

Catch-Up Schedule and Minimum Intervals for Children and Adolescents

There is no need to restart a vaccine series no matter how much time has elapsed between doses.

Catch-Up Schedule for Ages 4 Months Through 6 Years

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks ¹ (and 16 weeks after first dose).		
Rotavirus ²	6 weeks	4 weeks	4 weeks if Rotateq was used for any previous dose(s).		
Diphtheria, Tetanus, Pertussis ³	6 weeks	4 weeks	4 weeks	6 months	6 months ³
<i>Haemophilus influenzae</i> type b ⁴	6 weeks	4 weeks if first dose given before age 12 months. 8 weeks (as final dose) if first dose given at age 12 through 14 months. No further doses needed if first dose given at age 15 months and older.	4 weeks ⁴ if current age is less than 12 months. 8 weeks (as final dose) ⁴ if current age is 12 months or older and second dose given before age 15 months. No further doses needed if previous dose given at age 15 months and older.	8 weeks (as final dose) The fourth dose is only necessary for children age 12 months to 5 years who received 3 doses before age 12 months.	
Pneumococcal ⁵	6 weeks	4 weeks if first dose given before age 12 months and current age is less than 24 months. 8 weeks (as final dose for healthy children) if first dose given at age 12 months and older or current age is 24 through 59 months. No further doses needed for healthy children if first dose given at age 24 through 59 months.	4 weeks if current age is less than 12 months. 8 weeks (as final dose for healthy children) if current age is 12 months and older. No further doses needed for healthy children if previous dose given at age 24 months and older.	8 weeks (as final dose) The fourth dose is only necessary for children age 12 months to 5 years who received 3 doses before age 12 months. For at-risk children age 24 through 59 months give PCV if 3 doses received previously.	
Inactivated Poliovirus ⁶	6 weeks	4 weeks	4 weeks	6 months ⁶	
Measles, Mumps, Rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months			
Hepatitis A ⁹	12 months	6 months			

Catch-Up Schedule for Ages 7 Through 18 Years

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Tetanus, Diphtheria; Tetanus, Diphtheria, Pertussis ¹⁰	7 years ¹⁰	4 weeks	8 weeks if first dose given before age 12 months. 6 months if first dose given at age 12 months and older.	6 months if first dose given before age 12 months.	
Human Papillomavirus ¹¹	9 years	4 weeks	12 weeks (and at least 6 months after first dose).		
Hepatitis A ⁹	12 months	6 months			
Hepatitis B ¹	Birth	4 weeks	8 weeks (and 16 weeks after first dose).		
Inactivated Poliovirus ⁶	6 weeks	4 weeks	6 months as final dose. 4 weeks if person has received both IPV and OPV and requires 4 doses.	6 months ⁶	
Measles, Mumps, Rubella ⁷	12 months	4 weeks			
Varicella ⁸	12 months	3 months if person is younger than age 13 years. 4 weeks if person is age 13 years and older.			
Meningococcal ¹²	2 years	2 months			

- Hepatitis B (HepB).**
 - Final dose should not be given before age 24 weeks.
 - A 2-dose series 4 to 6 months apart of adolescent formulation Recombivax HB is licensed for ages 11 through 15 years.
 - Rotavirus (RV).**
 - Do not start the series at age 15 weeks and older.
 - Do not give a dose on or after age 8 months.
 - If Rotateq was used for either of the first 2 doses, give a total of 3 doses.
 - Diphtheria, tetanus, and acellular pertussis (DTaP).**
 - Fifth dose is not necessary if fourth dose was given at age 4 years or older.
 - Not indicated for persons age 7 years and older.
 - Haemophilus influenzae* type b (Hib).**
 - Consider 1 dose for unvaccinated high-risk persons age 5 years and older with sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy.
 - If current age is under 12 months and first 2 doses were PRP-OMP (PedvaxHIB or ComVax), give third (and final) dose at age 12 through 15 months and at least 8 weeks after second dose.
 - If first dose was given at age 7 through 11 months, give 2 doses separated by 4 weeks plus a booster at age 12 through 15 months.
 - Pneumococcal conjugate vaccine (PCV).**
 - Generally not recommended for children age 5 years and older.
 - Give 1 dose to healthy children age 2 through 4 years who have not received at least 1 dose of PCV on or after 12 months of age.
 - Give at-risk children age 2 through 5 years 1 dose if 3 doses received previously or give 2 doses 8 weeks apart if child has received fewer than 3 doses.
 - Consider a single supplemental dose of PCV13 for children age 6 through 18 years with anatomic or functional asplenia including sickle cell disease, immunocompromising conditions including HIV infection, cochlear implant, or CSF leaks.
 - Inactivated poliovirus (IPV).**
 - For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if third dose was given at age 4 years or older and at least 6 months has elapsed from previous dose.
- If both OPV and IPV were given as part of a series, give a total of 4 doses, regardless of child's current age.
 - IPV is not routinely recommended for persons age 18 years and older.
 - Always give final dose on or after age 4 years, regardless of the number of doses previously given.
 - Give final dose at least 6 months from previous dose.
 - In children age 6 months and younger; apply minimum age and intervals only if there is an imminent risk of exposure, i.e., community outbreak or travel to endemic areas.
- Measles, mumps, and rubella (MMR).**
 - Second dose is recommended routinely at age 4 through 6 years but may be given earlier.
 - Give 2 doses of MMR at least 4 weeks apart to all previously unvaccinated children.
 - MMR and varicella may be given simultaneously; otherwise separate them by at least 4 weeks.
 - Varicella (VAR).**
 - Second dose is recommended routinely at age 4 through 6 years but may be given earlier.
 - If the second dose is given at least 28 days following the first dose it can be considered valid.
 - Hepatitis A (HepA).**
 - Consider catch-up vaccination for children through age 18 years.
 - Tetanus and diphtheria (Td) and tetanus, diphtheria, and acellular pertussis (Tdap).**
 - Substitute Tdap for one dose of Td in the primary catch-up series and use Td for other doses.
 - Give Tdap in place of Td booster dose for children age 11 through 18 years.
 - Human papillomavirus (HPV).**
 - Give HPV2 or HPV4 series to all unvaccinated females at age 13 through 18 years. May give HPV4 to males age 9 through 18 years.
 - Follow the dose intervals of 0, 2, and 6 months as closely as possible.
 - Meningococcal conjugate vaccine (MCV).**
 - Give 1 dose of MCV to unvaccinated adolescents age 13 through 18 years. If vaccinated at age 13 through 15 years, give a booster dose at age 16 through 18 years (i.e., 3 years later).
 - Give 2 doses 2 months apart to adolescents age 11 through 18 years who are HIV positive.
 - Give 2 doses 2 months apart to children age 2 years and older with persistent complement component deficiency or anatomic or functional asplenia and 1 dose every 5 years thereafter.

Recommended Immunization Schedule for Children and Adolescents Minnesota 2011

- Ages 0–6 Years
- Ages 7–18 Years
- Catch-Up: 4 Months–6 Years
- Catch-Up: 7–18 Years

Based on recommendations of the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians, and endorsed by the Minnesota Immunization Practices Advisory Committee of the Minnesota Department of Health.



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Recommended Immunization Schedule, Minnesota 2011

Ages 0–6 Years

Chart must be used with guidelines below.

Vaccine ↓	Age →	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	19-23 months	2-3 years	4-6 years
Hepatitis B ¹	HepB		HepB	see footnote 1	HepB							
Rotavirus ²			RV	RV	RV ²							
Diphtheria, Tetanus, Pertussis ³			DTaP	DTaP	DTaP	see footnote 3	DTaP					DTaP
<i>Haemophilus influenzae</i> type b ⁴			Hib	Hib	Hib ⁴	Hib						
Pneumococcal ⁵			PCV	PCV	PCV	PCV	Supplemental PCV13				PPSV	
Inactivated Poliovirus ⁶			IPV	IPV	IPV							IPV
Influenza ⁷					TIV (annually)						TIV or LAIV	
Measles, Mumps, Rubella ⁸					MMR							MMR
Varicella ⁹					VAR							VAR
Hepatitis A ¹⁰					HepA series						HepA series	
Meningococcal ¹¹											MCV	

- Range of recommended ages
- Catch-up vaccination
- Certain high-risk groups

- Additional vaccines may be licensed and recommended during the year. For updated information see www.cdc.gov/vaccines/pubs/ACIP-list.htm.
- Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Also consider provider assessment, patient preference, and potential for adverse events.
- Consult the respective ACIP statement for detailed recommendations.
- Report clinically significant adverse events that follow immunization to the Vaccine Adverse Event Reporting System (VAERS). For guidance on how to obtain and complete a VAERS form see <http://vaers.hhs.gov/index> or call 800-822-7967.

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

At birth:

- Give monovalent HepB to all newborns within 12 hours of birth.
- If mother is HBsAg positive, give newborn HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
- If mother's HBsAg status is unknown, give newborn HepB within 12 hours of birth. Determine mother's HBsAg status as soon as possible and if HBsAg positive, give newborn HBIG as soon as possible and within 1 week.

Following the birth dose:

- Complete HepB series with either monovalent HepB or a combination vaccine containing HepB. Give second dose at age 1 or 2 months and final dose no sooner than age 24 weeks. Note: Combination vaccines are not indicated before age 6 weeks. It is permissible to give 4 doses of HepB when combination vaccines are given after the birth dose.
- Infants that didn't receive a birth dose should receive HepB on a schedule of 0, 1, and 6 months.
- Test infants born to HBsAg positive mothers for HBsAg and antibody to HBsAg after completion of 3 or more doses in HepB series, at age 9 through 18 months (generally at the next well-child visit).

4-month dose:

- If monovalent HepB is used for doses after the birth dose, a dose at age 4 months is not needed.
- ### 2. Rotavirus (RV). *Minimum age: 6 weeks.*
- Give first dose at age 6 through 14 weeks. Do not start the series at age 15 weeks and older.
 - Give final dose by age 8 months. Do not give a dose at age 8 months and older.
 - If Rotateq was used for either of the first 2 doses, give a total of 3 doses.
 - Rotarix only requires 2 doses at 2 months and 4 months.

3. Diphtheria, tetanus, and acellular pertussis (DTaP). *Minimum age: 6 weeks.*

- Fourth dose may be given as early as age 12 months, provided at least 6 months have elapsed since third dose.
- Give final dose at age 4 through 6 years.

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

- If PRP-OMP (PedvaxHIB or ComVax) is given at age 2 and 4 months, a dose at age 6 months is not necessary.
- Hiberix should not be used for doses at age 2, 4, or 6 months but can be used as a booster following any Hib vaccine in children age 12 months and older.
- Not routinely recommended for persons age 5 years and older; however, consider 1 dose for unvaccinated children with sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy.

5. Pneumococcal (PCV, PPSV). *Minimum ages: 6 weeks for pneumococcal conjugate vaccine (PCV); 2 years for pneumococcal polysaccharide vaccine (PPSV).*

Pneumococcal conjugate vaccine (PCV)

- Give 1 dose of PCV to any unvaccinated child age 2 through 4 years. If they are at risk for invasive disease give a second dose 2 months after first dose.
- Give PCV13 to complete any series started with PCV7.

- Provide a single supplemental dose of PCV13 following a completed PCV7 series for:
 - Healthy children through age 4 years,
 - Children with certain medical conditions through age 5 years.

- Allow 8 weeks between pneumococcal vaccine doses.
- Consider a single supplemental dose of PCV13 for children age 6 through 18 years with anatomic or functional asplenia including sickle cell disease, immunocompromising conditions including HIV infection, cochlear implant, or CSF leaks.

Pneumococcal polysaccharide vaccine (PPSV)

- Give PPSV to certain high-risk groups age 2 years and older. See MMWR 2000; 49(RR-9):1-35.
- A single revaccination is recommended 5 years after initial dose for children age 2 years and older with anatomic or functional asplenia or immunocompromising conditions.

6. Inactivated poliovirus (IPV). *Minimum age: 6 weeks.*

- Always give final dose between age 4 through 6 years, regardless of the number of doses previously given.
- Give final dose at least 6 months after previous dose.

7. Influenza, seasonal (TIV, LAIV). *Minimum ages: 6 months for trivalent inactivated influenza vaccine (TIV); 2 years for live, attenuated influenza vaccine (LAIV).*

- Give annually to all children: TIV for age 6 months through 2 years and TIV or LAIV for healthy children age 2 through 18 years.
- Give 2 doses separated by at least 4 weeks to children younger than age 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time last season and only received 1 dose.

8. Measles, mumps, and rubella (MMR). *Minimum age: 12 months.*

- Give first dose on or after first birthday.
- Give second dose at age 4 through 6 years. It may be given earlier provided at least 4 weeks have elapsed since first dose.

9. Varicella (VAR). *Minimum age: 12 months.*

- Give first dose on or after first birthday.
- Give second dose at age 4 through 6 years. It may be given earlier provided that at least 3 months have elapsed since first dose. If second dose was given at least 28 days after the first dose, it does not need to be repeated.

10. Hepatitis A (HepA). *Minimum age: 12 months.*

- Give 2 doses at least 6 months apart to all children at age 1 year. If not fully vaccinated by age 2 years child can be vaccinated at a subsequent visit.
- Consider catch-up vaccination for children through age 18 years.

11. Meningococcal conjugate vaccine (MCV). *Minimum age: 2 years.*

- Give 2 doses 2 months apart to children age 2 years and older with persistent complement component deficiency, anatomic or functional asplenia, or HIV infection and 1 dose every 5 years thereafter.
- Give 1 dose of MCV to children through age 6 years who received meningococcal polysaccharide vaccine (MPSV) or MCV three or more years previously and who remain at risk (i.e., travel to endemic areas).

Recommended Immunization Schedule, Minnesota 2011

Ages 7–18 Years

Chart must be used with guidelines below.

Vaccine ↓	Age →	7–10 years	11–12 years	13–18 years
Tetanus, Diphtheria, Pertussis ¹		see footnote 1	Tdap	Tdap
Human Papillomavirus ²		see footnote 2	HPV (3 doses)	HPV series
Meningococcal ³		MCV	MCV	MCV
Influenza ⁴		TIV or LAIV (annually)		
Pneumococcal ⁵		PPSV / PCV		
Hepatitis A ⁶		HepA series		
Hepatitis B ⁷		HepB series		
Inactivated Poliovirus ⁸		IPV series		
Measles, Mumps, Rubella ⁹		MMR		
Varicella ¹⁰		VAR		

- Range of recommended ages
- Catch-up vaccination
- Certain high-risk groups

- Additional vaccines may be licensed and recommended during the year. For updated information see www.cdc.gov/vaccines/pubs/ACIP-list.htm.
- Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Also consider provider assessment, patient preference, and potential for adverse events.
- Consult the respective ACIP statement for detailed recommendations.
- Report clinically significant adverse events that follow immunization to the Vaccine Adverse Event Reporting System (VAERS). For guidance on how to obtain and complete a VAERS form see <http://vaers.hhs.gov/index> or call 800-822-7967.

1. Tetanus, diphtheria, and acellular pertussis (Tdap). *Minimum ages: 10 years for Boostrix and 11 years for Adacel.*

- Give Tdap at age 11 or 12 years for those who have completed the recommended childhood DTP/DTaP series but have not received a Td booster dose.
- Give Tdap to adolescents age 13 through 18 years who have not already received a Tdap.
- Tdap can be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.
- Persons age 7 through 10 years who are not fully immunized against pertussis (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap. Refer to the catch-up schedule if additional doses of tetanus and diphtheria toxoid-containing vaccine are needed.

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

- Give 3-dose HPV series to all females at age 11 or 12 years and to all unvaccinated females at age 13 through 18 years at intervals of 0, 2, and 6 months.
- Give HPV2 to prevent cervical cancer.
- Give HPV4 to prevent cervical, vaginal, and vulvar cancers and genital warts.
- Ideally, vaccine should be given prior to potential exposure through sexual activity; however, sexually active females should still be vaccinated. Inform sexually active females that they may not receive protection against all HPV types in the vaccine if previously exposed to any of them.
- As appropriate also instruct females to receive annual Pap smears.
- HPV4 may be given to males age 9 through 18 years to reduce the likelihood of acquiring genital warts.

3. Meningococcal conjugate vaccine (MCV). *Minimum age: 2 years.*

- Give 1 dose of MCV at age 11 or 12 years and a booster dose at age 16 years.
- Give 1 dose of MCV to unvaccinated adolescents age 13 through 18 years including unvaccinated college freshmen living in dormitories. If vaccinated at age 13 through 15 years, give a booster dose at age 16 through 18 years (i.e., 3 years later).
- Give 2 doses 2 months apart to children age 2 years and older with persistent complement component deficiency or anatomic or functional asplenia and 1 dose every 5 years thereafter.
- Give 2 doses 2 months apart to adolescents age 11 through 18 years who are HIV positive.
- Give 1 dose of MCV to children age 7 years and older who received meningococcal polysaccharide vaccine (MPSV) or MCV five or more years previously and who remain at risk.

4. Influenza, seasonal (TIV, LAIV). *Minimum ages: 6 months for TIV; 2 years for LAIV.*

- Give annually to all children age 6 months through 18 years.
- For healthy nonpregnant persons age 2 through 49 years, use either LAIV or TIV.
- Give 2 doses separated by at least 4 weeks to children younger than age 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time last season and only received 1 dose.

5. Pneumococcal polysaccharide vaccine and pneumococcal conjugate vaccine (PPSV and PCV). *Minimum ages: 2 years for PPSV; 6 weeks for PCV.*

- Give PPSV to certain high-risk groups. See MMWR 2010; 59(RR-11):1-24.
- A single revaccination is recommended 5 years after initial dose for children age 2 years and older with anatomic or functional asplenia or immunocompromising conditions.
- Consider a single supplemental dose of PCV13 for children age 6 through 18 years with anatomic or functional asplenia including sickle cell disease or immunocompromising conditions including HIV infection, cochlear implant, or CSF leaks.

6. Hepatitis A (HepA). *Minimum age: 12 months.*

- Give 2 doses at least 6 months apart.
- Consider catch-up vaccination for children through age 18 years.

7. Hepatitis B (HepB). *Minimum age: birth.*

- Give a 3-dose series to unvaccinated children (see catch-up schedule).
- A 2-dose series 4 to 6 months apart of adolescent formulation Recombivax HB is licensed for children ages 11 through 15 years.

8. Inactivated poliovirus (IPV). *Minimum age: 6 weeks.*

- Give 3 doses of IPV to unvaccinated children age 7 through 17 years (see catch-up schedule).
- IPV is not routinely recommended for persons age 18 years and older.
- If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of child's current age.

9. Measles, mumps, and rubella (MMR). *Minimum age: 12 months.*

- Give 2 doses of MMR at least 4 weeks apart to all unvaccinated children.

10. Varicella (VAR). *Minimum age: 12 months.*

- Give 2 doses to persons without evidence of immunity (i.e., who have not received 2 doses of varicella or have no physician diagnosis of varicella or shingles disease).
 - For persons younger than age 13 years give 2 doses at least 3 months apart. Do not repeat second dose if given 28 days or more after first dose.
 - For persons age 13 years and older give 2 doses at least 4 weeks apart.