
ACHA Guidelines

Immunization Recommendations for College Students

Immunizations offer safe and effective protection from vaccine-preventable diseases and outbreaks. The United States is experiencing re-emergence of these diseases, in part due to factors such as un-immunized and under-immunized persons and global travel. The American College Health Association (ACHA) strongly supports the use of vaccines to protect the health of our individual students and our campus communities. In recognition of the vital role that vaccine coverage plays in community immunity (also known as herd immunity), ACHA discourages use of nonmedical exemptions for required vaccines.

This guidance is provided to facilitate implementation of a comprehensive institutional immunization policy. Best practices for institutions of higher education include the following Immunization Recommendations for College Students, encouraging students who request nonmedical exemptions to required vaccines to be counseled by a health service clinician, and considering exclusion of un-immunized students from school during outbreaks of vaccine-preventable diseases. Institutions may also be subject to additional requirements for pre-matriculation vaccinations and the granting of exemptions by state law. Health science students have additional responsibility to their patients and should meet the same standards as health care personnel.

The ACHA Vaccine-Preventable Diseases Advisory Committee updates this document yearly in accordance with changing public health recommendations. These guidelines follow Advisory Committee on Immunization Practices (ACIP) recommendations published by the U.S. Centers for Disease Control and Prevention (CDC). Links to full information regarding ACIP provisional and final recommendations, including schedules, indications, precautions, and contraindications, are available at the CDC National Immunization Program website: <http://www.cdc.gov/vaccines/index.html>.

In addition to implementing a comprehensive institutional immunization policy, institutions are also encouraged to screen for tuberculosis (TB) infection, especially those students who are at increased risk, as this is a key strategy for controlling and preventing infection on college and university campuses. See the *ACHA Guidelines: Tuberculosis Screening and Targeted Testing of College and University Students*, available at www.acha.org/guidelines.

VACCINES TO REDUCE OUTBREAKS

Outbreaks of communicable diseases cause great disruption and emotional and financial burdens for campuses, students, and their families. Assuring compliance with the vaccines recommended by the CDC is particularly important in preventing disease clusters and outbreaks on campus.

COVID-19 Vaccine

As COVID-19 vaccines continue to move through the FDA authorization process from Emergency Use to Biologic License, it is important to note that these vaccines are safe and effective at preventing severe illness and death. All members of a college community should be encouraged to follow CDC guidelines and stay up to date on COVID-19 vaccination.

As the COVID-19 public health emergency has ended, the definition of **up to date** for COVID-19 immunization continues to evolve. The scientific and research communities continue to monitor COVID-19 for seasonality and circulating strains, and CDC and ACIP continue to adapt their vaccine recommendations. This often means their updated recommendations are released after the publication of this document. At the time of review, up to date is defined as receiving one dose of an updated COVID vaccine.

At present, there are two types of COVID-19 vaccines available in the United States:

mRNA vaccines:

- Moderna COVID-19 Vaccine (2023–2024 Formula) is authorized for children ages 6 months–11 years; SPIKEVAX is the licensed Moderna product for people ages 12 years and older. These vaccines are hereafter referred to as updated (2023–2024 Formula) Moderna COVID-19 Vaccine.

- Pfizer-BioNTech COVID-19 Vaccine (2023–2024 Formula) is authorized for children ages 6 months–11 years; COMIRNATY is the licensed Pfizer-BioNTech product for people ages 12 years and older. These vaccines are hereafter referred to as updated (2023–2024 Formula) Pfizer-BioNTech COVID-19 Vaccine.

Protein subunit vaccine:

- Novavax COVID-19 Vaccine, Adjuvanted is authorized for people ages 12 years and older.

The 2023–2024 formulation for all COVID-19 vaccines licensed or authorized in the United States (Moderna, Novavax, and Pfizer-BioNTech) has been updated to a monovalent vaccine based on the Omicron XBB.1.5 sublineage of SARS-CoV-2. **The Original monovalent and bivalent (Original and Omicron BA.4/BA.5) formulations should no longer be used.**

VACCINATION SCHEDULE: On September 12, 2023, ACIP recommended vaccination with updated COVID-19 vaccines for all persons aged ≥6 months. Updates and additional schedule recommendations can be found at <https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html>.

MAJOR INDICATIONS: All members of a campus community age 6 months or older should receive an updated COVID-19 vaccine. CDC’s Interim Clinical Considerations for Use of COVID-19 Vaccines can be found at <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html>.

CONTRAINDICATIONS AND PRECAUTIONS: Contraindications and precautions vary based on the type of COVID-19 vaccine being considered. People receiving any COVID-19 vaccine, especially males ages 12–39 years, should be made aware of the rare risk of myocarditis and pericarditis following COVID-19 vaccination. Counseling should include the need to seek care if symptoms of myocarditis or pericarditis develop after vaccination, particularly in the week after vaccination. The only contraindication to COVID-19 vaccination is a history of severe allergic reaction (e.g. anaphylaxis) after a previous dose or to a component of the COVID-19 vaccine. Caution should be used in individuals with a history of a diagnosed non-severe allergy to a component of the COVID-19 vaccine, a history of a non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of one COVID-19 vaccine types, moderate or severe acute illness (with or without fever), a history of MIS-C or MIS-A, and/or a history of myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine.

Influenza Vaccine

Several preparations of influenza vaccine are available. Please review <https://www.cdc.gov/flu/prevent/different-flu-vaccines.htm> for options.

VACCINATION SCHEDULE: Annually

MAJOR INDICATIONS: All members of a campus community age 6 months or older should receive annual influenza vaccination.

CONTRAINDICATIONS AND PRECAUTIONS: Contraindications and precautions vary based on the type of influenza vaccine being considered. In general, a history of severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine or to a previous dose of any vaccine is a contraindication. Precautions should be taken in individuals with a moderate or severe acute illness, with or without fever, or a history of Guillain-Barre syndrome within 6 weeks of receiving an influenza vaccine. For persons with a history of severe allergic reaction (e.g., anaphylaxis) to any egg-based IIV or LAIV of any valency, egg allergy may no longer be an absolute contraindication. Please refer to CDC guidance: https://www.cdc.gov/flu/professionals/vaccination/vaccine_safety.htm. Providers can also consider consulting with an allergist to help determine which vaccine component is responsible for the allergic reaction.

Measles, Mumps, Rubella (MMR) Vaccine

VACCINATION SCHEDULE: Two doses of MMR, at least 28 days apart, after 12 months of age.

MAJOR INDICATIONS:

- All college students born after 1956 without evidence of immunity* should receive 2 doses.
- All health care professional students without evidence of immunity* should receive two doses of MMR (if they do not have documentation of having had 2 MMR doses)

- A 3rd dose should be given in a mumps outbreak when public health authorities consider the individual part of a group or population at increased risk. See <https://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm>
- In an outbreak, those born before 1957 without other evidence of immunity* should be brought up to date on their MMR vaccination.

**Evidence of immunity*: Born before 1957 (except for health care personnel who should have documented immunity, birth before 1957 generally can be considered acceptable evidence of immunity to measles, mumps, and rubella.), OR documentation of receipt of MMR vaccine, OR laboratory evidence of immunity or disease

CONTRAINDICATIONS: Pregnancy; severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component; severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised). A family history of immunosuppression in first-degree relatives (i.e., parents or siblings) is a contraindication to MMR and varicella-containing vaccines unless the potential vaccine recipient's immunocompetence has been verified either clinically or by a laboratory.

PRECAUTIONS: Recent (≤ 11 months) receipt of antibody-containing blood product (specific interval depends on product); history of thrombocytopenia or thrombocytopenic purpura; need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing; moderate or severe acute illness, with or without fever. A family history of seizures is a precaution for MMRV vaccination.

Meningococcal Serogroups A, C, W, and Y Vaccine

Three quadrivalent meningococcal vaccines are available in the United States:

- Menactra: MenACWY-D (meningococcal groups A, C, W, and Y polysaccharide diphtheria toxoid conjugate vaccine)
- Menveo: MenACWY-CRM (meningococcal groups A, C, W, and Y oligosaccharide diphtheria CRM197 conjugate vaccine)
- MenQuadfi: MenACWY-TT (meningococcal groups A, C, W, and Y polysaccharide tetanus toxoid conjugate vaccine)

ROUTINE MenACWY VACCINATION SCHEDULE:

- Initial dose: 11–12 yrs. of age
- Booster dose: 16 yrs. of age
- If initial dose given age 13–15 years: booster dose at 16–18 years of age
- If initial dose given age ≥ 16 years, no booster dose required

Notes:

- MenACWY vaccines are interchangeable; the same vaccine product is recommended, but not required, for all doses.
- Refer to CDC guidelines for persons with altered immune competence: www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.
- Colleges and universities should check to see if their state mandates MenACWY vaccination: <https://www.immunize.org/official-guidance/state-policies/vaccine-requirements/menacwy-college/>
- Those schools that have a state mandate or meningococcal vaccine requirement should have documentation of a dose of conjugate vaccine at ≥ 16 years of age. The booster dose can be administered any time after the 16th birthday. The minimum interval between doses of meningococcal conjugate vaccine is a minimum of 8 weeks.
- Routine vaccination of healthy persons who are not at increased risk for exposure is not recommended after age 21 years.

MAJOR INDICATIONS:

- ACIP recommends routine vaccination for adolescents aged 11 or 12 years, with a booster dose at age 16 years.
- Booster doses are also recommended for previously vaccinated persons who become or remain at increased risk including unvaccinated or under vaccinated first-year college students living in residence halls, persons with certain medical conditions including anatomic or functional asplenia, complement component deficiencies, complement inhibitor or ravulizumab [Ultomiris] use, or human immunodeficiency virus infection; microbiologists with routine exposure to *Neisseria meningitidis* isolates; persons at increased risk during an outbreak (e.g., in community or organizational settings, and among men who have sex with men [MSM]); persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic.

- Non-freshmen college students may choose to be vaccinated to reduce their risk of meningococcal disease.
- Menactra (MenACWY-D) and Menveo (MenACWY-CRM) can be used certain persons aged 11–55 years at increased risk for meningococcal disease because of asplenia, persistent complement component deficiency, or human immunodeficiency virus (HIV) infection (with another indication for vaccination).

CONTRAINDICATIONS: Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or following prior dose. For Menactra (MenACWY-D) and Menveo (ACWY-CRM) only: severe allergic reaction to any diphtheria toxoid- or CRM197-containing vaccine. For MenQuadfi (MenACWY-TT) only: severe allergic reaction to a tetanus toxoid-containing vaccine.

PRECAUTIONS: Moderate or severe acute illness with or without fever.

Meningococcal Serogroup B Vaccine

Two recombinant serogroup B meningococcal (MenB) vaccines are available in the United States:

- Bexsero: (MenB-4C); 2 dose series
- Trumenba: (MenB-FHbp); 2 or 3 dose series

Trumenba and Bexsero are not interchangeable; the same vaccine should be used for all doses, including booster doses.

VACCINATION SCHEDULE:

- For Bexsero (MenB-4C): 0 and 1 month (or longer)
- For Trumenba (MenB-FHbp): 0, 1 to 2, and 6 months (for those at increased risk) or 0 and 6 months (for those at no increased risk)

Notes:

- If the second dose of Bexsero or Trumenba dose is given earlier than the recommended interval, then the dose should be repeated at least 4 weeks after the last dose.
- Serogroup B vaccines may be administered with MenACWY but at different anatomic site, if possible

MAJOR INDICATIONS: Based on shared clinical decision-making, may be given to those not at increased risk:

- Adolescents and young adults aged 16–23 years to provide short term protection (preferred age 16–18 years)
- MenB vaccines are licensed in the United States only for persons aged 10–25 years

CONTRAINDICATIONS: Bexsero and Trumenba: severe allergic reaction (e.g., anaphylaxis) after a previous dose or to any vaccine component.

PRECAUTIONS: Moderate or severe acute illness. Latex sensitivity (Bexsero only).

Meningococcal Pentavalent or MenABCWY Vaccine (Penbraya™)

- ACIP approved and adopted by CDC in October 2023
- MenABCWY vaccine may be used when both MenACWY and MenB are indicated at the same visit
- The minimum interval between MenABCWY doses is 6 months
- If a patient receives MenABCWY vaccine, which includes Trumenba, then administer:
 - Trumenba for additional MenB dose(s) when MenACWY is not indicated
 - Any MenACWY vaccine when MenB is not indicated
- Approved for individuals 10 through 25 years of age

For more information: <https://www.fda.gov/vaccines-blood-biologics/vaccines/penbraya>

Mpox Vaccine

JYNNEOS vaccine is licensed in the U.S. for subcutaneous administration in individuals 18 years of age and older. The U.S. Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) in August 2022 to also allow for use of JYNNEOS vaccine:

- By subcutaneous injection for prevention of mpox disease in individuals younger than 18 years of age.
- By intradermal injection for prevention of mpox disease in individuals 18 years of age and older.

VACCINATION SCHEDULE: While the CDC does not currently recommend routine immunization against mpox for the general public, mpox vaccine can be given as post-exposure prophylaxis (PEP) to people with known or presumed exposure to mpox virus. The vaccine can also be given to people with certain risk factors and recent experiences that might make them more likely to have been exposed to mpox. Vaccination prior to exposure and PEP strategies might help control outbreaks by reducing transmission of mpox virus, preventing disease, or reducing disease severity.

Two doses of JYNNEOS vaccine are recommended with either subcutaneous or intradermal dosing regimens. The recommended dosing interval between the first and second dose of JYNNEOS vaccine for both the standard (subcutaneous administration) and the alternative (intradermal administration) dosing regimens is the same, 4 weeks (28 days +/- 3 days).

If given as post-exposure prophylaxis, vaccination should be given as soon as possible after exposure to mpox, ideally within 4 days. PEP administered between 4-14 days after exposure has also been shown to be effective and should be offered. If an individual has ongoing risk of exposure – and has not developed signs or symptoms of mpox – they should be offered vaccination regardless of the time since exposure.

MAJOR INDICATIONS:

- People who had known or suspected exposure to someone with mpox
- People who had a sex partner in the past 2 weeks who was diagnosed with mpox
- Gay, bisexual, and other men who have sex with men, and transgender or nonbinary people (including adolescents who fall into any of these categories) who, in the past 6 months, have had:
 - A new diagnosis of one or more sexually transmitted infections (e.g., chlamydia, gonorrhea, syphilis); or
 - More than one sex partner
- People who have had any of the following in the past 6 months:
 - Sex at a commercial sex venue
 - Sex in association with a large public event in a geographic area where mpox transmission is occurring
 - Sex in exchange for money or other items
- People who are sexual partners of people with the above risks
- People who anticipate experiencing any of the above scenarios
- People with HIV infection or other causes of immunosuppression who have had recent or anticipate potential mpox exposure
- People who work in settings where they may be exposed to mpox (e.g., people who work with orthopoxviruses in a lab)

CONTRAINDICATIONS: History of severe allergic reaction after previous dose of JYNNEOS.

PRECAUTIONS: History of severe allergic reaction following receipt of gentamicin or ciprofloxacin. History of severe allergic reactions to chicken or egg protein AND currently avoiding exposure to all chicken or egg products. Moderate or severe acute illness with or without fever.

Tetanus, Diphtheria, Pertussis Vaccine

- DT: pediatric (<age 7 years), preparation of diphtheria and tetanus toxoids
- DTaP: pediatric (<age 7 years), preparation of diphtheria, tetanus toxoids, and acellular pertussis
- Td: 7 years and older, preparation of tetanus and diphtheria toxoids
- Tdap: 7 years and older; preparation of tetanus, diphtheria toxoids, and acellular pertussis

VACCINATION SCHEDULE: Primary series in childhood (4 doses: DT, DTaP, DTP, or Td)

Booster doses: For adolescents 11–18 and adults 19–64: single dose of Tdap. Tdap can be administered regardless of interval since the last tetanus or diphtheria toxoid-containing vaccine.

Routine booster dose intervals: Adults should receive tetanus boosters at 10-year intervals, beginning 10 years after receiving Tdap. Subsequently, either Tdap or Td may be used for booster doses.

Tetanus prophylaxis in wound management: Persons with three 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 who have not previously received Tdap or whose Tdap history is unknown.

MAJOR INDICATIONS: All college students. One dose of Tdap for all individuals ages 11–64 regardless of interval since last Td booster.

CONTRAINDICATIONS: Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component. *For Tdap 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, DTaP, or Tdap.

PRECAUTIONS: Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus-toxoid-containing vaccine; history of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid-containing or tetanus-toxoid-containing vaccine (defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine); moderate or severe acute illness with or without fever. *For Tdap only:* Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized.

Varicella Vaccine

VACCINATION SCHEDULE: Two doses of varicella-containing vaccine, at least 12 weeks apart, if vaccinated between 1 and 12 years of age, and at least 4 weeks apart if vaccinated at age 13 years or older.

MAJOR INDICATIONS:

- All college students without evidence of immunity (e.g., born in the U.S. before 1980, a history of disease, two prior doses of varicella vaccine, or an antibody level consistent with immunity)
- All health care professional students with only one documented dose of vaccine or with a negative serologic antibody test should receive a total of two doses of vaccine

CONTRAINDICATIONS: Pregnancy, severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component; severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised). A family history of immunosuppression in first-degree relatives (i.e., parents or siblings) is a contraindication to MMR and varicella-containing vaccines unless the potential vaccine recipient's immunocompetence has been verified either clinically or by a laboratory. A family history of seizures is a precaution for MMRV vaccination.

PRECAUTIONS: Recent (≤ 11 months) receipt of antibody-containing blood product (specific interval depends on product); receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination); use of aspirin or aspirin-containing products; moderate or severe acute illness with or without fever.

OTHER VACCINES RECOMMENDED FOR ADULTS

The following vaccines are recommended for adults. College matriculation provides the opportunity to ensure that students receive the appropriate vaccines.

Hepatitis A Vaccine

Two-dose series: Havrix 6–12 months apart or Vaqta 6–18 months apart (minimum interval: 6 months)*

MAJOR INDICATIONS: Recommended for routine use in all adolescents through the age of 18 and in particular for adolescent and adult high-risk groups (i.e., chronic liver disease, HIV infection, men who have sex with men, injection or non-injection drug use, persons experiencing homelessness, work with hepatitis A virus in research laboratory or with nonhuman primates with hepatitis A virus infection, travel in countries with high or intermediate endemic hepatitis A, close personal contact with international adoptee (e.g., household or regular babysitting) in first 60 days after arrival from country with high or

intermediate endemic hepatitis A, pregnancy if at risk for infection or severe outcome from infection during pregnancy, and settings for exposure, including health care settings targeting services to injection or non-injection drug users or group homes and nonresidential day care facilities for developmentally disabled persons.

CONTRAINDICATIONS: Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component including neomycin

PRECAUTIONS: Moderate or severe acute illness with or without fever

**Combined hepatitis A and B vaccines may be given as a series of 3 or 4 doses for 18 years of age and older:*

- 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months. Minimum interval for dose 1 to dose 2: 4 weeks; minimum interval for dose 2 to dose 3: 5 months)
- 4-dose series HepA-HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

Hepatitis B Vaccine

- Hepatitis B recombinant (Engerix-B, Recombivax HB, PreHevbrio)
- Hepatitis B recombinant, adjuvanted HepB-CpG (Heplisav-B)

VACCINATION SCHEDULE: 2- or 3-dose series:

- 2-dose series only applies when 2 doses of Heplisav-B* are used at least 4 weeks apart
- 3-dose series Engerix-B, PreHevbrio, or RecombivaxHB at 0, 1, 6 months
 - minimum intervals:
 - dose 1 to dose 2: 4 weeks
 - dose 2 to dose 3: 8 weeks
 - dose 1 to dose 3: 16 weeks

INTERCHANGEABILITY AND DOSING SCHEDULE: Series consisting of a combination of 1 dose of adjuvanted HepB-CpG and Hep B):

- Adhere to the 3-dose schedule, minimum of 4 weeks between dose 1 and 2; 8 weeks between dose 2 and 3; and 16 weeks between dose 1 and 3
- If HepB-CpG is substituted for dose 2 of Hep B, it is recommended that the HepB-CpG is the third dose (given a minimum of 4 weeks from the previous dose to complete the 3-dose series)

MAJOR INDICATIONS: All adults aged 19–59 years. In particular, students enrolled in health care professional programs should receive hepatitis B vaccination.

CONTRAINDICATIONS: Individuals with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component including yeast. Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons.

PRECAUTIONS: Moderate or severe acute illness with or without fever

**Combined hepatitis A and B vaccines may be given as a series of 3 or 4 doses for 18 years of age and older:*

- 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months. Minimum interval for dose 1 to dose 2: 4 weeks; minimum interval for dose 2 to dose 3: 5 months)
 - 4-dose series HepA-HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
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Human Papilloma (HPV) Vaccine

- 9-valent (HPV9 [Gardasil 9]) [Note: Bivalent (HPV2) and Quadrivalent (HPV4) are no longer available in the US.]

VACCINATION SCHEDULE: Administer human papillomavirus (HPV) vaccine to all persons through age 26 years

The number of doses of HPV vaccine to be administered depends on age at initial HPV vaccination:

- 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.)
- Age 9–14 years at HPV vaccine series initiation and received 1 dose or 2 doses less than 5 months apart: Administer 1 additional dose
- Age 9–14 years at HPV vaccine series initiation and received 2 doses at least 5 months apart: Series complete; no additional dose needed

Administer human papillomavirus (HPV) vaccine using shared clinical decision-making to persons ages 27 to 45. Administer 2 or 3 doses based on age at the initial dose, as above.

MAJOR INDICATIONS: If not vaccinated previously: all adults through age 26 years

CONTRAINDICATIONS: Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component. Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant.

PRECAUTIONS: Moderate or severe acute illness with or without fever

Pneumococcal Vaccine

- Pneumococcal conjugate vaccine (PCV13 [Prevnar 13]; PCV15 [Vaxneuvance]; PCV20 [Prevnar20])
- Pneumococcal polysaccharide vaccine (PPSV23 [Pneumovax23])

VACCINATION SCHEDULE: 4-dose series of PCV13 at age 2, 4, 6, and 12–15 months; booster of PPSV23 between ages 6–18 years (if no previous PPSV23)

MAJOR INDICATIONS:

- Adults 65 years or older (see <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html#note-pneumo>)
- Adults ages 19–64 years old with certain underlying medical conditions or other risk factors who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.

CONTRAINDICATIONS: Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component. For PCV15 and PCV 20, severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid-containing vaccine or to its vaccine component.

PRECAUTIONS: Moderate or severe acute illness with or without fever

Polio Vaccine

- Inactivated (IPV)
- Oral poliovirus (OPV is no longer available in U.S.)

VACCINATION SCHEDULE:

- 4-dose series at ages 2, 4, 6, 6-18 months, 4-6 years with IPV, mixed OPV-IPV, or OPV-only series.
- IPV booster only for those at increased risk of exposure.

MAJOR INDICATIONS: Adults at increased risk of exposure may receive one lifetime booster dose of IPV; travelers who are going to countries where polio is epidemic or endemic, laboratory and healthcare workers who handle specimens that might contain polioviruses, healthcare workers or other caregivers who have close contact with a person who could be infected with poliovirus, adults who are identified by public health authorities as being part of a group or population at increased risk of exposure because of an outbreak.

CONTRAINDICATIONS: Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component.

PRECAUTIONS: Pregnancy. Moderate or severe acute illness with or without fever.

These guidelines were developed by ACHA's Vaccine-Preventable Diseases Advisory Committee and are updated annually.



APPENDIX A: Recommendations for Immunizations and TB Testing for Health Science Students

Local requirements and clinical circumstances should be taken into consideration when using these guidelines to develop an institutional immunization policy for health science students.

Overview

Health science students are often recommended to receive several vaccines to protect themselves, their patients, and the community from preventable infectious diseases. The specific recommendations may vary depending on factors such as age, vaccination history, and occupational risks. However, common vaccines and testing recommended for health science students typically include:

COVID-19: If not up to date, give COVID-19 vaccine according to current CDC recommendations (see www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html).

Hepatitis B Vaccine: Primary series AND documented quantitative hepatitis B surface antibody serologic testing after documented completion of series to indicate proof of immunity. A positive serologic test without documentation of the primary series is not sufficient.

Influenza Vaccine: 1 dose of inactivated influenza vaccine yearly.

Measles/Mumps/Rubella (MMR) Vaccine: 2 doses of MMR vaccine at least 28 days apart after 12 months of age OR 2 doses of measles and 2 doses of Mumps at least 28 days apart after 12 months of age and one dose of rubella after 12 months of age OR serologic testing to indicate proof of immunity.

Meningococcal Vaccine: Initial dose given age 13–15 years; booster dose at 16–18 years. If the initial dose given age ≥ 16 years, no booster dose required.

Tetanus/Diphtheria/Pertussis Vaccine: Primary series, to include 1 dose of Td/Tdap within the past 10 years.

Tuberculosis Testing: The CDC recommends initial baseline testing with a TB screening test. Factors in selecting which test to use may depend on facility requirements. Generally, it is not recommended to test a person with both a TB skin test and a TB blood test (see <https://www.cdc.gov/tb/topic/testing/tbtesttypes.htm>).

Per CDC, annual TB testing of health care personnel is not recommended unless there is a known exposure or ongoing transmission at a healthcare facility (see <https://www.cdc.gov/tb/topic/testing/healthcareworkers.htm>).

Varicella Vaccine: 2 doses of varicella vaccine given at least 4 weeks apart OR serologic testing to indicate proof of immunity.

Detailed Guidance

COVID-19 Vaccine

Vaccination against COVID-19 is crucial for health science students working in hospitals to protect themselves and mitigate the risk of contracting and spreading the virus to vulnerable patients, colleagues, and their own families.

Their vaccination serves as a vital step in controlling the transmission of COVID-19 within healthcare settings, ultimately reducing the burden on healthcare systems and saving lives.

Health science students should check for the specific requirements of their affiliated medical facility or hospitals.

Hepatitis B Vaccine

Hepatitis B is a viral infection that can cause liver damage and liver cancer. Health science students are at an increased risk of exposure to blood and bodily fluids, placing them at higher risk for hepatitis B infection. The vaccine provides long-term protection against the virus.

Health science students should have a primary hepatitis B series AND a positive (≥ 10 mIU/mL) serological quantitative hepatitis B surface antibody serologic test (anti-HBs or HBsAb). The test is recommended to be done 1–2 months after completion of a primary series/booster dose.

A positive serologic test without documentation of the primary series is not sufficient.

If the test result is still not consistent with immunity (< 10 mIU/mL), after the booster dose completion of the second series should be done and a test repeated 1-2 months after the final dose.

If the student has received 2 complete series of hepatitis B vaccine and does not have a positive anti-HBs test result, they are considered a “non-responder” and must be evaluated for further clinical review and recommendations.

Non-responders should be considered susceptible to hepatitis B infection and should be counseled about precautions to prevent HBV infection and the need to receive hepatitis B Immunoglobulin upon exposure to hepatitis B surface antigen positive (HBsAg) blood or fluids or blood or fluids with unknown HBsAg status.

Non-responders should also be tested for HBsAg to evaluate for chronic hepatitis B infection. Health science students who are chronic hepatitis B carriers should be counseled as to local and state guidelines for the safe provision of health care.

For more information on Hep B vaccine and serology: <https://www.immunize.org/wp-content/uploads/catg.d/p2109.pdf>

Influenza Vaccine

The influenza virus causes seasonal flu outbreaks, which can be severe and lead to complications, especially in vulnerable populations. Health science students are often in close contact with patients, increasing their risk of exposure to the influenza virus.

It is strongly recommended that all healthcare personnel receive the influenza vaccine yearly.

Measles/Mumps/Rubella (MMR) Vaccine

Measles, mumps, and rubella are highly contagious viral infections. Health science students may encounter infected patients or fellow students, making vaccination important for preventing outbreaks and protecting vulnerable populations.

Students must meet any of the following 3 options to document proof of immunity to measles, mumps, and rubella (MMR):

- 2 doses of MMR vaccine at least 28 days apart after 12 months of age.
- 2 doses of measles vaccine and 2 doses of mumps vaccine at least 28 days apart after 12 months of age and 1 dose of rubella vaccine after 12 months of age
- Serologic testing to indicate proof of immunity to measles, mumps and rubella.
 - If the serologic test result is negative or equivocal, the student should repeat the MMR series with at least 28 days between each dose.

No test is required after the MMR vaccine series.

Meningococcal Vaccine

Meningococcal disease is a serious bacterial infection that can lead to meningitis and septicemia. Health science students may be at increased risk of exposure to the bacteria, particularly in healthcare settings with close contact with patients. Vaccination provides protection against several strains of meningococcal bacteria.

Health science students should check for the specific requirements of their affiliated medical facility or hospitals.

Tetanus/Diphtheria/Pertussis Vaccine

The Tdap vaccine protects against tetanus, diphtheria, and pertussis (whooping cough). Pertussis can be particularly dangerous for infants and young children.

- Health science students should have had 1 dose of the Tdap vaccine in the past 10 years.
- If the student does not have documentation of receiving a Tdap vaccine, a Tdap vaccine should be administered as soon as feasible without regard to the interval since the previous dose of Td.
- All health science students should then receive Td or Tdap boosters every 10 years thereafter.

Tuberculosis Screening

Upon matriculation, health science students should undergo baseline testing for tuberculosis with a blood test (Interferon Gamma Release Assay [IGRA]) or a 2-step tuberculin skin test (TST). Tests for TB infection aid in the diagnosis of *M. tuberculosis* infection; neither can differentiate latent tuberculosis infection (LTBI) from tuberculosis disease.

IGRA: two IGRAs are currently endorsed by CDC for initial screening and surveillance of healthcare professionals—QuantiFERON-TB Gold and T-Spot TB.

Tuberculin Skin Test (TST) – 2-Step: Initial repeat testing is recommended for persons with a negative TST who are to undergo periodic TST screening and who have not been tested with tuberculin recently (within 1 year). This is intended to avoid “booster phenomenon” a misclassification of a subsequently reactive TST after initial testing as a TST conversion indicating recent infection.

- Individuals who have received the BCG vaccine should have their results interpreted according to standard criteria.
- 2-Step TST is performed by intradermal injection of PPD (purified protein derivative) with the student returning in 48-72 hours to record induration and interpreted according to risk factors. If negative, a second TST is placed on the opposite forearm 7-21 days after initial negative results and the results are interpreted in the standard fashion.
- If the repeat TST is positive, this is a true positive result and the student should be evaluated for latent or active TB.

Serial Testing: Utilize same testing methodology, TST or IGRA. Utilize same brand of IGRA for serial testing.

Varicella Vaccine

Varicella (chickenpox) is a highly contagious viral infection that can cause severe complications, especially in adults.

Students must have either 1 of the following 2 options to demonstrate immunity to varicella:

- Documentation of 2 varicella vaccines given at least 4 weeks apart.
- Serologic testing to indicate proof of immunity to varicella. Documentation of previous varicella disease (i.e., chicken/shingles) is not acceptable proof of immunity.
 - If the varicella serologic test is negative or equivocal, the student will repeat the varicella series with doses at least 4 weeks apart.

No test is required after the varicella vaccine series.

APPENDIX B: Health Science Student Initial Immunization Record

Student Name: _____ ID#: _____

Mobile Ph#: _____ Email: _____

Tetanus/Diphtheria/Pertussis - Students must have at least 3 doses; one of which must be a Tdap booster and one of which must be within the past 10 yrs.				
	(#1) mo./day/year	(#2) mo./day/year	(#3) mo./day/year	(#4) mo./day/year
DTP, DTaP or Td				
Tdap booster **Must have one documented				
Measles/Mumps/Rubella – 2 doses of MMR at least 28 days apart after 12 months of age OR 2 doses of Measles and 2 doses of Mumps at least 28 days apart after 12 months of age and 1 dose of Rubella after 12 months of age OR laboratory proof of immunity (blood test) to measles/mumps/rubella. If test result is negative or equivocal, repeat MMR series with doses at least 28 days apart. No test is required after series repeat.				
	(#1) mo./day/year	(#2) mo./day/year		
MMR – 2 required on or after 1st birthday				
OR				
Measles – 2 required on or after 1st birthday				
Mumps – 2 required on or after 1st birthday				
Rubella – 1 required on or after 1st birthday				
OR				
MMR Test *must attach laboratory results	Date of test	Result		
Varicella – 2 doses of Varicella at least 4 weeks apart OR laboratory proof of immunity to varicella. If serologic test result is negative or equivocal, repeat Varicella series with doses at least 4 weeks apart. No test is required after series repeat.				
	(#1) mo./day/year	(#2) mo./day/year		
Varicella – 2 doses				
OR				
Varicella Test *must attach laboratory results	Date of test	Result		
Hepatitis B – a primary series of hepatitis B vaccines and a positive (>10 mIU/mL) serological quantitative hepatitis B surface antibody test (HBsAb) 1-2 months after the date of the last vaccine. If series was completed in the remote past, and if the serologic test checked upon matriculation is negative, student will get 1 hepatitis B vaccine dose and re-test at least 1-2 months after vaccine. If the second test is negative, student will get the additional Hepatitis B vaccine(s) to complete the series per the standard schedule. A final test should be done 1-2 months after the final vaccine and if this is negative, the student should be considered a non-responder and evaluated and counseled appropriately. Those students recently vaccinated with a negative test after a primary series can receive a second series with a re-test 1-2 months after the final dose. Non-responders should be counseled and evaluated appropriately.				
	(#1) mo./day/year	(#2) mo./day/year	(#3) mo./day/year	
Hepatitis B Series – a primary series required				
Hepatitis B <u>Quantitative</u> Test *must attach laboratory results	Date of Test	Result		
Hepatitis B Series Repeat				
Hepatitis B <u>Quantitative</u> Test Repeat *must attach laboratory results	Date of Test	Result		

Tuberculin Screening – IGRA Blood Test (preferred) OR a 2-step TB skin test (TST) placed within the past 12 months.				
2 Step TST – placed within the past 12 months, must have been performed in the United States. The 2nd TST must be placed at least 1 week AFTER the 1st TST read date.	1 st TST Place date	1 st TST Read Date and result	2 nd TST Place Date	2 nd TST Read date and result
OR				
IGRA TB Screening – specific test used should be approved for us in the US. ___ T-spot* ___ QuantiFERON Gold* *Must attach laboratory results	Date of IGRA	Result		
COVID-19 - Students should have an updated COVID-19 vaccine, as per the CDC recommendations. Some institutions may require documentation of a primary series.				
	Vaccine NAME	DATE (mo./day/year)	Vaccine NAME	DATE (mo./day/year)
COVID-19 Vaccine (most recent)				
COVID-19 Vaccine (primary series)				

Signature and Credentials of Health Care Provider

Date



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