2019-2020 Preventive Health Guidelines for Children Age Birth To 18

**Part I: Neonates (Birth to 1 Month)**

1. **History and Physical Examination** (Reference: 1-AAP)
   Perform newborn examination and at 3-5 days:
   a) History
   b) Physical exam
   c) Length and weight, weight for length
   d) Head circumference
   e) Development surveillance

2. **Screening Tests** (References: 2, 3 – AAP; 4, 5, 6 – USPSTF; 7, 8, 9, 10, 11 – States of Illinois, Montana, New Mexico, Oklahoma and Texas)
   - Perform screening tests prior to discharge or transfer from the nursery, but no later than 7 days of age. The USPSTF is not updating the recommendation for screening for phenylketonuria, congenital hypothyroidism and sickle-cell disease and refers to the Health Resources & Service Administration (HRSA) and the Recommended Uniform Screening Panel (RUSP). However, state regulations define required screening. The state-specific lists of required newborn screening can be found at these sites:
     MT  [http://dphhs.mt.gov/publichealth/cshs/NewbornScreeningPrograms.aspx](http://dphhs.mt.gov/publichealth/cshs/NewbornScreeningPrograms.aspx)
     NM  [http://nmhealth.org/about/phd/fhb/cms/nbgs/](http://nmhealth.org/about/phd/fhb/cms/nbgs/)
     OK  [Newborn Screening Program - Oklahoma State Department of Health](https://www.dshs.oklahoma.gov/newborn/screened_disorders.shtm)
     TX  [https://www.dshs.texas.gov/newborn/screened_disorders.shtm](https://www.dshs.texas.gov/newborn/screened_disorders.shtm)

3. **Ocular Chemoprophylaxis** (Reference: 12 – USPSTF)
   - Prophylactic ocular topical medication for all newborns to prevent gonococcal ophthalmia neonatorum

4. **Immunizations** (References: 13, 19 – CDC)
   - Administer immunizations in accordance with the ACIP Recommended Immunization Schedules for Persons Aged 0 through 18 Years. Copies of the Schedules are attached at the end of the document.

5. **Counseling/Anticipatory Guidance** (Reference: 1 – AAP)
   - Relevant topics include injury prevention, nutrition, and sleep positioning.

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**Part II: Children Age 1 month through 17 years – Average Risk Pediatric Population**

1. **General Recommendations – see table below**. Provide preventive services for children in accordance with the recommendation summarized in the following table. (References: 1, - AAP; 14, 16, 17, 18, 21, 22, 56, 66 - USPSTF)

2. **For Texas Medicaid, ages 0 to 21, please use the periodicity schedule at [http://www.dshs.texas.gov/thsteps/providers.shtm](http://www.dshs.texas.gov/thsteps/providers.shtm)**

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A Division of Health Care Service Corporation, a Mutual Legal Reserve Company, an Independent Licensee of the Blue Cross and Blue Shield Association
## Recommendations for Preventive Pediatric Health Care

**Bright Futures/American Academy of Pediatrics**

These recommendations represent a consensus by the American Academy of Pediatrics' (AAP) and Bright Futures, the AAP continues to emphasize the importance of early childhood health promotion and disease prevention. The recommendations are based on the best available evidence, taking into account the need for preventive services in primary care settings. The recommendations are intended to support providers in delivering comprehensive, evidence-based care to children and adolescents. The American Academy of Pediatrics, 6300 North River Road, Elk Grove Village, IL 60007, and American Academy of Family Physicians, 11400 Tomahawk Circle, Parkville, MO 64152, work together to promote the health and well-being of all children. Updated 2019. The recommendations do not replace current AAP or Bright Futures guidelines and recommendations for preventive care.

### Key Facts

- **Infectious Diseases**:
  - Measles, mumps, and rubella (MMR) at 12-15 months and 4-6 years old
  - Varicella (chickenpox) at 12-15 months and 4-6 years old
  - Pneumococcal conjugate vaccine (PCV13) at 2, 4, 6, and 15-18 months
  - 3 doses of hepatitis B vaccine at birth, 1 month, and 6 months
  - 2 doses of inactivated poliovirus vaccine (IPV) at 2 and 4-6 years old
  - Annual influenza vaccine starting at 6 months old

- **Developmental, Behavioral, and Social Disorders**:
  - Screening for behavioral and emotional problems at 18 and 24 months
  - Developmental screening at 18-24 months

- **Nutritional Counseling**:
  - Counseling on healthy eating and physical activity at ages 1-5 years

- **Tobacco Use/Abuse**:
  - Counseling on tobacco use prevention at ages 5-11 years

### Key Dates

<table>
<thead>
<tr>
<th>Age</th>
<th>Vaccines</th>
<th>Screening</th>
<th>Tobacco Use</th>
<th>Nutritional Counseling</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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<tr>
<td>4 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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<td>6 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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<td>12 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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<tr>
<td>18 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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<tr>
<td>24 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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<tr>
<td>36 m</td>
<td>Birth</td>
<td>12-15 m</td>
<td>18-24 m</td>
<td>1-5 y</td>
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</tbody>
</table>

### Notes

- **Screening**:
  - Blood pressure measurement should be performed at ages 3-5 years.
  - Vision screening should be performed at ages 2-5 years.
  - Hearing screening should be performed at ages 2-5 years.

- **Nutritional Counseling**:
  - Provide dietary counseling to children and adolescents who are at risk for obesity, based on the Dietary Guidelines for Americans.

- **Tobacco Use**:
  - Counsel parents and caregivers on the importance of quitting smoking and avoiding tobacco exposure.

### References

3. **Immunizations** *(References: 13 - CDC, 19 – ACIP; 20 – NMDOH)*
   - Administer immunizations in accordance with ACIP Recommended Immunization Schedules for Persons Aged 0 through 18 years, or in accordance with state law or mandates if such exist. Copies of the ACIP immunization schedules are attached at the end of this document. NOTE: New Mexico physicians/practitioners are encouraged to follow the optimized "Done By One" immunization schedule. A copy of the "Done By One" schedule is attached and the most current version is available online at [http://nmhealth.org/publication/view/general/450](http://nmhealth.org/publication/view/general/450).

4. **Prevention of Dental Caries in Children from Birth through Age 5 Years** *(Reference: 67 - USPSTF)*
   - The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation starting at age 6 months for children whose water supply is deficient in fluoride. It is also recommended that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption.

**Part III: Recommendations for Select Populations at Risk**

1. **Iron Supplementation** *(Reference: 15 – USPSTF)*
   - The U.S. Preventive Services Task Force (USPSTF) concludes that evidence is insufficient to recommend for or against routine screening for iron deficiency anemia in asymptomatic children aged 6 to 12 months.

2. **Hepatitis B Screening** *(Reference: 68 – USPSTF)*
   - Screen for Hepatitis B in adolescents at high risk for infection. Risk factors include country of origin, HIV-positive persons, injection drug users, household contacts or sexual partners of persons with HBV infection, and men who have sex with men. Screening is also recommended for persons receiving hemodialysis or cytotoxic or immunosuppressive therapy.

3. **Behavioral Counseling to Prevent Skin Cancer** *(Reference: 62 - USPSTF)*
   - Children and adolescents age 6 months to 24 years with fair skin types should be counseled about minimizing ultraviolet radiation to reduce risk for skin cancer.

4. **Sexually Transmitted Infections** *(Reference: 16, 17, and 18 – USPSTF)*
   - a) Gonorrhea - Screen for Gonorrhea in sexually active adolescent females.
   - b) Chlamydia - Screen for Chlamydia in sexually active adolescent females.
   - c) Behavioral Counseling - Intensive behavioral counseling is recommended for all sexually active adolescents.
References and Links to Websites


8. Texas Department of State Health Services. All Texas newborns are screened for these disorders. Available at: https://www.dshs.texas.gov/newborn/screened_disorders.shtm. Accessed March 27, 2019. A list of the disorders for which Texas newborns are screened is provided.

9. Oklahoma State Department of Health. Newborn Screening. Accessed March 27, 2019. Available at: https://www.ok.gov/health/Community_Family_Health/Screening_Special_Services/Newborn_Screening_Program/. Every baby born in Oklahoma is required to have a blood test in the first week of life; a link is provided to the list of disorders included in the testing.

10. New Mexico Department of Health. New Mexico Department of Health Newborn Screening Program. Available at: https://nmhealth.org/about/phd/fhb/cms/nbgs/. Accessed March 01, 2019. The State of New Mexico mandates two Newborn Screens be collected on every Newborn born in New Mexico.


15. U.S. Preventive Services Task Force. Screening and supplementation for iron deficiency anemia May 2006. Available at http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/iron-deficiency-anemia-screening. Accessed March 01, 2019. USPSTF concludes that evidence is insufficient to recommend for or against routine screening for iron deficiency anemia in asymptomatic children aged 6 to 12 months but recommends routine iron supplementation for asymptomatic children aged 6 to 12 months who are at increased risk for iron deficiency anemia. This Recommendation is for informational purposes only since it is not an A or B recommendation.


The USPSTF recommends screening for major depressive disorder (MDD) in adolescents aged 12 to 18 years. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.

The USPSTF recommends that clinicians screen for HIV infections in adolescents and adults aged 15 to 65 years. Younger adolescents and older adults who are at risk should also be screened. The USPSTF recommends that clinicians screen all pregnant women for HIV. The evidence is insufficient to determine optimum time intervals for HIV screening.

The USPSTF recommends that primary care clinicians provide interventions, including education or brief counseling, to prevent initiation of tobacco use among school-aged children and adolescents.

The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation starting at age 6 months for children whose water supply is deficient in fluoride. The USPSTF recommends that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption.

The USPSTF recommends screening for hepatitis B virus infection in persons at high risk for infection.
### Table 1: Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger

**United States, 2019**

These recommendations must be read with the Notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Table 1. To determine minimum intervals between doses, see the catch-up schedule (Table 2). School entry and adolescent vaccine age groups are shaded in gray.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>16 yrs</th>
<th>17-18 yrs</th>
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<tbody>
<tr>
<td>Hepatitis B (HepB)</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Rotavirus (RV RV1 (2-dose series); RV5 (3-dose series))</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>See Notes</td>
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<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis (DTaP; &lt;7 yrs)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
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<tr>
<td>Haemophilus influenza type b (Hib)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>See Notes</td>
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<tr>
<td>Pneumococcal conjugate (PCV13)</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Inactivated poliovirus (IPV; &lt;18 yrs)</td>
<td>1st dose</td>
<td>2nd dose</td>
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<td>Influenza (IIV)</td>
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<td>Annual vaccination 1 or 2 doses</td>
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<td>Influenza (LAIV)</td>
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<td>Annual vaccination 1 dose only</td>
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<td>Measles, mumps, rubella (MMR)</td>
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<td>Varicella (VAR)</td>
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<td>Meningococcal (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)</td>
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<td>Tetanus, diphtheria, &amp; acellular pertussis (Tdap; ≥7 yrs)</td>
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<td>Human papillomavirus (HPV)</td>
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<td>Meningococcal B</td>
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<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
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- **Range of recommended ages for all children**
- **Range of recommended ages for catch-up immunization**
- **Range of recommended ages for certain high-risk groups**
- **Range of recommended ages for non-high-risk groups that may receive vaccine, subject to individual clinical decision-making**
- **No recommendation**
### Table 2: Catch-up immunization schedule for persons aged 4 months—18 years who start late or who are more than 1 month behind, United States, 2019

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 Table 1 and the notes that follow.

#### Children age 4 months through 6 years

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Dose 1 to Dose 2</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 2 to Dose 3</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>Birth</td>
<td>4 weeks</td>
<td>8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.</td>
<td>4 weeks</td>
<td>Maximum age for final dose is 8 months, 0 days.</td>
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<tr>
<td>Rotavirus</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>No further doses needed if first dose was administered at age 15 months or older. 4 weeks if first dose was administered before the 1st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months.</td>
<td></td>
<td>No further doses needed if previous dose was administered at age 15 months or older. 4 weeks if current age is younger than 12 months and first dose was administered at younger than age 7 months, and at least 1 previous dose was PRP-OMP (ActHib, Pentacel, Hibermu) or unknown. 8 weeks and 12 through 59 months (as final dose) if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR if current age is 12 through 59 months and first dose was administered before the 1st birthday, and second dose administered at younger than 15 months; OR if both doses were PRP-OMP (PedvaxHIB, Comvax) and were administered before the 1st birthday. 8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.</td>
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<tr>
<td>Hepatitis A</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>No further doses needed for healthy children if first dose was administered at age 24 months or older. 4 weeks if first dose administered before the 1st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1st birthday or after.</td>
<td></td>
<td>No further doses needed for healthy children if previous dose administered at age 24 months or older. 4 weeks if current age is younger than 12 months and previous dose given at &lt;7 months old. 8 weeks (as final dose for healthy children) if previous dose given between 7-11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months.</td>
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<tr>
<td>Pneumococcal conjugate</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks if current age is &lt; 4 years. 6 months (as final dose) if current age is 4 years or older.</td>
<td></td>
<td>6 months (minimum age 4 years for final dose).</td>
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<tr>
<td>Inactivated poliovirus</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks if current age is &lt; 4 years. 6 months (as final dose) if current age is 4 years or older.</td>
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<td>6 months (minimum age 4 years for final dose).</td>
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<tr>
<td>Measles, mumps, rubella</td>
<td>12 months</td>
<td>4 weeks</td>
<td>4 weeks if current age is &lt; 4 years. 6 months (as final dose) if current age is 4 years or older.</td>
<td></td>
<td>6 months (minimum age 4 years for final dose).</td>
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<tr>
<td>Varicella</td>
<td>12 months</td>
<td>3 months</td>
<td>4 weeks if current age is &lt; 4 years. 6 months (as final dose) if current age is 4 years or older.</td>
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<td>6 months (minimum age 4 years for final dose).</td>
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<tr>
<td>Meningococcal</td>
<td>2 months MeNCWY-CRM</td>
<td>8 weeks</td>
<td>8 weeks if current age is &lt; 4 years. 6 months (as final dose) if current age is 4 years or older.</td>
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<td>6 months (minimum age 4 years for final dose).</td>
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<tr>
<td></td>
<td>9 months MeNCWY-D</td>
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<td>See Notes</td>
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<td>See Notes</td>
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</tbody>
</table>

#### Children and adolescents age 7 through 18 years

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Dose 1 to Dose 2</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 2 to Dose 3</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningococcal</td>
<td>Not Applicable (N/A)</td>
<td>8 weeks</td>
<td>4 weeks if first dose of DTaP/DT was administered before the 1st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday.</td>
<td></td>
<td>4 weeks if first dose of DTaP/DT was administered before the 1st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday.</td>
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<tr>
<td>Human papillomavirus</td>
<td>9 years</td>
<td>Routine dosing intervals are recommended.</td>
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<td>A fourth dose of IPV is indicated if all previous doses were administered at 6 years or if the third dose was administered &lt;6 months after the second dose.</td>
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<tr>
<td>Hepatitis A</td>
<td>N/A</td>
<td>6 months</td>
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<tr>
<td>Hepatitis B</td>
<td>N/A</td>
<td>4 weeks</td>
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<td></td>
</tr>
<tr>
<td>Inactivated poliovirus</td>
<td>N/A</td>
<td>4 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella</td>
<td>N/A</td>
<td>4 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>N/A</td>
<td>3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 months if younger than age 13 years, 4 weeks if age 13 years or older.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Notes

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2019

Additional information

- Consult relevant ACIP statements for detailed recommendations at https://www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For information on contraindications and precautions for the use of a vaccine, consult the General Best Practice Guidelines for Immunization and relevant ACIP statements at https://www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as "through."
- Vaccine doses administered ≤4 days before the minimum age or interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see Table 3-1, Recommended and minimum ages and intervals between vaccine doses, in General Best Practice Guidelines for Immunization at https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccine requirements and recommendations is available at https://wwwnc.cdc.gov/travel/.
- For information regarding vaccination in the setting of a vaccine-preventable disease outbreak, contact your state or local health department.

The National Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information, see https://www.hrsa.gov/vaccinecompensation/index.html.

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Diptheria, tetanus, and pertussis (DTaP) vaccination (minimum age: 6 weeks [4 years for Kinrix or Quadracel])

**Routine vaccination**
- 5-dose series at 2, 4, 6, 15–18 months, 4–6 years
  - Prospectively: Dose 4 may be given as early as age 12 months if at least 6 months have elapsed since dose 3.
  - Retrospectively: A 4th dose that was inadvertently given as early as 12 months may be counted if at least 4 months have elapsed since dose 3.

**Catch-up vaccination**
- Dose 5 is not necessary if dose 4 was administered at age 4 years or older.
- For other catch-up guidance, see Table 2.

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Haemophilus influenzae type b (Hib) vaccination (minimum age: 6 weeks)

**Routine vaccination**
- ActHIB, Hiberix, or Pentacel: 4-dose series at 2, 4, 6, 12–15 months
- PedvaxHIB: 3-dose series at 2, 4, 12–15 months

**Catch-up vaccination**
- Dose 1 at 7–11 months: Administer dose 2 at least 4 weeks later and dose 3 (final dose) at 12–15 months or 8 weeks after dose 2 (whichever is later).
- Dose 1 at 12–14 months: Administer dose 2 (final dose) at least 8 weeks after dose 1.
- Dose 1 before 12 months and dose 2 before 15 months: Administer dose 3 (final dose) 8 weeks after dose 2.
- 2 doses of PedvaxHIB before 12 months: Administer dose 3 (final dose) at 12–15 months and at least 8 weeks after dose 2.
- Unvaccinated at 15–59 months: 1 dose
- For other catch-up guidance, see Table 2.

**Special situations**
- Chemotherapy or radiation treatment:
  - 12–59 months:
    - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
    - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose
    - Doses administered within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.
- Hematopoietic stem cell transplant (HSCT):
  - 3-dose series 4 weeks apart starting 6 to 12 months after successful transplant regardless of Hib vaccination history
  - Anatomic or functional asplenia (including sickle cell disease):
    - 12–59 months
      - Unvaccinated or only 1 dose before 12 months: 2 doses, 8 weeks apart
      - 2 or more doses before 12 months: 1 dose at least 8 weeks after previous dose
    - Unvaccinated persons age 5 years or older
      - 1 dose
- Elective splenectomy:
  - Unvaccinated persons age 15 months or older
    - 1 dose (preferably at least 14 days before procedure)
- HIV infection:
  - 12–59 months
    - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
    - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose
  - Unvaccinated persons age 5–18 years
    - 1 dose
- Immunoglobulin deficiency, early component complement deficiency:
  - 12–59 months
    - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
    - 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

*Unvaccinated* = Less than routine series (through 14 months) OR no doses (14 months or older)
Hepatitis A vaccination (minimum age: 12 months for routine vaccination)

Routine vaccination
- 2-dose series (Havrix 6–12 months apart or Vaqta 6–18 months apart, minimum interval 6 months); a series begun before the 2nd birthday should be completed even if the child turns 2 before the second dose is administered.

Catch-up vaccination
- Anyone 2 years of age or older may receive HepA vaccine if desired. Minimum interval between doses: 6 months.
- Adolescents 18 years and older may receive the combined HepA and HepB vaccine, Twinrix, as a 3-dose series (0, 1, and 6 months) or 4-dose series (0, 2, and 6 months), followed by a dose at 12 months.

International travel
- Persons traveling to or working in countries with high or intermediate endemic hepatitis A (wwwnc.cdc.gov/travel/):
  - Infants age 6–11 months: 1 dose before departure; revaccinate with 2 doses, separated by 6–18 months, between 12 to 23 months of age.
  - Unvaccinated age 12 months and older: 1st dose as soon as travel considered.

Special situations
- At risk for hepatitis A infection: 2-dose series as above
- Chronic liver disease
- Clotting factor disorders
- Men who have sex with men
- Injection or non-injection drug use
- Homelessness
- Work with hepatitis A virus in research laboratory or nonhuman primates with hepatitis A infection
- Travel in countries with high or intermediate endemic hepatitis A
- Close, personal contact with international adoptee (e.g., household or regular babysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A (admit dose 1 as soon as adoption is planned, at least 2 weeks before adoptee’s arrival)

Hepatitis B vaccination (minimum age: birth)

Birth dose (monovalent HepB vaccine only)
- Mother is HBsAg-negative: 1 dose within 24 hours of birth for all medically stable infants ≤2,000 grams. Infants ≤2,000 grams: administer 1 dose at chronological age 1 month or hospital discharge.
- Mother is HBsAg-positive:
  - Administer HepB vaccine and 0.5 mL of hepatitis B immune globulin (HBIG) (at separate anatomic sites) within 12 hours of birth, regardless of birth weight. For infants <2,000 grams, administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
  - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
- Mother’s HBsAg status is unknown:
  - Administer HepB vaccine within 12 hours of birth, regardless of birth weight.
  - For infants <2,000 grams, administer 0.5 mL of HBIG in addition to HepB vaccine within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
  - Determine mother’s HBsAg status as soon as possible. If mother is HBsAg-positive, administer 0.5 mL of HBIG to infants ≥2,000 grams as soon as possible, but no later than 7 days of age.

Routine series
- 3-dose series at 0, 1–2, 6–18 months (use monovalent HepB vaccine for doses administered before age 6 weeks).
- Infants who did not receive a birth dose should begin the series as soon as feasible (see Table 2).
- Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.
- Minimum age for the final (3rd or 4th) dose: 24 weeks.
- Minimum intervals:
  - dose 1 to dose 2: 2 weeks
  - dose 2 to dose 3: 8 weeks
  - dose 3 to dose 4: 16 weeks (when 4 doses are administered, substitute “dose 4” for “dose 3” in these calculations).

Catch-up vaccination
- Unvaccinated persons should complete a 3-dose series at 0, 1–2, and 6 months.
- Adolescents age 11–15 years may use an alternative 2-dose schedule with at least 4 months between doses (adult formulation Recombivax HB only).
- Adolescents 18 years and older may receive a 2-dose series of HepB (Hepisav-B) at least 4 weeks apart.
- Adolescents 18 years and older may receive the combined HepA and HepB vaccine, Twinrix, as a 3-dose series (0, 1, and 6 months) or 4-dose series (0, 7, and 21–30 days, followed by a dose at 12 months).
- For other catch-up guidance, see Table 2.

Human papillomavirus vaccination (minimum age: 9 years)

Routine and catch-up vaccination
- HPV vaccination routinely recommended for all adolescents age 11–12 years (can start at age 9 years) and through age 18 years if not previously adequately vaccinated
- 2- or 3-dose series depending on age at initial vaccination:
  - Age 9 through 14 years at initial vaccination: 2-dose series at 0, 6–12 months (minimum interval: 5 months; repeat dose if administered too soon).
  - Age 15 years or older at initial vaccination: 3-dose series at 0, 1–2, 6 months (minimum intervals: dose 1 to dose 2: 2 weeks; dose 2 to dose 3: 12 weeks; dose 1 to dose 3: 3 months; repeat dose if administered too soon).
- If completed valid vaccination series with any HPV vaccine, no additional doses needed.

Special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above.
- History of sexual abuse or assault: Start at age 9 years.
- Pregnancy: HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination.

Inactivated poliovirus vaccination (minimum age: 6 weeks)

Routine vaccination
- 4-dose series at ages 2, 4, 6–18 months, 4–6 years; administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.
- 4 or more doses of IPV can be administered before the 4th birthday when a combination vaccine containing IPV is used. However, a dose is still recommended after the 4th birthday and at least 6 months after the previous dose.

Catch-up vaccination
- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- IPV is not routinely recommended for U.S. residents 18 years and older.

Series containing oral polio vaccine (OPV), either mixed OPV-IPV or OPV-only series:
- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm#cid=mm6601a6_w.
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- Only trivalent OPV (TOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as “OPV,” see [www.cdc.gov/mmwr/volumes/66/ww/mm6606a7. html](http://www.cdc.gov/mmwr/volumes/66/ww/mm6606a7..html). For other catch-up guidance, see Table 2.

### Influenza vaccination
- (minimum age: 6 months [IIV], 2 years [LAIV], 18 years [RIV])

#### Routine vaccination
- 1 dose any influenza vaccine appropriate for age and health status annually (2 doses separated by at least 4 weeks for children 6 months–8 years who did not receive at least 2 doses of influenza vaccine before July 1, 2018)

#### Special situations
- Children age 2 years or older: 1 dose Menveo or Menactra
- First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits:
  - 1 dose Menveo or Menactra

**Note:** Menactra should be administered either before or at the same time as DTaP. For MenACWY booster dose recommendations for groups listed under “Special situations” above and additional meningococcal vaccination information, see meningococcal MMWR publications at [www.cdc.gov/vaccines/hcp/aci-recs/vacc-specific/bling.html](http://www.cdc.gov/vaccines/hcp/aci-recs/vacc-specific/bling.html).

### Measles, mumps, and rubella vaccination
- (minimum age: 12 months for routine vaccination)

#### Routine vaccination
- 2-dose series at 12–15 months, 4–6 years
- Dose 1 may be administered as early as 4 weeks after dose 1.

#### Catch-up vaccination
- Unvaccinated children and adolescents: 2 doses at least 4 weeks apart
- The maximum age for use of MMRV is 12 years.

### Meningococcal serogroup A,C,W,Y vaccination
- (minimum age: 2 months [MenACWY-CRM, Menveo], 9 months [MenACWY-D, Menactra])

#### Routine vaccination
- 2-dose series: 11–12 years, 16 years

### Meningococcal serogroup B vaccination
- (minimum age: 10 years [MenB-4C, Bexsero; MenB-FHbp, Trumenba])

#### Clinical discrepancy
- MenB vaccine may be administered based on individual clinical decision to adolescents not at increased risk age 16–23 years (preferred age 16–18 years):
  - Bexsero: 2-dose series at least 1 month apart
  - Trumenba: 2-dose series at least 6 months apart; if dose 2 is administered earlier than 6 months, administer a 3rd dose at least 4 months after dose 2.

#### Special situations
- Anatomic or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, eculizumab use:
  - Bexsero: 2-dose series at least 1 month apart
  - Trumenba: 3-dose series at 0, 1–2, 6 months
  - Bexsero and Trumenba are not interchangeable; the same product should be used for all doses in a series.

For additional meningococcal vaccination information, see meningococcal MMWR publications at [www.cdc.gov/vaccines/hcp/aci-recs/vacc-specific/bling.html](http://www.cdc.gov/vaccines/hcp/aci-recs/vacc-specific/bling.html).
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**Pneumococcal vaccination** (minimum age: 6 weeks [PCV13], 2 years [PPSV23])

**Routine vaccination with PCV13**
- 4-dose series at 2, 4, 6, 12–15 months

**Catch-up vaccination with PCV13**
- 1 dose for healthy children age 24–59 months with any incomplete* PCV13 series
- For other catch-up guidance, see Table 2.

**Special situations**
- High-risk conditions below: When both PCV13 and PPSV23 are indicated, administer PCV13 first. PCV13 and PPSV23 should not be administered during same visit.
- Chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma treated with high-dose, oral corticosteroids); diabetes mellitus:
  - **Age 2–5 years**
    - Any incomplete* series with:
      - 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
      - Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
    - No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)
  - **Age 6–18 years**
    - No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)

**Cerebrospinal fluid leak, cochlear implant:**
- **Age 2–5 years**
  - Any incomplete* series with:
    - 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
    - Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
  - No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)
- **Age 6–18 years**
  - No history of either PCV13 or PPSV23: 1 dose PCV13, 2 doses PPSV23 (dose 1 of PPSV23 administered 8 weeks after PCV13 and dose 2 of PPSV23 administered at least 5 years after dose 1 of PPSV23)
  - Any PCV13 but no PPSV23: 2 doses PPSV23 (dose 1 of PPSV23 administered 8 weeks after the most recent dose of PCV13 and dose 2 of PPSV23 administered at least 5 years after dose 1 of PPSV23)
  - PPSV23 but no PCV13: 1 dose PCV13 at least 8 weeks after the most recent PPSV23 dose and a 2nd dose of PPSV23 administered 5 years after dose 1 of PPSV23 and at least 8 weeks after a dose of PCV13

**Chronic liver disease, alcoholism:**
- **Age 6–18 years**
  - No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)
  - An incomplete series is defined as not having received all doses in either the recommended series or an age-appropriate catch-up series. See Tables 8, 9, and 11 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.

**Rotavirus vaccination** (minimum age: 6 weeks)

**Routine vaccination**
- Rotarix: 2-dose series at 2 and 4 months.
- Rotarix: 3-dose series at 2, 4, and 6 months.

**Catch-up vaccination**
- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

**Varicella vaccination** (minimum age: 12 months)

**Routine vaccination**
- 2-dose series: 12–15 months, 4–6 years
  - Dose 2 may be administered as early as 3 months after dose 1 (a dose administered after a 4-week interval may be counted).

**Catch-up vaccination**
- Ensure persons age 7–18 years without evidence of immunity (see MMWR at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have 2-dose series:
  - Ages 7–12 years: routine interval: 3 months (minimum interval: 4 weeks)
  - Ages 13 years and older: routine interval: 4–8 weeks (minimum interval: 4 weeks).
- The maximum age for use of MMRV is 12 years.

**Tetanus, diphtheria, and pertussis (Tdap) vaccination** (minimum age: 11 years for routine vaccination, 7 years for catch-up vaccination)

**Routine vaccination**
- Adolescents age 11–12 years: 1 dose Tdap
- Pregnancy: 1 dose Tdap during each pregnancy, preferably in the early part of gestational weeks 27–36
- Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

**Catch-up vaccination**
- Adolescents age 13–18 years who have not received Tdap: 1 dose Tdap, then Td booster every 10 years
- Persons age 7–18 years not fully immunized with DTaP: 1 dose Tdap as part of the catch-up series (preferably the first dose); if additional doses are needed, use Td.
- Children age 7–10 years who receive Tdap inadvertently or as part of the catch-up series should receive the routine Tdap dose at 11–12 years.
- DTaP inadvertently given after the 7th birthday:
  - Child age 7–10 years: DTaP may count as part of catch-up series. Routine Tdap dose at 11–12 should be administered.
  - Adolescent age 11–18 years: Count dose of DTaP as the adolescent Tdap booster.
- For other catch-up guidance, see Table 2.
- For information on use of Tdap or Td as tetanus prophylaxis in wound management, see www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm.