### Recommended Immunization Schedules for Persons Aged 0–18 Years

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

#### Table: Catch-up Immunization Schedule for Persons Aged 4 Months–18 Years Who Start Late or Who Are More Than 1 Month Behind

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose</th>
<th>Dose 1 to Dose 2</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 (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Rotavirus®</td>
<td>6 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Diphtheria, Tetanus, Pertussis®</td>
<td>6 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Haemophilus influenzae type b®</td>
<td>6 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Pneumococcal®</td>
<td>6 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Inactivated Poliovirus®</td>
<td>6 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Measles, Mumps, Rubella®</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Varicella®</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Hepatitis A®</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
</tbody>
</table>

#### Table: Catch-up Immunization Schedule for Persons Aged 7–18 Years

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose</th>
<th>Dose 1 to Dose 2</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>Tetanus, Diphtheria, Tetanus, Pertussis®</td>
<td>7 yrs[^1]</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Human Papillomavirus®</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Measles, Mumps, Rubella®</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
<tr>
<td>Varicella®</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>8 weeks (as final dose)</td>
<td>8 weeks (after last dose)</td>
<td>6 months</td>
</tr>
</tbody>
</table>

### Notes

1. **Hepatitis B vaccine (HepB)**
   - Administer the 3-dose series to those who were not previously vaccinated.
   - A 4-dose series of Recombivax® HB is preferred for children aged 11–15 years.

2. **Rotavirus vaccine (Rotavirus)**
   - Do not start the series later than age 12 weeks.
   - Administer the final dose in the series by age 32 weeks.
   - Do not administer a dose later than age 32 weeks.
   - Data on safety and efficacy outside of these age ranges are insufficient.

3. **Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP)**
   - The 6th dose is not necessary if the fourth dose was administered at age 4–6 years or older.
   - DTaP is not indicated for persons aged 7 years or older.

4. **Haemophilus influenzae type b conjugate vaccine (Hib)**
   - Vaccine is not generally recommended for children aged 5 years or older.
   - If current age is younger than 12 months and the first 2 doses were PPS-OMP-IPV, the third dose should be administered at age 12–15 months and at least 8 weeks after the second dose.
   - If PPS-OMP-IPV was administered at younger than 12 months or at age 12–15 months, administer 2 doses separated by 4 weeks plus a booster at age 12–15 months.

5. **Pneumococcal conjugate vaccine (PCV)**
   - Administer at least 2 doses of PCV to all healthy children aged 24–59 months having any immunocompromising condition.
   - For children with underlying medical conditions, administer 2 doses of PCV at least 8 weeks apart and 8 weeks after the second dose.

6. **Inactivated poliovirus vaccine (IPV)**
   - For children who received an IPV or oral poliovirus (OPV) series, a fourth dose is not necessary if third dose was administered at age 4 years or older.
   - If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child's current age.
   - IPV is not routinely recommended for persons aged 10 years and older.

7. **Measles, mumps, and rubella vaccine (MMR)**
   - The second dose of MMR is recommended routinely at age 4–6 years but may be administered earlier if desired.
   - If not previously vaccinated, administer 2 doses of MMR during any visit with an interval of 4 or more weeks between the doses.

8. **Varicella vaccine**
   - The second dose of varicella vaccine is recommended routinely at age 4–6 years but may be administered earlier if desired.
   - Do not repeat the second dose in persons younger than 13 years of age who were administered 2 or more doses before age 13 years.

9. **Hepatitis A vaccine (HepA)**
   - Both doses of HepA are recommended for certain groups of children, including in areas where vaccination programs target older children. See MMWR 2006;55(No. RR-7):1–23.

10. **Tetanus and diphtheria toxoids vaccine (Td) and tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap)**
    - Tdap should be substituted for a single dose of Td in the primary catch-up series or as a booster if age appropriate; use Td for other doses.
    - A 5-year interval from the last Td dose is encouraged when Tdap is used as a booster dose. A booster (fourth) dose is needed if any of the previous doses were administered at younger than 12 months of age.
    - Refer to ACIP recommendations for further information.

11. **Human papillomavirus vaccine (HPV)**
    - Administer the HPV vaccine series to females at age 13–18 years if not previously vaccinated.

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[^1]: Data on safety and efficacy outside of these age ranges are insufficient.

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

At birth
• Administer monovalent HepB to all newborns prior to hospital discharge.
• If mother is HepB surface antigen (HBsAg) positive, administer HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
• If mother’s HBsAg status is unknown, administer HepB within 12 hours of birth. Determine the HBsAg status as soon as possible and if HBsAg positive, administer HBIG (no later than age 1 week).
• If mother is HBsAg negative, the birth dose can be delayed, in rare cases, with a provider’s order and a copy of the mother’s negative HBsAg laboratory report in the infant’s medical record.

After the birth dose
• The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be administered at age 1–2 months. The final dose should be administered no earlier than age 16 weeks and not more than 1 month before the birth dose. Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg after completion of at least 3 doses of a licensed HepB series, at age 12–18 months (generally at the next well-child visit).

4-month dose:
• It is permissible to administer 4 doses of HepB when combination vaccines are administered after the birth dose. If monovalent HepB is used for doses after the birth dose, a dose at age 4 months is not needed.

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

• Administer the first dose at age 6–12 weeks.
• Do not start the series later than 12 weeks.
• Administer the final dose in the series by age 32 weeks. Do not administer any dose later than age 32 weeks.
• Data on safety and efficacy outside of these age ranges are insufficient.

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

• The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose.
• Administer the final dose in the series at age 4–6 years.

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

• If PRP-OMP (PedvaxHIB® or Comvax® [Merrick]) is administered at ages 2 and 4 months, a dose at age 6 months is not required.
• TRIB isset® (DTP/Hib) or combination products should not be used for primary immunization but can be used as boosters following any Hib vaccine in children age 12 months or older.

5. Pneumococcal vaccine. (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPV])

• Administer one dose of PCV to all healthy children aged 24–59 months having any incomplete schedule.
• Administer PPV to children aged 2 years and older with underlying medical conditions.

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

• Administer annually to children aged 6–23 months and to all eligible close contacts of children aged 0–9 months.
• Administer annually to children 5 years of age and older with certain risk factors. For household contacts of persons who have received a dose in the previous season, only one dose is needed.
• Do not start the series later than age 12 weeks.
• Administer the first dose at age 6–12 weeks.
• For healthy people (those who do not have underlying medical conditions that predispose them to influenza complications) ages 4–49 years, either TIV or LAIV may be used.
• Children receiving TIV should receive 0.25 mL if age 6–35 months or 0.5 mL if age 3 years or older.
• Administer 2 doses (separated by 4 weeks or longer) to children younger than 9 years who received influenza vaccine for the first time or who were vaccinated for the first time last season but only received one dose.

7. Measles, Mumps, and Rubella vaccine (MMR).

• Administer the second dose of MMR at age 4–6 years. MMR may be administered before age 4 years if 2 doses have been given.

8. Varicella vaccine.

• Administer the second dose of MMR at age 4–6 years. MMR may be administered before age 4 years if 2 doses have been given.
• Do not repeat second dose if administered 28 or more days after first dose.

9. Hepatitis A vaccine (HepA).

• Administer the first dose of the HepA vaccine series to females at age 11–12 years.
• Administer the second dose 2 months after the first dose and the third dose 6 months after the first dose.
• Administer the HepA vaccine series to females at age 13–18 years in B series.

10. Meningococcal vaccine.

• Administer MCV4 to persons who received MPSV4 >3 or more years previously and if not previously vaccinated.
• Persons who received MCV4 >3 or more years previously and remain at increased risk for meningococcal disease should be vaccinated with MCW.

11. Pneumococcal polysaccharide vaccine (PPV).

• Administer PPV to certain high-risk groups.

12. Inactivated poliovirus vaccine (IPV).

• For children who received an all-IPV or all-oral poliovirus (OPV) vaccine.
• If not previously vaccinated, administer 2 doses of IPV at ages 2 and 4 years or older.
• If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child’s current age.

13. Mumps, rubella, and varicella vaccine (MMRV).

• For healthy nonpregnant persons (those who do not have underlying medical conditions that predispose them to influenza complications) ages 2–49 years, either LAIV or TIV may be used.

6. Hepatitis A vaccine (HepA).

• Administer the 2-dose series at the latest at age 6 months at school entry.
• HepA is recommended for certain other groups of children, including those in areas where vaccination programs target older children.

7. Hepatitis B vaccine (HepB).

• Administer the 3-dose series to those who were not previously vaccinated.
• A 2-dose series of Recombivax HB® is licensed for children aged 11–15 years.

8. Inactivated poliovirus vaccine (IPV).

• For children who received an all-IPV or all-oral poliovirus (OPV) vaccine.
• If not previously vaccinated, administer 2 doses of IPV at ages 2 and 4 years or older.
• If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child’s current age.


• If not previously vaccinated, administer 2 doses of MMR during any visit, with 4 or more weeks between the doses.

10. Varicella vaccine.

• Administer 2 doses of varicella vaccine to persons younger than 13 years of age at least 3 months apart. Do not repeat the second vaccine if administered 28 or more days following the first dose.
• Administer 2 doses of varicella vaccine to persons aged 13 years or older at least 4 weeks apart.