### Vaccines and Other Immunizing Agents in the Child and Adolescent Immunization Schedule

**Recommended vaccines if immunization history is incomplete or unknown. Do not restart or add doses to vaccine series for extended intervals between doses. When a vaccine is not administered at the recommended age, administer at a subsequent visit.**

The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

### How to use the child and adolescent immunization schedule

1. **Determine recommended vaccine by age** (Table 1)
2. **Determine recommended interval for catch-up vaccination** (Table 2)
3. **Assess need for additional recommended vaccines by medical condition or other indication** (Table 3)
4. **Review vaccine types, frequencies, intervals, and considerations for special situations** (Notes)
5. **Review contraindications and precautions for vaccine types** (Appendix)
6. **Review new or updated ACIP guidance** (Addendum)

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### United States 2024

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Read the text carefully and answer any questions you might have about the document.
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. To determine minimum intervals between doses, see the catch-up schedule (Table 2).

<table>
<thead>
<tr>
<th>Vaccine and other immunizing agents</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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</thead>
<tbody>
<tr>
<td>Respiratory syncytial virus (RSV-mAb)</td>
<td>1 dose depending on maternal RSV vaccination status, See Notes</td>
<td>1 dose through 19 months, See Notes</td>
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<tr>
<td>Hepatitis B (HepB)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
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<td>Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Diphtheria, tetanus, acellular pertussis (DTaP &lt;7 yrs)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td>4th dose</td>
<td>5th dose</td>
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<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>See Notes</td>
<td>3rd or 4th dose</td>
<td>See Notes</td>
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<td>2nd dose</td>
<td>See Notes</td>
<td>3rd dose</td>
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<td>COVID-19 (1vCOV-mRNA, 1vCOV-aPS)</td>
<td>1 or more doses of updated (2023–2024 Formula) vaccine (See Notes)</td>
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<td>Annual vaccination 1 dose only</td>
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<td>Annual vaccination 1 dose only</td>
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<tr>
<td>Measles, mumps, rubella (MMR)</td>
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<td>Hepatitis A (HepA)</td>
<td>See Notes</td>
<td>2-dose series, See Notes</td>
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<td>Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)</td>
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<td>Human papillomavirus (HPV)</td>
<td>See Notes</td>
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<td>Meningococcal (MenACWY-CRM ≥2 mos, MenACWY-TT ≥2 years)</td>
<td>See Notes</td>
<td>1st dose</td>
<td>2nd dose</td>
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<td>Meningococcal B (MenB-4C, MenB-FHbp)</td>
<td>See Notes</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Respiratory syncytial virus vaccine (RSV [Abrysvo])</td>
<td>Seasonal administration during pregnancy, See Notes</td>
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<tr>
<td>Dengue (DEN4CYD; 9-16 yrs)</td>
<td>Seropositive in endemic dengue areas (See Notes)</td>
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</tbody>
</table>

Range of recommended ages for all children | Range of recommended ages for catch-up vaccination | Range of recommended ages for certain high-risk groups | Recommended vaccination can begin in this age group | Recommended vaccination based on shared clinical decision-making | No recommendation/not applicable
The following table 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.

### Table 2: Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More than 1 Month Behind, United States, 2024

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Dose 1 to Dose 2</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</td>
<td>Minimum age for the final dose is 24 weeks.</td>
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<tr>
<td>Rotavirus</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td>Maximum age for final dose is 8 months, 0 days.</td>
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<tr>
<td>Diphtheria, tetanus, and acellular pertussis</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks</td>
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<tr>
<td>Haemophilus influenzae type b</td>
<td>6 weeks</td>
<td>No further doses needed</td>
<td>No further doses needed</td>
<td>If first dose was administered at age 15 months or older</td>
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<tr>
<td>Rotavirus</td>
<td>6 weeks</td>
<td>No further doses needed</td>
<td>No further doses needed</td>
<td>If first dose was administered before the 1st birthday</td>
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<tr>
<td>Pneumococcal conjugate</td>
<td>6 weeks</td>
<td>No further doses needed</td>
<td>No further doses needed</td>
<td>If first dose was administered at age 4 months or older</td>
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<tr>
<td>Inactivated poliovirus</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td>If current age is &lt;4 years</td>
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<tr>
<td>Measles, mumps, rubella</td>
<td>12 months</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td>If current age is 6 months, 0 days</td>
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<tr>
<td>Varicella</td>
<td>12 months</td>
<td>3 months</td>
<td>3 months</td>
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<tr>
<td>Hepatitis A</td>
<td>12 months</td>
<td>6 months</td>
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<tr>
<td>Meningococcal ACWY</td>
<td>2 months</td>
<td>See Notes</td>
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<tr>
<td>Meningococcal ACWY</td>
<td>2 months</td>
<td>MenACWY-CRM</td>
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<tr>
<td>Meningococcal ACWY</td>
<td>2 months</td>
<td>MenACWY-TT</td>
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<tr>
<td>Measles, mumps, rubella</td>
<td>9 years</td>
<td>6 months</td>
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<tr>
<td>Varicella</td>
<td>9 years</td>
<td>6 months</td>
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</table>

### Children 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>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 ACWY</td>
<td>Not applicable (N/A)</td>
<td>8 weeks</td>
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<tr>
<td>Tetanus, diphtheria, tetanus, diphtheria, and acellular pertussis</td>
<td>7 years</td>
<td>4 weeks</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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<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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<tr>
<td>Inactivated poliovirus</td>
<td>N/A</td>
<td>4 weeks</td>
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<tr>
<td>Measles, mumps, rubella</td>
<td>N/A</td>
<td>4 weeks</td>
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<tr>
<td>Varicella</td>
<td>N/A</td>
<td>6 months</td>
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<tr>
<td>Dengue</td>
<td>9 years</td>
<td>6 months</td>
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</tbody>
</table>
Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions are often not mutually exclusive. If multiple conditions are present, refer to guidance in all relevant columns. See Notes for medical conditions not listed.

<table>
<thead>
<tr>
<th>Vaccine and other immunizing agents</th>
<th>Pregnancy</th>
<th>Immunocompromised (excluding HIV infection)</th>
<th>HIV infection CD4 percentage and count*</th>
<th>CSF leak or cochlear implant</th>
<th>Asplenia or persistent complement component deficiencies</th>
<th>Heart disease or chronic lung disease</th>
<th>Kidney failure, End-stage renal disease or on Dialysis</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSV-mAb (nirsevimab)</td>
<td>2nd RSV season</td>
<td>1 dose depending on maternal RSV vaccination status, See Notes</td>
<td>2nd RSV season for chronic lung disease (See Notes)</td>
<td>1 dose depending on maternal RSV vaccination status, See Notes</td>
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<tr>
<td>Hepatitis B</td>
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Table 3: Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2024

- Recommended for all age-eligible children who lack documentation of a complete vaccination series
- Not recommended for all children, but is recommended for some children based on increased risk for or severe outcomes from disease
- Recommended for all age-eligible children, and additional doses may be necessary based on medical condition or other indications. See Notes.
- Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended
- No Guidance/Not Applicable

a. For additional information regarding HIV laboratory parameters and use of live vaccines, see the General Best Practice Guidelines for Immunization, "Altered Immunocompetence" at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html and Table 4-1 (footnote J) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

b. Severe Combined Immunodeficiency

c. LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months
For vaccination recommendations for persons ages 19 years or older, see the Recommended Adult Immunization Schedule, 2024.

Additional information
• 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 3–2, Recommended and minimum ages and intervals between vaccine doses, in General Best Practice Guidelines for Immunization at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
• Information on travel vaccination requirements and recommendations is available at www.cdc.gov/travel/.
• For information about 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 vaccines included in the child and adolescent vaccine schedule are covered by VICP except dengue, PPSV23, RSV, Mpox and COVID-19 vaccines. Mpox and COVID-19 vaccines are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

COVID-19 vaccination
(minimum age: 6 months [Moderna and Pfizer-BioNTech COVID-19 vaccines], 12 years [Novavax COVID-19 Vaccine])

Routine vaccination
Age 6 months–4 years
• Unvaccinated:
  - 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4-8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3-8, 11-16 weeks
• Previously vaccinated* with 1 dose of any Moderna: 1 dose of updated (2023–2024 Formula) Moderna 4-8 weeks after the most recent dose.
• Previously vaccinated* with 2 or more doses of any Moderna: 1 dose of updated (2023–2024 Formula) Moderna at least 8 weeks after the most recent dose.
• Previously vaccinated* with 1 dose of any Pfizer-BioNTech: 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 8 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3-8 weeks).
• Previously vaccinated* with 2 or more doses of any Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 5–11 years
• Unvaccinated: 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech vaccine.
• Previously vaccinated* with 1 or more doses of Moderna or Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 12–18 years
• Unvaccinated:
  - 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech vaccine
  - 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3-8 weeks
• Previously vaccinated* with any COVID-19 vaccine(s): 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

Special situations
Persons who are moderately or severely immunocompromised**
Age 6 months–4 years
• Unvaccinated:
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 11 weeks.
• Previously vaccinated* with 1 dose of any Moderna: 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna and dose 1: 4 weeks).
• Previously vaccinated* with 2 doses of any Moderna: 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
• Previously vaccinated* with 3 or more doses of any Moderna: 1 dose of updated (2023–2024 Formula) Moderna at least 8 weeks after the most recent dose.
• Previously vaccinated* with 1 dose of any Pfizer-BioNTech: 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 8 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3 weeks).
• Previously vaccinated* with 2 or more doses of any Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

Age 5–11 years
• Unvaccinated:
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 7 weeks.
• Previously vaccinated* with 1 dose of any Moderna: 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna and dose 1: 4 weeks).
• Previously vaccinated* with 2 doses of any Moderna: 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
• Previously vaccinated* with 1 dose of any Pfizer-BioNTech: 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 4 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3 weeks).
• Previously vaccinated* with 2 doses of any Pfizer-BioNTech: 1 dose of 2023–2024 Pfizer-BioNTech at least 4 weeks after the most recent dose.
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**Notes**

- Previously vaccinated* with 3 or more doses of any Moderna or Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech at least 8 weeks after the most recent dose.
- Previously vaccinated* with 2 doses of any Moderna or Pfizer-BioNTech: 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna dose and dose 1: 4 weeks).
- Previously vaccinated* with 2 doses of any Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 4 weeks (minimum interval between previous Pfizer-BioNTech dose and dose 1: 3 weeks).
- Previously vaccinated* with 2 doses of any Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at 4 weeks after the most recent dose.

**Age 12–18 years**

- Unvaccinated:
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 7 weeks
  - 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3 weeks

- Previously vaccinated* with 1 dose of any Moderna: 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna dose and dose 1: 4 weeks).
- Previously vaccinated* with 2 doses of any Moderna: 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
- Previously vaccinated* with 1 dose of any Pfizer-BioNTech: 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

- Previously vaccinated* with 3 or more doses of any Moderna or Pfizer-BioNTech: 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.
- Previously vaccinated* with 1 or more doses of Janssen or Novavax or with or without dose(s) of any Original monovalent or bivalent COVID-19 vaccine: 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

There is no preferential recommendation for the use of one COVID-19 vaccine over another when more than one recommended age-appropriate vaccine is available.

Administer an age-appropriate COVID-19 vaccine product for each dose. For information about transition from age 4 years to age 5 years or age 11 years to age 12 years during COVID-19 vaccination series, see Tables 1 and 2 at www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#covid-vaccines.


**Note:** Previously vaccinated is defined as having received any Original monovalent or bivalent COVID-19 vaccine (Janssen, Moderna, Novavax, Pfizer-BioNTech) prior to the updated 2023–2024 formulation.

**Prospectively:**

- Dose 4 may be administered as early as age 12 months if at least 6 months have elapsed since dose 3.
- **Retrospectively:** A 4th dose that was inadvertently administered as early as age 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 and at least 6 months after dose 3.
- For other catch-up guidance, see Table 2.

**Special situations**

- Wound management in children less than age 7 years with history of 3 or more doses of tetanus-toxoid-containing vaccine: For all wounds except clean and minor wounds, administer DTaP if more than 5 years since last dose of tetanus-toxoid-containing vaccine. For detailed information, see www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm.

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

**Routine vaccination**

- ActHIB®, Hibrix®, Pentacel®, or Vaxelis*: 6-dose series (3-dose primary series at age 2, 4, and 6 months, followed by a booster dose at age 12–15 months)
  - *Vaxelis® is not recommended for use as a booster dose.
- PedvaxHIB*: 3-dose series (2-dose primary series at age 2 and 4 months, followed by a booster dose at age 12–15 months)

**Catch-up vaccination**

- **Dose 1 at age 7–11 months:** Administer dose 2 at least 4 weeks later and dose 3 (final dose) at age 12–15 months or 8 weeks after dose 2 (whichever is later).
- **Dose 1 at age 12–14 months:** Administer dose 2 (final dose) at least 8 weeks after dose 1.
- **Dose 1 before age 12 months and dose 2 before age 15 months:** Administer dose 3 (final dose) at least 8 weeks after dose 2.
- **2 doses of PedvaxHIB before age 12 months:** Administer dose 3 (final dose) at age 12–15 months and at least 8 weeks after dose 2.
- **1 dose administered at age 15 months or older:** No further doses needed.
- **Unvaccinated at age 15–59 months:** Administer 1 dose.

**Dengue vaccination (minimum age: 9 years)**

**Routine vaccination**

- Age 9–16 years living in areas with endemic dengue AND have laboratory confirmation of previous dengue infection: 3-dose series administered at 0, 6, and 12 months
- Endemic areas include Puerto Rico, American Samoa, US Virgin Islands, Federated States of Micronesia, Republic of Marshall Islands, and the Republic of Palau. For updated guidance on dengue endemic areas and pre-vaccination laboratory testing see www.cdc.gov/mmwr/volumes/70/rr/rr7006a1.htm?view=all&id=rr7006a1_w and www.cdc.gov/dengue/vaccine/hcp/index.html
- Dengue vaccine should not be administered to children traveling to or visiting endemic dengue areas.

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

**Routine vaccination**

- 5-dose series (3-dose primary series at age 2, 4, and 6 months, followed by a booster doses at ages 15–18 months and 4–6 years
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- Previously unvaccinated children age 60 months or older who are not considered high risk: Do not require catch-up vaccination

For other catch-up guidance, see Table 2. Vaxelis® can be used for catch-up vaccination in children less than age 5 years. Follow the catch-up schedule even if Vaxelis® is used for one or more doses. For detailed information on use of Vaxelis®, see www.cdc.gov/mmwr/volumes/69/wr/mm6905a5.htm.

Special situations

- Chemotherapy or radiation treatment: Age 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

- Hematopoietic stem cell transplant (HSCT):
  - 3-dose series 4 weeks apart starting 6 to 12 months after successful transplant, regardless of HB vaccination history

Anatomic or functional asplenia (including sickle cell disease):

- Age 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 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:

- Age 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:
  - Age 12–59 months
    - Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart

Hepatitis A vaccination
(minimum age: 12 months for routine vaccination)

Routine vaccination

- 2-dose series (minimum interval: 6 months) at age 12–23 months

Catch-up vaccination

- Unvaccinated persons through age 18 years should complete a 2-dose series (minimum interval: 6 months).
- Persons who previously received 1 dose at age 12 months or older should receive dose 2 at least 6 months after dose 1.
- Adolescents age 18 years or older may receive the combined HepA and HepB vaccine, Twinrix®, as a 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).

International travel

- Persons traveling to or working in countries with high or intermediate endemic hepatitis A (www.cdc.gov/travel/):
  - Infants age 6–11 months: 1 dose before departure; revaccinate with 2 doses (separated by at least 6 months) between age 12–23 months.
  - Unvaccinated age 12 months or older: Administer dose 1 as soon as travel is considered.

Hepatitis B vaccination
(minimum age: birth)

Routine vaccination

- 3-dose series at age 0, 1–2, 6–18 months (use monovalent HepB vaccine for doses administered before age 6 weeks)
  - Birth weight ≥2,000 grams: 1 dose within 24 hours of birth if medically stable
  - Birth weight <2,000 grams: 1 dose at chronological age 1 month or hospital discharge (whichever is earlier) and even if weight is still <2,000 grams.
  - Infants who did not receive a birth dose should begin the series as soon as possible (see Table 2 for minimum intervals).
  - Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.

Minimum intervals (see Table 2): when 4 doses are administered, substitute “dose 4” for “dose 3” in these calculations

- Final (3rd or 4th) dose: age 6–18 months (minimum age 24 weeks)

- Mother is HBsAg-positive

  - Birth dose (monovalent HepB vaccine only): administer HepB vaccine and hepatitis B immune globulin (HBIG) (in separate limbs) within 12 hours of birth, regardless of birth weight.
  - Birth weight <2,000 grams: administer 3 additional doses of HepB vaccine beginning at age 1 month (total of 4 doses)
  - Final (3rd or 4th) dose: administer at age 6 months (minimum age 24 weeks)
  - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose. Do not test before age 9 months.

- Mother is HBsAg-unknown

If other evidence suggestive of maternal hepatitis B infection exists (e.g., presence of HBV DNA, HBsAg-positive, or mother known to have chronic hepatitis B infection), manage infant as if mother is HBsAg-positive

- Birth dose (monovalent HepB vaccine only):
  - Birth weight ≥2,000 grams: administer HepB vaccine within 12 hours of birth. Determine mother’s HBsAg status as soon as possible. If mother is determined to be HBsAg-positive, administer HBIG as soon as possible (in separate limb), but no later than 7 days of age.
  - Birth weight <2,000 grams: administer HepB vaccine and HBIG (in separate limbs) within 12 hours of birth. Administer 3 additional doses of HepB vaccine beginning at age 1 month (total of 4 doses)
  - Final (3rd or 4th) dose: administer at age 6 months (minimum age 24 weeks)
  - If mother is determined to be HBsAg-positive or if status remains unknown, test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose. Do not test before age 9 months.

Catch-up vaccination

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months. See Table 2 for minimum intervals.
  - 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 age 18 years may receive:
    - Heplisav-B®: 2-dose series at least 4 weeks apart
    - PreHevbrio®: 3-dose series at 0, 1, and 6 months
    - Combined HepA and HepB vaccine, Twinrix®: 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).
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Special situations

- Revaccination is not generally recommended for persons with a normal immune status who were vaccinated as infants, children, adolescents, or adults.
- Post-vaccination serology testing and revaccination (if anti-HBs <10mIU/mL) is recommended for certain populations, including:
  - Infants born to HBsAg-positive mothers
  - Persons who are predialysis or on maintenance dialysis
  - Other immunocompromised persons
  - For detailed revaccination recommendations, see www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html.

Note: Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons.

Influenza vaccination

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**Special situations**

- Infants age 6–11 months: 1 dose before departure; revaccinate with 2-dose series at age 12–15 months (12 months for children in high-risk areas) and dose 2 as early as 4 weeks later.
- Unvaccinated children age 12 months or older: 2-dose series at least 4 weeks apart before departure.
- In mumps outbreak settings, for information about additional doses of MMR (including 3rd dose of MMR), see www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm

*Note: If MMRV is used, the minimum interval between MMRV doses is 3 months*

Human papillomavirus vaccination (minimum age: 9 years)

Routine and catch-up vaccination

- HPV vaccination routinely recommended at age 11–12 years (can start at age 9 years) and catch-up HPV vaccination recommended for all persons through age 18 years if not adequately vaccinated.
- 2- or 3-dose series depending on age at initial vaccination:
  - Age 9–14 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 months, 6 months (minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 12 weeks / dose 1 to dose 3: 5 months; repeat dose if administered too soon)
- No additional dose recommended when any HPV vaccine series of any valency has been completed using recommended dosing intervals.

Special situations

- Immunocompromising conditions, including HIV infection: 3-dose series, even for those who initiate vaccination at age 9 through 14 years.
- History of sexual abuse or assault: Start at age 9 years
- Pregnancy: Pregnancy testing not needed before vaccination; HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant

Meningococcal serogroup A,C,W,Y vaccination (minimum age: 2 months [MenACWY-CRM, Menevo], 2 years [MenACWY-TT, MenQuadfi]), 10 years [MenACWY-TT/MenB-FHbp, Penbraya]

Routine vaccination

- 2-dose series at age 11–12 years; 16 years

Catch-up vaccination

- Age 13–15 years: 1 dose now and booster at age 16–18 years (minimum interval: 8 weeks)
- Age 16–18 years: 1 dose

Special situations

Anatomic or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:

- Menevo**
  - Dose 1 at age 2 months: 4-dose series (additional 3 doses at age 4, 6, and 12 months)
  - Dose 1 at age 3–6 months: 3- or 4-dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
  - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
  - Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart

- MenQuadfi*
  - Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart
Notes

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Travel to countries with hyperendemic or epidemic meningococcal disease, including countries in the African meningitis belt or during the Hajj ([www.cdc.gov/travel/](http://www.cdc.gov/travel/)):

- Children less than age 24 months:
  - Menveo® (age 2–23 months)
    - Dose 1 at age 2 months: 4-dose series (additional 3 doses at age 4, 6, and 12 months)
    - Dose 1 at age 3–6 months: 3- or 4-dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
    - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
  - Children age 2 years or older: 1 dose Menveo® or MenQuad®

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 MenQuad®

Adolescent vaccination of children who received MenACWY prior to age 10 years:

- Children for whom boosters are recommended because of an ongoing increased risk of meningococcal disease (e.g., those with complement component deficiency, HIV, or asplenia): Follow the booster schedule for persons at increased risk.

- Children for whom boosters are not recommended (e.g., a healthy child who received a single dose for travel to a country where meningococcal disease is endemic): Administer MenACWY according to the recommended adolescent schedule with dose 1 at age 11–12 years and dose 2 at age 16 years.
  *Menveo has two formulations: lyophilized and liquid. The liquid formulation should not be used before age 10 years. See www.cdc.gov/vaccines/hcp/admin/downloads/menveo-single-vial-presentation.pdf.

Note: For MenACWY booster dose recommendations for groups listed under “Special situations” and in an outbreak setting and additional meningococcal vaccination information, see www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.

Children age 10 years or older may receive a dose of Penbraya™ as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day (see “Meningococcal serogroup B vaccination” section below for more information).

Meningococcal serogroup B vaccination (minimum age: 10 years [MenB-4C, Bexsero®; MenB-FHbp, Trumenba®; MenACWY-TT/MenB-FHbp, Penbraya®])

- 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

For additional information on shared clinical decision-making for MenB, see www.cdc.gov/vaccines/hcp/admin/downloads/isd-job-aid-scdm-mening-b-shared-clinical-decision-making.pdf

Special situations

Anatomic or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:

- Bexsero®: 2-dose series at least 1 month apart
- Trumenba®: 3-dose series at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed; if dose 3 is administered earlier than 4 months after dose 2, a 4th dose should be administered at least 4 months after dose 3)

Note: Bexsero® and Trumenba® are not interchangeable; the same product should be used for all doses in a series. For MenB booster dose recommendations for groups listed under “Special situations” and in an outbreak setting and additional meningococcal vaccination information, see www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.

Children age 10 years or older may receive a dose of Penbraya™ as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day. For age-eligible children not at increased risk, if Penbraya™ is used for dose 1 MenB, MenB-FHbp (Trumenba) should be administered for dose 2 MenB. For age-eligible children at increased risk of meningococcal disease, Penbraya™ may be used for additional MenACWY and MenB doses (including booster doses) if both would be given on the same clinic day and at least 6 months have elapsed since most recent Penbraya™ dose.

Mpxox vaccination (minimum age: 18 years [Jynneos®])

Special situations

- Age 18 years and at risk for Mpox infection: 2-dose series, 28 days apart.
- Risk factors for Mpox infection include:
  - Persons who are gay, bisexual, and other MSM, transgender or nonbinary people who in the past 6 months have had:
    - A new diagnosis of at least 1 sexually transmitted disease
    - More than 1 sex partner
    - Sex at a commercial sex venue
    - Sex in association with a large public event in a geographic area where Mpox transmission is occurring
  - Persons who are sexual partners of the persons described above
  - Persons who anticipate experiencing any of the situations described above
  - Pregnancy: There is currently no ACIP recommendation for Jynneos use in pregnancy due to lack of safety data in pregnant persons. Pregnant persons with any risk factor described above may receive Jynneos.

For detailed information, see: www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-10-25-26/04-MPOX-Rao-508.pdf

Pneumococcal vaccination (minimum age: 6 weeks [PCV13], [PCV 20]; 2 years [PPSV23])

Routine vaccination with PCV

- 4-dose series at 2, 4, 6–12–15 months

Catch-up vaccination with PCV

- Healthy children ages 2–4 years with any incomplete* PCV series: 1 dose PCV
- For other catch-up guidance, see Table 2.

Note: For children without risk conditions, PCV20 is not indicated if they have received 4 doses of PCV13 or PCV15 or another age appropriate complete PCV series.
Special situations

Children and adolescents with cerebrospinal fluid leak; chronic heart disease; chronic kidney disease (excluding maintenance dialysis and nephrotic syndrome); chronic liver disease; chronic lung disease (including moderate persistent or severe persistent asthma); cochlear implant; or diabetes mellitus:

**Age 2–5 years**

- Any incomplete* PCV series with:
  - 3 PCV doses: 1 dose PCV (at least 8 weeks after the most recent PCV dose)
  - Less than 3 PCV doses: 2 doses PCV (at least 8 weeks after the most recent dose and administered at least 8 weeks apart)
- Completed recommended PCV series but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: administer 1 dose PCV20 or 1 dose PPSV23, administer at least 8 weeks after the most recent PCV dose.

**Age 6–18 years**

- Not previously received any dose of PCV13, PCV15, or PCV20: administer 1 dose of PCV15 or 1 dose of PCV20. If PCV15 is used and no previous receipt of PPSV23, administer 1 dose of PPSV23 at least 8 weeks after the PCV15 dose.**
- Received PCV before age 6 years but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: 1 dose PCV20 OR 1 dose PPSV23, administer at least 8 weeks after the most recent PCV dose.
  - Received PCV13 OR 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose.
- Children and adolescents on maintenance dialysis, or with immunocompromising conditions such as nephrotic syndrome; congenital or acquired asplenia or splenic dysfunction; congenital or acquired immunodeficiencies; diseases and conditions treated with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and solid organ transplant; HIV infection; or sickle cell disease or other hemoglobinopathies:

**Age 2–5 years**

- Any incomplete* PCV series:
  - 3 PCV doses: 1 dose PCV (at least 8 weeks after the most recent PCV dose)
  - Less than 3 PCV doses: 2 doses PCV (at least 8 weeks after the most recent dose and administered at least 8 weeks apart)
- Completed recommended PCV series but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV dose.

**Age 6–18 years**

- Not previously received any dose of PCV13, PCV15, or PCV20: administer 1 dose of PCV15 OR 1 dose of PCV20. If PCV15 is used and no previous receipt of PPSV23, administer 1 dose of PPSV23 at least 8 weeks after the PCV15 dose.**
- Received PCV before age 6 years but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no additional dose of PCV or PPSV23
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose.
  - Received PCV13 only at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose.

**Notes**

Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

**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 age 4 years and at least 6 months after the previous dose.
- 4 or more doses of IPV can be administered before age 4 years when a combination vaccine containing IPV is used. However, a dose is still recommended on or after age 4 years 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.
- Adolescents age 18 years known or suspected to be unvaccinated or incompletely vaccinated: administer remaining doses (1, 2, or 3 IPV doses) to complete a 3-dose primary series.* Unless there are specific reasons to believe they were not vaccinated, most persons aged 18 years or older born and raised in the United States can assume they were vaccinated against polio as children.

**Series containing oral poliovirus 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?s_cid=mm6601a6_w.
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements.
  - Doses of OPV administered before April 1, 2016, should be counted (unless specifically noted as administered during a campaign).
  - Doses of OPV administered on or after April 1, 2016, should not be counted.
  - For guidance to assess doses documented as “OPV,” see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Table 2.
Special situations

- Adolescents aged 18 years at increased risk of exposure to poliovirus and completed primary series*: may administer one lifetime IPV booster
  *Note: Complete primary series consist of at least 3 doses of IPV or trivalent oral poliovirus vaccine (tOPV) in any combination.

For detailed information, see: www.cdc.gov/vaccines/vpd/pols/hcp/recommendations.html

Respiratory syncytial virus immunization (minimum age: birth [Nirsevimab, RSV-mAb (Beyfortus™)])

Routine immunization

- Infants born October – March in most of the continental United States*
  - Mother did not receive RSV vaccine or mother’s RSV vaccination status is unknown: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting
  - Mother received RSV vaccine ≤14 days prior to delivery: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting
  - Mother received RSV vaccine at least 14 days prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers (see special populations and situations at www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html)

- Infants born April–September in most of the continental United States*
  - Mother did not receive RSV vaccine or mother’s RSV vaccination status is unknown: administer 1 dose nirsevimab shortly before start of RSV season*
  - Mother received RSV vaccine ≤14 days prior to delivery: administer 1 dose nirsevimab shortly before start of RSV season*
  - Mother received RSV vaccine at least 14 days prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers (see special populations and situations at www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html)

Infants with prolonged birth hospitalization** (e.g., for prematurity) discharged October through March should be immunized shortly before or promptly after discharge.

Special situations

- Ages 8–19 months with chronic lung disease of prematurity requiring medical support (e.g., chronic corticosteroid therapy, diuretic therapy, or supplemental oxygen) any time during the 6-month period before the start of the second RSV season; severe immunocompromise; cystic fibrosis with either weight for length <10th percentile or manifestation of severe lung disease (e.g., previous hospitalization for pulmonary exacerbation in the first year of life or abnormalities on chest imaging that persist when stable)**:
  - 1 dose nirsevimab shortly before start of second RSV season*

- Ages 8–19 months who are American Indian or Alaska Native:
  - 1 dose nirsevimab shortly before start of second RSV season*

- Age-eligible and undergoing cardiac surgery with cardiopulmonary bypass**: 1 additional dose of nirsevimab after surgery. For additional details see special populations and situations at www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html

*Note: While the timing of the onset and duration of RSV season may vary, nirsevimab may be administered October through March in most of the continental United States. Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality.

Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality. Although optimal timing of administration is just before the start of the RSV season, nirsevimab may also be administered during the RSV season to infants and children who are age-eligible.

**Note: Nirsevimab can be administered to children who are eligible to receive palivizumab. Children who have received nirsevimab should not receive palivizumab for the same RSV season.

For further guidance, see www.cdc.gov/mmwr/volumes/72/mm7234a4.htm and www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html

Respiratory syncytial virus vaccination

(RSV [Abrysvo™])

Routine vaccination

- Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States*: 1 dose RSV vaccine (Abrysvo™). Administer RSV vaccine regardless of previous RSV infection.

  - Either maternal RSV vaccination or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent respiratory syncytial virus lower respiratory tract infection in infants.

- All other pregnant persons: RSV vaccine not recommended. There is currently no ACIP recommendation for RSV vaccination in subsequent pregnancies. No data are available to inform whether additional doses are needed in later pregnancies.

*Note: Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality.

Rotavirus vaccine (minimum age: 6 weeks)

Routine vaccination

- Rotarix*: 2-dose series at age 2 and 4 months

  - RotaTeq*: 3-dose series at age 2, 4, and 6 months

  - If any dose in the series is either RotaTeq* or unknown, default to 3-dose series.

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 Table 2.

For detailed information, see: www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html
Notes

Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

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

Routine vaccination
- Age 11–12 years: 1 dose Tdap (adolescent booster)
- Pregnancy: 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36.

Note: Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Catch-up vaccination
- Age 13–18 years who have not received Tdap: 1 dose Tdap (adolescent booster)
- Age 7–18 years not fully vaccinated with DTaP: 1 dose Tdap as part of the catch-up series (preferably the first dose); if additional doses are needed, use Td or Tdap.
- Tdap administered at age 7–10 years:
  - Age 7–9 years who receive Tdap should receive the adolescent Tdap booster dose at age 11–12 years.
  - Age 10 years who receive Tdap do not need the adolescent Tdap booster dose at age 11–12 years.
- DTaP inadvertently administered on or after age 7 years:
  - Age 7–9 years: DTaP may count as part of catch-up series. Administer adolescent Tdap booster dose at age 11–12 years.
  - Age 10–18 years: Count dose of DTaP as the adolescent Tdap booster dose.
- For other catch-up guidance, see Table 2.

Special situations
- Wound management in persons age 7 years or older with history of 3 or more doses of tetanus-toxoid-containing vaccine: For clean and minor wounds, administer Tdap or Td if more than 10 years since last dose of tetanus-toxoid-containing vaccine; for all other wounds, administer Tdap or Td if more than 5 years since last dose of tetanus-toxoid-containing vaccine. Tdap is preferred for persons age 11 years or older who have not previously received Tdap or whose Tdap history is unknown. If a tetanus-toxoid-containing vaccine is indicated for a pregnant adolescent, use Tdap.
- For detailed information, see www.cdc.gov/mmwr/volumes/69/mm/m6903a5.htm.

Varicella vaccination
(minimum age: 12 months)

Routine vaccination
- 2-dose series at age 12–15 months, 4–6 years
- VAR or MMRV may be administered*
- Dose 2 may be administered as early as 3 months after dose 1 (a dose inadvertently administered after at least 4 weeks may be counted as valid)

*Note: For dose 1 in children age 12–47 months, it is recommended to administer MMR and varicella vaccines separately. MMRV may be used if parents or caregivers express a preference.

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 a 2-dose series:
  - Age 7–12 years: Routine interval: 3 months (a dose inadvertently administered after at least 4 weeks may be counted as valid)
  - Age 13 years and older: Routine interval: 4–8 weeks (minimum interval: 4 weeks)
- The maximum age for use of MMRV is 12 years.

*Fully vaccinated = 5 valid doses of DTaP OR 4 valid doses of DTap if dose 4 was administered at age 4 years or older.
### Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

#### Appendix

**Guide to Contraindications and Precautions to Commonly Used Vaccines**

Adapted from Table 4-1 in Advisory Committee on Immunization Practices (ACIP) General Best Practice Guidelines for Immunization: Contraindication and Precautions, Prevention and Control of Seasonal Influenza with Vaccines—United States, 2023–24 Influenza Season | MMWR (cdc.gov) | Contraindications and Precautions for COVID-19 Vaccination, and Contraindications and Precautions for JYNNEOS Vaccination

<table>
<thead>
<tr>
<th>Vaccines and other Immunizing Agents</th>
<th>Contraindicated or Not Recommended¹</th>
<th>Precaution²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COVID-19 mRNA vaccines</strong> (Pfizer-BioNTech, Moderna)</td>
<td>- Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of an mRNA COVID-19 vaccine⁴</td>
<td>- Diagnosed non-severe allergy (e.g., urticaria beyond the injection site) to a component of an mRNA COVID-19 vaccine⁴ or non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of an mRNA COVID-19 vaccine⁴ - Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine⁴ - Multisystem inflammatory syndrome in children (MIS-C) or multisystem inflammatory syndrome in adults (MIS-A) - Moderate or severe acute illness, with or without fever</td>
</tr>
<tr>
<td><strong>COVID-19 protein subunit vaccine</strong> (Novavax)</td>
<td>- Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of a Novavax COVID-19 vaccine⁴</td>
<td>- Diagnosed non-severe allergy (e.g., urticaria beyond the injection site) to a component of Novavax COVID-19 vaccine⁴ or non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of a Novavax COVID-19 vaccine⁴ - Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine⁴ - Multisystem inflammatory syndrome in children (MIS-C) or multisystem inflammatory syndrome in adults (MIS-A) - Moderate or severe acute illness, with or without fever</td>
</tr>
<tr>
<td><strong>Influenza, egg-based, inactivated injectable (IIV4)</strong></td>
<td>- Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency)</td>
<td>- Guillain–Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine - Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td><strong>Influenza, cell culture-based inactivated injectable (ccIIV4)</strong> (Flucelvax Quadrivalent)</td>
<td>- Severe allergic reaction (e.g., anaphylaxis) to any ccIIV of any valency, or to any component² of ccIIV⁴</td>
<td>- Guillain–Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine - Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency - If using ccIIV, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. - Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td><strong>Influenza, recombinant injectable (RIV4)</strong> (Flublok Quadrivalent)</td>
<td>- Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component² of RIV⁴</td>
<td>- Guillain–Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine - Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, ccIIV, RIV, or LAIV of any valency - If using RIV⁴, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. - Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td><strong>Influenza, live attenuated (LAIV4)</strong> (Flumist Quadrivalent)</td>
<td>- Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency) - Severe allergic reaction (e.g., anaphylaxis) to any vaccine component² (excluding egg) - Children age 2–4 years with a history of asthma or wheezing - Anatomically or functionally asplenia - Immunocompromised due to any cause including, but not limited to, medications and HIV infection - Close contacts or caregivers of severely immunosuppressed persons who require a protected environment - Pregnancy - Cochlear implant - Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear or any other cranial CSF leak - Children and adolescents receiving aspirin or salicylate-containing medications - Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days</td>
<td>- Guillain–Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine - Asthma in persons age 5 years old or older - Persons with underlying medical conditions other than those listed under contraindications that might predispose to complications after wild-type influenza virus infection, e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus) - Moderate or severe acute illness with or without fever</td>
</tr>
</tbody>
</table>

¹ When a contraindication is present, a vaccine should NOT be administered. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization.

² When a precaution is present, vaccination should generally be deferred but might be indicated if the benefit of protection from the vaccine outweighs the risk for an adverse reaction. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization.

³ Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. See Package inserts and FDA EUA fact sheets for a full list of vaccine ingredients. mRNA COVID-19 vaccines contain polyethylene glycol (PEG).

⁴ See package inserts and FDA EUA fact sheets for a full list of vaccine ingredients. mRNA COVID-19 vaccines contain polyethylene glycol (PEG).
<table>
<thead>
<tr>
<th>Vaccines and Other Immunizing Agents</th>
<th>Contraindicated or Not Recommended</th>
<th>Precautions</th>
</tr>
</thead>
</table>
| Dengue (DENV)                       | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy) with HfI who are severely immunocompromised.  
• Lack of laboratory confirmation of a previous Dengue infection.  
• Guillain-Barré syndrome (GBS) within 6 weeks after previous dose of tetanus-toxoid-containing vaccine.  
• History of Kawasaki disease, acute severe febrile illness, or other similar conditions.  
• Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy) with HfI who are severely immunocompromised.  
• Pregnancy.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • HIV infection without evidence of severe immunosuppression.  
• Moderate or severe acute illness with or without fever.  
| Diphtheria, tetanus, pertussis (DTaP) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • For DTaP only: 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 or DTaP.  
• History of diphtheria-toxoid-containing vaccine or 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) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• Less than age 6 weeks.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Pregnancy.  
| Hepatitis A (HepA) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Hepatitis B (HepB) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component.  
• Moderate or severe acute illness with or without fever.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Human papillomavirus (HPV) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• Pregnancy.  
• History of cervical intraepithelial neoplasia.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Measles, mumps, rubella (MMR) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• Moderate or severe acute illness with or without fever.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Meningococcal ACWY (MenACWY) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• For MenACWY-CRM only: severe allergic reaction to any diphtheria toxoid–or CRM197–containing vaccine.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • For MenACWY-CRM only: Rectum during pregnancy.  
• Moderate or severe acute illness with or without fever.  
| Meningococcal B (MenB) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • For MenB-4C only: Latex sensitivity.  
| Pneumococcal conjugate (PCV) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• For MenB-4C only: Latex sensitivity.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Poliovirus vaccine, inactivated (IPV) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Pregnancy.  
| RSV monoclonal antibody (RSV mAb) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Respiratory syncytial virus vaccine (RSV) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• Pregnancy.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Moderate or severe acute illness with or without fever.  
| Tetanus, diphtheria, and acellular pertussis (Tdap) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • For Tdap only: Pregnancy.  
| Varicella (VAR) | • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or a vaccine component.  
• Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy) with HfI who are severely immunocompromised.  
• Family history of altered immune competency, unless verified clinically or by laboratory testing as immunocompetent.  
| Recommendations for Ages 18 Years or Younger, United States, 2024 | • Pregnancy.  
| 1. When a contraindication is present, a vaccine should NOT be administered.  
2. When a precaution is present, vaccination should generally be deferred but might be indicated if the benefit of protection from the vaccine outweighs the risk for an adverse reaction.  
4. For information on pregnancy exposure registries for persons who were inadvertently vaccinated with Hepatitis B or PreHevbrio while pregnant, please visit heplisavbreg.com or www.prehevbrio.com/#safety.  
5. Full prescribing information for BEYFORTUS (nirsevimab-alip) www.accessdata.fda.gov/drugsatfda_docs/label/2023/761328s000lbl.pdf
Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

Addendum

In addition to the recommendations presented in the previous sections of this immunization schedule, ACIP has approved the following recommendations by majority vote since October 26, 2023. The following recommendations have been adopted by the CDC Director and are now official. Links are provided if these recommendations have been published in Morbidity and Mortality Weekly Report (MMWR).

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>Recommendations</th>
<th>Effective Date of Recommendation*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No new vaccines or vaccine recommendations to report</td>
<td></td>
</tr>
</tbody>
</table>

*The effective date is the date when the CDC director adopted the recommendation and when the ACIP recommendation became official.