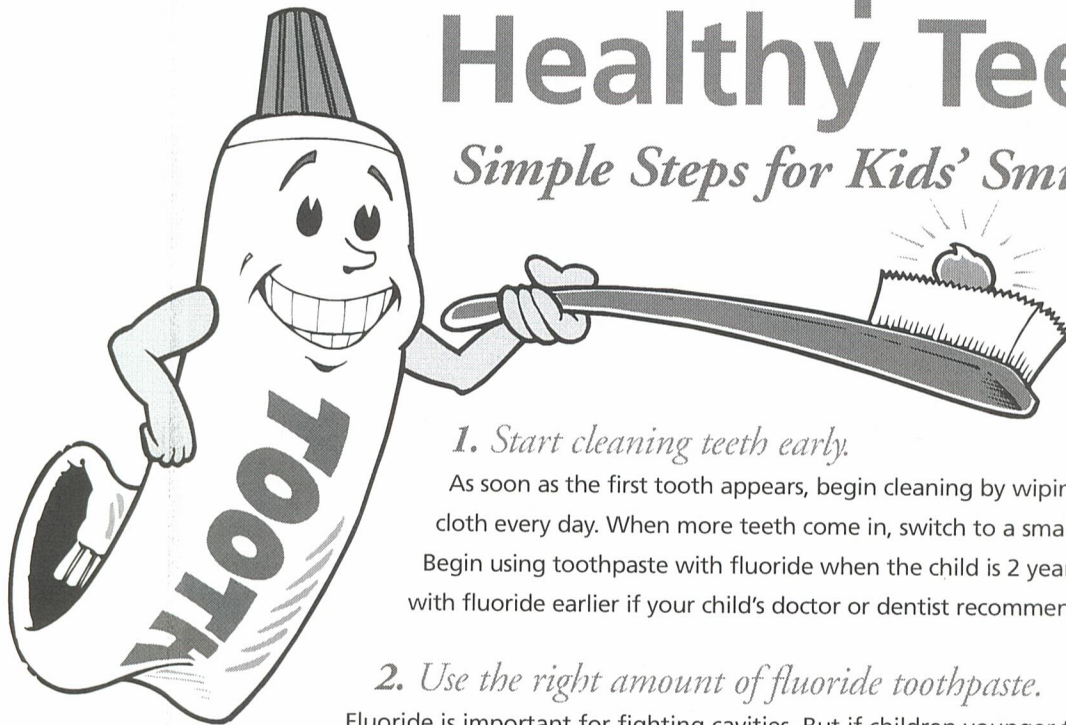


Brush Up on Healthy Teeth

Simple Steps for Kids' Smiles



1. Start cleaning teeth early.

As soon as the first tooth appears, begin cleaning by wiping with a clean, damp cloth every day. When more teeth come in, switch to a small, soft toothbrush. Begin using toothpaste with fluoride when the child is 2 years old. Use toothpaste with fluoride earlier if your child's doctor or dentist recommends it.

2. Use the right amount of fluoride toothpaste.

Fluoride is important for fighting cavities. But if children younger than 6 years old swallow too much fluoride, their permanent teeth may have white spots. To keep this from happening, use only a small amount of toothpaste (about the size of a pea). Teach your child to spit out the toothpaste and to rinse well after brushing.

3. Supervise brushing.

Brush your child's teeth twice a day until your child has the skill to handle the toothbrush alone. Then continue to closely watch brushing to make sure the child is doing a thorough job and using only a small amount of toothpaste.

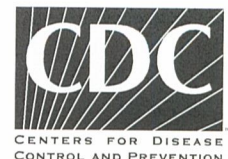
4. Talk to your child's doctor or dentist.

Check with the doctor or dentist about your child's specific fluoride needs. After age 2, most children get the right amount of fluoride to help prevent cavities if they drink water that contains fluoride and brush their teeth with a pea-sized amount of fluoride toothpaste twice a day.

Parents of children older than 6 months should ask about the need for a fluoride supplement if drinking water does not have enough fluoride.

Do not let a child younger than 6 years old use a fluoride mouth rinse unless the child's doctor or dentist recommends it.

Early care for your children's teeth will protect their smile and their health.



Vision Loss FACT SHEET

What is vision loss?

Vision loss means that a person's eyesight is not corrected to a "normal" level. Vision loss can vary greatly among children and can be caused by many things.

What causes loss of vision?

Vision loss can be caused by damage to the eye itself, by the eye being shaped incorrectly, or even by a problem in the brain. Babies can be born unable to see, and vision loss can occur anytime during a person's life.

When should my child be checked?

Your child should be checked for vision problems by an ophthalmologist, optometrist, pediatrician, or other trained specialist at:

- newborn to 3 months
- 6 months to 1 year
- about 3 years
- about 5 years

Having your child's vision checked is especially important if someone in your family has had vision problems.

What are some of the signs of vision loss?

A child with vision loss might:

- close or cover one eye
- squint the eyes or frown
- complain that things are blurry or hard to see
- have trouble reading or doing other close-up work, or hold objects close to eyes in order to see
- blink more than usual or seem cranky when doing close-up work (such as looking at books)

One eye of a child with vision loss could look out or cross. One or both eyes could be watery, and one or both of the child's eyelids could also look red-rimmed, crusted, or swollen.

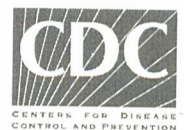
What can I do if I think my child may have vision loss?

Talk with your child's doctor or nurse. If you or your doctor think there could be a problem, you can take your child to see an ophthalmologist, optometrist, or other specialist, and you can contact your local early intervention agency (for children under 3) or public school (for children 3 and older). To find out whom to speak to in your area, contact the National Information Center for Children and Youth with Disabilities at www.nichcy.org/states.htm or call the Centers for Disease Control and Prevention (CDC) at **1-800-232-4636**. In addition, CDC has information about vision loss at www.cdc.gov/ncbddd.

Treating vision problems early may protect your child's sight, and teaching children with severe vision loss how to function as early as possible can help them reach their full potential.

www.cdc.gov/actearly

1-800-CDC-INFO



Learn the Signs. Act Early.

Hoja informativa sobre la pérdida de la visión

¿Qué es la pérdida de la visión?

Pérdida de la visión significa que la visión de una persona no puede corregirse a su nivel normal. La pérdida de la visión varía considerablemente de niño a niño y sus causas pueden ser muchas.

¿Qué causa la pérdida de la visión?

La pérdida de la visión puede resultar por daños al ojo mismo, porque el ojo tiene una forma incorrecta o incluso por problemas cerebrales. Algunos bebés nacen sin poder ver, pero la pérdida de la visión puede ocurrir en cualquier momento durante el transcurso de la vida de cualquier persona.

¿Cuándo se le debe hacer un examen de la visión a mi hijo?

La visión de su hijo debe de ser examinado por un oftalmólogo, optómetra, pediatra u otro especialista entrenado en este campo:

- recién nacido a 3 meses
- 6 meses a 1 año
- a los 3 años aproximadamente
- a los 5 años aproximadamente

En particular, es muy importante hacerle a su hijo un examen de la visión si alguien en su familia ya ha tenido problemas de la vista.

¿Cuáles son algunos síntomas de la pérdida de la visión?

Un niño con pérdida de la visión puede:

- cerrar o cubrirse un ojo
- entrecerrar los ojos o arrugar el ceño
- quejarse de que ve las cosas borrosas o que son difíciles de ver
- tener dificultad para leer o realizar actividades que requieren acercar las cosas o acercar los objetos para poderlos ver mejor
- parpadear demasiado o molestarse al realizar actividades que requieren acercar las cosas (como hojear los libros)

En niños con problemas de visión, un ojo puede mirar hacia afuera o bizquear. También los niños pueden lagrimear en uno o en ambos ojos o presentar enrojecimiento, costras o inflamación en uno o en ambos párpados.

¿Qué puedo hacer si creo que mi hijo tiene problemas de visión?

Por favor hable con el médico o enfermera de su hijo. Si usted o su doctor piensan que podría existir algún problema, pídale al doctor que remita a su hijo a un oftalmólogo, optómetra, u otro especialista entrenado en este campo; también puede llamar a su agencia local de intervención temprana (para niños menores de 3 años) o su escuela pública (para niños de 3 años o más). Para saber con quién hablar en su área, puede comunicarse con el Centro Nacional de Disseminación de Información para Niños con Discapacidades (National Information Center for Children and Youth with Disabilities – NICHCY) a través del siguiente sitio web: www.nichcy.org/spanish.htm o llamar al **1-800-695-0285**. Los Centros para el Control y la Prevención de Enfermedades (CDC por sus siglas en inglés) también tienen enlaces con información para las familias en el sitio electrónico www.cdc.gov/ncbddd/defaultspan.htm.

El atender los problemas de la visión en su inicio puede proteger la visión de su hijo; el enseñarles a los niños que sufren de pérdida grave de la visión cómo valerse por sí mismos tan pronto como sea posible, les ayudará a alcanzar su máximo potencial.

www.cdc.gov/pronto | 1-800-CDC-INFO



Aprenda los signos. Reaccione pronto.

Hearing Loss

FACT SHEET

What is hearing loss in children?

Hearing loss can vary greatly among children and can be caused by many things. In the United States, 1 to 3 children per 1,000 are born with hearing loss each year. Most children also experience mild, temporary hearing loss when fluid gets in the middle ear from allergies or colds. Sometimes as a result of an ear infection, fluid stays in the middle ears, which can sometimes cause hearing loss and delays in your child's speech. Some children have permanent hearing loss. This can be from mild (they don't hear as well as you do) to complete (where they can't hear anything at all).

What are some of the signs of hearing loss?

The signs and symptoms of hearing loss are different for different children. If you see any of these signs call your child's doctor or nurse:

- does not turn to the source of a sound from birth to 3 or 4 months of age
- does not say single words, such as "dada" or "mama" by 1 year of age
- turns head when he or she sees you but not if you only call out his or her name: this usually is mistaken for not paying attention or just ignoring, but could be the result of a partial or complete hearing loss
- hears some sounds but not others

What causes hearing loss? Can it be prevented?

Hearing loss can happen any time during life – from before birth to adulthood. Babies who are born early, who have low birth weight, or who are exposed to infections in the womb might have hearing loss, but this can happen to full-term, normal weight babies as well. Genetic factors are the cause of hearing loss in about 50% of babies – some of these babies might have family members who are deaf. Illnesses, injuries, certain medicines, and loud noise levels can cause children and adults to lose hearing.

Some causes of hearing loss can be prevented. For example, vaccines can prevent certain infections, such as measles or meningitis (an infection of the fluid around the brain and spinal cord), which can cause hearing loss. Another cause that can be prevented is a kind of brain damage called kernicterus, which is caused by bad jaundice. This can be prevented by using special lights (phototherapy) or other therapies to treat babies with jaundice before they go home from the hospital.

What can I do if I think my child might have hearing loss?

Talk with your child's doctor or nurse. If you, your doctor, or anyone else who knows your child well, think your child might have hearing loss, ask that a hearing test be given as soon as possible. To have your child's exact levels of hearing measured, see an audiologist or an ear, nose, and throat doctor (ENT, otolaryngologist) who works with infants and children. If your child is under age 2 or does not cooperate for the hearing exam, a test (called brain-stem evoked-response audiometry) could be given. This test allows the doctor to check your child's hearing without having to rely on your child's cooperation. Your child will not be hurt; most babies even sleep through the test. This test is done routinely with newborn babies in all states.

Hearing loss can affect a child's ability to develop speech, language, and social skills. The earlier a child who is deaf or hard-of-hearing starts getting services, the more likely the child's speech, language, and social skills will reach their full potential. Services can be received through your local early intervention agency or public school. To find out who to speak to in your area, contact the National Dissemination Center for Children with Disabilities by logging on to www.nichcy.org. In addition, the Centers for Disease Control and Prevention (CDC) has links to information for families (www.cdc.gov/ncbddd/ehdi).

www.cdc.gov/actearly



Learn the Signs. Act Early.

Hoja informativa sobre la pérdida de la audición

¿En qué consisten los problemas auditivos en los niños?

En los niños, los problemas auditivos pueden ser de diferentes tipos y tener muchas causas. En los Estados Unidos, nacen anualmente de 1 a 3 niños por cada 1,000 con problemas auditivos. La mayoría de los niños sufre una pérdida leve temporal de la audición cuando el oído medio se llena de líquido debido a alergias o resfriados. Algunas veces, debido a una infección del oído, el líquido se queda en el oído medio y en ocasiones puede causar pérdida de la audición y retrasos en el habla. Algunos niños pierden la audición de manera permanente. Esto puede variar de una sordera leve (el niño no oye tan bien como usted) a una sordera total (el niño no oye nada).

¿Cuáles son algunos de los signos de los problemas auditivos?

Los signos y síntomas de los problemas auditivos son diferentes en cada niño. Si usted observa cualquiera de los siguientes signos, llame al doctor o a la enfermera de su hijo:

- a los 3 ó 4 meses de edad, no se voltea para buscar el origen de un sonido
- al año, todavía no dice palabras sencillas como "papá" o "mamá"
- voltea la cabeza cuando puede ver a quien lo llama, pero no lo hace si usted solamente lo llama por su nombre; con frecuencia se piensa equivocadamente que se trata de falta de atención o simplemente que el niño ignora a quien lo está llamando, pero puede ser el resultado de una sordera parcial o total.
- oye unos sonidos, pero no otros

¿Cuál es la causa de los problemas auditivos? ¿Pueden prevenirse?

Los problemas auditivos pueden ocurrir en cualquier momento de la vida, desde antes del nacimiento hasta la edad adulta. Algunos bebés prematuros o con bajo peso al nacer o que hayan estado expuestos a infecciones intrauterinas podrían tener problemas auditivos, pero éstos también pueden presentarse en bebés nacidos a término y con peso normal. En el 50% de los bebés, los problemas auditivos se deben a factores genéticos; de hecho, es probable que algunos miembros de la familia sean sordos. Algunas enfermedades, lesiones, ciertas medicinas y niveles elevados de ruido pueden causar pérdida de la audición en niños y adultos.

Algunas causas se pueden prevenir, por ejemplo: las vacunas pueden prevenir ciertas infecciones, tales como el sarampión

y la meningitis (infección del líquido que rodea el cerebro y la médula espinal), que pueden producir pérdida auditiva. Otra causa que puede prevenirse es un tipo de daño cerebral denominado kernicterus (o ictericia nuclear), que es provocado por una fuerte ictericia. Esta afección puede prevenirse mediante la fototerapia (a base de luces especiales) u otras terapias usadas para tratar a los bebés con ictericia antes de que salgan del hospital.

¿Qué puedo hacer si creo que mi hijo tiene problemas auditivos?

Hable con el médico o la enfermera de su hijo. Si usted, su doctor o cualquier otra persona que conoce bien a su hijo piensa que el niño tiene problemas auditivos, pida que le hagan un examen de la audición tan pronto como sea posible. Para que a su hijo le midan con exactitud los niveles de audición, visite a un audiólogo o a un doctor especializado en oído, nariz y garganta, también llamado otorrinolaringólogo (o ENT, por sus siglas en inglés). Si su hijo tiene menos de 2 años de edad o no coopera durante el examen de la audición, se le puede hacer una prueba denominada respuesta auditiva evocada del tronco del encéfalo (o BAER, por sus siglas en inglés). Esta prueba permite que el doctor examine la capacidad de audición del niño sin tener que depender de la cooperación de éste. Este examen no lastimará a su bebé, es más, la mayoría de los bebés duermen mientras se les practica el examen. Ésta es una prueba de rutina que se realiza en todos los bebés, en todos los estados.

Los problemas auditivos pueden afectar la capacidad del niño para desarrollar el habla, la adquisición del lenguaje y las destrezas sociales. Mientras más pronto sean atendidos los niños sordos o con dificultad auditiva, más probabilidades habrá de que desarrollen su máximo potencial en el habla, el lenguaje y las destrezas sociales. Su hijo puede recibir los servicios pertinentes a través de la agencia local de intervención temprana o la escuela pública. Para averiguar con quién hablar en su área, puede comunicarse con el Centro Nacional de Diseminación de Información para Niños con Discapacidades (NICHCY por sus siglas en inglés) ya sea a través de la página web www.nichcy.org/states.htm. Además, los Centros para el Control y la Prevención de Enfermedades (CDC) también tienen enlaces con información para las familias en la página web www.cdc.gov/ncbddd/ehdi.

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Aprenda los signos. Reaccione pronto.

FIGURE 1: Recommended immunization schedule for persons aged 0 through 6 years—United States, 2012 (for those who fall behind or start late, see the catch-up schedule [Figure 3])

Vaccine ▼	Age ►	Birth	1 month	2 months	4 months	6 months	9 months	12 months	15 months	18 months	19–23 months	2–3 years	4–6 years	
Hepatitis B ¹	Hep B	HepB	HepB			HepB		HepB						Range of recommended ages for all children
Rotavirus ²				RV	RV	RV ²								
Diphtheria, tetanus, pertussis ³				DTaP	DTaP	DTaP	see footnote ⁹		DTaP				DTaP	
<i>Haemophilus influenzae</i> type b ⁴				Hib	Hib	Hib ⁴		Hib						Range of recommended ages for certain high-risk groups
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 ⁹			MMR	Range of recommended ages for all children and certain high-risk groups
Varicella ⁹								Varicella		see footnote ⁹			Varicella	
Hepatitis A ¹⁰								Dose 1 ¹⁰					HepA Series	
Meningococcal ¹¹								MCV4 — see footnote ¹¹						

This schedule includes recommendations in effect as of December 23, 2011. 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. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>. Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (<http://www.vaers.hhs.gov>) or by telephone (800-822-7967).

- Hepatitis B (HepB) vaccine.** (Minimum age: birth)

At birth:

 - Administer monovalent HepB vaccine to all newborns before hospital discharge.
 - For infants born to hepatitis B surface antigen (HBsAg)-positive mothers, administer HepB vaccine and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) 1 to 2 months after receiving the last dose of the series.
 - If mother's HBsAg status is unknown, within 12 hours of birth administer HepB vaccine for infants weighing $\geq 2,000$ grams, and HepB vaccine plus HBIG for infants weighing $< 2,000$ grams. Determine mother's HBsAg status as soon as possible and, if she is HBsAg-positive, administer HBIG for infants weighing $\geq 2,000$ grams (no later than age 1 week).

Doses after the birth dose:

 - The second dose should be administered at age 1 to 2 months. Monovalent HepB vaccine should be used for doses administered before age 6 weeks.
 - Administration of a total of 4 doses of HepB vaccine 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 a HepB-containing vaccine starting as soon as feasible (Figure 3).
 - The minimum interval between dose 1 and dose 2 is 4 weeks, and between dose 2 and 3 is 8 weeks. The final (third or fourth) dose in the HepB vaccine series should be administered no earlier than age 24 weeks and at least 16 weeks after the first dose.
- Rotavirus (RV) vaccines.** (Minimum age: 6 weeks for both RV-1 [Rotarix] and RV-5 [Rota Teq])
 - The maximum age for the first dose in the series is 14 weeks, 6 days; and 8 months, 0 days for the final dose in the series. Vaccination should not be initiated for infants aged 15 weeks, 0 days or older.
 - If RV-1 (Rotarix) is administered at ages 2 and 4 months, a dose at 6 months is not indicated.
- Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine.** (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.
- Haemophilus influenzae* type b (Hib) conjugate vaccine.** (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 only be used for the booster (final) dose in children aged 12 months through 4 years.
- Pneumococcal vaccines.** (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])
 - Administer 1 dose of PCV to all healthy children aged 24 through 59 months who are not completely vaccinated for their age.
 - For children who have received an age-appropriate series of 7-valent PCV (PCV7), a single supplemental dose of 13-valent PCV (PCV13) is recommended for:
 - All children aged 14 through 59 months
 - Children aged 60 through 71 months with underlying medical conditions.
 - 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. See *MMWR* 2010;59(No. RR-11), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5911.pdf>.
- Inactivated poliovirus vaccine (IPV).** (Minimum age: 6 weeks)
 - If 4 or more doses are administered before 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 after the previous dose.
- Influenza vaccines.** (Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live, attenuated influenza vaccine [LAIV])
 - For most healthy children aged 2 years and older, either LAIV or TIV may be used. However, LAIV should not be administered to some children, including 1) children with asthma, 2) children 2 through 4 years who had wheezing in the past 12 months, or 3) children who have any other underlying medical conditions that predispose them to influenza complications. For all other contraindications to use of LAIV, see *MMWR* 2010;59(No. RR-8), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5908.pdf>.
 - For children aged 6 months through 8 years:
 - For the 2011–12 season, administer 2 doses (separated by at least 4 weeks) to those who did not receive at least 1 dose of the 2010–11 vaccine. Those who received at least 1 dose of the 2010–11 vaccine require 1 dose for the 2011–12 season.
 - For the 2012–13 season, follow dosing guidelines in the 2012 ACIP influenza vaccine recommendations.
- Measles, mumps, and rubella (MMR) vaccine.** (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.
 - Administer MMR vaccine to infants aged 6 through 11 months who are traveling internationally. These children should be revaccinated with 2 doses of MMR vaccine, the first at ages 12 through 15 months and at least 4 weeks after the previous dose, and the second at ages 4 through 6 years.
- Varicella (VAR) 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.
- Hepatitis A (HepA) vaccine.** (Minimum age: 12 months)
 - Administer the second (final) dose 6 to 18 months after the first.
 - Unvaccinated children 24 months and older at high risk should be vaccinated. See *MMWR* 2006;55(No. RR-7), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5507.pdf>.
 - A 2-dose HepA vaccine series is recommended for anyone aged 24 months and older, previously unvaccinated, for whom immunity against hepatitis A virus infection is desired.
- Meningococcal conjugate vaccines, quadrivalent (MCV4).** (Minimum age: 9 months for Menactra [MCV4-D], 2 years for Menveo [MCV4-CRM])
 - For children aged 9 through 23 months 1) with persistent complement component deficiency; 2) who are residents of or travelers to countries with hyperendemic or epidemic disease; or 3) who are present during outbreaks caused by a vaccine serogroup, administer 2 primary doses of MCV4-D, ideally at ages 9 months and 12 months or at least 8 weeks apart.
 - For children aged 24 months and older with 1) persistent complement component deficiency who have not been previously vaccinated; or 2) anatomic/functional asplenia, administer 2 primary doses of either MCV4 at least 8 weeks apart.
 - For children with anatomic/functional asplenia, if MCV4-D (Menactra) is used, administer at a minimum age of 2 years and at least 4 weeks after completion of all PCV doses.
 - See *MMWR* 2011;60:72–6, available at <http://www.cdc.gov/mmwr/pdf/wk/mm6003.pdf>, and Vaccines for Children Program resolution No. 6/11-1, available at <http://www.cdc.gov/vaccines/programs/vfc/downloads/resolutions/06-11mening-mcv.pdf>, and *MMWR* 2011;60:1391–2, available at <http://www.cdc.gov/mmwr/pdf/wk/mm6040.pdf>, for further guidance, including revaccination guidelines.

FIGURE 2: Recommended immunization schedule for persons aged 7 through 18 years—United States, 2012 (for those who fall behind or start late, see the schedule below and the catch-up schedule [Figure 3])

Vaccine ▼	Age ►	7–10 years	11–12 years	13–18 years	
Tetanus, diphtheria, pertussis ¹		1 dose (if indicated)	1 dose	1 dose (if indicated)	Range of recommended ages for all children
Human papillomavirus ²		see footnote ²	3 doses	Complete 3-dose series	
Meningococcal ³		See footnote ³	Dose 1	Booster at 16 years old	
Influenza ⁴		Influenza (yearly)			
Pneumococcal ⁵		See footnote ⁵			Range of recommended ages for catch up immunization
Hepatitis A ⁶		Complete 2-dose series			
Hepatitis B ⁷		Complete 3-dose series			
Inactivated poliovirus ⁸		Complete 3-dose series			
Measles, mumps, rubella ⁹		Complete 2-dose series			Range of recommended ages for certain high risk groups
Varicella ¹⁰		Complete 2-dose series			

This schedule includes recommendations in effect as of December 23, 2011. 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. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>. Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (<http://www.vaers.hhs.gov>) or by telephone (800-822-7967).

- Tetanus and diphtheria toxoids and acellular pertussis (Tdap) vaccine.** (Minimum age: 10 years for Boostrix and 11 years for Adacel)
 - Persons aged 11 through 18 years who have not received Tdap vaccine should receive a dose followed by tetanus and diphtheria toxoids (Td) booster doses every 10 years thereafter.
 - Tdap vaccine should be substituted for a single dose of Td in the catch-up series for children aged 7 through 10 years. Refer to the catch-up schedule if additional doses of tetanus and diphtheria toxoid-containing vaccine are needed.
 - Tdap vaccine can be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.
- Human papillomavirus (HPV) vaccines (HPV4 [Gardasil] and HPV2 [Cervarix]).** (Minimum age: 9 years)
 - Either HPV4 or HPV2 is recommended in a 3-dose series for females aged 11 or 12 years. HPV4 is recommended in a 3-dose series for males aged 11 or 12 years.
 - The vaccine series can be started beginning at age 9 years.
 - Administer the second dose 1 to 2 months after the first dose and the third dose 6 months after the first dose (at least 24 weeks after the first dose).
 - See *MMWR* 2010;59:626–32, available at <http://www.cdc.gov/mmwr/pdf/wk/mm5920.pdf>.
- Meningococcal conjugate vaccines, quadrivalent (MCV4).**
 - Administer MCV4 at age 11 through 12 years with a booster dose at age 16 years.
 - Administer MCV4 at age 13 through 18 years if patient is not previously vaccinated.
 - If the first dose is administered at age 13 through 15 years, a booster dose should be administered at age 16 through 18 years with a minimum interval of at least 8 weeks after the preceding dose.
 - If the first dose is administered at age 16 years or older, a booster dose is not needed.
 - Administer 2 primary doses at least 8 weeks apart to previously unvaccinated persons with persistent complement component deficiency or anatomic/functional asplenia, and 1 dose every 5 years thereafter.
 - Adolescents aged 11 through 18 years with human immunodeficiency virus (HIV) infection should receive a 2-dose primary series of MCV4, at least 8 weeks apart.
 - See *MMWR* 2011;60:72–76, available at <http://www.cdc.gov/mmwr/pdf/wk/mm6003.pdf>, and Vaccines for Children Program resolution No. 6/11-1, available at <http://www.cdc.gov/vaccines/programs/vfc/downloads/resolutions/06-11mening-mcv.pdf>, for further guidelines.
- Influenza vaccines (trivalent inactivated influenza vaccine [TIV] and live, attenuated influenza vaccine [LAIV]).**
 - For most healthy, nonpregnant persons, either LAIV or TIV may be used, except LAIV should not be used for some persons, including those with asthma or any other underlying medical conditions that predispose them to influenza complications. For all other contraindications to use of LAIV, see *MMWR* 2010;59(No. RR-8), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5908.pdf>.
 - Administer 1 dose to persons aged 9 years and older.
 - For children aged 6 months through 8 years:
 - For the 2011–12 season, administer 2 doses (separated by at least 4 weeks) to those who did not receive at least 1 dose of the 2010–11 vaccine. Those who received at least 1 dose of the 2010–11 vaccine require 1 dose for the 2011–12 season.
 - For the 2012–13 season, follow dosing guidelines in the 2012 ACIP influenza vaccine recommendations.
- Pneumococcal vaccines (pneumococcal conjugate vaccine [PCV] and pneumococcal polysaccharide vaccine [PPSV]).**
 - A single dose of PCV may be administered to children aged 6 through 18 years who have anatomic/functional asplenia, HIV infection or other immunocompromising condition, cochlear implant, or cerebral spinal fluid leak. See *MMWR* 2010;59(No. RR-11), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5911.pdf>.
 - Administer PPSV 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 anatomic/functional asplenia or an immunocompromising condition.
- Hepatitis A (HepA) vaccine.**
 - HepA vaccine is recommended for children older than 23 months who live in areas where vaccination programs target older children, who are at increased risk for infection, or for whom immunity against hepatitis A virus infection is desired. See *MMWR* 2006;55(No. RR-7), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5507.pdf>.
 - Administer 2 doses at least 6 months apart to unvaccinated persons.
- Hepatitis B (HepB) vaccine.**
 - Administer the 3-dose series to those not previously vaccinated.
 - For those with incomplete vaccination, follow the catch-up recommendations (Figure 3).
 - A 2-dose series (doses separated by at least 4 months) of adult formulation Recombivax HB is licensed for use in children aged 11 through 15 years.
- Inactivated poliovirus vaccine (IPV).**
 - The final dose in the series should be administered at least 6 months after 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.
 - IPV is not routinely recommended for U.S. residents aged 18 years or older.
- Measles, mumps, and rubella (MMR) vaccine.**
 - The minimum interval between the 2 doses of MMR vaccine is 4 weeks.
- Varicella (VAR) vaccine.**
 - For persons without evidence of immunity (see *MMWR* 2007;56[No. RR-4], available at <http://www.cdc.gov/mmwr/pdf/rr/rr5604.pdf>), 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.

FIGURE 3. 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 • 2012
 The figure 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. Always use this table in conjunction with the accompanying childhood and adolescent immunization schedules (Figures 1 and 2) and their respective footnotes.

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	Birth	4 weeks	8 weeks and at least 16 weeks after first dose; minimum age for the final dose is 24 weeks		
Rotavirus ¹	6 weeks	4 weeks	4 weeks ¹		
Diphtheria, tetanus, pertussis ²	6 weeks	4 weeks	4 weeks	6 months	6 months ²
<i>Haemophilus influenzae</i> type b ³	6 weeks	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 ³ if current age is younger than 12 months 8 weeks (as final dose) ³ 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 ⁴	6 weeks	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 ⁵	6 weeks	4 weeks	4 weeks	6 months ⁵ minimum age 4 years for final dose	
Meningococcal ⁶	9 months	8 weeks ⁶			
Measles, mumps, rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months			
Hepatitis A	12 months	6 months			
Persons aged 7 through 18 years					
Tetanus, diphtheria/tetanus, diphtheria, pertussis ⁹	7 years ⁹	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 ¹⁰	9 years	Routine dosing intervals are recommended ¹⁰			
Hepatitis A	12 months	6 months			
Hepatitis B	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)		
Inactivated poliovirus ⁵	6 weeks	4 weeks	4 weeks ⁵	6 months ⁵	
Meningococcal ⁶	9 months	8 weeks ⁶			
Measles, mumps, rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months if person is younger than age 13 years 4 weeks if person is aged 13 years or older			

- Rotavirus (RV) vaccines (RV-1 [Rotarix] and RV-5 [Rota Teq]).**
 - The maximum age for the first dose in the series is 14 weeks, 6 days; and 8 months, 0 days for the final dose in the series. Vaccination should not be initiated for infants aged 15 weeks, 0 days or older.
 - If RV-1 was administered for the first and second doses, a third dose is not indicated.
- Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine.**
 - The fifth dose is not necessary if the fourth dose was administered at age 4 years or older.
- Haemophilus influenzae* type b (Hib) conjugate vaccine.**
 - Hib vaccine should be considered for unvaccinated persons aged 5 years or older who have sickle cell disease, leukemia, human immunodeficiency virus (HIV) infection, or anatomic/functional asplenia.
 - If the first 2 doses were PRP-OMP (PedvaxHIB or Comvax) and were 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 vaccines.** (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])
 - For children aged 24 through 71 months with underlying medical conditions, administer 1 dose of PCV if 3 doses of PCV were received previously, or administer 2 doses of PCV at least 8 weeks apart if fewer than 3 doses of PCV were received previously.
 - A single dose of PCV may be administered to certain children aged 6 through 18 years with underlying medical conditions. See age-specific schedules for details.
 - Administer PPSV to children aged 2 years or older with certain underlying medical conditions. See *MMWR* 2010;59(No. RR-11), available at <http://www.cdc.gov/mmwr/pdf/rr/rr5911.pdf>.
- Inactivated poliovirus vaccine (IPV).**
 - A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after 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).
 - IPV is not routinely recommended for U.S. residents aged 18 years or older.
- Meningococcal conjugate vaccines, quadrivalent (MCV4).** (Minimum age: 9 months for Menactra [MCV4-D]; 2 years for Menveo [MCV4-CRM])
 - See Figure 1 ("Recommended immunization schedule for persons aged 0 through 6 years") and Figure 2 ("Recommended immunization schedule for persons aged 7 through 18 years") for further guidance.
- Measles, mumps, and rubella (MMR) vaccine.**
 - Administer the second dose routinely at age 4 through 6 years.
- Varicella (VAR) 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.
- Tetanus and diphtheria toxoids (Td) and tetanus and diphtheria toxoids and acellular pertussis (Tdap) vaccines.**
 - For children aged 7 through 10 years who are not fully immunized with the childhood DTaP vaccine series, Tdap vaccine should be substituted for a single dose of Td vaccine in the catch-up series; if additional doses are needed, use Td vaccine. For these children, an adolescent Tdap vaccine dose should not be given.
 - An inadvertent dose of DTaP vaccine administered to children aged 7 through 10 years can count as part of the catch-up series. This dose can count as the adolescent Tdap dose, or the child can later receive a Tdap booster dose at age 11–12 years.
- Human papillomavirus (HPV) vaccines (HPV4 [Gardasil] and HPV2 [Cervarix]).**
 - Administer the vaccine series to females (either HPV2 or HPV4) and males (HPV4) at age 13 through 18 years if patient is not previously vaccinated.
 - Use recommended routine dosing intervals for vaccine series catch-up; see Figure 2 ("Recommended immunization schedule for persons aged 7 through 18 years").

Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (<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 vaccination, is available from CDC online (<http://www.cdc.gov/vaccines>) or by telephone (800-CDC-INFO [800-232-4636]).