

2021 VACCINATION SCHEDULE: ADULTS (Part 1 of 2)

This schedule indicates the recommended age groups and medical indications for routine administration of currently licensed vaccines for persons ≥19yrs. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated.

Vaccine	Recommended for all persons who meet age requirement, lack documentation of vaccination, or lack evidence of past infection		Recommended for persons with additional risk factor or another indication		Recommended based on shared clinical decision-making	
	19–26yrs	27–49yrs	50–64yrs	≥65yrs		
Influenza ¹ inactivated (IIV) or recombinant (RIV) ¹ OR Influenza live attenuated (LAIV) ¹	1 dose annually OR					
Tetanus, diphtheria, pertussis (Tdap or Td) ²	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management 1 dose Tdap, then Td or Tdap booster every 10yrs					
Measles, mumps, rubella (MMR) ³	1 or 2 doses (if born in 1957 or later)					
Varicella (VAR) ⁴	2 doses (if born in 1980 or later)			2 doses		
Recombinant zoster (RZV) ⁵				2 doses		
Human papillomavirus (HPV) ⁶	2 or 3 doses		27–45yrs			
Pneumococcal 13-valent conjugate (PCV13) ⁷	1 dose				1 dose	
Pneumococcal polysaccharide (PPSV23) ⁷	1 or 2 doses				1 dose	
Hepatitis A (HepA) ⁸	2 or 3 doses					
Hepatitis B (HepB) ⁹	2 or 3 doses					
Meningococcal conjugate (MenACWY) ¹⁰	1 or 2 doses (for booster, see footnote 10)					
Meningococcal serogroup B (MenB) ¹⁰	19–23yrs	2 or 3 doses (for booster, see footnote 10)				
<i>Haemophilus influenzae</i> type b (Hib) ¹¹	1 or 3 doses					

- Influenza vaccination**
 - Give 1 dose of any age and health status-appropriate influenza vaccine annually.
 - Persons with hives-only allergy to eggs should receive 1 dose of any appropriate vaccine. For allergy other than hives (eg, angioedema, respiratory distress), give in a medical setting under supervision of healthcare provider if using a vaccine other than RIV4 or cclIV4. Persons with a previous severe allergic reaction to any influenza vaccine is contraindicated for future vaccination.
 - LAIV is not recommended in persons with immunocompromising conditions (including HIV), asplenia, cerebrospinal fluid leak, cochlear implant, pregnant women, close contacts/caregivers of severely immunocompromised persons, use of oseltamivir or zanamivir in previous 48hrs, peramivir within previous 5 days, or baloxavir within previous 17 days.
- Tetanus, diphtheria, and acellular pertussis (Tdap or Td) vaccination**
 - Persons who previously did not receive a dose of Tdap at or after age 11yrs should receive 1 dose of Tdap vaccine, followed by Td or Tdap booster every 10yrs.
 - Persons who previously did not receive primary series for tetanus, diphtheria, and pertussis should receive at least 1 dose of Tdap, followed by 1 dose Td or Tdap ≥4wks after, and another Td or Tdap dose 6–12mos after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose); Td or Tdap booster every 10yrs thereafter.
 - Give 1 dose of Tdap vaccine to pregnant women during each pregnancy (preferred during the early part of gestational weeks 27–36).
 - For wound management in persons with ≥3 doses of tetanus-toxoid-containing vaccine, give Tdap or Td for clean and minor wounds if >10yrs since last dose of tetanus-toxoid-containing vaccine. For all other wounds, give Tdap or Td if >5yrs since last dose of tetanus vaccine. Tdap is preferred if no or unknown history of Tdap vaccination, or in pregnancy.
- Measles, mumps, rubella (MMR) vaccination**
 - Adults with no evidence of immunity to measles, mumps, or rubella should receive 1 dose of MMR vaccine.
 - Evidence of immunity includes any of the following:
 - Born before 1957 (except healthcare personnel)
 - Documentation of receipt of MMR vaccine
 - Lab evidence of immunity or disease (documentation of provider-diagnosed disease without lab confirmation is not considered evidence of immunity)
 - Healthcare personnel born in 1957 or later with no evidence of immunity to measles, mumps, or rubella should receive 2-dose series ≥4wks apart for measles or mumps, or ≥1 dose for rubella. If born before 1957 with no evidence of immunity, consider 2-dose series.
 - MMR is contraindicated during pregnancy. Give 1 dose after birth and before hospital discharge. Nonpregnant women of childbearing age with no evidence of immunity to rubella should receive 1 dose of MMR.
 - Give 2-dose series ≥4wks apart to persons with HIV and CD4 count ≥200cells/μL for ≥6mos with no evidence of immunity. MMR is contraindicated in HIV with CD4 count <200 cells/μL and other severe immunocompromising conditions.
 - Students in postsecondary educational institutions, international travelers, and household contacts of immunocompromised persons should receive 2 doses ≥4wks apart (or 1 dose if previously received 1 MMR dose).
- Varicella vaccination**
 - All adults without evidence of immunity to varicella should receive 2 doses of VAR vaccine 4–8wks apart. If previously received 1 dose of varicella-containing vaccine, give the 2nd dose at least 4wks after the 1st dose.
 - Evidence of immunity to varicella in adults includes any of the following:
 - documentation of 2 doses of varicella vaccine at least 4wks apart;
 - U.S.-born before 1980, except HCPs and pregnant women
 - diagnosis or verification of history of varicella or herpes zoster by a HCP;
 - lab evidence of immunity or disease.
 - VAR is contraindicated during pregnancy. Pregnant women without evidence of immunity should receive the first of 2 doses (4–8wks apart) or the 2nd dose, if previously received 1 dose, after birth and before hospital discharge.
 - HCP without evidence of immunity should receive 2 doses 4–8wks apart or the 2nd dose if previously received 1 dose.
 - Persons with HIV and CD4 count ≥200cells/μL with no evidence of immunity may consider 2 doses 3mos apart. VAR is contraindicated in HIV with CD4 count <200 cells/μL and other severe immunocompromising conditions.
- Zoster (recombinant zoster vaccine [RZV]) vaccination**
 - Persons ≥50yrs regardless of past episode of herpes zoster or receipt of zoster vaccine live (ZVL) should receive 2 doses of RZV 2–6mos apart (repeat dose if given <4wks apart).
 - Persons who previously received ZVL should receive 2 doses of RZV at least 2mos after ZVL.
 - Consider delaying RZV until after pregnancy, if indicated. RZV use in severe immunocompromising conditions is under review.
- Human papilloma virus (HPV) vaccination**
 - Vaccinate all adults through age 26yrs. Can vaccinate adults age 27–45yrs based on shared clinical decision-making.
 - If initiated vaccination at ≥15yrs, give a 3-dose series at 0, 1–2, and 6mos; the 1st and 2nd doses should be at least 4wks apart, the 2nd and 3rd doses at least 12wks apart, and the 1st and 3rd doses at least 5mos apart; repeat doses if given too soon.
 - If initiated vaccination at 9–14yrs and received 1 dose or 2 doses <5mos apart, give 1 dose. No additional dose is needed if initiated vaccination at 9–14yrs and received 2 doses at least 5mos apart.
 - Series does not need to be restarted if vaccination schedule is interrupted.
 - No additional doses needed if valid vaccination series completed with any HPV vaccine.
 - HPV vaccination is not recommended until after pregnancy. However, pregnancy testing is not needed before vaccination. If a woman is vaccinated while pregnant, no intervention is needed.
- Pneumococcal (13-valent pneumococcal conjugate vaccine [PCV13] and 23-valent pneumococcal polysaccharide vaccine [PPSV23]) vaccination**
 - All immunocompetent adults ≥65yrs should receive 1 dose of PPSV23. If PPSV23 given before age 65yrs, give additional PPSV23 dose at least 5yrs after previous dose.
 - Immunocompetent adults ≥65yrs may receive 1 dose of PCV13 based on shared clinical decision-making. If both PCV13 and PPSV23 are indicated, give PCV13 first (do not give both during the same visit). PCV13 and PPSV23 should be given ≥1yr apart.
 - Adults 19–64yrs with chronic heart disease (excluding hypertension), chronic lung or liver disease, alcoholism, diabetes, or cigarette smokers should receive 1 dose of PPSV23.

(continued)

- Adults ≥19yrs with immunocompromising conditions (eg, immunodeficiency including B- and T-lymphocyte deficiency, complement deficiencies, phagocytic disorders, HIV, chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression [drug or radiation therapy], solid organ transplant, multiple myeloma) or anatomical or functional asplenia (including sickle cell disease and other hemoglobinopathies) should receive 1 dose of PCV13 followed by 1 dose of PPSV23 at least 8wks after, and a 2nd dose of PPSV23 at least 5yrs after the previous PPSV23 dose. At age ≥65yrs, give another dose of PPSV23 at least 5yrs after the last PPSV23 dose (only 1 dose PPSV23 recommended at age ≥65yrs).

- Adults ≥19yrs with cerebrospinal fluid leak or cochlear implant should receive 1 dose of PCV13 followed by 1 dose of PPSV23 at least 8wks after. At age ≥65yrs, give another dose of PPSV23 at least 5yrs after the last PPSV23 dose (only 1 dose PPSV23 recommended at age ≥65yrs).

8. Hepatitis A vaccination

- Vaccinate any not at risk person seeking protection from hepatitis A virus (HAV) infection and persons with any of the following indications:
 - chronic liver disease (hepatitis B/C, cirrhosis, fatty or alcoholic liver disease, autoimmune hepatitis, ALT/AST >2xULN);
 - HIV infection;
 - men who have sex with men;
 - injection or non-injection drug use;
 - homelessness;
 - work with HAV in research lab or nonhuman primates with HAV infection;
 - travel to countries with high or intermediate endemic hepatitis A;
 - close personal contact with international adoptee (eg, household, regular babysitting) in 1st 60 days after arrival from country with high or intermediate endemic hepatitis A (give 1st dose as soon as adoption is planned, at least 2wks before adoptee's arrival);
 - Pregnancy (if at risk for infection or severe outcome);
 - Settings for exposure (eg, drug use clinics, group homes, day care facilities for persons with developmental disabilities)
- Give either a 2-dose series of the single antigen HepA vaccine (Havrix 6–12mos apart or Vaqta 6–18mos apart), or a 3-dose series of the HepA-HepB vaccine combination (Twinrix at 0, 1, and 6mos; the 1st and 2nd doses should be ≥4wks apart, and the 2nd and 3rd doses ≥5mos apart).
- For travel in highly or intermediately endemic countries, Twinrix may be given on an accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster at 12mos.

9. Hepatitis B vaccination

- Vaccinate any not at risk person seeking protection from hepatitis B virus (HBV) infection and persons with any of the following indications:
 - HCV infection or chronic liver disease (cirrhosis, fatty or alcoholic liver disease, autoimmune hepatitis, ALT/AST >2xULN);
 - HIV-infection;
 - sexual exposure risk (eg, sex partners of HBsAg-positive persons, sexually active persons who are not in a mutually monogamous relationship, persons seeking evaluation or treatment for an STD, men who have sex with men);
 - current or recent injection drug use;
 - percutaneous or mucosal risk for blood exposure (eg, household contacts of HBsAg-positive persons, residents/staff of facilities for persons with developmental disabilities, HCPs and public safety workers who are exposed to blood or blood-contaminated body fluids, dialysis patients, patients <60yrs with diabetes [shared clinical decision-making for ≥60yrs]);
 - incarcerated;
 - travel to countries with high or intermediate hepatitis B endemicity
 - pregnancy (if at risk for infection or severe outcome. HepB vaccine not currently recommended due to lack of safety data in pregnant women)

- Give a 2-dose series with HepBisav-B at least 4wks apart (2-dose series HepB only applies when 2 doses of HepBisav-B are used) or a 3-dose series with either Engerix-B, Recombivax HB or Twinrix. 3-dose series with single-antigen HepB vaccines (Engerix-B, Recombivax HB) are given at 0, 1 and 6mos; the 1st and 2nd doses should be ≥4wks apart, the 2nd and 3rd doses ≥8wks apart, and the 1st and 3rd doses ≥16wks apart. If the combined HepA and HepB vaccine (Twinrix) is used, administer 3 doses at 0, 1, and 6mos; the 1st and 2nd doses should be ≥4wks apart, and the 2nd and 3rd doses ≥5mos apart.

10. Meningococcal (Serogroups A, C, W, and Y [MenACWY] or serogroup B [MenB]) vaccination

- MenACWY vaccination (Menactra, Menveo):
 - Adults with anatomical or functional asplenia, HIV, persistent complement component deficiency, or on eculizumab or ravulizumab therapy should receive 2 doses of MenACWY at least 8wks apart. Revaccinate with 1 dose every 5yrs if risk remains.
 - microbiologists routinely exposed to *N. meningitidis* and persons traveling in countries where meningococcal disease is hyperendemic or epidemic should receive 1 dose of MenACWY; revaccinate every 5yrs if risk remains
 - first-year college students in residential housing (if not received vaccine at ≥16yrs) and military recruits should receive 1 dose of MenACWY.
- MenB vaccination (Bexsero, Trumenba):
 - young adults 16–23yrs (16–18yrs preferred) not at increased risk may receive, based on shared clinical decision making, 2 doses of Bexsero at least 1 month apart, or 2 doses of Trumenba at least 6mos apart (if 2nd dose given too soon, give 3rd dose at least 4mos after 2nd dose).
 - adults with anatomic or functional asplenia, persistent complement component deficiency, on eculizumab or ravulizumab therapy, or microbiologists routinely exposed to *N. meningitidis* should receive 2 doses of Bexsero at least 1 month apart, or 3 doses of Trumenba at 0, 1–2, and 6mos (3rd dose is not needed if 2nd dose was given at least 6mos after 1st dose). Give 1 dose of MenB booster 1yr after primary series and revaccinate every 2–3yrs if risk remains.
 - delay MenB until after pregnancy unless at increased risk and benefit outweighs potential risks.
 - The two MenB vaccines are not interchangeable.
- Additional information on MenACWY and MenB booster doses in special situations is available at <https://www.cdc.gov/mmwr/volumes/69/rrr/rr6909a1.htm>.

11. Haemophilus influenzae type b (Hib) vaccination

- 1 dose of Hib vaccine should be administered to persons with functional or anatomic asplenia, sickle cell disease or are undergoing elective splenectomy if they have not previously received Hib vaccine. Hib should be administered ≥14 days before splenectomy.
- Recipients of a hematopoietic stem cell transplant should be vaccinated with a 3-dose regimen 6–12mos after a successful transplant, regardless of vaccination history; at least 4wks should separate doses.

12. Covid-19 vaccination

- Under Emergency Use Authorization for persons aged ≥16yrs for BNT162b2 and aged ≥18yrs for mRNA-1273 and Ad.26.COV2.S
- Pfizer-BioNTech vaccine (BNT162b2): give 2 doses, 21 days apart
- Moderna vaccine (mRNA-1273): give 2 doses, 28 days apart
- Janssen (J&J) vaccine (Ad.26.COV2.S): give 1 dose only

13. Additional information

- Immunocompromising conditions: Inactivated vaccines generally are acceptable (eg, pneumococcal, meningococcal, and inactivated influenza vaccine), and live vaccines generally are avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult-conditions.html>.
- Information on travel vaccine requirements and recommendations (eg, for hepatitis A and B, meningococcal, and other vaccines) available at <http://wwwnc.cdc.gov/travel/destinations/list>.

CHANGES IN THE SCHEDULE SINCE LAST RELEASE

- The HepA note has been revised to add an accelerated Twinrix schedule for travel in countries with high or intermediate endemic HepA.
- The HepB note has been updated to include shared clinical decision-making in persons <60yrs with diabetes.
- The HPV note has been revised to include a recommendation for interrupted vaccination schedules.
- The Influenza note has been revised to add recommendations for egg-allergy patients and use with antivirals.

- MenQuadfi is included to the list of available MenACWY meningococcal vaccines. MenACWY and Men B booster dose recommendations have been added.
- The Tdap and Td vaccination schedule has been revised to include recommendations for wound management and pregnancy.
- Zoster vaccine live (ZVL) has been removed from the vaccination schedule.
- A text box has been added to include recommendations for Covid-19 vaccination.

REFERENCES

For information on individual vaccines, please see product monographs at www.eMPR.com, contact company for full labeling, or call the National Immunization Hotline at (800) 232-4636.

Source: Advisory Committee on Immunization Practices (ACIP). Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2021. <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>. Accessed February 23, 2021.

Oliver S, Gargano J, Marin M, et al. The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Moderna COVID-19 Vaccine — United States, December 2020. *MMWR Morb Mortal Wkly Rep*. 2021;69:1653–1656. DOI: <http://dx.doi.org/10.15585/mmwr.mm6951152e1>.

Oliver S, Gargano J, Marin M, et al. The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Pfizer-BioNTech COVID-19 Vaccine — United States, December 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69:1922–1924. DOI: <http://dx.doi.org/10.15585/mmwr.mm6950e2>.

Oliver SE, Gargano JW, Scobie H, et al. The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Janssen COVID-19 Vaccine — United States, February 2021. *MMWR Morb Mortal Wkly Rep*. 2021;70:329–332. DOI: <http://dx.doi.org/10.15585/mmwr.mm7009e4>.

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