

Recommended Immunization Schedule for Children and Adolescents Ages 0 through 18 Years, United States, 2009

Also included: Guide to Contraindications and Precautions
to Commonly Used Vaccines in Children and Teens

The Immunization Action Coalition created this laminated schedule based on the **Recommended Immunization Schedules for Persons Aged 0 Through 18 Years—United States, 2009**, published in the *Morbidity and Mortality Weekly Report* on January 2, 2009 (*MMWR* 2008;57[51&52]). This document contains indications for persons ages 0 through 6 years (see Figure 1) and for persons ages 7 through 18 years (see Figure 2), as well as a catch-up schedule for persons who start immunizations late or who are more than 1 month behind on immunizations (see Table 1).

In addition, IAC has included a list of contraindications and precautions that should be considered before vaccines are administered. The list is shown in Table 2, "Guide to Contraindications and Precautions to Commonly Used Vaccines in Children and Teens," which is adapted from "General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices" *MMWR* 2006;55(No. RR-15):10–14.

Please note that both this document and the **Recommended Immunization Schedules for Persons Aged 0 Through 18 Years—United States, 2009**, reflect vaccination recommendations issued by the Centers for Disease Control and Prevention (CDC) as of December 17, 2008. Vaccination recommendations issued by CDC after December 17, 2008, are official, even though they are not reflected in this document.

To be sure you have the most current versions of vaccination recommendations, contraindications, and precautions, visit the following web pages:

Final CDC recommendations

www.cdc.gov/vaccines/pubs/acip-list.htm (alphabetical order)

www.immunize.org/acip (chronological order)

Provisional ACIP recommendations to CDC

www.cdc.gov/vaccines/recs/provisional/default.htm

www.immunize.org/acip

For other versions of CDC's recommended immunization schedules,
go to www.cdc.gov/vaccines/recs/schedules.

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at www.immunize.org/shop, call (651) 647-9009, or email admininfo@immunize.org.

Figure 1. Recommended Immunization Schedule for Persons Ages 0 through 6 Years, U.S., 2009

For those who fall behind or start late, see the catch-up schedule (Table 1).

Vaccine ▼	Age ►	Birth	1 mo	2 mo	4 mo	6 mo	12 mo	15 mo	18 mo	19–23 mo	2–3 yrs	4–6 yrs
Hepatitis B ¹	HepB	HepB	HepB	See footnote 1	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			IPV	IPV	IPV							IPV
Influenza ⁶					Influenza (Yearly)							
Measles, Mumps, Rubella ⁷						MMR			See footnote 7			MMR
Varicella ⁸						Varicella			See footnote 8			Varicella
Hepatitis A ⁹						HepA (2 doses)					HepA Series	
Meningococcal ¹⁰												MCV

Range of recommended ages

Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 17, 2008, for children ages 0 through 6 years. Any dose not given at the recommended age should be given at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the relevant Advisory Committee on

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

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

At birth:

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

After the birth dose:

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

4-month dose:

- Administration of 4 doses of HepB to infants is permissible when combination vaccines containing HepB are given after the birth dose.

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

- Give the first dose at age 6 through 14 weeks (maximum age: 14 weeks 6 days). Vaccination should not be initiated for infants ages 15 weeks 0 days or older.
- Give the final dose in the series by age 8 months 0 days.
- If Rotarix[®] is given 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 given as early as age 12 months, provided at least 6 months have elapsed since the third dose.
- Give the final dose in the series at age 4 through 6 years.

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

- If PRP-OMP (PedvaxHIB[®] or ComVax[®] [HepB-Hib]) is given at ages 2 and 4 months, a dose at age 6 months is not indicated.
- TriHIBit[®] (DTaP/Hib) should not be used for doses at ages 2, 4, or 6 months but can be used as the final dose in children age 12 months or older.

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 age younger than 5 years. Give 1 dose of PCV to all healthy

children ages 24 through 59 months who are not completely vaccinated for their age.

- Give PPSV to children age 2 years or older with certain underlying medical conditions (see *MMWR* 2000;49[No. RR-9]), including a cochlear implant.

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

- Give annually to children ages 6 months through 18 years.
- For healthy nonpregnant persons (i.e., those who do not have underlying medical conditions that predispose them to influenza complications) ages 2 through 49 years, either LAIV or TIV may be used.
- Children receiving TIV should receive 0.25 mL if age 6 through 35 months or 0.5 mL if age 3 years or older.
- Give 2 doses (separated by at least 4 weeks) to children age younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

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

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

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

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

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

- Give to all children age 1 year (i.e., ages 12 through 23 months). Give 2 doses at least 6 months apart.
- Children not fully vaccinated by age 2 years can be vaccinated at subsequent visits.
- HepA also is recommended for children older than age 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55[No. RR-7].

10. Meningococcal vaccine. (Minimum age: 2 years for meningococcal conjugate vaccine [MCV] and for meningococcal polysaccharide vaccine [MPSV])

- Give MCV to children ages 2 through 10 years with terminal complement component deficiency, anatomic or functional asplenia, and certain other high-risk groups. See *MMWR* 2005;54 [No. RR-7].
- Persons who received MPSV 3 or more years previously and who remain at increased risk for meningococcal disease should be revaccinated with MCV.

Figure 2. Recommended Immunization Schedule for Persons Ages 7 through 18 Years, U.S., 2009

For those who fall behind or start late, see the schedule below and the catch-up schedule (Table 1).

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

Range of recommended ages

Catch-up immunization

Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 17, 2008, for children ages 7 through 18 years. Any dose not given at the recommended age should be given at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the relevant Advisory

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

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

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

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

- Give the first dose to females at age 11 or 12 years.
- Give the second dose 2 months after the first dose and the third dose 6 months after the first dose (at least 24 weeks after the first dose).
- Give the series to females at age 13 through 18 years if not previously vaccinated.

3. Meningococcal conjugate vaccine (MCV).

- Give at age 11 or 12 years, or at age 13 through 18 years if not previously vaccinated.
- Give to previously unvaccinated college freshmen living in a dormitory.
- MCV is recommended for children ages 2 through 10 years with terminal complement component deficiency, anatomic or functional asplenia, and certain other groups at high risk. See *MMWR* 2005;54(No. RR-7).
- Persons who received MPSV 5 or more years previously and remain at increased risk for meningococcal disease should be revaccinated with MCV.

4. Influenza vaccine.

- Give annually to children ages 6 months through 18 years.
- For healthy nonpregnant persons (i.e., those who do not have underlying medical conditions that predispose them to influenza complications) ages 2 through 49 years, either LAIV or TIV may be used.
- Give 2 doses (separated by at least 4 weeks) to children age younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

5. Pneumococcal polysaccharide vaccine (PPSV).

- Give to children with certain underlying medical conditions (see *MMWR* 1997;46[No. RR-8], including a cochlear implant. A single revaccination should be given to children with functional or anatomic asplenia or other immunocompromising condition after 5 years.

6. Hepatitis A vaccine (HepA).

- Give 2 doses at least 6 months apart.
- HepA is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55(No. RR-7).

7. Hepatitis B vaccine (HepB).

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

8. Inactivated poliovirus vaccine (IPV).

- For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was given at age 4 years or older.
- If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of the child's current age.

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

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

10. Varicella vaccine.

- For persons ages 7 through 18 years without evidence of immunity (see *MMWR* 2007;56[No. RR-4]), give 2 doses if not previously vaccinated or the second dose if they have received only 1 dose.
- For persons ages 7 through 12 years, the minimum interval between doses is 3 months. However, if the second dose was given at least 28 days after the first dose, it can be accepted as valid.
- For persons age 13 years and older, the minimum interval between doses is 28 days.

Table 2. (continued) Guide to Contraindications and Precautions to Commonly Used Vaccines in Children and Teens

Vaccine	Contraindications	Precautions ¹
Pneumococcal (PCV or PPSV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Measles, mumps, rubella (MMR)⁶	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component Pregnancy Known severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy⁴; or patients with HIV infection who are severely immunocompromised) 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)⁷ History of thrombocytopenia or thrombocytopenic purpura
Varicella (Var)⁶	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component Substantial suppression of cellular immunity Pregnancy 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)⁷
Hepatitis A (HepA)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Pregnancy
Human papilloma-virus (HPV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Pregnancy
Meningococcal, conjugate (MCV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of GBS (if not at high risk for meningococcal disease)
Meningococcal, polysaccharide (MPSV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever

Footnotes

- Events or conditions listed as precautions should be reviewed carefully. Benefits of and risks for administering a specific vaccine to a person under these circumstances should be considered. If the risk from the vaccine is believed to outweigh the benefit, the vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. Whether and when to administer DTaP to children with proven or suspected underlying neurologic disorders should be decided on a case-by-case basis.
- Hepatitis B vaccination should be deferred for preterm infants and infants weighing less than 2000 g if the mother is documented to be hepatitis B surface antigen (HBsAg)-negative at the time of the infant's birth. Vaccination can commence at chronological age 1 month. For infants born to HBsAg-positive women, hepatitis B immunoglobulin and hepatitis B vaccine should be administered at or soon after birth, regardless of weight.
- Acetaminophen or other appropriate antipyretic can be administered to infants and children with a history of previous seizures at the time of DTaP vaccination and every 4 hours for 24 hours thereafter to reduce the possibility of postvaccination fever (Source: American Academy of Pediatrics. *Red Book: Report of the Committee on Infectious Diseases, 2006*: page 512).
- Substantially immunosuppressive steroid dose is considered to be 2 weeks or more of daily receipt of 20 mg or more (or 2 mg/kg body weight or more) of prednisone or equivalent.
- For details, see CDC. "Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP)" at www.cdc.gov/vaccines/pubs/acip-list.htm.
- MMR and varicella vaccines can be administered on the same day. If not administered on the same day, these vaccines should be separated by at least 28 days.
- For details, see CDC. "General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)" at www.cdc.gov/vaccines/pubs/acip-list.htm.

The Recommended Immunization Schedules for Persons Aged 0 Through 18 Years — U.S., 2009 was approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians. The Immunization Action Coalition's Guide to Contraindications and Precautions to Commonly Used Vaccines in Children and Teens was technically reviewed by CDC.

The Immunization Action Coalition modified the format of these materials for publication of this laminated version of the childhood and adolescent immunization schedule.

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Table 1. Catch-up Immunization Schedule for Persons Ages 4 Months through 18 Years Who Start Late or Who Are More Than 1 Month Behind, United States, 2009

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.

Catch-up schedule for persons ages 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 wks 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 given before age 12 mos 8 weeks (as final dose) if first dose given at age 12–14 mos No further doses needed if first dose given at age 15 mos or older	4 weeks ⁴ if current age is younger than 12 mos 8 weeks (as final dose) ⁴ if current age is 12 mos or older and second dose given before age 15 mos No further doses needed if previous dose given at age 15 mos or older	8 weeks (as final dose) This dose only necessary for children ages 12 mos through 59 mos who received 3 doses before age 12 mos	
Pneumococcal ⁵	6 wks	4 weeks if first dose given before age 12 mos 8 weeks (as final dose for healthy children) if first dose given at age 12 mos or older or current age is 24 through 59 mos No further doses needed for healthy children if first dose given at age 24 mos or older	4 weeks if current age is younger than 12 mos 8 weeks (as final dose for healthy children) if current age is 12 mos or older No further doses needed for healthy children if previous dose given at age 24 mos or older	8 weeks (as final dose) This dose only necessary for children ages 12 mos through 59 mos who received 3 doses before age 12 mos or for high-risk children who received 3 doses at any age	
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	4 weeks ⁶	
Measles, Mumps, Rubella ⁷	12 mos	4 weeks			
Varicella ⁸	12 mos	3 months			
Hepatitis A ⁹	12 mos	6 months			
Catch-up schedule for persons ages 7 through 18 years					
Tetanus, Diphtheria/ Tetanus, Diphtheria, Pertussis ¹⁰	7 yrs ¹⁰	4 weeks	4 weeks if first dose is given before age 12 mos 6 months if first dose given at age 12 mos or older	6 months if first dose is given before age 12 mos	
Human Papillomavirus ¹¹	9 yrs	Routine dosing intervals are recommended ¹¹			
Hepatitis A ⁹	12 mos	6 months			
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 wks after first dose)		
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	4 weeks ⁶	
Measles, Mumps, Rubella ⁷	12 mos	4 weeks			
Varicella ⁸	12 mos	3 months if the person is younger than age 13 yrs 4 weeks if the person is age 13 years or older			

1. Hepatitis B vaccine (HepB).

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

2. Rotavirus vaccine (RV).

- The maximum age for the first dose is 14 weeks 6 days. Vaccination should not be initiated for infants age 15 weeks or older (i.e., 15 weeks 0 days or older).
- Give the final dose in the series by age 8 months 0 days.
- If Rotarix[®] was given for the first and second doses, a third dose is not indicated.

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

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

4. *Haemophilus influenzae* type b conjugate vaccine (Hib).

- Hib vaccine is not generally recommended for persons age 5 years or older. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in persons who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy; giving 1 dose of Hib vaccine to these persons is not contraindicated.
- If the first 2 doses were PRP-OMP (PedvaxHIB[®] or ComVax[®]), and given at age 11 months or younger, the third (and final) dose should be given at age 12 through 15 months and at least 8 weeks after the second dose.
- If the first dose was given at age 7 through 11 months, give 2 doses separated by 4 weeks and a final dose at age 12 through 15 months.

5. Pneumococcal vaccine.

- Give 1 dose of pneumococcal conjugate vaccine (PCV) to all healthy children ages 24 through 59 months who have not received at least 1 dose of PCV on or after age 12 months.
- For children ages 24 through 59 months with underlying medical conditions, give 1 dose of PCV if 3 doses were received previously or give 2 doses of PCV at least 8 weeks apart if fewer than 3 doses were received previously.
- Give pneumococcal polysaccharide vaccine (PPSV) to children ages 2 years or older with certain underlying medical conditions (see *MMWR* 2000;49[No. RR-9]), including a cochlear implant, at least 8 weeks after the last dose of PCV.

6. Inactivated poliovirus vaccine (IPV).

- For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was given at age 4 years or older.
- If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of the child's current age.

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

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

8. Varicella vaccine.

- Give the second dose at age 4 through 6 years. However, the second dose may be given before age 4, provided at least 3 months have elapsed since the first dose.
- For persons ages 12 months through 12 years, the minimum interval between doses is 3 months. However, if the second dose was given at least 28 days after the first dose, it can be accepted as valid.
- For persons ages 13 years and older, the minimum interval between doses is 28 days.

9. Hepatitis A vaccine (HepA).

- HepA is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55(No. RR-7).

10. 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 or as a booster for children ages 10 through 18 years; use Td for other doses.

11. Human papillomavirus vaccine (HPV).

- Give the series to females at age 13 through 18 years if not previously vaccinated.
- Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses should be given at 2 and 6 months after the first dose). However, 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 given at least 24 weeks after the first dose.

Table 2. Guide to Contraindications and Precautions to Commonly Used Vaccines in Children and Teens

Vaccine	Contraindications	Precautions ¹
Hepatitis B (HepB)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Infant weighing less than 2000 grams²
Rotavirus (RV5 [RotaTeq], RV1 [Rotarix])	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Immunosuppression Preexisting gastrointestinal disease Previous history of intussusception
Diphtheria, tetanus, pertussis (DTaP)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP/DTaP Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy: defer DTaP until neurologic status clarified and stabilized 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Temperature of 105° F or higher (40.5° C or higher) for 48 hours after vaccination with a previous dose of DTP/DTaP Collapse or shock-like state (i.e., hypotonic hyporesponsive episode) within 48 hours after receiving a previous dose of DTP/DTaP Seizure within 3 days after receiving a previous dose of DTP/DTaP³ Persistent, inconsolable crying lasting 3 or more hours within 48 hours after receiving a previous dose of DTP/DTaP Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus toxoid-containing vaccine History of Arthus-type hypersensitivity reactions following a previous dose of tetanus toxoid-containing vaccine: defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine
Tetanus, diphtheria (DT, Td)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever GBS within 6 weeks after a previous dose of tetanus toxoid-containing vaccine History of Arthus-type hypersensitivity reactions following a previous dose of tetanus toxoid-containing vaccine: defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine
Tetanus, diphtheria, pertussis (Tdap)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP/DTaP/Tdap 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever GBS within 6 weeks after a previous dose of tetanus toxoid-containing vaccine Progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized History of Arthus-type hypersensitivity reactions following a previous dose of tetanus toxoid-containing vaccine: defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine
Haemophilus influenzae type b (Hib)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component Age younger than 6 weeks 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Inactivated poliovirus vaccine (IPV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Pregnancy Moderate or severe acute illness with or without fever
Influenza, injectable trivalent (TIV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of GBS within 6 weeks of previous influenza vaccine
Influenza, live attenuated (LAIV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component Pregnancy Known severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy⁴; or patients with HIV infection who are severely immunocompromised) Certain chronic medical conditions⁵ 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of GBS within 6 weeks of previous influenza vaccine

Adapted from "Table 5. Contraindications and Precautions to Commonly Used Vaccines" found in: CDC. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2006; 55(No. RR-15).