

CD Summary

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2017 Immunization Schedules: Adults ≥ 19 years of age

CDC announced the availability of the adult immunization schedule at www.cdc.gov/vaccines/schedules/hcp/index.html in the Morbidity and Mortality Weekly Report (MMWR).¹ The schedule is printed in its entirety in the Annals of Internal Medicine.²

**Table 1. Recommended Immunization schedule for adults aged 19 years or older
United States, 2017**

Tables 1 and 2 should be read with the footnotes that contain important general information and considerations for special populations.

Vaccine	19–49 years	50–64 years	65–79 years	80+ years
Influenza^a				
Tetanus ^b				
Varicella ^c	1 dose			
MMR ^d				
HPV ^e	3 doses			
HPV-Prevent ^f	3 doses			
HPV-Refer ^g	3 doses			
PCV13 ^h			1 dose	
HPV18 ⁱ	1 or 2 doses depending on indication		1 dose	
Daptac ^j	1 or 2 doses depending on indication			
Daptac ^k	1 dose			
Measles ^l or MMRVA ^m	1 or 2 doses depending on indication			
MMR ⁿ	1 or 2 doses depending on indication			
MMR ^o	1 or 2 doses depending on indication			
MMR ^p	1 or 2 doses depending on indication			
<small>^a Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, and feel evidence of past infection.</small>				
<small>^b Recommended for adults with additional medical conditions or other indications.</small>				
<small>^c Recommended for adults with additional medical conditions or other indications.</small>				
<small>^d Recommended for adults with additional medical conditions or other indications.</small>				
<small>^e Recommended for adults with additional medical conditions or other indications.</small>				
<small>^f Recommended for adults with additional medical conditions or other indications.</small>				
<small>^g Recommended for adults with additional medical conditions or other indications.</small>				
<small>^h Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>ⁱ Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>^j Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>^k Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>^l Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>^m Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>ⁿ Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>^o Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				
<small>^p Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, or feel evidence of past infection.</small>				

This issue of the *CD Summary* presents the new adult immunization schedules recommended by the Advisory Committee on Immunization Practice (ACIP) and reviews changes for influenza, human papillomavirus, hepatitis B, and meningococcal vaccines.

All 3 tables and the footnotes have been redesigned for ease of reading and simplification of content. Table 1 displays recommendations by age and Table 2 by medical conditions. The footnotes refer to both tables. The footnotes have been condensed, simplified, and standardized. The formats for several of the vaccinations have undergone substantial revision. Table 3 displays a simplified version of vaccine contraindications. The tables can be viewed at <https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf#page=6>

**Table 2. Recommended Immunization schedule for adults aged 19 years or older
by medical condition and other indications
United States, 2017**

Tables 1 and 2 should be read with the footnotes that contain important general information and considerations for special populations.

Vaccine	Progression ^a	Influenza ^b	Varicella ^c	MMR ^d	HPV ^e	Measles ^f	MMRVA ^g	MMR ^h	MMR ⁱ	MMR ^j	MMR ^k	MMR ^l	MMR ^m	MMR ⁿ	MMR ^o	MMR ^p
Influenza^b																
Tetanus ^b	1 dose annually															
Varicella ^c	1 or 2 doses depending on indication															
MMR ^d	1 dose															
HPV ^e	3 doses															
HPV-Prevent ^f	3 doses															
HPV-Refer ^g	3 doses															
PCV13 ^h																
HPV18 ⁱ	1 or 2 doses depending on indication															
Daptac ^j	1 or 2 doses depending on indication															
Daptac ^k	1 dose															
Measles ^l or MMRVA ^m	1 or 2 doses depending on indication															
MRI ⁿ																
MMR ^o	1 or 2 doses depending on indication															
MMR ^p	1 or 2 doses depending on indication															
<small>^a Recommended for adults who meet the age requirements, feel comfortable with administration of vaccination, and feel evidence of past infection.</small>																
<small>^b Recommended for adults with additional medical conditions or other indications.</small>																
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The image contains two side-by-side screenshots of tables from the CDC Summary document. The left screenshot shows a table titled 'Contraindications and precautions for vaccines routinely recommended for adults'. The right screenshot shows a table titled 'Additional contraindications and precautions for vaccines routinely recommended for adults'.

Following are the key changes to recommendations for specific vaccines:

- Influenza: LAIV should not be used in the 2016–2017 season (and maybe longer). Adults with a history of egg allergy who have only hives after exposure to egg should receive age-appropriate inactivated influenza vaccine (IIV) or recombinant influenza vaccine (RIV). The vaccine should be administered in a clinic setting by a health care provider who can recognize and manage severe allergic conditions.
- Human papillomavirus: Adult females through age 26 years, adult males through 21 years and certain adult males 22–26 years:
 - Should receive a 3-dose series if the series was started at age ≥ 15 years.
 - May receive a 2-dose series if the first dose was given before age 15 and the second dose was given >5 months after the first.
 - Need a third dose if the second dose was administered <5 months after the first dose.
- Hepatitis B: Updated recommendations for adults with chronic liver disease, hepatitis C virus infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and an alanine aminotransferase (ALT) or aspartate aminotransferase (AST) level greater than twice the upper limit of normal.
- Meningococcal: ACIP recommends a 2-dose series of MenACWY for adults with human immunodeficiency virus (HIV) infection.

The MenB FHbp vaccine (Trumenba®) has been approved for a 2-dose series at 0 and 6 months for healthy adults who obtain clinical guidance. This 2-dose series is neither appropriate for high-risk individuals nor during an outbreak; the 3-dose series should be given at 0, 1–2, and 6 months. The dosing schedule for MenB-4C (Boxero®) remains unchanged as a 2-dose series at 0 and 1 months.

MenACWY booster doses:

- High-risk adults with anatomical or functional asplenia or persistent complement component deficiencies should receive a 2-dose primary series with doses administered ≥ 2 months apart, and be revaccinated every 5 years. They should also be vaccinated against serogroup B disease with either the 2-dose MenB-4C or the 3-dose MenB-FHbp vaccine.
- HIV-infected adults who have not previously been vaccinated should receive a 2-dose primary MenACWY vaccination series, with doses administered ≥ 2 months apart, and be revaccinated every 5 years. MenB vaccine is not routinely recommended for HIV-infected adults.
- Microbiologists who are routinely exposed to isolates of *Neisseria meningitidis* should receive 1 dose of MenACWY and be revaccinated every 5 years if risk for infection

remains, and either a 2-dose series of MenB-4C at least 1 month apart or a 3-dose series of MenB-FH_p at 0, 1–2 and 6 months.

Adults at risk because of a meningococcal disease outbreak should receive 1 dose of MenACWY if the outbreak is of serogroup A, C, W, or Y disease; or if it's a serogroup B outbreak, they should receive series of either MenB vaccine.

Healthy adolescents and adults 16–23 years of age (the preferred age range is 15–18 years) who are not at increased risk for serogroup B meningococcal disease may receive, with clinical recommendation, either MenB vaccine for short-term protection against most strains of serogroup B meningococcal disease.

Consider the following information when reviewing the adult immunization schedule:

- The tables in the adult immunization schedule should be read with the footnotes that contain important general information and information about vaccination of special populations.
- When indicated, administer recommended vaccines to adults whose vaccination history is incomplete or unknown.
- Increased interval between doses of a multi-dose vaccine does not diminish vaccine effectiveness; therefore, it is not necessary to restart the vaccine series or add doses to the series because of an extended interval between doses.
- Adults with immunocompromising conditions should generally avoid live vaccines, e.g., measles, mumps, and rubella vaccine. Inactivated vaccines, e.g., pneumococcal or inactivated influenza vaccines, are generally acceptable.

Details on vaccines recommended for adults and complete ACIP statements are available at www.cdc.gov/vaccines/hcp/acip-recs/index.html. Additional CDC resources include:

- A summary of information on vaccination recommendations, vaccination of persons with immunodeficiencies, preventing and managing adverse reactions, vaccination contraindications precautions and other information can be found in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf
- Vaccination Information Statements that explain benefits and risks of vaccination are available at www.cdc.gov/vaccines/hcp/vis/index.html.
- Information and resources regarding vaccination of pregnant women are available at www.cdc.gov/vaccines/adults/rec-vac/pregnant.html
- A CDC Vaccine Schedules App for clinicians and other immunization service providers to download is available at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html
- The Recommended Immunization Schedule for Children and Adolescents Ages 18 Years or Younger is available at www.cdc.gov/vaccines/schedules/hcp/index.html

Report all clinically significant post-vaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or by telephone, 800-822-7967. All vaccines included in the adult immunization schedule except herpes zoster and 23-valent pneumococcal polysaccharide vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382.

Submit questions and comments regarding the 2017 adult immunization schedule to CDC through www.cdc.gov/cdc-info or by telephone, 800-CDC-INFO (800-232-4636) in English and Spanish 8:00am–8:00pm ET, Monday–Friday, excluding holidays.

Resources

1. MMWR. 2017;66. Available at www.cdc.gov/mmwr/volumes/66/wr/mm660532.htm?s_cid=mm660532_2.
2. Ann Intern Med. 2017;166:209–18. Available at annals.org/aim/article/doi/10.7326/M16-2936.



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