least 8 weeks 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)

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

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

- For healthy children aged 2 years and older (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.
- Administer 2 doses (separated by at least 4 weeks) to children aged 6 months through 8 years who are receiving seasonal influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.
- Children aged 6 months through 8 years who received no doses of monovalent 2009 H1N1 vaccine should receive 2 doses of 2010–2011 seasonal influenza vaccine. See MMWR 2010;59(No. RR-8):33–34.

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

- The second dose may be administered before age 4 years, provided at least 4 weeks have elapsed since the first dose.

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

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

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

- Administer 2 doses at least 6 months apart.
- 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.

11. Meningococcal conjugate vaccine, quadrivalent (MCV4). (Minimum age: 2 years)

- Administer 2 doses of MCV4 at least 8 weeks apart to children aged 2 through 10 years with persistent complement component deficiency and anatomic or functional asplenia, and 1 dose every 5 years thereafter.
- Persons with human immunodeficiency virus (HIV) infection who are vaccinated with MCV4 should receive 2 doses at least 8 weeks apart.
- Administer 1 dose of MCV4 to children aged 2 through 10 years who travel to countries with highly endemic or epidemic disease and during outbreaks caused by a vaccine serogroup.
- Administer MCV4 to children at continued risk for meningococcal disease who were previously vaccinated with MCV4 or meningococcal polysaccharide vaccine after 3 years if the first dose was administered at age 2 through 6 years.

The Recommended Immunization Schedules for Persons Aged 0 Through 18 Years are approved by the Advisory Committee on Immunization Practices (<http://www.cdc.gov/vaccines/recs/acip/>), the American Academy of Pediatrics (<http://www.aap.org>), and the American Academy of Family Physicians (<http://www.aafp.org>).
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QuickGuide

FIGURE 2. Recommended immunization schedule for persons aged 7 through 18 years — United States, 2011 (for those who fall behind or start late, see the schedule below and the catch-up schedule [Table])

Vaccine ▼	Age ►	7–10 years	11–12 years	13–18 years	
Tetanus, Diphtheria, Pertussis ¹			Tdap	Tdap	Range of recommended ages for all children
Human Papillomavirus ²	see footnote ²		HPV (3 doses)(females)	HPV series	
Meningococcal ³		MCV4	MCV4	MCV4	Range of recommended ages for catch-up immunization
Influenza ⁴		Influenza (Yearly)			
Pneumococcal ⁵		Pneumococcal			Range of recommended ages for certain high-risk groups
Hepatitis A ⁶		HepA Series			
Hepatitis B ⁷		Hep B Series			
Inactivated Poliovirus ⁸		IPV Series			
Measles, Mumps, Rubella ⁹		MMR Series			
Varicella ¹⁰		Varicella Series			

This schedule includes recommendations in effect as of December 21, 2010. 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. Providers should

consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations: <http://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 <http://www.vaers.hhs.gov> or by telephone, 800-822-7967.

- Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap).** (Minimum age: 10 years for Boostrix and 11 years for Adacel)
 - Persons aged 11 through 18 years who have not received Tdap should receive a dose followed by Td booster doses every 10 years thereafter.
 - Persons aged 7 through 10 years who are not fully immunized against pertussis (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap. Refer to the catch-up schedule if additional doses of tetanus and diphtheria toxoid-containing vaccine are needed.
 - Tdap can be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.
- Human papillomavirus vaccine (HPV).** (Minimum age: 9 years)
 - Quadrivalent HPV vaccine (HPV4) or bivalent HPV vaccine (HPV2) is recommended for the prevention of cervical precancers and cancers in females.
 - HPV4 is recommended for prevention of cervical precancers, cancers, and genital warts in females.
 - HPV4 may be administered in a 3-dose series to males aged 9 through 18 years to reduce their likelihood of genital warts.
 - 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).
- Meningococcal conjugate vaccine, quadrivalent (MCV4).** (Minimum age: 2 years)
 - Administer MCV4 at age 11 through 12 years with a booster dose at age 16 years.
 - Administer 1 dose at age 13 through 18 years if not previously vaccinated.
 - Persons who received their first dose at age 13 through 15 years should receive a booster dose at age 16 through 18 years.
 - Administer 1 dose to previously unvaccinated college freshmen living in a dormitory.
 - Administer 2 doses at least 8 weeks apart to children aged 2 through 10 years with persistent complement component deficiency and anatomic or functional asplenia, and 1 dose every 5 years thereafter.
 - Persons with HIV infection who are vaccinated with MCV4 should receive 2 doses at least 8 weeks apart.
 - Administer 1 dose of MCV4 to children aged 2 through 10 years who travel to countries with highly endemic or epidemic disease and during outbreaks caused by a vaccine serogroup.
 - Administer MCV4 to children at continued risk for meningococcal disease who were previously vaccinated with MCV4 or meningococcal polysaccharide vaccine 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).
- Influenza vaccine (seasonal).**
 - 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 6 months through 8 years who are receiving seasonal influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

- Children 6 months through 8 years of age who received no doses of monovalent 2009 H1N1 vaccine should receive 2 doses of 2010-2011 seasonal influenza vaccine. See MMWR 2010;59(No. RR-8):33-34.
- Pneumococcal vaccines.**
 - A single dose of 13-valent pneumococcal conjugate vaccine (PCV13) may be administered to children aged 6 through 18 years who have functional or anatomic asplenia, HIV infection or other immunocompromising condition, cochlear implant or CSF leak. See MMWR 2010;59(No. RR-11).
 - The dose of PCV13 should be administered at least 8 weeks after the previous dose of PCV7.
 - Administer pneumococcal polysaccharide vaccine at least 8 weeks after the last dose of PCV to children aged 2 years or older 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 an immunocompromising condition.
 - Hepatitis A vaccine (HepA).**
 - Administer 2 doses at least 6 months apart.
 - HepA is recommended for children aged older than 23 months who live in areas where vaccination programs target older children, or who are at increased risk for infection, or for whom immunity against hepatitis A is desired.
 - Hepatitis B vaccine (HepB).**
 - Administer the 3-dose series to those not previously vaccinated. For those with incomplete vaccination, follow the catch-up recommendations (Table).
 - A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB is licensed for children aged 11 through 15 years.
 - 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.
 - Measles, mumps, and rubella vaccine (MMR).**
 - The minimum interval between the 2 doses of MMR is 4 weeks.
 - Varicella vaccine.**
 - For persons aged 7 through 18 years without evidence of immunity (see MMWR 2007;56[No. RR-4]), 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 recommended minimum interval between doses is 3 months. However, if the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.
 - For persons aged 13 years and older, the minimum interval between doses is 4 weeks.

TABLE. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind — United States, 2011

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age.

PERSONS AGED 4 MONTHS THROUGH 6 YEARS					
Vaccine	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 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)		
Rotavirus ²	6 wks	4 weeks	4 weeks ²		
Diphtheria, Tetanus, Pertussis ³	6 wks	4 weeks	4 weeks	6 months	6 months ³
<i>Haemophilus influenzae</i> type b ⁴	6 wks	4 weeks if first dose administered at younger than age 12 months 8 weeks (as final dose) if first dose administered at age 12–14 months No further doses needed if first dose administered 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 first dose administered at younger than age 12 months and second dose administered at younger than 15 months No further doses needed if previous dose administered at age 15 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 months through 59 months who received 3 doses before age 12 months	
Pneumococcal ⁵	6 wks	4 weeks if first dose administered at younger than age 12 months 8 weeks (as final dose for healthy children) if first dose administered at age 12 months or older or current age 24 through 59 months No further doses needed for healthy children if first dose administered at age 24 months or older	4 weeks if current age is younger than 12 months 8 weeks (as final dose for healthy children) if current age is 12 months or older No further doses needed for healthy children if previous dose administered at age 24 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 months through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age	
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	6 months ⁶	
Measles, Mumps, Rubella ⁷	12 mos	4 weeks			
Varicella ⁸	12 mos	3 months			
Hepatitis A ⁹	12 mos	6 months			
PERSONS AGED 7 THROUGH 18 YEARS					
Tetanus, Diphtheria/ Tetanus, Diphtheria, Pertussis ¹⁰	7 yrs ¹⁰	4 weeks	4 weeks if first dose administered at younger than age 12 months 6 months if first dose administered at 12 months or older	6 months if first dose administered at younger than age 12 months	
Human Papillomavirus ¹¹	9 yrs		Routine dosing intervals are recommended (females) ¹¹		
Hepatitis A ⁹	12 mos	6 months			
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)		
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks ⁶	6 months ⁶	
Measles, Mumps, Rubella ⁷	12 mos	4 weeks			
Varicella ⁸	12 mos	3 months if person is younger than age 13 years 4 weeks if person is aged 13 years or older			

- Hepatitis B vaccine (HepB).**
 - Administer the 3-dose series to those not previously vaccinated.
 - The minimum age for the third dose of HepB is 24 weeks.
 - A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB is licensed for children aged 11 through 15 years.
- 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.
 - If Rotarix was administered for the first and second doses, a third dose is not indicated.
- 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.
- Haemophilus influenzae* type b conjugate vaccine (Hib).**
 - 1 dose of Hib vaccine should be considered for unvaccinated persons aged 5 years or older who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy.
 - 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.
- Pneumococcal vaccine.**
 - Administer 1 dose of 13-valent pneumococcal conjugate vaccine (PCV13) to all healthy children aged 24 through 59 months with any incomplete PCV schedule (PCV7 or PCV13).
 - For children aged 24 through 71 months with underlying medical conditions, administer 1 dose of PCV13 if 3 doses of PCV were received previously or administer 2 doses of PCV13 at least 8 weeks apart if fewer than 3 doses of PCV were received previously.
 - A single dose of PCV13 is recommended for certain children with underlying medical conditions through 18 years of age. See age-specific schedules for details.
 - 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. A single revaccination should be administered after 5 years to children with functional or anatomical asplenia or an immunocompromising condition. See MMWR 2010;59(No. RR-11).
- 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).
- Measles, mumps, and rubella vaccine (MMR).**
 - Administer the second dose routinely at age 4 through 6 years. The minimum interval between the 2 doses of MMR is 4 weeks.
- Varicella vaccine.**
 - Administer the second dose routinely at age 4 through 6 years.
 - If the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.
- Hepatitis A vaccine (HepA).**
 - HepA is recommended for children aged older than age 23 months who live in areas where vaccination programs target older children, or who are at increased risk for infection, or for whom immunity against hepatitis A is desired.
- Tetanus and diphtheria toxoids (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 for children aged 7 through 10 years or as a booster for children aged 11 through 18 years; use Td for other doses.
- Human papillomavirus vaccine (HPV).**
 - Administer the series to females at age 13 through 18 years if not previously vaccinated or have not completed the vaccine series.
 - Quadrivalent HPV vaccine (HPV4) may be administered in a 3-dose series to males aged 9 through 18 years to reduce their likelihood of genital warts.
 - 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.

Information about reporting reactions after immunization is available online at <http://www.vaers.hhs.gov> or by telephone, 800-822-7967. Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for immunization, is available from the National Center for Immunization and Respiratory Diseases at <http://www.cdc.gov/vaccines> or telephone, 800-CDC-INFO (800-232-4636).
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Summary of Recommendations for Child/Teen Immunization (Ages birth through 18 years) (Page 1 of 4)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hepatitis B (HepB) <i>Give IM</i>	<ul style="list-style-type: none"> Vaccinate all children age 0 through 18yrs. Vaccinate all newborns with monovalent vaccine prior to hospital discharge. Give dose #2 at age 1–2m and the final dose at age 6–18m (the last dose in the infant series should not be given earlier than age 24wks). After the birth dose, the series may be completed using 2 doses of single-antigen vaccine or up to 3 doses of Comvax (ages 2m, 4m, 12–15m) or Pediarix (ages 2m, 4m, 6m), which may result in giving a total of 4 doses of hepatitis B vaccine. If mother is HBsAg-positive: give the newborn HBIG + dose #1 within 12hrs of birth; complete series at age 6m or, if using Comvax, at age 12–15m. If mother’s HBsAg status is unknown: give the newborn dose #1 within 12hrs of birth. If low birth weight (less than 2000 grams), also give HBIG within 12hrs. If the mother is subsequently found to be HBsAg positive, give the infant HBIG ASAP and within 7d of birth and follow HepB immunization schedule for infants born to HBsAg-positive mothers. 	<ul style="list-style-type: none"> Do not restart series, no matter how long since previous dose. 3-dose series can be started at any age. Minimum intervals between doses: 4wks between #1 and #2, 8wks between #2 and #3, and at least 16wks between #1 and #3 (e.g., 0-, 2-, 4m; 0-, 1-, 4m). <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin-top: 10px;"> <p>Special Notes on Hepatitis B Vaccine (HepB) Dosing of HepB: Monovalent vaccine brands are interchangeable. For people age 0 through 19yrs, give 0.5 mL of either Engerix-B or Recombivax HB. Alternative dosing schedule for unvaccinated adolescents age 11 through 15yrs: Give 2 doses Recombivax HB 1.0 mL (adult formulation) spaced 4–6m apart. (Engerix-B is not licensed for a 2-dose schedule.) For preterm infants: Consult ACIP hepatitis B recommendations (<i>MMWR</i> 2005; 54 [RR-16]).*</p> </div>	<p>Contraindication Previous anaphylaxis to this vaccine or to any of its components.</p> <p>Precaution Moderate or severe acute illness.</p>
DTaP, DT (Diphtheria, tetanus, acellular pertussis) <i>Give IM</i>	<ul style="list-style-type: none"> Give to children at ages 2m, 4m, 6m, 15–18m, 4–6yrs. May give dose #1 as early as age 6wks. May give #4 as early as age 12m if 6m have elapsed since #3. Do not give DTaP/DT to children age 7yrs and older. If possible, use the same DTaP product for all doses. 	<ul style="list-style-type: none"> #2 and #3 may be given 4wks after previous dose. #4 may be given 6m after #3. If #4 is given before 4th birthday, wait at least 6m for #5 (age 4–6yrs). If #4 is given after 4th birthday, #5 is not needed. 	<p>Contraindications</p> <ul style="list-style-type: none"> Previous anaphylaxis to this vaccine or to any of its components. For DTaP/Tdap only: encephalopathy not attributable to an identifiable cause, within 7d after DTP/DTaP. <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness. History of arthus reaction following a prior dose of tetanus-toxoid-containing vaccine.
Td, Tdap (Tetanus, diphtheria, acellular pertussis) <i>Give IM</i>	<ul style="list-style-type: none"> Give Tdap to all children and teens age 11–18yrs (starting at age 11–12yrs) who have not received previous Tdap; then boost every 10yrs with Td. Tdap should be given regardless of interval since previous Td. Make special efforts to give Tdap to children and teens who are 1) in contact with infants younger than age 12m and 2) healthcare workers with direct patient contact. In pregnancy, when indicated, give Td or Tdap in 2nd or 3rd trimester. If not administered during pregnancy, give Tdap in immediate postpartum period (if not previously vaccinated). 	<ul style="list-style-type: none"> Children as young as age 7yrs and teens who are unvaccinated or behind schedule should complete a primary Td series (spaced at 0, 1–2m, and 6–12m intervals); substitute a 1-time Tdap for any dose in the series, preferably as dose #1. 	<ul style="list-style-type: none"> Guillain-Barré syndrome (GBS) within 6wks after previous dose of tetanus-toxoid-containing vaccine. For DTaP only: Any of these events following a previous dose of DTP/DTaP: 1) temperature of 105°F (40.5°C) or higher within 48hrs; 2) continuous crying for 3hrs or more within 48hrs; 3) collapse or shock-like state within 48hrs; 4) seizure within 3d. For DTaP/Tdap only: Progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy. <p>Note: Tdap may be given to pregnant women at the provider’s discretion.</p>
Polio (IPV) <i>Give SC or IM</i>	<ul style="list-style-type: none"> Give to children at ages 2m, 4m, 6–18m, 4–6yrs. May give dose #1 as early as age 6wks. Not routinely recommended for U.S. residents age 18yrs and older (except certain travelers). 	<ul style="list-style-type: none"> The final dose should be given on or after the 4th birthday and at least 6m from the previous dose. If dose #3 is given after 4th birthday, dose #4 is not needed if dose #3 is given at least 6m after dose #2. 	<p>Contraindication Previous anaphylaxis to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness. Pregnancy.

*This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of the recommendations, call the CDC-INFO Contact Center at (800) 232-4636; visit CDC’s website at www.cdc.gov/vaccines/pubs/ACIP-list.htm; or visit the

Immunization Action Coalition (IAC) website at www.immunize.org/acip. This table is revised periodically. Visit IAC’s website at www.immunize.org/childrules to make sure you have the most current version.

Summary of Recommendations for Child/Teen Immunization (Ages birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
<p>Influenza Trivalent inactivated influenza vaccine (TIV) <i>Give IM</i> Live attenuated influenza vaccine (LAIV) <i>Give intranasally</i></p>	<ul style="list-style-type: none"> • Vaccinate all children and teens age 6m through 18yrs. • LAIV may be given to healthy, non-pregnant people age 2–49yrs. • Give 2 doses to first-time vaccinees age 6m through 8yrs, spaced 4wks apart. • For TIV, give 0.25 mL dose to children age 6–35m and 0.5 mL dose if age 3yrs and older. • If LAIV and either MMR, Var, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. 		<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylaxis to this vaccine, to any of its components, or to eggs. • For LAIV only: age younger than 2yrs; pregnancy; chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic, or metabolic (including diabetes) disorders; immunosuppression (including that caused by medications or HIV); for children and teens ages 6m through 18yrs, current long-term aspirin therapy; for children age 2 through 4yrs, wheezing or asthma within the past 12m, per healthcare provider statement. <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • History of Guillain-Barré syndrome (GBS) within 6wks of a previous influenza vaccination. • For LAIV only: Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48hrs before vaccination. Avoid use of these antiviral drugs for 14d after vaccination.
<p>Varicella (Var) (Chickenpox) <i>Give SC</i></p>	<ul style="list-style-type: none"> • Give dose #1 at age 12–15m. • Give dose #2 at age 4–6yrs. Dose #2 of Var or MMRV may be given earlier if at least 3m since dose #1. • Give a 2nd dose to all older children and adolescents with history of only 1 dose. • MMRV may be used in children age 12m through 12yrs (see note below). <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin-top: 10px;"> <p>Note: For the first dose of MMR and varicella given at age 12–47mos, either MMR and Var or MMRV may be used. Unless the parent or caregiver expresses a preference for MMRV, CDC recommends that MMR and Var should be given for the first dose in this age group.</p> </div>	<ul style="list-style-type: none"> • If younger than age 13yrs, space dose #1 and #2 at least 3m apart. If age 13yrs or older, space at least 4wks apart. • May use as postexposure prophylaxis if given within 5d. • If Var and either MMR, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. 	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylaxis to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Children on high-dose immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired cellular immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte percentages are either 15% or greater in children ages 1 through 8yrs or 200 cells/μL or greater in children age 9yrs and older). <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP statement <i>General Recommendations on Immunization*</i> regarding time to wait before vaccinating. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination. • For MMRV only, personal or family (i.e., sibling or parent) history of seizures. <p>Note: For patients with humoral immunodeficiency or leukemia, see ACIP recommendations*.</p>
<p>MMR (Measles, mumps, rubella) <i>Give SC</i></p>	<ul style="list-style-type: none"> • Give dose #1 at age 12–15m. • Give dose #2 at age 4–6yrs. Dose #2 may be given earlier if at least 4wks since dose #1. For MMRV: dose #2 may be given earlier if at least 3m since dose #1. • Give a 2nd dose to all older children and teens with history of only 1 dose. • MMRV may be used in children age 12m through 12yrs (see note above). 	<ul style="list-style-type: none"> • If MMR and either Var, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. • When using MMR for both doses, minimum interval is 4wks. • When using MMRV for both doses, minimum interval is 3m. • Within 72hrs of measles exposure, give 1 dose of MMR as postexposure prophylaxis to susceptible healthy children age 12m and older. 	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylaxis to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy, or severely symptomatic HIV). Note: HIV infection is NOT a contraindication to MMR for children who are not severely immunocompromised (consult ACIP MMR recommendations [<i>MMWR</i> 1998;47 [RR-8] for details*). <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • If blood, plasma, or immune globulin given in past 11m, see ACIP statement <i>General Recommendations on Immunization*</i> regarding time to wait before vaccinating. • History of thrombocytopenia or thrombocytopenic purpura. • For MMRV only, personal or family (i.e., sibling or parent) history of seizures. • Need for tuberculin skin testing (TST). If TST needed, give TST before or on same day as MMR, or give TST 4wks following MMR.

Summary of Recommendations for Child/Teen Immunization (Ages birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
<p>Hib (<i>Haemophilus influenzae</i> type b) Give IM</p>	<ul style="list-style-type: none"> ActHib (PRP-T): give at age 2m, 4m, 6m, 12–15m (booster dose). PedvaxHIB or Comvax (containing PRP-OMP): give at age 2m, 4m, 12–15m (booster dose). Dose #1 of Hib vaccine should not be given earlier than age 6wks. The last dose (booster dose) is given no earlier than age 12m and a minimum of 8wks after the previous dose. Hib vaccines are interchangeable; however, if different brands of Hib vaccines are administered for dose #1 and dose #2, a total of 3 doses are necessary to complete the primary series in infants. Any Hib vaccine may be used for the booster dose. Hib is not routinely given to children age 5yrs and older. Hiberix is approved ONLY for the booster dose at age 15m through 4yrs. 	<p>All Hib vaccines:</p> <ul style="list-style-type: none"> If #1 was given at 12–14m, give booster in 8wks. Give only 1 dose to unvaccinated children ages 15 through 59m. <p>ActHib:</p> <ul style="list-style-type: none"> #2 and #3 may be given 4wks after previous dose. If #1 was given at age 7–11m, only 3 doses are needed; #2 is given 4–8wks after #1, then boost at age 12–15m (wait at least 8wks after dose #2). <p>PedvaxHIB and Comvax:</p> <ul style="list-style-type: none"> #2 may be given 4wks after dose #1. 	<p>Contraindications</p> <ul style="list-style-type: none"> Previous anaphylaxis to this vaccine or to any of its components. Age younger than 6wks. <p>Precaution</p> <p>Moderate or severe acute illness.</p>
<p>Pneumococcal conjugate (PCV13) Give IM</p>	<p>As soon as feasible, replace existing stock of PCV7 with PCV13.</p> <ul style="list-style-type: none"> Give at ages 2m, 4m, 6m, 12–15m. Dose #1 may be given as early as age 6wks. When children are behind on PCV schedule, minimum interval for doses given to children younger than age 12m is 4wks; for doses given at 12m and older, it is 8wks. Give 1 dose to unvaccinated healthy children age 24–59m. For high-risk** children ages 24–71m: Give 2 doses at least 8wks apart if they previously received fewer than 3 doses; give 1 dose at least 8wks after the most recent dose if they previously received 3 doses. PCV13 is not routinely given to healthy children age 5yrs and older. <div style="border: 1px solid black; border-radius: 15px; padding: 5px; margin-top: 10px;"> <p>**High-risk: Those with sickle cell disease; anatomic or functional asplenia; chronic cardiac, pulmonary, or renal disease; diabetes; cerebrospinal fluid leaks; HIV infection; immunosuppression; diseases associated with immunosuppressive and/or radiation therapy; or who have or will have a cochlear implant.</p> </div>	<ul style="list-style-type: none"> For minimum intervals, see 3rd bullet at left. For age 7–11m: If history of 0 doses, give 2 doses of PCV13, 8wks apart, with a 3rd dose at age 12–15m; if history of 1 or 2 doses, give 1 dose of PCV13 with a 2nd dose at age 12–15m, at least 8wks later. For age 12–23m: If unvaccinated or history of 1 dose before age 12m, give 2 doses of PCV13 8wks apart; if history of 1 dose at or after age 12m or 2 or 3 doses before age 12m, give 1 dose of PCV13 at least 8wks after most recent dose; if history of 4 doses of PCV7 or other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8wks after the most recent dose. For age 24–59m and healthy: If unvaccinated or any incomplete schedule or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8wks after the most recent dose. For age 24–71m and at high risk**: If unvaccinated or any incomplete schedule of 1 or 2 doses, give 2 doses of PCV13, 1 at least 8wks after the most recent dose and another dose at least 8wks later; if any incomplete series of 3 doses, or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8wks after the most recent PCV7 dose. For children ages 6 through 18yrs with functional or anatomic asplenia (including sickle cell disease), HIV infection or other immunocompromising condition, cochlear implant, or CSF leak, consider giving 1 dose of PCV13 regardless of previous history of PCV7 or PPSV. 	<p>Contraindication</p> <p>Previous anaphylaxis to a PCV vaccine, to any of its components, or to any diphtheria toxoid-containing vaccine.</p> <p>Precaution</p> <p>Moderate or severe acute illness.</p>
<p>Pneumococcal polysaccharide (PPSV) Give IM or SC</p>	<ul style="list-style-type: none"> Give 1 dose at least 8wks after final dose of PCV to high-risk children age 2yrs and older. For children who have an immunocompromising condition or have sickle cell disease or functional or anatomic asplenia, give a 2nd dose of PPSV 5yrs after previous PPSV (consult ACIP PPSV recommendations at www.cdc.gov/vaccines/pubs/ACIP-list.htm). 		<p>Contraindication</p> <p>Previous anaphylaxis to this vaccine or to any of its components.</p> <p>Precaution</p> <p>Moderate or severe acute illness.</p>

Summary of Recommendations for Child/Teen Immunization (Ages birth through 18 years)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Rotavirus (RV) <i>Give orally</i>	<ul style="list-style-type: none"> • Rotarix (RV1): give at age 2m, 4m. • RotaTeq (RV5): give at age 2m, 4m, 6m. • May give dose #1 as early as age 6wks. • Give final dose no later than age 8m 0 days. 	<ul style="list-style-type: none"> • Do not begin series in infants older than age 14wks 6 days. • Intervals between doses may be as short as 4wks. • If prior vaccination included use of different or unknown brand(s), a total of 3 doses should be given. 	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylaxis to this vaccine or to any of its components. If allergy to latex, use RV5. • Diagnosis of severe combined immunodeficiency (SCID). <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • Altered immunocompetence other than SCID. • Chronic gastrointestinal disease. • History of intussusception. • Spina bifida or bladder exstrophy.
Hepatitis A (HepA) <i>Give IM</i>	<ul style="list-style-type: none"> • Give 2 doses spaced 6m apart to all children at age 1yr (12–23m). • Vaccinate all previously unvaccinated children and adolescents age 2yrs and older who <ul style="list-style-type: none"> - Want to be protected from HAV infection. - Live in areas where vaccination programs target older children. - Travel anywhere except U.S., W. Europe, N. Zealand, Australia, Canada, or Japan. - Have chronic liver disease, clotting factor disorder, or are adolescent males who have sex with other males. - Are users of illicit drugs (injectable or non-injectable). - Anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee’s arrival in the U.S. 	<ul style="list-style-type: none"> • Minimum interval between doses is 6m. • Children who are not fully vaccinated by age 2yrs can be vaccinated at subsequent visits. • Consider routine vaccination of children age 2yrs and older in areas with no existing program. • Give 1 dose as postexposure prophylaxis to incompletely vaccinated children age 12m and older who have recently (during the past 2wks) been exposed to hepatitis A virus. 	<p>Contraindication</p> <p>Previous anaphylaxis to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • Pregnancy.
Meningococcal conjugate, quadrivalent (MCV4) <i>Give IM</i> <hr/> Meningococcal polysaccharide (MPSV4) <i>Give SC</i>	<ul style="list-style-type: none"> • Give MCV4 #1 routinely at age 11 through 12yrs and a booster dose at age 16yrs. • Give MCV4 to all unvaccinated teens ages 13 through 18yrs; if vaccinated at age 13–15yrs, give booster dose at age 16–18yrs. • Give 1 initial dose to unvaccinated <i>incoming</i> college students ages 19–21yrs; give booster dose to incoming students who received the most recent dose when younger than age 16yrs. Consider same vaccination strategy for <i>existing</i> college students ages 19–21yrs. • Vaccinate all children age 2yrs and older who have any of the following risk factors: <ul style="list-style-type: none"> - Anatomic or functional asplenia, or persistent complement component deficiency; give 2 doses, separated by 8wks. - Travel to or reside in countries in which meningococcal disease is hyper-endemic or epidemic (e.g., the “meningitis belt” of Sub-Saharan Africa). <p>Note: Use MPSV4 ONLY if there is a permanent contraindication or precaution to MCV4.</p>	<ul style="list-style-type: none"> • If previously vaccinated with MPSV4 or MCV4 and risk of meningococcal disease persists, revaccinate with MCV4 in 3yrs (if first dose given at age 2 through 6yrs) or in 5yrs (if previous dose given at age 7yrs or older). Then, give additional booster doses every 5yrs if risk continues. • When administering MCV4 to children with HIV infection, give 2 initial doses, separated by 8wks. 	<p>Contraindication</p> <p>Previous anaphylaxis to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness.
Human papillomavirus (HPV) (HPV2, Cervarix) (HPV4, Gardasil) <i>Give IM</i>	<ul style="list-style-type: none"> • Give 3-dose series to girls at age 11–12yrs on a 0, 1–2, 6m schedule. (May be given as early as age 9yrs.) • Give a 3-dose series to all older girls and women (through age 26yrs) who were not previously vaccinated. • Consider giving HPV4 to males age 9 through 26yrs to reduce their likelihood of acquiring genital warts. 	<p>Minimum intervals between doses: 4wks between #1 and #2; 12 wks between #2 and #3. Overall, there must be at least 24wks between doses #1 and #3. If possible, use the same vaccine product for all doses.</p>	<p>Contraindication</p> <p>Previous anaphylaxis to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • Pregnancy.

Vermont Recommended Adult Vaccination Schedule

This simplified schedule for persons aged 19+ years assumes receipt of ACIP recommended childhood vaccines. Comprehensive vaccine specific information is available at: <http://www.cdc.gov/vaccines/pubs/ACIP-list.htm>. Please consult the Vermont Immunization Registry for the immunization status of Vermonters.

Vaccine	Dose
Influenza (LAIV and TIV)	Flu vaccine: give yearly to all adults , including health care workers (HCW). Healthy adults, including HCW through 49 years may receive LAIV intranasal mist.
Tetanus, diphtheria, pertussis (Tdap and Td)	Give Tdap to all adults , including HCW who have not yet received a dose. There is <u>no</u> minimum interval after last Td. Give Td at 10 year intervals after Tdap.
Human papillomavirus (HPV)	Give 3 dose series of HPV2 or HPV4 to females through 26 years. Males through 26 years may be given 3 doses of HPV4.
Pneumococcal (PPSV23)	Give 1 dose routinely at age 65 and older . If a dose was administered before age 65, allow a 5 year interval before a second dose. Give 1 dose to adults ages 19-64 with chronic illness or other increased risk, now including smokers or persons with asthma.
Herpes zoster (ZOS)	Give 1 dose shingles vaccine at age 60 and older.
Hepatitis A (HepA)	Give 2 doses to adults at increased risk and those who want protection from Hepatitis A.
Hepatitis B (HepB)	Give 3 doses to adults at increased risk , including HCW and those who want protection from Hepatitis B.

Immunization Program
Vermont Department of Health
108 Cherry Street, PO Box 70
Burlington, VT 05402-0070



802-863-7638
800-640-4374—toll free in VT

01.24.2011

Recommended Adult Immunization Schedule — United States, 2011

Each year, the Advisory Committee on Immunization Practices (ACIP) reviews the recommended adult immunization schedule to ensure that the schedule reflects current recommendations for the licensed vaccines. In October 2010, ACIP approved the adult immunization schedule for 2011, which includes several changes. The notation for influenza vaccination in the figure and footnotes was changed to reflect the expanded recommendation for annual influenza vaccination for all persons aged 6 months and older, which was approved by ACIP in February 2010. In October 2010, ACIP issued a permissive recommendation for use of tetanus, diphtheria, and acellular pertussis (Tdap) vaccine in adults aged 65 years and older, approved the recommendation that Tdap vaccine be administered regardless of how much time has elapsed since the most recent tetanus and diphtheria toxoids (Td)-containing vaccine, and approved a recommendation for a 2-dose series of meningococcal vaccine in adults with certain high-risk medical conditions. The vaccines listed in the figures have been reordered to keep all universally recommended vaccines together (e.g., influenza, Td/Tdap, varicella, human papillomavirus [HPV], and zoster vaccines). Clarifications were made to the footnotes for measles, mumps, and rubella (MMR) vaccination; HPV vaccine; revaccination with pneumococcal polysaccharide vaccine (PPSV), and *Haemophilus influenzae* type b (Hib) vaccine. Finally, a statement has been added to the box at the bottom of the footnotes to clarify that a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.

Additional information is available as follows: schedule (in English and Spanish) at <http://www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm>; information about adult vaccination at <http://www.cdc.gov/vaccines/default.htm>; ACIP statements for specific vaccines at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>; and reporting adverse events at <http://www.vaers.hhs.gov> or by telephone, 800-822-7967.

The recommended adult immunization schedule has been approved by the Advisory Committee on Immunization Practices, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Physicians.

Suggested citation: Centers for Disease Control and Prevention. Recommended adult immunization schedule—United States, 2011. *MMWR* 2011;60(4).

Changes for 2011

Footnotes (Figures 1 and 2)

- The influenza vaccination footnote (#1) is revised and shortened to reflect a recommendation for vaccination of all persons aged 6 months and older, including all adults. The high-dose influenza vaccine (Fluzone), licensed in 2010 for adults aged 65 years and older, is mentioned as an option for this age group.
- The Td/Tdap vaccination footnote (#2) has language added to indicate that persons aged 65 years and older who have close contact with an infant aged less than 12 months should get vaccinated with Tdap; the additional language notes that all persons aged 65 years and older may get vaccinated with Tdap. Also added is the recommendation to administer Tdap regardless of interval since the most recent Td-containing vaccine.
- The HPV vaccination footnote (#4) has language added to the introductory sentences to indicate that either quadrivalent vaccine or bivalent vaccine is recommended for females.
- The MMR vaccination footnote (#6) has been revised mainly by consolidating common language that previously had been part of each of the three vaccine component sections into one introductory statement.
- The revaccination with PPSV footnote (#8) clarifies that one-time revaccination after 5 years only applies to persons with indicated chronic conditions who are aged 19 through 64 years.
- The meningococcal vaccination footnote (#9) has language added to indicate that a 2-dose series of meningococcal conjugate vaccine is recommended for adults with anatomic or functional asplenia, or persistent complement component deficiencies, as well adults with human immunodeficiency (HIV) virus infection who are vaccinated. Language has been added that a single dose of meningococcal vaccine is still recommended for those with other indications. Also, language has been added to clarify that quadrivalent meningococcal conjugate vaccine (MCV4) is a quadrivalent vaccine.
- The language for the selected conditions for the Hib footnote (#12) has been shortened to clarify which persons at high risk may receive 1 dose of Hib vaccine.

FIGURE 1. Recommended adult immunization schedule, by vaccine and age group — United States, 2011

VACCINE ▼	AGE GROUP ►	19–26 years	27–49 years	50–59 years	60–64 years	≥65 years
Influenza ^{1,*}		1 dose annually				
Tetanus, diphtheria, pertussis (Td/Tdap) ^{2,*}		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 years				
Varicella ^{3,*}		2 doses				
Human papillomavirus (HPV) ^{4,*}		3 doses (females)				
Zoster ⁵					1 dose	
Measles, mumps, rubella (MMR) ^{6,*}		1 or 2 doses		1 dose		
Pneumococcal (polysaccharide) ^{7,8}		1 or 2 doses				1 dose
Meningococcal ^{9,*}		1 or more doses				
Hepatitis A ^{10,*}		2 doses				
Hepatitis B ^{11,*}		3 doses				

* Covered by the Vaccine Injury Compensation Program  For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of previous infection)  Recommended if some other risk factor is present (e.g., based on medical, occupational, lifestyle, or other indications)  No recommendation

FIGURE 2. Vaccines that might be indicated for adults, based on medical and other indications — United States, 2011

VACCINE ▼	INDICATION ►	Pregnancy	Immunocompromising conditions (excluding human immunodeficiency virus [HIV]) ^{3,5,6,13}	HIV infection ^{3,6,12,13} CD4+ T lymphocyte count		Diabetes, heart disease, chronic lung disease, chronic alcoholism	Asplenia ¹² (including elective splenectomy) and persistent complement component deficiencies	Chronic liver disease	Kidney failure, end-stage renal disease, receipt of hemodialysis	Health-care personnel
				<200 cells/μL	≥200 cells/μL					
Influenza ^{1,*}										1 dose TIV or LAIV annually
Tetanus, diphtheria, pertussis (Td/Tdap) ^{2,*}	Td									Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 years
Varicella ^{3,*}			Contraindicated							2 doses
Human papillomavirus (HPV) ^{4,*}										3 doses through age 26 years
Zoster ⁵			Contraindicated							1 dose
Measles, mumps, rubella ^{6,*}			Contraindicated							1 or 2 doses
Pneumococcal (polysaccharide) ^{7,8}										1 or 2 doses
Meningococcal ^{9,*}										1 or more doses
Hepatitis A ^{10,*}										2 doses
Hepatitis B ^{11,*}										3 doses

* Covered by the Vaccine Injury Compensation Program  For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of previous infection)  Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)  No recommendation

NOTE: The above recommendations must be read along with the footnotes on pages 3–4 of this schedule.

1. Influenza vaccination

Annual vaccination against influenza is recommended for all persons aged 6 months and older, including all adults. Healthy, nonpregnant adults aged less than 50 years without high-risk medical conditions can receive either intranasally administered live, attenuated influenza vaccine (FluMist), or inactivated vaccine. Other persons should receive the inactivated vaccine. Adults aged 65 years and older can receive the standard influenza vaccine or the high-dose (Fluzone) influenza vaccine. Additional information about influenza vaccination is available at <http://www.cdc.gov/vaccines/vpd-vac/flu/default.htm>.

2. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination

Administer a one-time dose of Tdap to adults aged less than 65 years who have not received Tdap previously or for whom vaccine status is unknown to replace one of the 10-year Td boosters, and as soon as feasible to all 1) postpartum women, 2) close contacts of infants younger than age 12 months (e.g., grandparents and child-care providers), and 3) health-care personnel with direct patient contact. Adults aged 65 years and older who have not previously received Tdap and who have close contact with an infant aged less than 12 months also should be vaccinated. Other adults aged 65 years and older may receive Tdap. Tdap can be administered regardless of interval since the most recent tetanus or diphtheria-containing vaccine.

Adults with uncertain or incomplete history of completing a 3-dose primary vaccination series with Td-containing vaccines should begin or complete a primary vaccination series. For unvaccinated adults, administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second. If incompletely vaccinated (i.e., less than 3 doses), administer remaining doses. Substitute a one-time dose of Tdap for one of the doses of Td, either in the primary series or for the routine booster, whichever comes first.

If a woman is pregnant and received the most recent Td vaccination 10 or more years previously, administer Td during the second or third trimester. If the woman received the most recent Td vaccination less than 10 years previously, administer Tdap during the immediate postpartum period. At the clinician's discretion, Td may be deferred during pregnancy and Tdap substituted in the immediate postpartum period, or Tdap may be administered instead of Td to a pregnant woman after an informed discussion with the woman.

The ACIP statement for recommendations for administering Td as prophylaxis in wound management is available at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>.

3. Varicella vaccination

All adults without evidence of immunity to varicella should receive 2 doses of single-antigen varicella vaccine if not previously vaccinated or a second dose if they have received only 1 dose, unless they have a medical contraindication. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (e.g., health-care personnel and family contacts of persons with immunocompromising conditions) or 2) are at high risk for exposure or transmission (e.g., teachers; child-care employees; residents and staff members of institutional settings, including correctional institutions; college students; military personnel; adolescents and adults living in households with children; nonpregnant women of childbearing age; and international travelers).

Evidence of immunity to varicella in adults includes any of the following: 1) documentation of 2 doses of varicella vaccine at least 4 weeks apart; 2) U.S.-born before 1980 (although for health-care personnel and pregnant women, birth before 1980 should not be considered evidence of immunity); 3) history of varicella based on diagnosis or verification of varicella by a health-care provider (for a patient reporting a history of or having an atypical case, a mild case, or both, health-care providers should seek either an epidemiologic link with a typical varicella case or to a laboratory-confirmed case or evidence of laboratory confirmation, if it was performed at the time of acute disease); 4) history of herpes zoster based on diagnosis or verification of herpes zoster by a health-care provider; or 5) laboratory evidence of immunity or laboratory confirmation of disease.

Pregnant women should be assessed for evidence of varicella immunity. Women who do not have evidence of immunity should receive the first dose of varicella vaccine upon completion or termination of pregnancy and before discharge from the health-care facility. The second dose should be administered 4–8 weeks after the first dose.

4. Human papillomavirus (HPV) vaccination

HPV vaccination with either quadrivalent (HPV4) vaccine or bivalent vaccine (HPV2) is recommended for females at age 11 or 12 years and catch-up vaccination for females aged 13 through 26 years.

Ideally, vaccine should be administered before potential exposure to HPV through sexual activity; however, females who are sexually active should still be vaccinated consistent with age-based recommendations. Sexually active females who have not been infected with any of the four HPV vaccine types (types 6, 11, 16, and 18, all of which HPV4 prevents) or any of the two HPV vaccine types (types 16 and 18, both of which HPV2 prevents) receive the full benefit of the vaccination. Vaccination is less beneficial for females who have already been infected with one or more of the HPV vaccine types. HPV4 or HPV2 can be administered to persons with a history of genital warts, abnormal Papanicolaou test, or positive HPV DNA test, because these conditions are not evidence of previous infection with all vaccine HPV types.

HPV4 may be administered to males aged 9 through 26 years to reduce their likelihood of genital warts. HPV4 would be most effective when administered before exposure to HPV through sexual contact.

A complete series for either HPV4 or HPV2 consists of 3 doses. The second dose should be administered 1–2 months after the first dose; the third dose should be administered 6 months after the first dose.

Although HPV vaccination is not specifically recommended for persons with the medical indications described in Figure 2, "Vaccines that might be indicated for adults based on medical and other indications," it may be administered to these persons because the HPV vaccine is not a live-virus vaccine. However, the immune response and vaccine efficacy might be less for persons with the medical indications described in Figure 2 than in persons who do not have the medical indications described or who are immunocompetent.

5. Herpes zoster vaccination

A single dose of zoster vaccine is recommended for adults aged 60 years and older regardless of whether they report a previous episode of herpes zoster. Persons with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication.

6. Measles, mumps, rubella (MMR) vaccination

Adults born before 1957 generally are considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 1 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine, laboratory evidence of immunity to each of the three diseases, or documentation of provider-diagnosed measles or mumps disease. For rubella, documentation of provider-diagnosed disease is not considered acceptable evidence of immunity.

Measles component: A second dose of MMR vaccine, administered a minimum of 28 days after the first dose, is recommended for adults who 1) have been recently exposed to measles or are in an outbreak setting; 2) are students in postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally. Persons who received inactivated (killed) measles vaccine or measles vaccine of unknown type during 1963–1967 should be revaccinated with 2 doses of MMR vaccine.

Mumps component: A second dose of MMR vaccine, administered a minimum of 28 days after the first dose, is recommended for adults who 1) live in a community experiencing a mumps outbreak and are in an affected age group; 2) are students in postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally. Persons vaccinated before 1979 with either killed mumps vaccine or mumps vaccine of unknown type who are at high risk for mumps infection (e.g. persons who are working in a health-care facility) should be revaccinated with 2 doses of MMR vaccine.

Rubella component: For women of childbearing age, regardless of birth year, rubella immunity should be determined. If there is no evidence of immunity, women who are not pregnant should be vaccinated. Pregnant women who do not have evidence of immunity should receive MMR vaccine upon completion or termination of pregnancy and before discharge from the health-care facility.

Health-care personnel born before 1957: For unvaccinated health-care personnel born before 1957 who lack laboratory evidence of measles, mumps, and/or rubella immunity or laboratory confirmation of disease, health-care facilities should 1) consider routinely vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), and 2) recommend 2 doses of MMR vaccine at the appropriate interval during an outbreak of measles or mumps, and 1 dose during an outbreak of rubella. Complete information about evidence of immunity is available at <http://www.cdc.gov/vaccines/recs/provisional/default.htm>.

7. Pneumococcal polysaccharide (PPSV) vaccination

Vaccinate all persons with the following indications:

Medical: Chronic lung disease (including asthma); chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases; cirrhosis; chronic alcoholism; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy) [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]; immunocompromising conditions (including chronic renal failure or nephrotic syndrome); and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

Other: Residents of nursing homes or long-term care facilities and persons who smoke cigarettes. Routine use of PPSV is not recommended for American Indians/Alaska Natives or persons aged less than 65 years unless they have underlying medical conditions that are PPSV indications. However, public health authorities may consider recommending PPSV for American Indians/Alaska Natives and persons aged 50 through 64 years who are living in areas where the risk for invasive pneumococcal disease is increased.

8. Revaccination with PPSV

One-time revaccination after 5 years is recommended for persons aged 19 through 64 years with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); and for persons with immunocompromising conditions. For persons aged 65 years and older, one-time revaccination is recommended if they were vaccinated 5 or more years previously and were aged less than 65 years at the time of primary vaccination.

9. Meningococcal vaccination

Meningococcal vaccine should be administered to persons with the following indications:

Medical: A 2-dose series of meningococcal conjugate vaccine is recommended for adults with anatomic or functional asplenia, or persistent complement component deficiencies. Adults with HIV infection who are vaccinated should also receive a routine 2-dose series. The 2 doses should be administered at 0 and 2 months.

Other: A single dose of meningococcal vaccine is recommended for unvaccinated first-year college students living in dormitories; microbiologists routinely exposed to isolates of *Neisseria meningitidis*; military recruits; and persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of sub-Saharan Africa during the dry season [December through June]), particularly if their contact with local populations will be prolonged. Vaccination is required by the government of Saudi Arabia for all travelers to Mecca during the annual Hajj.

Meningococcal conjugate vaccine, quadrivalent (MCV4) is preferred for adults with any of the preceding indications who are aged 55 years and younger; meningococcal polysaccharide vaccine (MPSV4) is preferred for adults aged 56 years and older. Revaccination with MCV4 every 5 years is recommended for adults previously vaccinated with MCV4 or MPSV4 who remain at increased risk for infection (e.g., adults with anatomic or functional asplenia, or persistent complement component deficiencies).

10. Hepatitis A vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis A virus (HAV) infection:

Behavioral: Men who have sex with men and persons who use injection drugs.

Occupational: Persons working with HAV-infected primates or with HAV in a research laboratory setting.

Medical: Persons with chronic liver disease and persons who receive clotting factor concentrates.

Other: Persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A (a list of countries is available at <http://www.cdc.gov/travel/content/diseases.aspx>).

Unvaccinated persons who anticipate close personal contact (e.g., household or regular babysitting) with an international adoptee during the first 60 days after arrival in the United States from a country with high or intermediate endemicity should be vaccinated. The first dose of the 2-dose hepatitis A vaccine series should be administered as soon as adoption is planned, ideally 2 or more weeks before the arrival of the adoptee.

Single-antigen vaccine formulations should be administered in a 2-dose schedule at either 0 and 6–12 months (Havrix), or 0 and 6–18 months (Vaqta). If the combined hepatitis A and hepatitis B vaccine (Twinrix) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule may be used, administered on days 0, 7, and 21–30, followed by a booster dose at month 12.

11. Hepatitis B vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis B virus (HBV) infection:

Behavioral: Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than one sex partner during the previous 6 months); persons seeking evaluation or treatment for a sexually transmitted disease (STD); current or recent injection-drug users; and men who have sex with men.

Occupational: Health-care personnel and public-safety workers who are exposed to blood or other potentially infectious body fluids.

Medical: Persons with end-stage renal disease, including patients receiving hemodialysis; persons with HIV infection; and persons with chronic liver disease.

Other: Household contacts and sex partners of persons with chronic HBV infection; clients and staff members of institutions for persons with developmental disabilities; and international travelers to countries with high or intermediate prevalence of chronic HBV infection (a list of countries is available at <http://www.cdc.gov/travel/content/diseases.aspx>).

Hepatitis B vaccination is recommended for all adults in the following settings: STD treatment facilities; HIV testing and treatment facilities; facilities providing drug-abuse treatment and prevention services; health-care settings targeting services to injection-drug users or men who have sex with men; correctional facilities; end-stage renal disease programs and facilities for chronic hemodialysis patients; and institutions and nonresidential day-care facilities for persons with developmental disabilities.

Administer missing doses to complete a 3-dose series of hepatitis B vaccine to those persons not vaccinated or not completely vaccinated. The second dose should be administered 1 month after the first dose; the third dose should be given at least 2 months after the second dose (and at least 4 months after the first dose). If the combined hepatitis A and hepatitis B vaccine (Twinrix) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose Twinrix schedule, administered on days 0, 7, and 21 to 30, followed by a booster dose at month 12 may be used.

Adult patients receiving hemodialysis or with other immunocompromising conditions should receive 1 dose of 40 µg/mL (Recombivax HB) administered on a 3-dose schedule or 2 doses of 20 µg/mL (Engerix-B) administered simultaneously on a 4-dose schedule at 0, 1, 2, and 6 months.

12. Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used

1 dose of Hib vaccine should be considered for persons who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy, if they have not previously received Hib vaccine.

13. Immunocompromising conditions

Inactivated vaccines generally are acceptable (e.g., pneumococcal, meningococcal, influenza [inactivated influenza vaccine]) and live vaccines generally are avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>.

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly indicated for adults ages 19 years and older, as of January 1, 2011. For all vaccines being recommended on the adult immunization schedule: a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (<http://www.cdc.gov/vaccines/pubs/acip-list.htm>).

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at <http://www.vaers.hhs.gov> or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at <http://www.hrsa.gov/vaccinecompensation> or by telephone, 800-338-2382. Information about filing a claim for vaccine injury is available through the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400.

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination also is available at <http://www.cdc.gov/vaccines> or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 24 hours a day, 7 days a week.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

Summary of Recommendations for Adult Immunization (Age 19 years & older)

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
<p>Influenza Trivalent inactivated influenza vaccine (TIV) <i>Give IM</i></p> <p>Live attenuated influenza vaccine (LAIV) <i>Give intranasally</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> Beginning with the 2010–11 influenza season, vaccination is recommended for all adults. (This includes healthy adults ages 19–49yrs without risk factors.) LAIV is only approved for healthy nonpregnant people age 2–49yrs. Adults ages 65yrs and older may be given standard-dose TIV or, alternatively, a high-dose TIV. <p>Note: LAIV may not be given to some adults; see contraindications and precautions listed in far right column.</p>	<ul style="list-style-type: none"> Give 1 dose every year in the fall or winter. Begin vaccination services as soon as vaccine is available and continue until the supply is depleted. Continue to give vaccine to unvaccinated adults throughout the influenza season (including when influenza activity is present in the community) and at other times when the risk of influenza exists. If 2 or more of the following live virus vaccines are to be given—LAIV, MMR, Var, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d. 	<p>Contraindications</p> <ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine, to any of its components, or to eggs. For LAIV only: pregnancy; chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic, or metabolic (including diabetes) disorders; immunosuppression (including that caused by medications or HIV). <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness. History of Guillain-Barré syndrome (GBS) within 6wks following previous influenza vaccination. For LAIV only: receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48hrs before vaccination. Avoid use of these antiviral drugs for 14d after vaccination.
<p>Pneumococcal polysaccharide (PPSV) <i>Give IM or SC</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> People age 65yrs and older. People younger than age 65yrs who have chronic illness or other risk factors, including chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, CSF leaks, cigarette smoking, as well as candidates for or recipients of cochlear implants and people living in special environments or social settings (including American Indian/Alaska Natives age 50 through 64yrs if recommended by local public health authorities). Those at highest risk of fatal pneumococcal infection, including people who <ul style="list-style-type: none"> Have anatomic or functional asplenia, including sickle cell disease. Have an immunocompromising condition, including HIV infection, leukemia, lymphoma, Hodgkin’s disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome. Are receiving immunosuppressive chemotherapy (including corticosteroids). Have received an organ or bone marrow transplant. 	<ul style="list-style-type: none"> Give 1 dose if unvaccinated or if previous vaccination history is unknown. Give a 1-time revaccination to people <ul style="list-style-type: none"> Age 65yrs and older if 1st dose was given prior to age 65yrs and 5yrs have elapsed since dose #1. Age 19 through 64yrs who are at highest risk of fatal pneumococcal infection or rapid antibody loss (see the 3rd bullet in the box to left for listings of people at highest risk) and 5yrs have elapsed since dose #1. 	<p>Contraindication</p> <p>Previous anaphylactic reaction to this vaccine or to any of its components.</p> <p>Precaution</p> <p>Moderate or severe acute illness.</p>

*This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, call the CDC-INFO Contact Center at (800) 232-4636; visit CDC’s website at www.cdc.gov/vaccines/pubs/ACIP-list.htm; or visit the Immunization Action Coal-

ition (IAC) website at www.immunize.org/acip. This table is revised periodically. Visit IAC’s website at www.immunize.org/adultrules to make sure you have the most current version.

Summary of Recommendations for Adult Immunization (Age 19 years & older)

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
<p>MMR (Measles, mumps, rubella) <i>Give SC</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • People born in 1957 or later (especially those born outside the U.S.) should receive at least 1 dose of MMR if there is no laboratory evidence of immunity or documentation of a dose given on or after the first birthday. • People in high-risk groups, such as healthcare personnel (paid, unpaid, or volunteer), students entering college and other post–high school educational institutions, and international travelers, should receive a total of 2 doses. • People born before 1957 are usually considered immune, but evidence of immunity (serology or documented history of 2 doses of MMR) should be considered for healthcare personnel. • Women of childbearing age who do not have acceptable evidence of rubella immunity or vaccination. 	<ul style="list-style-type: none"> • Give 1 or 2 doses (see criteria in 1st and 2nd bullets in box to left). • If dose #2 is recommended, give it no sooner than 4wks after dose #1. • If a pregnant woman is found to be rubella susceptible, give 1 dose of MMR postpartum. • If 2 or more of the following live virus vaccines are to be given—LAIV, MMR, Var, Zos, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d. • Within 72hrs of measles exposure, give 1 dose as postexposure prophylaxis to susceptible adults. <p>Note: Routine post-vaccination serologic testing is not recommended.</p>	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylactic reaction to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy; or severely symptomatic HIV). Note: HIV infection is NOT a contraindication to MMR for those who are not severely immunocompromised (i.e., CD4+ T-lymphocyte counts are greater than or equal to 200 cells/μL). <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin were given in past 11m, see ACIP statement <i>General Recommendations on Immunization*</i> regarding time to wait before vaccinating. • History of thrombocytopenia or thrombocytopenic purpura. <p>Note: If TST (tuberculosis skin test) and MMR are both needed but not given on same day, delay TST for 4–6wks after MMR.</p>
<p>Varicella (chickenpox) (Var) <i>Give SC</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • All adults without evidence of immunity. <p>Note: Evidence of immunity is defined as written documentation of 2 doses of varicella vaccine; a history of varicella disease or herpes zoster (shingles) based on healthcare-provider diagnosis; laboratory evidence of immunity; and/or birth in the U.S. before 1980, with the exceptions that follow.</p> <ul style="list-style-type: none"> - Healthcare personnel (HCP) born in the U.S. before 1980 who do not meet any of the criteria above should be tested or given the 2-dose vaccine series. If testing indicates they are not immune, give the 1st dose of varicella vaccine immediately. Give the 2nd dose 4–8 wks later. - Pregnant women born in the U.S. before 1980 who do not meet any of the criteria above should either 1) be tested for susceptibility during pregnancy and if found susceptible, given the 1st dose of varicella vaccine postpartum before hospital discharge, or 2) not be tested for susceptibility and given the 1st dose of varicella vaccine postpartum before hospital discharge. Give the 2nd dose 4-8wks later. 	<ul style="list-style-type: none"> • Give 2 doses. • Dose #2 is given 4–8wks after dose #1. • If dose #2 is delayed, do not repeat dose #1. Just give dose #2. • If 2 or more of the following live virus vaccines are to be given—LAIV, MMR, Var, Zos, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d. • May use as postexposure prophylaxis if given within 5d. <p>Note: Routine post-vaccination serologic testing is not recommended.</p>	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylactic reaction to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Persons on high-dose immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired cellular immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte counts are greater than or equal to 200 cells/μL. See <i>MMWR</i> 2007;56,RR-4). <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP statement <i>General Recommendations on Immunization*</i> regarding time to wait before vaccinating. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination.
<p>Zoster (shingles) (Zos) <i>Give SC</i></p>	<ul style="list-style-type: none"> • People age 60yrs and older. 	<ul style="list-style-type: none"> • Give 1-time dose if unvaccinated, regardless of previous history of herpes zoster (shingles) or chickenpox. • If 2 or more of the following live virus vaccines are to be given—MMR, Zos, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d. 	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous anaphylactic reaction to any component of zoster vaccine. • Primary cellular or acquired immunodeficiency. • Pregnancy. <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination.

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
<p>Td, Tdap (Tetanus, diphtheria, pertussis) <i>Give IM</i></p> <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: fit-content; margin-top: 10px;"> <p><i>Using tetanus toxoid (TT) instead of Tdap or Td is not recommended.</i></p> </div>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> All people who lack written documentation of a primary series consisting of at least 3 doses of tetanus- and diphtheria-toxoid-containing vaccine. A booster dose of Td or Tdap may be needed for wound management, so consult ACIP recommendations.* In pregnancy, when indicated, give Td or Tdap in 2nd or 3rd trimester. If not administered during pregnancy, give Tdap in immediate postpartum period. <p>For Tdap only:</p> <ul style="list-style-type: none"> Adults younger than age 65yrs who have not already received Tdap. Adults of any age, including adults age 65yrs and older, in contact with infants younger than age 12m (e.g., parents, grandparents, childcare providers) who have not received a dose of Tdap should be prioritized for vaccination. Healthcare personnel of all ages. Adults age 65yrs and older without a risk indicator (e.g., not in contact with an infant) may also be vaccinated with Tdap. 	<ul style="list-style-type: none"> For people who are unvaccinated or behind, complete the primary Td series (spaced at 0, 1–2m, 6–12m intervals); substitute a one-time dose of Tdap for one of the doses in the series, preferably the first. Give Td booster every 10yrs after the primary series has been completed. Tdap can be given regardless of interval since previous Td. 	<p>Contraindications</p> <ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine or to any of its components. For Tdap only, history of encephalopathy, not attributable to an identifiable cause, within 7d following DTP/DTaP. <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness. Guillain-Barré syndrome within 6wks following previous dose of tetanus-toxoid-containing vaccine. Progressive or unstable neurologic disorder, uncontrolled seizures, or progressive neuropathy. History of arthus reaction following a prior dose of tetanus-toxoid-containing vaccine. <p>Note: Tdap may be given to pregnant women at the provider’s discretion.</p>
<p>Hepatitis A (HepA) <i>Give IM</i></p> <p>Brands may be used interchangeably.</p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> All people who want to be protected from hepatitis A virus (HAV) infection. People who travel or work anywhere EXCEPT the U.S., Western Europe, New Zealand, Australia, Canada, and Japan. People with chronic liver disease; injecting and non-injecting drug users; men who have sex with men; people who receive clotting-factor concentrates; people who work with HAV in experimental lab settings; food handlers when health authorities or private employers determine vaccination to be appropriate. People who anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee’s arrival in the U.S. Adults age 40yrs or younger with recent (within 2 wks) exposure to HAV. For people older than age 40yrs with recent (within 2 wks) exposure to HAV, immune globulin is preferred over HepA vaccine. 	<ul style="list-style-type: none"> Give 2 doses. The minimum interval between doses #1 and #2 is 6m. If dose #2 is delayed, do not repeat dose #1. Just give dose #2. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>For Twinrix (hepatitis A and B combination vaccine [GSK]) for patients age 18yrs and older only: give 3 doses on a 0, 1, 6m schedule. There must be at least 4wks between doses #1 and #2, and at least 5m between doses #2 and #3.</p> <p>An alternative schedule can also be used at 0, 7d, 21–30d, and a booster at 12m.</p> </div>	<p>Contraindication</p> <p>Previous anaphylactic reaction to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness. Safety during pregnancy has not been determined, so benefits must be weighed against potential risk.
<p>Hepatitis B (HepB) <i>Give IM</i></p> <p>Brands may be used interchangeably.</p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> All adults who want to be protected from hepatitis B virus infection. Household contacts and sex partners of HBsAg-positive people; injecting drug users; sexually active people not in a long-term, mutually monogamous relationship; men who have sex with men; people with HIV; persons seeking STD evaluation or treatment; hemodialysis patients and those with renal disease that may result in dialysis; healthcare personnel and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities; certain international travelers; and people with chronic liver disease. <p>Note: Provide serologic screening for immigrants from endemic areas. If patient is chronically infected, assure appropriate disease management. For sex partners and household contacts of HBsAg-positive people, provide serologic screening and administer initial dose of HepB vaccine at same visit.</p>	<p>Give 3 doses on a 0, 1, 6m schedule.</p> <ul style="list-style-type: none"> Alternative timing options for vaccination include 0, 2, 4m; 0, 1, 4m; and 0, 1, 2, 12m (Engerix brand only). There must be at least 4wks between doses #1 and #2, and at least 8wks between doses #2 and #3. Overall, there must be at least 16wks between doses #1 and #3. Schedule for those who have fallen behind: If the series is delayed between doses, DO NOT start the series over. Continue from where you left off. 	<p>Contraindication</p> <p>Previous anaphylactic reaction to this vaccine or to any of its components.</p> <p>Precaution</p> <p>Moderate or severe acute illness.</p>

Summary of Recommendations for Adult Immunization (Age 19 years & older)

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
<p>Human papillomavirus (HPV) (HPV2, Cervarix) (HPV4, Gardasil) <i>Give IM</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • All previously unvaccinated women through age 26yrs. • Consider giving HPV4 to men through age 26yrs to reduce their likelihood of acquiring genital warts. 	<ul style="list-style-type: none"> • Give 3 doses on a 0, 2, 6m schedule. • There must be at least 4wks between doses #1 and #2 and at least 12wks between doses #2 and #3. Overall, there must be at least 24wks between doses #1 and #3. If possible, use the same vaccine product for all three doses. 	<p>Contraindication Previous anaphylactic reaction to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • Data on vaccination in pregnancy are limited. Vaccination should be delayed until after completion of the pregnancy.
<p>Meningococcal conjugate vaccine, quadrivalent (MCV4) Menactra, Menveo <i>Give IM</i></p> <hr/> <p>Meningococcal polysaccharide vaccine (MPSV4) Menomune <i>Give SC</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • People with anatomic or functional asplenia or persistent complement component deficiency. • People who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the “meningitis belt” of Sub-Saharan Africa). • Microbiologists routinely exposed to isolates of <i>N. meningitidis</i>. • Incoming and current college students ages 19 through 21 may require vaccination; see 5th bullet in the box to the right for details. 	<ul style="list-style-type: none"> • Give 2 initial doses of MCV4 separated by 2m to adults 55yrs and younger with risk factors listed in 1st bullet in column to left or if vaccinating adults in this age group with HIV infection. Give 1 dose of MPSV4 to adults 56yrs and older with risk factors. • Give 1 initial dose to all other adults with risk factors (see 2nd–4th bullets in column to left). • Give booster doses every 5yrs to adults with continuing risk (see the 1st–3rd bullets in column to left for listings of people with possible continuing risks). • MCV4 is preferred over MPSV4 for people age 55yrs and younger; use MPSV4 ONLY if age 56yrs or older or if there is a permanent contraindication/precaution to MCV4. • Give 1 initial dose to <i>unvaccinated incoming</i> college students ages 19–21yrs; give booster dose to <i>incoming</i> students who received the most recent dose when younger than 16yrs. <i>Consider</i> same vaccination strategy for existing college students ages 19–21yrs. 	<p>Contraindication Previous anaphylactic reaction to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness.
<p>Polio (IPV) <i>Give IM or SC</i></p>	<p>For people through age 18 years, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • Not routinely recommended for U.S. residents age 18yrs and older. <p>Note: Adults living in the U.S. who never received or completed a primary series of polio vaccine need not be vaccinated unless they intend to travel to areas where exposure to wild-type virus is likely. Previously vaccinated adults can receive 1 booster dose if traveling to polio endemic areas or to areas where the risk of exposure is high.</p>	<ul style="list-style-type: none"> • Refer to ACIP recommendations* regarding unique situations, schedules, and dosing information. 	<p>Contraindication Previous anaphylactic reaction to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness. • Pregnancy.