STEP 4:

Deciding Whom to Vaccinate

By now, you have selected and obtained one or more vaccines to administer to the patients you serve. If not, we will be reviewing which patient-care settings may want to administer certain vaccines. In deciding whom to vaccinate, you will need to **assess** and **screen** each individual who comes into your clinic setting.

- **Assessment** – Are there any special reasons, or *indications*, that this person should be vaccinated?
- **Screening** – Are there any special reasons, or *contraindications*, that this person should NOT be vaccinated?

NFID

Depending on your healthcare setting, your patients may come in partially assessed, which makes the job a bit easier. For instance, if you work in an ob-gyn clinic, many of your patients are likely pregnant women who will need specific vaccines. If your patients are primarily men who have sex with men (MSM), they have certain risk factors and will need certain vaccines as well. Ideally, you will not miss an opportunity to vaccinate someone who needs to be vaccinated, but you also will not vaccinate someone who shouldn't receive a particular vaccine. In this chapter we provide you with information to help you determine who needs to be vaccinated against which diseases.

In this chapter we provide you with information to help you determine who needs to be vaccinated against which diseases.

Step-by-Step: Assessment and Screening Tasks

- Determine the patient's previous vaccination history
- Determine which vaccines are needed
- Screen for contraindications and precautions to vaccines
- Advise the patient if he or she should be vaccinated
- Educate your patients about diseases for which they may be at risk and the vaccines that can prevent them

Vaccination of Special Populations

- Women who are pregnant
- People who may be immunosuppressed because of disease or treatment of disease
- People with anatomic or functional asplenia (spleen is lacking or not functioning)
- People without a vaccination record
- People vaccinated outside the United States
- Healthcare personnel (HCP)
- Childcare, home health care, and long-term care providers
- International travelers

Vaccines to consider having available in different healthcare settings

If you work in a clinic or program with a focused target population, you may already know which vaccines you will need to offer. You should also review information about vaccination of special populations (such as pregnant women and immunosuppressed people) later in this chapter. The chart below may serve as a guide to help you determine which vaccines your clinic might routinely keep in stock.

SETTING	VACCINE											
	Hep B	Hep A	Influenza	Tdap/Td	MMR	Varicella	HPV	Zoster	PPSV	PCV	Men ACWY	Men B
Internal Medicine Practice	●	●	●	●	●	●	●	●	●	●	●	●
Family Medicine Practice	●	●	●	●	●	●	●	●	●	●	●	●
Ob-gyn Practice	●	●	●	●	●	●	●	●	●	●	●	●
STD Clinic	●	●	●	●			●					
Clinic Serving MSM	●	●	●	●	●	●	●	●	●	●	●	●
Family Planning Clinic	●	●	●	●	●	●	●				●	●
College Health Service	●	●	●	●	●	●	●				●	●
Adult Correctional Facility	●	●	●	●	●	●	●	●	●	●	●	●
Drug Treatment Center	●	●	●	●	●	●	●				●	●
Senior Center			●	●				●	●	●		

Determine the patient's previous vaccination history

Before you can decide which of your patients need which vaccines from among those you will offer, it is important to know what vaccines they've had in the past and to what diseases they may already be immune. If they were born in the U.S. before 1957, it's likely that they had measles, mumps, and rubella diseases as a child. Many younger adults, particularly those who started school in the late 1970s or after, may have been vaccinated against measles and rubella to meet the requirements of their enrollment in school or college. If they were born in the U.S. before 1980, they probably had chickenpox and are immune to varicella.

Before you can decide which of your patients need which vaccines from among those you will offer, it is important to know what vaccines they've had in the past and to what diseases they may already be immune.

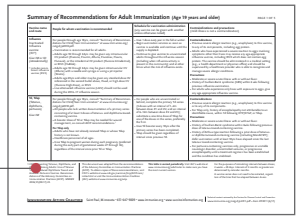
If they can't provide a personal written record of the vaccines they've had, see if they (or you) can easily get that information. The Immunization Action Coalition's (IAC) *Tips for Locating Old Immunization Records*, available at www.immunize.org/catg.d/p3065.pdf, may help you with ideas about how to proceed. The first place to check is the doctor's office or clinic where vaccines may have been given in the past.

Be sure to check with the state or local health department located where the person received immunizations in the past, because many localities maintain a centralized computer database of vaccinations called an Immunization Information System (IIS) or "registry." (More information about this is available in *Step 6 – Documentation and Related Issues*.) If a record of past vaccinations cannot be located, CDC recommends giving the vaccine. Revaccination of a person who may already be immune to that disease is not harmful.

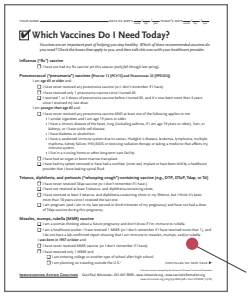
Determine which vaccines are needed

The vaccines that patients need are determined by a variety of factors. The tools listed below can assist you in your assessment of which vaccines your patient should receive.

Summary of Recommendations for Adult Vaccination – This summary chart was adapted from the recommendations of the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP).

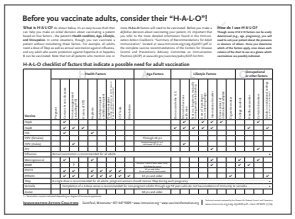

Summary of Recommendations for Adult Immunization (Age 19 years and older)

www.immunize.org/catg.d/p2011.pdf


Which Vaccines Do I Need Today?

Which Vaccines Do I Need Today? – This questionnaire can be used to allow your adult patients to conduct a self-assessment of the vaccines they need.

www.immunize.org/catg.d/p4036.pdf


Before you vaccinate adults, consider their "H-A-L-O"!

www.immunize.org/catg.d/p3070.pdf

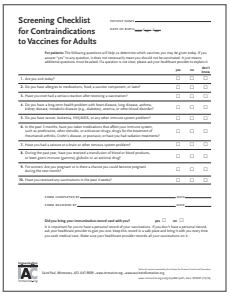
Before You Vaccinate Adults, Consider Their "H-A-L-O" – This table can be used to help you assess your patient's current **H**ealth condition, **A**ge, **L**ifestyle, and/or **O**ccupation.

Screen for contraindications and precautions to vaccines

Not every patient is a candidate for every vaccination. And like any medication, any vaccine may cause an adverse reaction. Most reactions are mild and temporary, such as pain or redness at the site of injection. As a vaccination provider, your job is to screen your patients for any medical conditions that might lead to a serious reaction. Such conditions can be classified as either a **contraindication** (i.e., the condition *greatly increases* the chance of a serious adverse reaction) or a **precaution** (i.e., the condition *may increase* the chance of a serious reaction or may compromise the ability of the vaccine to produce immunity). Contraindications and precautions vary depending on the type of vaccine (live or inactivated). As a general rule, you should not vaccinate a person with a valid contraindication or precaution to that vaccine at that visit. But most contraindications and precautions are temporary conditions (such as pregnancy or a moderate to severe illness), and the vaccine can be given at a later date.

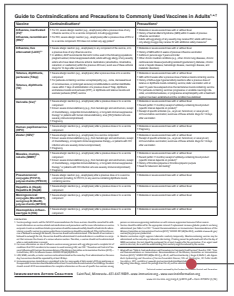
As a vaccination provider, your job is to screen your patients for any medical conditions that might lead to a serious reaction.

Several tools are available to help with this important screening. The *Screening Checklist for Contraindications to Vaccines for Adults*, found at www.immunize.org/catg.d/p4065.pdf, should be completed by your patients while they are in the exam or waiting room. The checklist is available in multiple languages for patients who do not speak English. Page 2 of this checklist is for you and pro-


Screening Checklist for Contraindications to Vaccines for Adults

www.immunize.org/catg.d/p4065.pdf

vides explanations about why you are asking the questions on page 1, as well as general information about contraindications and precautions. This questionnaire with your patient's answers is one of the most important documents in your patient's medical record. Make sure you review it carefully and that a nurse or doctor addresses any concerns raised by your patient's responses. After you have reviewed the questionnaire with your patient, add any pertinent comments and place it in your patient's medical record. Another important reference for your use, the *Guide to Contraindications and Precautions to Commonly Used Vaccines in Adults* found at www.immunize.org/catg.d/p3072.pdf, summarizes contraindications and precautions as determined by the ACIP.



www.immunize.org/catg.d/p3072.pdf

Note that contraindications and precautions to each vaccine are found in several sources. The vaccine manufacturer lists these in the product information that is supplied with the vaccine. ACIP also issues them within the recommendations for use of each vaccine. Usually, the manufacturer and ACIP contraindications and precautions agree. But for some vaccines, there may be disagreement between the two. An example is the length of time a woman should defer pregnancy after receiving MMR vaccine: the manufacturer says 3 months, but ACIP recommends 1 month. When you encounter these disagreements in contraindications or precautions, we suggest that you follow ACIP recommendations rather than those in the product information.

After you've completed your screening assessment for needed vaccines and checked for contraindications and precautions, advise the patient about vaccines recommended for him or her.

Advise the patient if he or she should be vaccinated

After you've completed your screening assessment for needed vaccines and checked for contraindications and precautions, advise the patient about vaccines recommended for him or her.

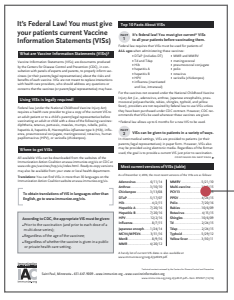
In certain situations, you may want to discuss the possibility that your patient already might be immune and recommend testing instead of vaccination. *There is no harm in vaccinating someone who is already immune*. But depending on your patient population, you may save money by testing certain patients for pre-existing immunity. Your decision to test or vaccinate without testing should be based on the likelihood that the person is already immune (based on age or other factors), the relative cost of testing compared to vaccination, and the chances that the person will return for vaccination if the test indicates the person is not immune. If the blood draw and testing is more expensive than the vaccine, or if you feel that the patient might not return, then the person should be vaccinated rather than tested.

Educate your patients about diseases for which they may be at risk and the vaccines that can prevent them

Providing patients with accurate and reliable information takes time. Fortunately, numerous handouts are available that can help you educate your patients about vaccine-preventable diseases and the vaccines that will prevent them. You can find a comprehensive listing of patient-friendly resources available from the Immunization Action Coalition at www.immunize.org/handouts/view-all-patient.asp. In addition, a series of easy-to-understand handouts describing the seriousness of diseases and the value of specific vaccines for adults may be found at www.immunize.org/handouts/adult-vaccination.asp#vaccinesummaries.

Under federal law, the VIS MUST be given to the patient or the patient's representative BEFORE the vaccine is administered.

The most important document for patient education is the *Vaccine Information Statement* (VIS), which CDC publishes for *each* vaccine. Under federal law, the VIS MUST be given to the patient or the patient's representative BEFORE the vaccine is administered. Each patient must be offered a copy of the VIS to take home. VISs for every vaccine are available in English and many other languages on the IAC website at www.immunize.org/vis. *It's Federal Law! You must give your patients current Vaccine Information Statements*, which provides more information about VIS requirements, is available at www.immunize.org/catg.d/p2027.pdf.



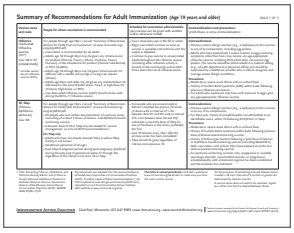
www.immunize.org/catg.d/p2027.pdf

Vaccination of Special Populations

All adults need vaccines. All adults should receive:

- influenza vaccine each fall or winter;
- 1 dose of Tdap and at least 2 additional doses of a tetanus-containing vaccine (such as DTP, DTaP [administered in childhood] or Td);
- zoster (shingles) vaccine at age 60 years or older;
- 1 dose of pneumococcal conjugate vaccine (PCV, Prevnar) at age 65 years (or older), followed by 1 dose of pneumococcal polysaccharide vaccine (PPSV, Pneumovax) 12 months later; and
- 2 or 3 doses of human papillomavirus (HPV) vaccine through age 21 years for all men, and through age 26 years for all women, as well as for certain men. (See HPV-specific ACIP guidance for details.)

Depending on the age of the person, MMR and varicella vaccines also may be recommended. For specific details, refer to the *Summary of Recommendations for Adult Vaccination* found at www.immunize.org/catg.d/p2011.pdf.



www.immunize.org/catg.d/p2011.pdf

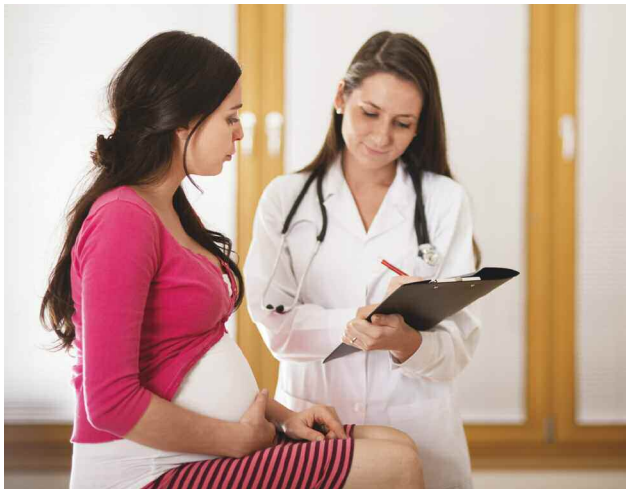
In addition to routinely recommended vaccines, some groups of adults, such as immunocompromised people or people with renal failure who are on dialysis, have special vaccination considerations. Certain vaccines may be indicated or contraindicated because of medical or other conditions. A detailed discussion of these groups is available in the *ACIP General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf and the *ACIP Recommendations: Vaccine Index* at www.immunize.org/acip/acip_vax.asp.

If your practice includes persons in any of these groups, we strongly recommend that you familiarize yourself with the more detailed guidelines. A brief discussion of some of these special populations follows.

Women who are pregnant

The decision to vaccinate a woman who is pregnant involves balancing benefits of protection of the woman and the fetus compared to any risk to the fetus. There is no evidence that inactivated vaccines, such as influenza, Tdap, and hepatitis B, pose a risk to the fetus, and these should be administered when indicated. Inactivated influenza and Tdap vaccines are specifically recommended for pregnant women to help protect them and their babies from serious diseases.

An exception to this general rule covering inactivated vaccines is human papillomavirus (HPV) vaccine. Although this vaccine contains only HPV proteins and not live virus, and no harm to a fetus has been documented in women vaccinated during pregnancy, neither the manufacturer nor ACIP recommends administration of the HPV vaccine to a pregnant woman. If a woman becomes pregnant before completing the HPV series, the remaining dose(s) should be deferred until after the pregnancy is completed. However, if a pregnant woman inadvertently receives HPV vaccine, no specific action must be taken.



Live vaccines (MMR, varicella, *Zostavax*, and nasal spray influenza vaccine) pose a theoretical risk of infection of the fetus, although only live virus smallpox vaccine has been shown to cause fetal damage. Live virus vaccines generally are contraindicated during pregnancy, and pregnancy should be avoided for at least four weeks after receiving those vaccines. However, having a pregnant household member or close contact is NOT a reason to withhold a live vaccine from a healthy patient.

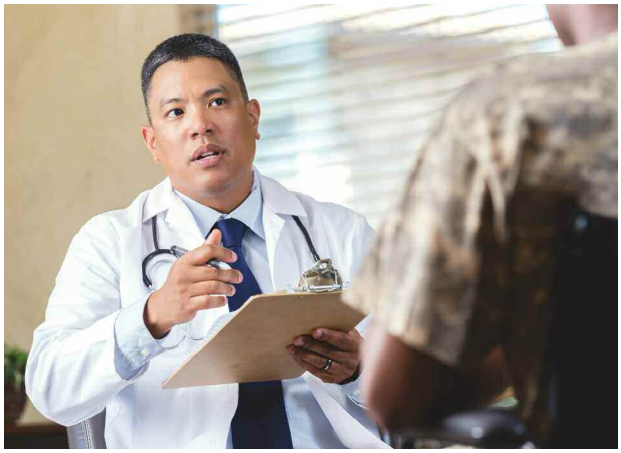
ALL inactivated and live vaccines except smallpox (contraindication) and yellow fever (precaution) may be administered to a breastfeeding woman if indicated. Breastfeeding does not affect the baby's response to vaccination, and infants who are breastfeeding should be vaccinated on schedule.

People who may be immunosuppressed because of disease or treatment of disease

Many people, particularly those who are older, are considered to be immunosuppressed to various degrees for different reasons. Immunosuppression can be caused by:

- **Diseases**; examples include chronic kidney disease, leukemia, lymphoma and other malignancies, or HIV infection;

- **Certain medications and therapies**; examples include corticosteroids (such as prednisone), cancer chemotherapy, radiation, and immune modulating drugs (such as *Embrel*® or *Humira*®); and/or
- **Removal or non-function of the spleen** (see below) or because of **solid organ** or **bone marrow transplantation**.



Susceptible immunosuppressed people can have significantly elevated risks for both the occurrence and severity of vaccine-preventable diseases.

Regardless of the cause, susceptible immunosuppressed people can have significantly elevated risks for both the occurrence and severity of vaccine-preventable diseases. People who were immune because of vaccination or infection prior to becoming immunosuppressed generally do not lose their immunity after becoming immunosuppressed. Susceptible people who are most severely immunosuppressed and most in need of vaccines may not have an effective immune response to a vaccine. Immunosuppressed people also may be at increased risk for adverse events from a live attenuated vaccine.

Inactivated vaccines do not replicate, and they may be administered to an immunosuppressed person if indicated. But live attenuated vaccines (MMR, varicella, *Zostavax*, nasal spray influenza vaccine) are contraindicated for immunosuppressed people. Live vaccines should not be administered to an immunosuppressed person for 1 to 3 months after cessation of immunosuppressive therapy, depending on the type of therapy. Immunosuppression of a close or household contact is NOT a reason to withhold a live vaccine from a healthy patient.

A detailed discussion of assessment of a patient's possible immune suppression is beyond the scope of this guide. See the *ACIP General Best Practices Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf for a more complete discussion of this issue.

People with anatomic or functional asplenia (spleen is lacking or not functioning)

Although asplenia – absence of the spleen – may be congenital, it more often is the result of surgery, usually following trauma. "Functional asplenia" means the spleen is present, but it does not work properly. Functional asplenia is most often a result of sickle cell disease.

Adults with asplenia from any cause are at increased risk of infection with certain bacteria, in particular pneumococcus, but also meningococcus and *Haemophilus influenzae* type b. In addition to routine vaccines, adults with asplenia should receive:

- meningococcal conjugate vaccine (MenACWY) (1 dose every 5 years);
- meningococcal serogroup B vaccine (MenB) (2 or 3 doses, depending on type of vaccine used);
- pneumococcal conjugate vaccine (1 dose);
- pneumococcal polysaccharide vaccine (2 doses 5 years apart, at least 8 weeks after receiving the pneumococcal conjugate dose); and
- any pediatric Hib vaccine (1 dose).

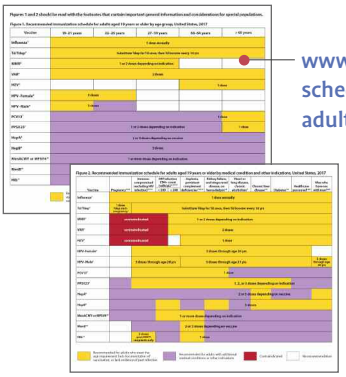
If surgical removal of the spleen is planned, both pneumococcal vaccines should be administered prior to surgery, if possible. If this is not possible, the patient should be vaccinated as soon as his/her condition stabilizes after surgery. Pneumococcal conjugate vaccine should be administered first, followed by the first dose of pneumococcal polysaccharide vaccine 8 weeks later. There is some variation in the meningococcal conjugate vaccine recommendations based on the brand that is used. If *Menactra* (Sanofi Pasteur) is used, pneumococcal conjugate vaccine should be administered first, followed by *Menactra* at least 4 weeks later. This recommendation is made due to possible interference between the two conjugate vaccines. Due to its chemical makeup, *Menveo* (GlaxoSmithKline) does not appear to interfere with pneumococcal vaccination and can be administered at the same visit or at any time before or after pneumococcal conjugate vaccine. Additional information about use of meningococcal vaccines may be found in *Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroups A, C, W, or Y Protection* at www.immunize.org/catg.d/p2018.pdf and *Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroup B Protection* at www.immunize.org/catg.d/p2035.pdf.

People without a vaccination record

Only written, dated records should be accepted as evidence of prior vaccination. A person's undocumented personal history is not acceptable as evidence of vaccination, except for pneumococcal polysaccharide and influenza vaccines. Many adults do not have or cannot locate a vaccination record. To avoid needlessly repeating vaccines, a search should always be made to locate a record. Information may be available from sources such as prior healthcare providers, parents, school records, or military records. IAC's *Tips for Locating Old Immunization Records*, available at www.immunize.org/catg.d/p3065.pdf, offers helpful hints to facilitate this effort.

Only written, dated records should be accepted as evidence of prior vaccination.

If no record can be located, then the person should be given all age-appropriate vaccines, particularly Tdap/Td (3 doses), MMR (1 or 2 doses), HPV (3 doses), and varicella (2 doses) or zoster (1 or 2 doses). Hepatitis B, polio, and other vaccines also may be indicated for some people. Serologic testing for immunity to measles, rubella, and certain other vaccine-preventable diseases may be an option in lieu of these vaccines. The *ACIP Recommended Adult Immunization Schedule* found at www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf provides guidance on vaccination of adults without a vaccination record. IAC's *Summary of Recommendations for Adult Immunization*, available at www.immunize.org/catg.d/p2011.pdf, also provides this guidance.



www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

People vaccinated outside the United States

Immigrants and expatriates with no vaccination record should be managed in the same manner as described above under *Persons without a Vaccination Record*. Such persons may have a written, dated record, but the vaccine names may be unfamiliar. It is also possible that schedules other than those used in the U.S. may have been followed.

As a general rule, any *documented* vaccine dose that was administered using ACIP-recommended ages and intervals can be counted as valid.

(For example, measles vaccine may have been given prior to the first birthday.) Vaccines administered outside the U.S. can be assumed to be potent. As a general rule, any documented vaccine dose that was administered using ACIP-recommended ages and intervals can be counted as valid. CDC maintains an extensive listing of *Foreign Language Terms*, available at www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/foreign-products-tables.pdf, to aid in translating foreign immunization records. If the vaccine name cannot be located on this table, then the vaccine dose should be disregarded and the person vaccinated as age-appropriate.

It is the ethical obligation of HCP to assure they are immune to vaccine-preventable diseases to protect themselves and to avoid being a vector for transmitting those diseases to their patients.

CDC

Healthcare personnel (HCP)

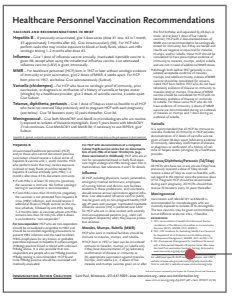
HCP are at increased risk of exposure to vaccine-preventable diseases by virtue of their occupation. Likewise, HCP with a vaccine-preventable disease pose a grave risk to their patients, who often have other medical issues. It is the ethical obligation of HCP to assure they are immune to vaccine-preventable diseases to protect themselves and to avoid being a vector for transmitting those diseases to their patients.

Vaccinations routinely recommended for all adults:

- Influenza vaccine annually;
- Tdap;
- Zoster vaccine (age-appropriate); and
- Pneumococcal conjugate and pneumococcal polysaccharide vaccines (age-appropriate),
- HPV vaccine (age appropriate);

Additional vaccinations routinely recommended for HCP:

- Hepatitis B (3 doses), which should be followed by laboratory confirmation of seroconversion 1–2 months after completion of the series for those HCP who are likely to be exposed to blood or body fluids;
- MMR (2 doses), unless they have laboratory evidence of immunity to all 3 viruses;
- Varicella (2 doses), unless they have laboratory evidence of immunity *or* a healthcare provider diagnosis of a history of varicella disease or herpes zoster; and
- Meningococcal conjugate vaccine (MenACWY) (1 dose every 5 years) and meningococcal serogroup B vaccine (MenB) for laboratory workers who work with *Neisseria meningitidis*.


Healthcare Personnel Vaccination Recommendations

IAC's *Healthcare Personnel Vaccination Recommendations*, available at www.immunize.org/catg.d/p2017.pdf, provides additional guidance.

www.immunize.org/catg.d/p2017.pdf

CDC

Childcare, home health care, and long-term care providers

ACIP has not made specific recommendations for persons employed in childcare, home health care (i.e, HCP providing care to patients in their own home), and long-term care settings. Some states have regulations that mandate these providers submit evidence of receiving certain vaccines. But even without state mandates, people who are employed in childcare, home health care, or long-term care facilities should protect themselves and the people under their care by being vaccinated. Childcare, home health care, and long-term care providers should receive:

Even without state mandates, people who are employed in childcare, home health care, or long-term care facilities should protect themselves and the people in their care by being vaccinated.

- all routinely recommended adult vaccines (annual influenza vaccination, 1 dose of Tdap, and, if age-appropriate, zoster, pneumococcal polysaccharide, and pneumococcal conjugate vaccines); and
- 1 or 2 doses of MMR vaccine (depending on the situation) and 2 doses of varicella vaccine. (Use of MMR and/or varicella vaccine also will be based on the presence of evidence-based immunity to measles, mumps, rubella and varicella.)

When there is the potential for exposure to blood and/or body fluids, hepatitis B vaccine also should be given. Hepatitis A infection is almost always asymptomatic in children. Although not specifically recommended for childcare providers by ACIP, hepatitis A vaccination should be considered.

International travelers may need other vaccines not routinely recommended for adults in the U.S.

International travelers

In addition to routine adult vaccines, international travelers may need other vaccines not routinely recommended for adults in the U.S., such as yellow fever, typhoid, Japanese encephalitis, hepatitis A, rabies, and polio. The number of vaccines a traveler needs is dependent on their itinerary and the type of activities that are anticipated. A complete discussion of travel-related vaccines and other travel health issues is beyond the scope of this guide. People who plan to travel outside the U.S. should be referred to a clinic that specializes in travel medicine. CDC has an extensive website on *Travelers' Health* at wwwnc.cdc.gov/travel that includes information about recommended vaccines.

STEP 4: DECIDING WHOM TO VACCINATE

Materials and Resources for You to Use

Tools for Providers

Before You Vaccinate Adults, Consider Their "H-A-L-O"! (IAC)
www.immunize.org/catg.d/p3070.pdf

Guide to Contraindications and Precautions to Commonly Used Vaccines in Adults (IAC)
www.immunize.org/catg.d/p3072.pdf

Healthcare Personnel Vaccination Recommendations (IAC) – www.immunize.org/catg.d/p2017.pdf

Hepatitis A and B Vaccine – Be Sure Your Patients Get the Correct Dose (IAC)
www.immunize.org/catg.d/p2081.pdf

Hepatitis A, B, and C: Learn the Differences (IAC)
www.immunize.org/catg.d/p4075.pdf

Hepatitis B Facts: Testing and Vaccination (IAC)
www.immunize.org/catg.d/p2110.pdf

Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroup B Protection (IAC)
www.immunize.org/catg.d/p2035.pdf

Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroups A,C,W, or Y Protection (IAC)
www.immunize.org/catg.d/p2018.pdf

Screening Checklist for Contraindications to Inactivated Injectable Influenza Vaccination (IAC)
www.immunize.org/catg.d/p4066.pdf

Screening Checklist for Contraindications to Vaccines for Adults (IAC)
www.immunize.org/catg.d/p4065.pdf

Summary of Recommendations for Adult Immunization (IAC)
www.immunize.org/catg.d/p2011.pdf

Using Standing Orders for Administering Vaccines: What You Should Know (IAC)
www.immunize.org/catg.d/p3066.pdf

NOTE: The publisher of each resource is shown as an acronym in the parentheses following the title. A key to these acronyms is included in *Appendix A: Acronyms and Abbreviations*.

Additional Provider Resources

ACIP General Best Practice Guidelines for Immunization (CDC) – www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf

ACIP Recommendations: Vaccine Index (IAC)
www.immunize.org/acip/acip_vax.asp

***Ask the Experts:* Experts from CDC Answer Questions About Vaccines (IAC)**
www.immunize.org/askexperts

Foreign Language Terms (CDC)
www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/foreign-products-tables.pdf

Immunization for Women (ACOG)
www.immunizationforwomen.org

Immunization Toolkits (ACOG)
http://immunizationforwomen.org/providers/resources/toolkits/default.php

Provider Resources (ACOG) – http://immunizationforwomen.org/providers/resources/default.php

Recommended Adult Immunization Schedule, United States (CDC) – www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf

Resources for Educating Pregnant Women (CDC)
www.cdc.gov/vaccines/pregnancy/hcp/resources.html

Standing Orders for Administering Vaccines (IAC)
www.immunize.org/standing-orders

Travelers' Health (CDC)
https://wwwnc.cdc.gov/travel

Vaccine Information Statements (VISs) and Translations (IAC) – www.immunize.org/vis

CONTINUED ON NEXT PAGE ▶

STEP 3: DECIDING WHOM TO VACCINATE

Materials and Resources for You to Use

CONTINUED FROM PREVIOUS PAGE

Information for Patients

Meningococcal B Vaccine – CDC Answers Your Questions (IAC)
www.immunize.org/catg.d/p2040.pdf

Pneumococcal Vaccines – CDC Answers Your Questions (IAC)
www.immunize.org/catg.d/p2015.pdf

Questions and Answers on Vaccines (multiple patient handouts for specific vaccines) **(IAC)**
www.immunize.org/handouts/vaccine-questions.asp

Tips for Locating Old Immunization Records (IAC)
www.immunize.org/catg.d/p3065.pdf

NOTE: The publisher of each resource is shown as an acronym in the parentheses following the title. A key to these acronyms is included in *Appendix A: Acronyms and Abbreviations*.

Vaccinations for Adults (suite of patient-friendly schedules for adults with specific health conditions) **(IAC)** – www.immunize.org/handouts/vaccine-schedules.asp#patientschedules

Vaccine Fact Sheets: Protect Yourself from… (multiple handouts for specific vaccines) **(IAC)**
www.immunize.org/handouts/vaccine-summaries.asp#at

Which Vaccines Do I Need Today? (IAC)
www.immunize.org/catg.d/p4036.pdf

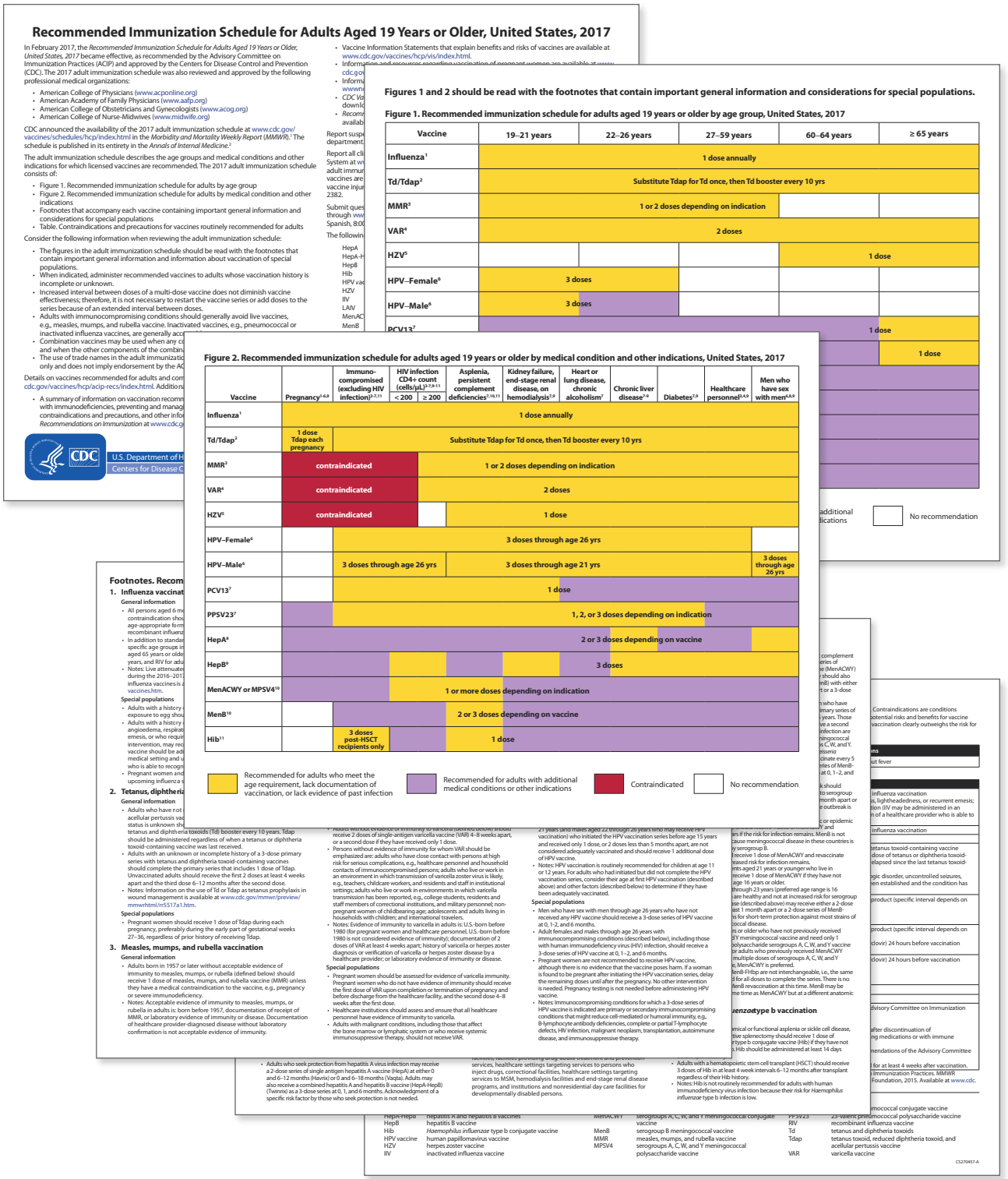
Zoster Vaccine – CDC Answers Your Questions (IAC) – www.immunize.org/catg.d/p2025.pdf

General Information

Immunization Action Coalition (IAC)
www.immunize.org

To access the current, ready-to-copy version of the schedule, visit

www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf



Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

In February 2017, the *Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017* became effective, as recommended by the Advisory Committee on Immunization Practices (ACIP) and approved by the Centers for Disease Control and Prevention (CDC). The 2017 adult immunization schedule was also reviewed and approved by the following professional medical organizations:

- American College of Physicians (www.acponline.org)
- American Academy of Family Physicians (www.aafp.org)
- American College of Obstetricians and Gynecologists (www.acog.org)
- American College of Nurse-Midwives (www.midwife.org)

CDC announced the availability of the 2017 adult immunization schedule at www.cdc.gov/vaccines/schedules/hcp/index.html in the *Morbidity and Mortality Weekly Report* (*MMWR*).[1] The schedule is published in its entirety in the *Annals of Internal Medicine*.[2]

The adult immunization schedule describes the age groups and medical conditions and other indications for which licensed vaccines are recommended. The 2017 adult immunization schedule consists of:

- Figure 1. Recommended immunization schedule for adults by age group
- Figure 2. Recommended immunization schedule for adults by medical condition and other indications
- Footnotes that accompany each vaccine containing important general information and considerations for special populations
- Table. Contraindications and precautions for vaccines routinely recommended for adults

Consider the following information when reviewing the adult immunization schedule:

- The figures 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 acc
- Combination vaccines may be used when any c and when the other components of the combin
- The use of trade names in the adult immunizatic only and does not imply endorsement by the AC

Details on vaccines recommended for adults and con cdc.gov/vaccines/hcp/acip-recs/index.html. Additiona

- A summary of information on vaccination recomm with immunodeficiencies, preventing and manag contraindications and precautions, and other info *Recommendations on Immunization* at www.cdc.g

- Vaccine Information Statements that explain benefits and risks of vaccines are available at www.cdc.gov/vaccines/hcp/vis/index.html.
- Information and resources regarding vaccination of pregnant women are available at www.cdc.go
- Informa www
- *CDC Va* downlo
- *Recomm* vaccines are availab

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Report all cli System at w adult immur vaccine inju 2382.

Submit ques through ww Spanish, 80

The followin

HepA HepA-H HepB Hib HPV vac HZV IIV LAIV MenAC MenB

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

Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group, United States, 2017

Vaccine	19–21 years	22–26 years	27–59 years	60–64 years	≥ 65 years
Influenza[1]	1 dose annually				
Td/Tdap[2]	Substitute Tdap for Td once, then Td booster every 10 yrs				
MMR[3]	1 or 2 doses depending on indication				
VAR[4]	2 doses				
HZV[5]				1 dose	
HPV–Female[6]	3 doses				
HPV–Male[6]	3 doses				
PCV13[7]	1 dose				1 dose

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

Vaccine	Pregnancy[1,6,9]	Immuno-compromised (excluding HIV infection)[3,7,11]	HIV infection CD4+ count (cells/μL)[3,7,8,11] < 200	HIV infection CD4+ count (cells/μL)[3,7,8,11] ≥ 200	Asplenia, persistent complement deficiencies[7,10,11]	Kidney failure, end-stage renal disease, on hemodialysis[7,9]	Heart or lung disease, chronic alcoholism[7]	Chronic liver disease[7,9]	Diabetes[7,9]	Healthcare personnel[1,4,9]	Men who have sex with men[1,4,9]
Influenza[1]	1 dose annually										
Td/Tdap[2]	1 dose Tdap each pregnancy	Substitute Tdap for Td once, then Td booster every 10 yrs									
MMR[3]	contraindicated	1 or 2 doses depending on indication									
VAR[4]	contraindicated	2 doses									
HZV[5]	contraindicated			1 dose							
HPV–Female[6]		3 doses through age 26 yrs									
HPV–Male[6]		3 doses through age 26 yrs		3 doses through age 21 yrs							3 doses through age 26 yrs
PCV13[7]		1 dose									
PPSV23[7]		1, 2, or 3 doses depending on indication									
HepA[8]		2 or 3 doses depending on vaccine									
HepB[9]		3 doses									
MenACWY or MPSV4[10]		1 or more doses depending on indication									
MenB[10]		2 or 3 doses depending on vaccine									
Hib[11]		3 doses post-HSCT recipients only		1 dose							

Recommended for adults who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended for adults with additional medical conditions or other indications

Contraindicated

No recommendation

Footnotes. Recom

1. Influenza vaccinat

General information

- All persons aged 6 mo contraindication sho age-appropriate for recombinant influenz
- In addition to standar specific age groups i aged 65 years or olde years, and RIV for adu
- Notes: Live attenuate during the 2016–201 influenza vaccines is a vaccines.htm.

Special populations

- Adults with a history exposure to egg shou
- Adults with a history angioedema, respirat emesis, or who requir intervention, may rec vaccine should be ad medical setting and u who is able to recogn
- Pregnant women and upcoming influenza s

2. Tetanus, diphtheria

General information

- Adults who have not r acellular pertussis vac status is unknown sh tetanus and diphtheria toxoids (Td) booster every 10 years. Tdap should be administered regardless of when a tetanus or diphtheria toxoid-containing vaccine was last received.
- Adults with an unknown or incomplete history of a 3-dose primary series with tetanus and diphtheria toxoid-containing vaccines should complete the primary series that includes 1 dose of Tdap. Unvaccinated adults should receive the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second dose.
- Notes: Information on the use of Td or Tdap as tetanus prophylaxis in wound management is available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm.

Special populations

- Pregnant women should receive 1 dose of Tdap during each pregnancy, preferably during the early part of gestational weeks 27–36, regardless of prior history of receiving Tdap.

3. Measles, mumps, and rubella vaccination

General information

- Adults born in 1957 or later without acceptable evidence of immunity to measles, mumps, or rubella (defined below) should receive 1 dose of measles, mumps, and rubella vaccine (MMR) unless they have a medical contraindication to the vaccine, e.g., pregnancy or severe immunodeficiency.
- Notes: Acceptable evidence of immunity to measles, mumps, or rubella in adults is: born before 1957, documentation of receipt of MMR, or laboratory evidence of immunity or disease. Documentation of healthcare provider-diagnosed disease without laboratory confirmation is not acceptable evidence of immunity.

- Adults who seek protection from hepatitis A virus infection may receive a 2-dose series of single antigen hepatitis A vaccine (HepA) at either 0 and 6–12 months (Havrix) or 0 and 6–18 months (Vaqta). Adults may also receive a combined hepatitis A and hepatitis B vaccine (HepA-HepB) (Twinrix) as a 3-dose series at 0, 1, and 6 months. Acknowledgment of a specific risk factor by those who seek protection is not needed.

- Adults without evidence of immunity to varicella (defined below) should receive 2 doses of single-antigen varicella vaccine (VAR) 4–8 weeks apart, or a second dose if they have received only 1 dose.
- Persons without evidence of immunity for whom VAR should be emphasized are: adults who have close contact with persons at high risk for serious complications, e.g., healthcare personnel and household contacts of immunocompromised persons; adults who live or work in an environment in which transmission of varicella zoster virus is likely, e.g., teachers, childcare workers, and residents and staff in institutional settings; adults who live or work in environments in which varicella transmission has been reported, e.g., college students, residents and staff members of correctional institutions, and military personnel; non-pregnant women of childbearing age; adolescents and adults living in households with children; and international travelers.
- Notes: Evidence of immunity to varicella in adults is: U.S.-born before 1980 (for pregnant women and healthcare personnel, U.S.-born before 1980 is not considered evidence of immunity); documentation of 2 doses of VAR at least 4 weeks apart; history of varicella or herpes zoster diagnosis or verification of varicella or herpes zoster disease by a healthcare provider; or laboratory evidence of immunity or disease.

Special populations

- Pregnant women should be assessed for evidence of varicella immunity. Pregnant women who do not have evidence of immunity should receive the first dose of VAR upon completion or termination of pregnancy and before discharge from the healthcare facility, and the second dose 4–8 weeks after the first dose.
- Healthcare institutions should assess and ensure that all healthcare personnel have evidence of immunity to varicella.
- Adults with malignant conditions, including those that affect the bone marrow or lymphatic system or who receive systemic immunosuppressive therapy, should not receive VAR.

21 years and males aged 22 through 26 years who may receive HPV vaccination) who initiated the HPV vaccination series before age 15 years and received only 1 dose, or 2 doses less than 5 months apart, are not considered adequately vaccinated and should receive 1 additional dose of HPV vaccine.

- Notes: HPV vaccination is routinely recommended for children at age 11 or 12 years. For adults who had initiated but did not complete the HPV vaccination series, consider their age at first HPV vaccination (described above) and other factors (described below) to determine if they have been adequately vaccinated.

Special populations

- Men who have sex with men through age 26 years who have not received any HPV vaccine should receive a 3-dose series of HPV vaccine at 0, 1–2, and 6 months.
- Adult females and males through age 26 years with immunocompromising conditions (described below), including those with human immunodeficiency virus (HIV) infection, should receive a 3-dose series of HPV vaccine at 0, 1–2, and 6 months.
- Pregnant women are not recommended to receive HPV vaccine, although there is no evidence that the vaccine poses harm. If a woman is found to be pregnant after initiating the HPV vaccination series, delay the remaining doses until after the pregnancy. No other intervention is needed. Pregnancy testing is not needed before administering HPV vaccine.
- Notes: Immunocompromising conditions for which a 3-dose series of HPV vaccine is indicated are primary or secondary immunocompromising conditions that might reduce cell-mediated or humoral immunity, e.g., B-lymphocyte antibody deficiencies, complete or partial T-lymphocyte defects, HIV infection, malignant neoplasm, transplantation, autoimmune disease, and immunosuppressive therapy.

services, healthcare settings targeting services to persons who inject drugs, correctional facilities, healthcare settings targeting services to MSM, hemodialysis facilities and end-stage renal disease programs, and institutions and nonresidential day care facilities for developmentally disabled persons.

- Adults with a hematopoietic stem cell transplant (HSCT) should receive 3 doses of Hib in at least 4 week intervals 6–12 months after transplant regardless of their Hib history.
- Notes: Hib is not routinely recommended for adults with human immunodeficiency virus infection because their risk for *Haemophilus influenzae* type b infection is low.

HepA-HepB	hepatitis A and hepatitis B vaccines	MenACWY	serogroups A, C, W, and Y meningococcal conjugate vaccine
HepB	hepatitis B vaccine	MenB	serogroup B meningococcal vaccine
Hib	*Haemophilus influenzae* type b conjugate vaccine	MMR	measles, mumps, and rubella vaccine
HPV vaccine	human papillomavirus vaccine	MPSV4	serogroups A, C, W, and Y meningococcal polysaccharide vaccine
HZV	herpes zoster vaccine	PPSV23	23-valent pneumococcal polysaccharide vaccine
IIV	inactivated influenza vaccine	RIV	recombinant influenza vaccine
		Td	tetanus and diphtheria toxoids
		Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine
		VAR	varicella vaccine

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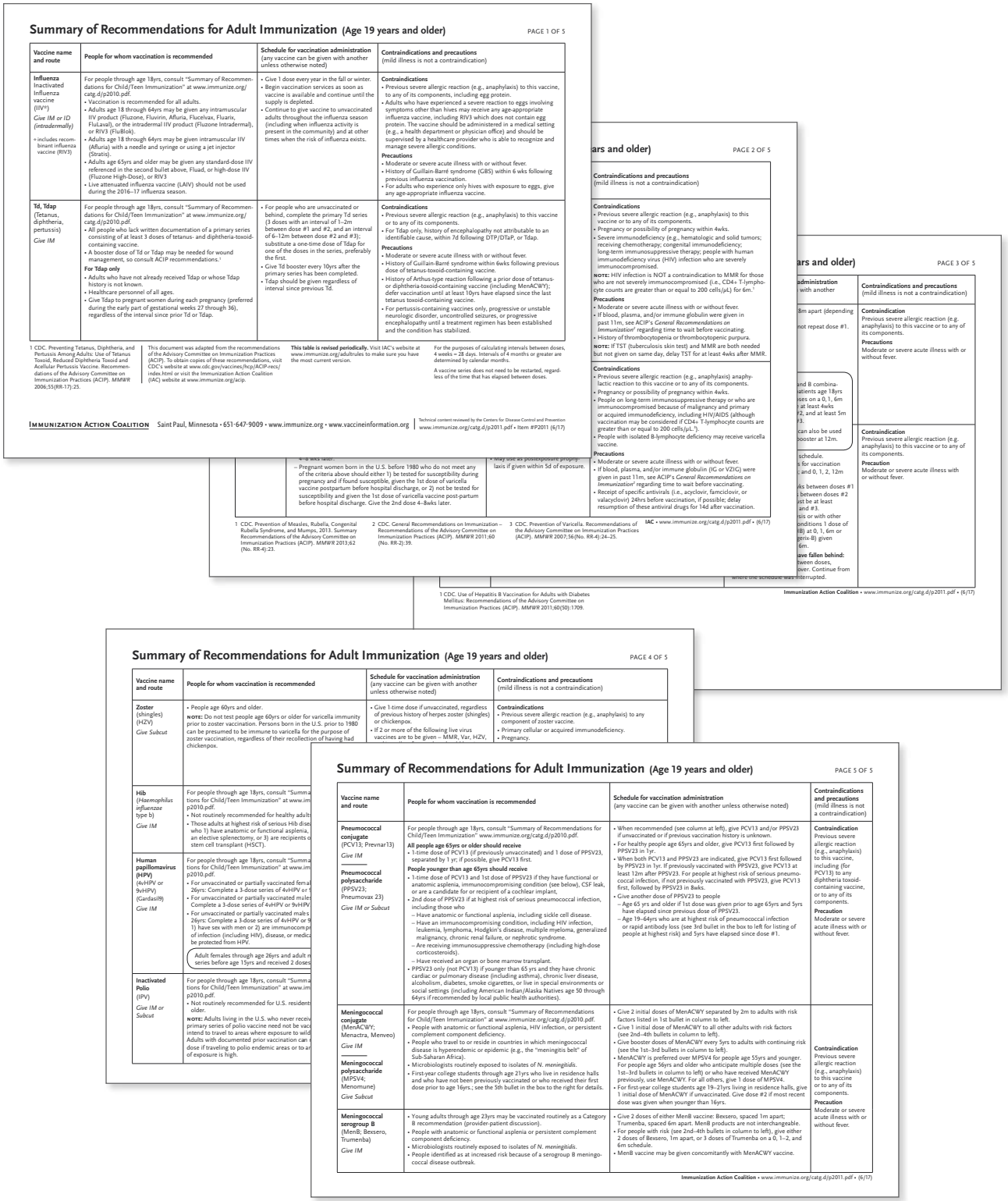
To access the current, ready-to-copy version of this piece, visit

www.immunize.org/catg.d/p2011.pdf



Summary of Recommendations for Adult Immunization (Age 19 years and older)

PAGE 1 OF 5

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Influenza Inactivated Influenza vaccine (IIV*) *Give IM or ID (intradermally)* * includes recombinant influenza vaccine (RIV3)	For people through age 18yrs, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • Vaccination is recommended for all adults. • Adults age 18 through 64yrs may be given any intramuscular IIV product (Fluzone, Fluvirin, Afluria, Flucelvax, Fluarix, FluLaval), or the intradermal IIV product (Fluzone Intradermal), or RIV3 (FluBlok). • Adults age 18 through 64yrs may be given intramuscular IIV (Afluria) with a needle and syringe or using a jet injector (Stratis). • Adults age 65yrs and older may be given any standard-dose IIV referenced in the second bullet above, Fluad, or high-dose IIV (Fluzone High-Dose), or RIV3 • Live attenuated influenza vaccine (LAIV) should not be used during the 2016–17 influenza season.	• Give 1 dose every year in the fall or winter. • Begin vaccination services as soon as vaccine is available and continue until the supply is depleted. • Continue to give vaccine to unvaccinated adults throughout the influenza season (including when influenza activity is present in the community) and at other times when the risk of influenza exists.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, to any of its components, including egg protein. • Adults who have experienced a severe reaction to eggs involving symptoms other than hives may receive any age-appropriate influenza vaccine, including RIV3 which does not contain egg protein. The vaccine should be administered in a medical setting (e.g., a health department or physician office) and should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions. **Precautions** • Moderate or severe acute illness with or without fever. • History of Guillain-Barré syndrome (GBS) within 6 wks following previous influenza vaccination. • For adults who experience only hives with exposure to eggs, give any age-appropriate influenza vaccine.
Td, Tdap (Tetanus, diphtheria, pertussis) *Give IM*	For people through age 18yrs, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • All people who lack written documentation of a primary series consisting of at least 3 doses of tetanus- and diphtheria-toxoid-containing vaccine. • A booster dose of Td or Tdap may be needed for wound management, so consult ACIP recommendations.[1] **For Tdap only** • Adults who have not already received Tdap or whose Tdap history is not known. • Healthcare personnel of all ages. • Give Tdap to pregnant women during each pregnancy (preferred during the early part of gestational weeks 27 through 36), regardless of the interval since prior Td or Tdap.	• For people who are unvaccinated or behind, complete the primary Td series (3 doses with an interval of 1–2m between dose #1 and #2, and an interval of 6–12m between dose #2 and #3); substitute a one-time dose of Tdap for one of the doses in the series, preferably the first. • Give Td booster every 10yrs after the primary series has been completed. • Tdap should be given regardless of interval since previous Td.	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • For Tdap only, history of encephalopathy not attributable to an identifiable cause, within 7d following DTP/DTaP, or Tdap. **Precautions** • Moderate or severe acute illness with or without fever. • History of Guillain-Barré syndrome within 6wks following previous dose of tetanus-toxoid-containing vaccine. • History of Arthus-type reaction following a prior dose of tetanus- or diphtheria-toxoid-containing vaccine (including MenACWY); defer vaccination until at least 10yrs have elapsed since the last tetanus toxoid-containing vaccine. • For pertussis-containing vaccines only, progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized.

1 CDC. Preventing Tetanus, Diphtheria, and Pertussis Among Adults: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2006;55(RR-17):25.

This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, visit CDC's website at www.cdc.gov/vaccines/hcp/ACIP-recs/index.html or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip.

This table is revised periodically. Visit IAC's website at www.immunize.org/adultrules to make sure you have the most current version.

For the purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.

A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.

	Contraindications and precautions (mild illness is not a contraindication)
	Contraindications • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy; people with human immunodeficiency virus (HIV) infection who are severely immunocompromised. **NOTE:** HIV infection is NOT a contraindication to MMR for those who are not severely immunocompromised (i.e., CD4+ T-lymphocyte counts are greater than or equal to 200 cells/μL) for 6m.[1] **Precautions** • Moderate or severe acute illness with or without fever. • If blood, plasma, and/or immune globulin were given in past 11m, see ACIP's *General Recommendations on Immunization*[2] regarding time to wait before vaccinating. • History of thrombocytopenia or thrombocytopenic purpura. **NOTE:** If TST (tuberculosis skin test) and MMR are both needed but not given on same day, delay TST for at least 4wks after MMR.
	Contraindications • Previous severe allergic reaction (e.g., anaphylaxis) anaphylactic reaction to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • People on long-term immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte counts are greater than or equal to 200 cells/μL[1]). • People with isolated B-lymphocyte deficiency may receive varicella vaccine. **Precautions** • Moderate or severe acute illness with or without fever. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP's *General Recommendations on Immunization*[2] regarding time to wait before vaccinating. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination.

1 CDC. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013. Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2013;62 (No. RR-4):23.

2 CDC. General Recommendations on Immunization – Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60 (No. RR-2):39.

3 CDC. Prevention of Varicella. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2007;56(No. RR-4):24–25.

…administration …with another	**Contraindications and precautions** (mild illness is not a contraindication)
…8m apart (depending …not repeat dose #1.	**Contraindication** Previous severe allergic reaction (e.g. anaphylaxis) to this vaccine or to any of its components. **Precautions** Moderate or severe acute illness with or without fever.
…nd B combina… …atients age 18yrs …ses on a 0, 1, 6m …t least 4wks …2, and at least 5m …3. …can also be used …booster at 12m.	**Contraindication** Previous severe allergic reaction (e.g. anaphylaxis) to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness with or without fever.
…schedule. …s for vaccination …; and 0, 1, 2, 12m …ks between doses #1 …: between doses #2 …ast be at least …and #3. …sis or with other …onditions 1 dose of …IB) at 0, 1, 6m or …gerix-B) given …6m. **…ve fallen behind:** …tween doses, …over. Continue from …where the schedule was interrupted.	

1 CDC. Use of Hepatitis B Vaccination for Adults with Diabetes Mellitus: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(50):1709.

Summary of Recommendations for Adult Immunization (Age 19 years and older)

PAGE 4 OF 5

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Zoster (shingles) (HZV) *Give Subcut*	• People age 60yrs and older. **NOTE:** Do not test people age 60yrs or older for varicella immunity prior to zoster vaccination. Persons born in the U.S. prior to 1980 can be presumed to be immune to varicella for the purpose of zoster vaccination, regardless of their recollection of having had chickenpox.	• Give 1-time dose if unvaccinated, regardless of previous history of herpes zoster (shingles) or chickenpox. • If 2 or more of the following live virus vaccines are to be given – MMR, Var, HZV, …	**Contraindications** • Previous severe allergic reaction (e.g., anaphylaxis) to any component of zoster vaccine. • Primary cellular or acquired immunodeficiency. • Pregnancy.
Hib (*Haemophilus influenzae* type b) *Give IM*	For people through age 18yrs, consult "Summa… tions for Child/Teen Immunization" at www.im… p2010.pdf. • Not routinely recommended for healthy adult… • Those adults at highest risk of serious Hib dise… who 1) have anatomic or functional asplenia, … an elective splenectomy, or 3) are recipients o… stem cell transplant (HSCT).		
Human papillomavirus (HPV) (4vHPV or 9vHPV) (Gardasil9) *Give IM*	For people through age 18yrs, consult "Summa… tions for Child/Teen Immunization" at www.im… p2010.pdf. • For unvaccinated or partially vaccinated fema… 26yrs: Complete a 3-dose series of 4vHPV or 9… • For unvaccinated or partially vaccinated male… Complete a 3-dose series of 4vHPV or 9vHPV… • For unvaccinated or partially vaccinated males … 26yrs: Complete a 3-dose series of 4vHPV or 9… 1) have sex with men or 2) are immunocompr… of infection (including HIV), disease, or medic… be protected from HPV. Adult females through age 26yrs and adult m… series before age 15yrs and received 2 doses…		
Inactivated Polio (IPV) *Give IM or Subcut*	For people through age 18yrs, consult "Summa… tions for Child/Teen Immunization" at www.im… p2010.pdf. • Not routinely recommended for U.S. residents … older. **NOTE:** Adults living in the U.S. who never receiv… primary series of polio vaccine need not be vac… intend to travel to areas where exposure to wild… Adults with documented prior vaccination can … dose if traveling to polio endemic areas or to ar… of exposure is high.		

Summary of Recommendations for Adult Immunization (Age 19 years and older)

PAGE 5 OF 5

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
Pneumococcal conjugate (PCV13; Prevnar13) *Give IM* **Pneumococcal polysaccharide** (PPSV23; Pneumovax 23) *Give IM or Subcut*	For people through age 18yrs, consult "Summary of Recommendations for Child/Teen Immunization" www.immunize.org/catg.d/p2010.pdf. **All people age 65yrs or older should receive** • 1-time dose of PCV13 (if previously unvaccinated) and 1 dose of PPSV23, separated by 1 yr, if possible, give PCV13 first. **People younger than age 65yrs should receive** • 1-time dose of PCV13 and 1st dose of PPSV23 if they have functional or anatomic asplenia, immunocompromising condition (see below), CSF leak, or are a candidate for or recipient of a cochlear implant, • 2nd dose of PPSV23 if at highest risk of serious pneumococcal infection, including those who – Have anatomic or functional asplenia, including sickle cell disease. – Have an immunocompromising condition, including HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome. – Are receiving immunosuppressive chemotherapy (including high-dose corticosteroids). – Have received an organ or bone marrow transplant. • PPSV23 only (not PCV13) if younger than 65 yrs and they have chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, smoke cigarettes, or live in special environments or social settings (including American Indian/Alaska Natives age 50 through 64yrs if recommended by local public health authorities).	• When recommended (see column at left), give PCV13 and/or PPSV23 if unvaccinated or if previous vaccination history is unknown. • For healthy people age 65yrs and older, give PCV13 first followed by PPSV23 in 1yr. • When both PCV13 and PPSV23 are indicated, give PCV13 first followed by PPSV23 in 1yr. If previously vaccinated with PPSV23, give PCV13 at least 12m after PPSV23. For people at highest risk of serious pneumococcal infection, if not previously vaccinated with PPSV23, give PCV13 first, followed by PPSV23 in 8wks. • Give another dose of PPSV23 to people – Age 65 yrs and older if 1st dose was given prior to age 65yrs and 5yrs have elapsed since previous dose of PPSV23. – Age 19–64yrs who are at highest risk of pneumococcal infection or rapid antibody loss (see 3rd bullet in the box to left for listing of people at highest risk) and 5yrs have elapsed since dose #1.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, including (for PCV13) to any diphtheria toxoid-containing vaccine, or to any of its components. **Precaution** Moderate or severe acute illness with or without fever.
Meningococcal conjugate (MenACWY; Menactra, Menveo) *Give IM* **Meningococcal polysaccharide** (MPSV4; Menomune) *Give Subcut*	For people through age 18yrs, consult "Summary of Recommendations for Child/Teen Immunization" at www.immunize.org/catg.d/p2010.pdf. • People with anatomic or functional asplenia, HIV infection, or persistent complement component deficiency. • People who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of Sub-Saharan Africa). • Microbiologists routinely exposed to isolates of *N. meningitidis*. • First-year college students through age 21yrs who live in residence halls and who have not been previously vaccinated or who received their first dose prior to age 16yrs.; see the 5th bullet in the box to the right for details.	• Give 2 initial doses of MenACWY separated by 2m to adults with risk factors listed in 1st bullet in column to left. • Give 1 initial dose of MenACWY to all other adults with risk factors (see 2nd–4th bullets in column to left). • Give booster doses of MenACWY every 5yrs to adults with continuing risk (see the 1st–3rd bullets in column to left). • MenACWY is preferred over MPSV4 for people age 55yrs and younger. For people age 56yrs and older who anticipate multiple doses (see the 1st–3rd bullets in column to left) or who have received MenACWY previously, use MenACWY. For all others, give 1 dose of MPSV4. • For first-year college students age 19–21yrs living in residence halls, give 1 initial dose of MenACWY if unvaccinated. Give dose #2 if most recent dose was given when younger than 16yrs.	**Contraindication** Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness with or without fever.
Meningococcal serogroup B (MenB; Bexsero, Trumenba) *Give IM*	• Young adults through age 23yrs may be vaccinated routinely as a Category B recommendation (provider-patient discussion). • People with anatomic or functional asplenia or persistent complement component deficiency. • Microbiologists routinely exposed to isolates of *N. meningitidis*. • People identified as at increased risk because of a serogroup B meningococcal disease outbreak.	• Give 2 doses of either MenB vaccine: Bexsero, spaced 1m apart; Trumenba, spaced 6m apart. MenB products are not interchangeable. • For people with risk (see 2nd–4th bullets in column to left), give either 2 doses of Bexsero, 1m apart, or 3 doses of Trumenba on a 0, 1–2, and 6m schedule. • MenB vaccine may be given concomitantly with MenACWY vaccine.	

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Before you vaccinate adults, consider their "H-A-L-O"!

What is H-A-L-O? As shown below, it's an easy-to-use chart that can help you make an *initial* decision about vaccinating a patient based on four factors – the patient's **Health condition, Age, Lifestyle, and Occupation**. In some situations, though, you can vaccinate a patient without considering these factors. For example, all adults need a dose of Tdap as well as annual vaccination against influenza, and any adult who wants protection against hepatitis A or hepatitis B can be vaccinated. Note that not all patients who mention one or more **H-A-L-O** factors will need to be vaccinated. Before you make a *definitive* decision about vaccinating your patient, it's important that you refer to the more detailed information found in the Immunization Action Coalition's "Summary of Recommendations for Adult Immunization," located at www.immunize.org/catg.d/p2011.pdf or the complete vaccine recommendations of the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/pubs/ACIP-list.htm.

How do I use H-A-L-O?
Though some H-A-L-O factors can be easily determined (e.g., age, pregnancy), you will need to ask your patient about the presence or absence of others. Once you determine which of the factors apply, scan down each column of the chart to see at a glance which vaccinations are possibly indicated.

H-A-L-O checklist of factors that indicate a possible need for adult vaccination

Vaccine	Health Factors									Age Factors	Lifestyle Factors							Occupational or other factors			
	Pregnant	Certain chronic diseases	Immunosuppressed (including HIV)	History of STD	Asplenia	Cochlear implant candidate/recipient	Organ transplant (for stem cell transplant, see ACIP's General Recommendations on Immunization)	CSF leaks	Alcoholism		Born outside the U.S.	Men who have sex with men	Not in a long-term, mutually monogamous relationship	User of injecting or non-injecting drugs	International traveler	Close contact of international adoptee	Cigarette smoker	College students	Healthcare worker	Certain lab workers	Adults in institutional settings (e.g., chronic care, correctional)
HepA		✔										✔		✔	✔	✔				✔	
HepB		✔	✔	✔							✔	✔	✔	✔	✔				✔		✔
Hib		✔			✔																
HPV (females)										Through 26 yrs											
HPV (males)			✔							Routine through 21 yrs; risk-based 22–26 yrs		✔									
IPV															✔					✔	
Influenza	Annual vaccination is recommended for all adults ····················►																				
Meningococcal		✔			✔										✔			✔		✔	
MMR			?							Routine 1 dose if born after 1956; 2nd dose for some					✔			✔	✔		
PCV13		✔	✔		✔	✔	✔	✔		65 yrs and older (if not previously vaccinated)											
PPSV23		✔	✔		✔	✔	✔	✔	✔	65 yrs and older							✔				✔
Tdap	A single dose is recommended for all adults; pregnant women should receive Tdap during each pregnancy ····················►																				
Varicella		Completion of a 2-dose series is recommended for non-pregnant adults through age 59 years who do not have evidence of immunity to varicella ····················►																			
Zoster										60 yrs and older											

? = Vaccination may be indicated depending on degree of immunosuppression

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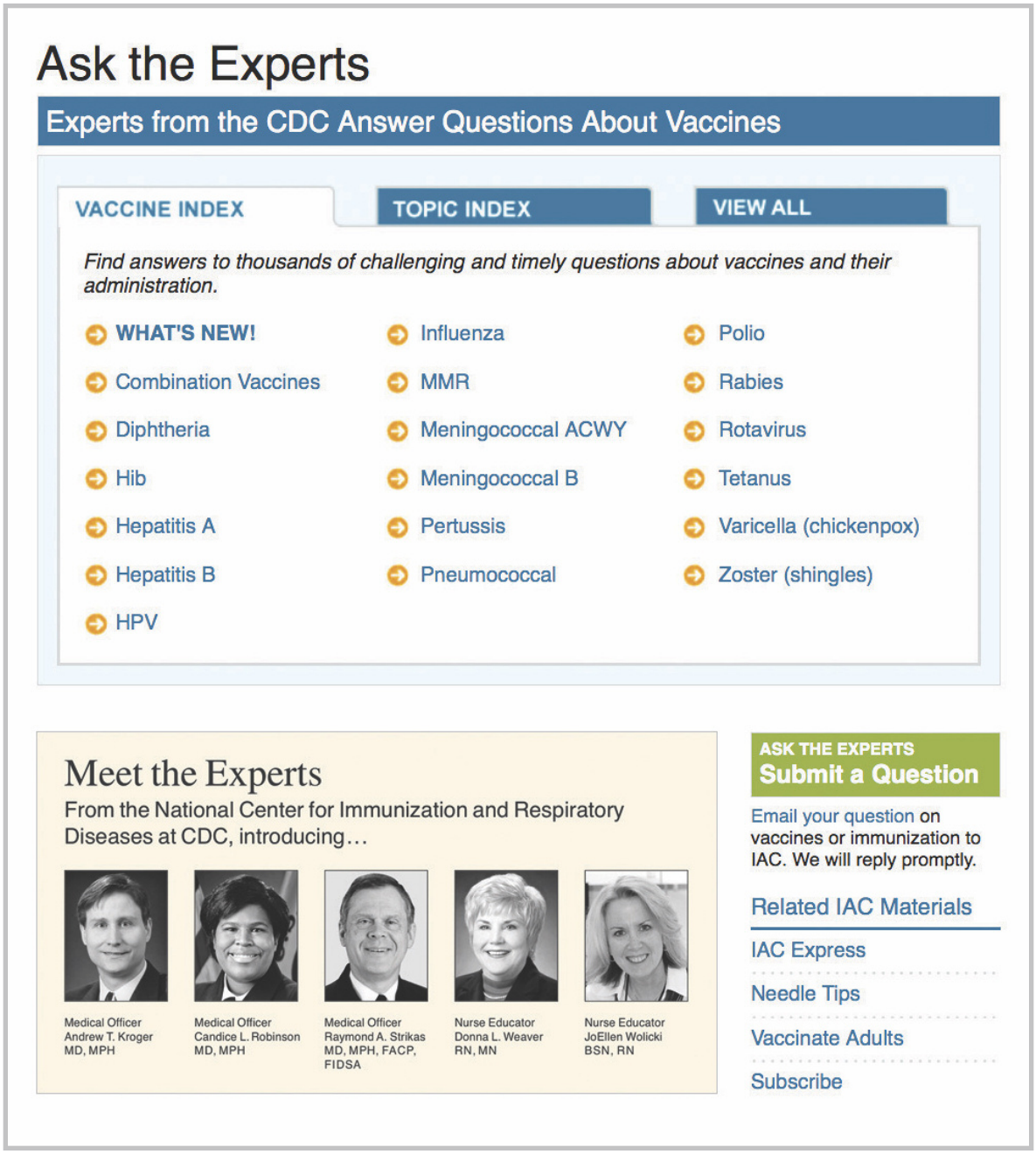

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- Pneumococcal
- Polio
- Rabies
- Rotavirus
- Tetanus
- Varicella (chickenpox)
- Zoster (shingles)

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Guide to Contraindications and Precautions to Commonly Used Vaccines in Adults[1,*]

Vaccine	Contraindications[1]	Precautions[1]
Influenza, inactivated (IIV)[2,3] **Influenza, recombinant (RIV) [2,3]**	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever • History of Guillain-Barré Syndrome (GBS) within 6 weeks of previous influenza vaccination • For IIV vaccine only: Egg allergy other than hives (e.g., angioedema, respiratory distress, lightheadedness, or recurrent emesis); or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting, under the supervision of a health-care provider who is able to recognize and manage severe allergic conditions)
Tetanus, diphtheria, pertussis (Tdap) **Tetanus, diphtheria (Td)**	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • For pertussis-containing vaccines: encephalopathy (e.g., coma, decreased level of consciousness, or prolonged seizures) not attributable to another identifiable cause within 7 days of administration of a previous dose of a vaccine containing tetanus or diphtheria toxoid or acellular pertussis.	• Moderate or severe acute illness with or without fever • GBS within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of tetanus or diphtheria toxoid-containing vaccine (including MenACWY); defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine • For pertussis-containing vaccines: progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized
Varicella (Var)[3]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Severe immunodeficiency (e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency, or long-term immunosuppressive therapy[4]), or persons with human immunodeficiency virus [HIV] infection who are severely immunocompromised • Pregnancy	• Moderate or severe acute illness with or without fever • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[6] • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination
Human papillomavirus (HPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Pregnancy
Herpes zoster (HZV)[4]	• Severe allergic reaction (e.g., anaphylaxis) to a vaccine component • Severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, or long-term immunosuppressive therapy[5]), or persons with HIV infection who are severely immunocompromised • Pregnancy	• Moderate or severe acute illness with or without fever • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination
Measles, mumps, rubella (MMR)[4]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Severe immunodeficiency (e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency, or long-term immunosuppressive therapy[5]), or persons with HIV infection who are severely immunocompromised • Pregnancy	• Moderate or severe acute illness with or without fever • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[6] • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing[7]
Pneumococcal: conjugate (PCV13), polysaccharide (PPSV23)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component (including, for PCV13, to any vaccine containing diphtheria toxoid-containing vaccine	• Moderate or severe acute illness with or without fever
Hepatitis A (HepA)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Hepatitis B (HepB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Hypersensitivity to yeast	• Moderate or severe acute illness with or without fever
Meningococcal: conjugate (MenACWY), serogroup B (MenB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
***Haemophilus influenzae* type b (Hib)**	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever

FOOTNOTES

1. The Advisory Committee on Immunization Practices (ACIP) recommendations and package inserts for vaccines provide information on contraindications and precautions related to vaccines. Contraindications are conditions that increase chances of a serious adverse reaction in vaccine recipients and the vaccine should not be administered when a contraindication is present. Precautions should be reviewed for potential risks and benefits for vaccine reipient. For a person with a severe allergy to latex (e.g., anaphylaxis), vaccines supplied in vials or syringes that contain natural rubber latex should not be administered unless the benefit of vaccinaton clearly outweighs the risk for a potential allergic reaction. For latex allergies other than anaphylaxis, vaccines supplied in vials or syringes that contain dry, natural rubber or natural rubber latex may be administered.
2. Live attenuated influenza vaccine (LAIV) should not be used during the 2016–2017 influenza season.
3. For additional information on use of influenza vaccines among persons with egg allergy, see CDC. "Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP) – United States, 2016–17 Influenza Season. *MMWR* 2016; 64(RR-5):1–54 available at www.cdc.gov/mmwr/volumes/65/rr/rr6505a1.htm.
4. MMR may be administered with VAR or HZV on the same day. If not administered on the same day, separate live vaccines by at least 28 days.
5. Immunosuppressive steroid dose is considered to be 20 mg or more prednisone or equivalent for two or more weeks. Vaccination should be deferred for at least 1 month after discontinuation of immunosuppressive steroid therapy. Providers should consult ACIP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.
6. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered (see Table 5 in CDC. "General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices [ACIP]." *MMWR* 2011; 60 (No. RR-2), available at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
7. Measles vaccination may temporarily suppress tuberculin reactivity temporarily. Measles-containing vaccine may be administered on the same day as tuberculin skin testing, or should be postponed for at least 4 weeks after the vaccination.

* Adapted from CDC. "Table 6. Contraindications and Precautions to Commonly Used Vaccines" found in: CDC. "General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)." *MMWR* 2011; 60 (No. RR-2), p. 40–41, and from Hamborsky J, Kroger A, Wolfe C, eds. Appendix A. *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 13th ed. Washington, DC Public Health Foundation, 2015, available at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

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Screening Checklist for Contraindications to Vaccines for Adults

PATIENT NAME _____

DATE OF BIRTH ____ /____ /____
month day year

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Are you sick today?	☐	☐	☐
2. Do you have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Have you ever had a serious reaction after receiving a vaccination?	☐	☐	☐
4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder?	☐	☐	☐
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
6. In the past 3 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments?	☐	☐	☐
7. Have you had a seizure or a brain or other nervous system problem?	☐	☐	☐
8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
9. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	☐	☐	☐
10. Have you received any vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____

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Did you bring your immunization record card with you? yes ☐ no ☐

It is important for you to have a personal record of your vaccinations. If you don't have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you seek medical care. Make sure your healthcare provider records all your vaccinations on it.

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...als about the Screening Checklist ...dults

...a certain question on the screening checklist? If so, read ...ven more, consult the references listed at the end.

NOTE: Live attenuated influenza vaccine (LAIV4; FluMist), is not recommended by CDC's Advisory Committee on Immunization Practices for use in the U.S. during the 2016–17 influenza season. Because LAIV4 is still a licensed vaccine that might be available and that some providers might elect to use, for informational purposes, reference is made to previous recommendations for its use.

5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem? *[LAIV, MMR, VAR, ZOS]*

Live virus vaccines (e.g., LAIV, measles-mumps-rubella [MMR], varicella [VAR], zoster [ZOS]) are usually contraindicated in immunocompromised people. However, there are exceptions. For example, MMR vaccine is recommended and varicella vaccine should be considered for adults with CD4+ T-lymphocyte counts of greater than or equal to 200 cells/μL. Immunosuppressed people should not receive LAIV. For details, consult the ACIP recommendations.[4,5,6]

6. In the past 3 months, have you taken medications that affect your immune system, such as cortisone, prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments? *[LAIV, MMR, VAR, ZOS]*

Live virus vaccines (e.g., LAIV, MMR, VAR, ZOS) should be postponed until after chemotherapy or long-term high-dose steroid therapy has ended. For details and length of time to postpone, consult the ACIP statement.[1,5] Some immune mediator and immune modulator drugs (especially the antitumor-necrosis factor agents adalimumab, infliximab, and etanercept) may be immunosuppressive. The use of live vaccines should be avoided in persons taking these drugs (*MMWR* 2011;60 [RR-2]:23). To find specific vaccination schedules for stem cell transplant (bone marrow transplant) patients, see reference 7. LAIV can be given only to healthy non-pregnant people ages 2 through 49 years.

7. Have you had a seizure or a brain or other nervous system problem? *[influenza, Td/Tdap]*

Tdap is contraindicated in people who have a history of encephalopathy within 7 days following DTP/DTaP given before age 7 years. An unstable progressive neurologic problem is a precaution to the use of Tdap. For people with stable neurologic disorders (including seizures) unrelated to vaccination, or for people with a family history of seizure, vaccinate as usual. A history of Guillain-Barré syndrome (GBS) is a consideration with the following: 1) Td/Tdap: if GBS has occurred within 6 weeks of a tetanus-containing vaccine and decision is made to continue vaccination, give Tdap instead of Td if no history of prior Tdap; 2) Influenza vaccine (IIV/LAIV): if GBS has occurred within 6 weeks of a prior influenza vaccine, vaccinate with IIV if at increased risk for severe influenza complications.

8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug? *[LAIV, MMR, VAR, ZOS]*

Certain live virus vaccines (e.g., LAIV, MMR, VAR, ZOS) may need to be deferred, depending on several variables. Consult the most current ACIP recommendations for current information on intervals between antiviral drugs, immune globulin or blood product administration and live virus vaccines.[1]

9. For women: Are you pregnant or is there a chance you could become pregnant during the next month? *[HPV, IPV, MMR, LAIV, VAR, ZOS]*

Live virus vaccines (e.g., MMR, VAR, ZOS, LAIV) are contraindicated one month before and during pregnancy because of the theoretical risk of virus transmission to the fetus. Sexually active women in their childbearing years who receive live virus vaccines should be instructed to practice careful contraception for one month following receipt of the vaccine. On theoretical grounds, inactivated poliovirus vaccine should not be given during pregnancy; however, it may be given if risk of exposure is imminent and immediate protection is needed (e.g., travel to endemic areas). Inactivated influenza vaccine and Tdap are both recommended during pregnancy. Both vaccines may be given at any time during pregnancy but the preferred time for Tdap administration is at 27–36 weeks' gestation. HPV vaccine is not recommended during pregnancy.[1,4,5,6,8,9]

10. Have you received any vaccinations in the past 4 weeks? *[LAIV, MMR, VAR, yellow fever, ZOS]*

People who were given either LAIV or an injectable live virus vaccine (e.g., MMR, VAR, ZOS, yellow fever) should wait 28 days before receiving another vaccination of this type. Inactivated vaccines may be given at any spacing interval if they are not administered simultaneously.

REFERENCES

1. CDC. General recommendations on immunization, at www.cdc.gov/mmwr/pdf/rr/rr6002.pdf.
2. Latex in Vaccine Packaging: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/latex-table.pdf.
3. Table of Vaccine Components: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
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5. CDC. Measles, mumps, and rubella – vaccine use and strategies for elimination of measles, rubella, and congenital rubella syndrome and control of mumps. *MMWR* 1998; 47 (RR-8).
6. CDC. Prevention of varicella: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2007; 56 (RR-4).
7. Tomblyn M, Einsele H, et al. Guidelines for preventing infectious complications among hematopoietic stem cell transplant recipients: a global perspective. Biol Blood Marrow Transplant 15:1143–1238; 2009 at www.cdc.gov/vaccines/pubs/hemato-cell-transplts.htm.
8. CDC. Notice to readers: Revised ACIP recommendation for avoiding pregnancy after receiving a rubella-containing vaccine. *MMWR* 2001; 50 (49).
9. CDC. Updated recommendations for use of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) in pregnant women: Recommendations of the ACIP. *MMWR* 2012; 62 (7):131–4.

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Screening Checklist for Contraindications to Inactivated Injectable Influenza Vaccination

PATIENT NAME _____

DATE OF BIRTH ___ (month) /___ (day) /___ (year)

For patients (both children and adults) to be vaccinated: The following questions will help us determine if there is any reason we should not give you or your child inactivated injectable influenza vaccination today. If you answer "yes" to any question, it does not necessarily mean you (or your child) should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is the person to be vaccinated sick today?	☐	☐	☐
2. Does the person to be vaccinated have an allergy to a component of the vaccine?	☐	☐	☐
3. Has the person to be vaccinated ever had a serious reaction to influenza vaccine in the past?	☐	☐	☐
4. Has the person to be vaccinated ever had Guillain-Barré syndrome?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____

FORM REVIEWED BY _____ DATE _____

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...als about the Screening Checklist ...jectable Influenza Vaccination

...certain question on the screening checklist? If so, read the ...ore, consult the sources listed at the bottom of this page.

Check the package inserts at www.immunize.org/packageinserts for information on which vaccines are affected, or go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/latex-table.pdf.

3. Has the person to be vaccinated ever had a serious reaction to influenza vaccine in the past?

Patients reporting a serious reaction to a previous dose of inactivated influenza vaccine should be asked to describe their symptoms. Immediate – presumably allergic – reactions are usually a contraindication to further vaccination against influenza.

Fever, malaise, myalgia, and other systemic symptoms most often affect people who are first-time vaccinees. These mild-to-moderate local reactions are not a contraindication to future vaccination. Also, red eyes or mild upper facial swelling following vaccination with inactivated injectable influenza vaccine is most likely a coincidental event and not related to the vaccine. Similarly, oculorespiratory syndrome is not likely to be an allergic response to IIV. These people can receive injectable vaccine without further evaluation.

4. Has the person to be vaccinated ever had Guillain-Barré syndrome?

It is prudent to avoid vaccinating people who are not at high risk for severe influenza complications (see source 3) and who are known to have developed Guillain-Barré syndrome (GBS) within 6 weeks after receiving a previous influenza vaccination. As an alternative, physicians might consider using influenza antiviral chemoprophylaxis for these people. Although data are limited, the established benefits of influenza vaccination for the majority of people who have a history of GBS, and who are at high risk for severe complications from influenza, justify yearly vaccination.

Persons who report having had reactions to egg involving symptoms other than hives, such as angioedema, respiratory distress, lightheadedness, or recurrent vomiting; or who required epinephrine or another emergency medical intervention, may also receive any age-appropriate influenza vaccine (IIV or RIV). The vaccine should be administered in a medical setting (e.g., a health department or physician office). Vaccine administration should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions.

Some inactivated influenza vaccines contain thimerosal as a preservative. Most people who had sensitivity to thimerosal when it was used in contact lens solution do not have reactions to thimerosal when it is used in vaccines. Check the package insert at www.immunize.org/packageinserts for a list of the vaccine components (i.e., excipients and culture media) used in the production of the vaccine, or go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.

Some vaccines also contain latex in the prefilled syringe cap which may cause allergic reactions in latex-sensitive people.

SOURCES

1. CDC. *Epidemiology & Prevention of Vaccine-Preventable Diseases*, Hamborsky J, Kroger A, Wolfe S, eds. 13th ed. at www.cdc.gov/vaccines/pubs/pinkbook/index.html.
2. CDC. *General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)* at www.cdc.gov/vaccines/hcp/acip-recs.
3. CDC. *Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2016–17 Influenza Season* at www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6505.pdf, pages 1–56.

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www.immunize.org/catg.d/p4066.pdf • Item #P4066 – page 2 (9/16)

To access the current, ready-to-copy version of this piece, visit

www.immunize.org/catg.d/p3066.pdf

Using Standing Orders for Administering Vaccines: What You Should Know

The use of standing orders for vaccination facilitates the delivery of immunization services to patients in clinics, hospitals, and community settings.

Standing orders have been shown to increase vaccination coverage rates.

▼ Go to **www.immunize.org/standing-orders** for the most current versions of sample standing orders.

What are standing orders?

Standing orders authorize nurses, pharmacists, and other appropriately trained healthcare personnel, where allowed by state law, to assess a patient's immunization status and administer vaccinations according to a protocol approved by an institution, physician, or other authorized practitioner. Standing orders work by enabling assessment and vaccination of the patient without the need for clinician examination or direct order from the attending provider at the time of the interaction. Standing orders can be established for the administration of one or more specific vaccines to a broad or narrow set of patients in healthcare settings such as clinics, hospitals, pharmacies, and long-term care facilities.

Who recommends standing orders for vaccination?

The Community Preventive Services Task Force (Task Force): The Task Force[1] recommends standing orders for vaccinations based on strong evidence of effectiveness in improving vaccination rates:

1. in adults and children,
2. when used alone or when combined with additional interventions, and
3. across a range of settings and populations.

Read the full Task Force Finding and Rationale Statement at www.thecommunityguide.org/vaccines/standingorders.html.

The Centers for Disease Control and Prevention (CDC): CDC's Advisory Committee on Immunization Practices (ACIP) specifically recommends standing orders for influenza and pneumococcal vaccinations and several other vaccines (e.g., hepatitis B, varicella). See *Use of Standing Orders Programs to Increase Adult Vaccination Rates: Recommendations of the ACIP. MMWR* 2000;49 (No. RR-1) at www.cdc.gov/mmwr/preview/mmwrhtml/rr4901a2.htm.

What are the elements of a standing order?

A comprehensive standing order should include the following elements:

1. Who is targeted to receive the vaccine;
2. How to determine if a patient needs or should receive a particular vaccination (e.g., indications, contraindications, and precautions);
3. Procedures for administering the vaccine (e.g., vaccine name, schedule for vaccination, appropriate needle size, vaccine dosage, route of administration);
4. Provision of any federally required information (e.g., Vaccine Information Statement);
5. How to document vaccination in the patient record;
6. A protocol for the management of any medical emergency related to the administration of the vaccine; and
7. How to report possible adverse events occurring after vaccination.

Who is authorized to administer vaccines under standing orders?

Each of the 50 states separately regulates physicians, nurses, pharmacists, and other health-related practitioners. For further information about who can carry out standing orders in your state, contact your state immunization program or the appropriate state body (e.g., state board of medical/nursing/pharmacy practice).

Who is authorized to sign the standing order?

In general, standing orders are approved by an institution, physician, or authorized practitioner. State law or regulatory agency might authorize other healthcare professionals to sign standing orders.

What should be done with the standing orders after they have been signed?

Signed standing orders should be kept with all other signed medical procedures and protocols that are operational in one's clinic setting. A copy should also be readily available for clinic staff who operate under those standing orders.

Do standing orders need to be renewed (e.g., yearly)?

Generally, standing orders will include an implementation date as well as an expiration date. Periodic review of standing orders is important, because vaccine recommendations may change over time.

Where can I find sample standing orders?

The Immunization Action Coalition has developed templates of standing orders for vaccines that are routinely recommended to children and adults. They are updated as needed and reviewed for technical accuracy by immunization experts at CDC. The most current versions can be accessed by going to www.immunize.org/standing-orders.

FOOTNOTE

1 The Task Force was established in 1996 by the U.S. Department of Health and Human Services to identify population health interventions that are scientifically proven to save lives, increase lifespans, and improve quality of life. The Task Force produces recommendations (and identifies evidence gaps) to help inform the decision making of federal, state, and local health departments, other government agencies, communities, healthcare providers, employers, schools, and research organizations. For more information, see www.thecommunityguide.org/index.html.

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To access the current, ready-to-copy versions
of these patient-friendly pieces, visit

www.immunize.org/handouts/adult-vaccination.asp#patientschedules

Vaccinations for Adults

You're never too old to get vaccinated!

Getting vaccinated is a lifelong, life-protecting job. Don't leave your healthcare provider's office without making sure you've had all the vaccinations you need.

Vaccine	Do you need it?
Hepatitis A (HepA)	***Maybe.*** You need this vaccine if you have a specific risk factor for hepatitis A virus infection* or simply want to be protected from this disease. The vaccine is usually given in 2 doses, 6–12 months apart.
Hepatitis B (HepB)	***Maybe.*** You need this vaccine if you have a specific risk factor for hepatitis B virus infection* or simply want to be protected from this disease. The vaccine is given in 3 doses, usually over 6 months.
Hib (*Haemophilus influenzae* type b)	***Maybe.*** Some adults with certain high-risk conditions, for example, lack of a functioning spleen, need vaccination with Hib. Talk to your healthcare provider to find out if you need this vaccine.
Human papillomavirus (HPV)	***Maybe.*** You need this vaccine if you are a woman age 26 or younger or a man age 21 or younger. Men age 22 through 26 with a risk condition* also need vaccination. Any man age 22 through 26 who wants to be protected from HPV may receive it, too. The vaccine is usually given in 3 doses over a 6-month period.
Influenza	***Yes!*** You need a dose every fall (or winter) for your protection and for the protection of others around you.
Measles, mumps, rubella (MMR)	***Maybe.*** You need at least 1 dose of MMR vaccine if you were born in 1957 or later. You may also need a second dose.*
Meningococcal ACWY (Men-ACWY, MCV4)	***Maybe.*** You may need MenACWY vaccine if you have one of several health condit don't have a functioning spleen. You need MenACWY if you are age 21 or younge student living in a residence hall and you either have never been vaccinated or were
Meningococcal B (MenB)	***Maybe.*** You should consider MenB vaccine if you are age 23 or younger (even if y medical condition). You may need MenB if you have one of several health conditi do not have a functioning spleen.
Pneumococcal (Pneumovax, PPSV; Prevnar, PCV)	***Maybe.*** If you are age 65 (or older), you need both pneumococcal vaccines, Prevna before) and Pneumovax. Get Prevnar first and then get Pneumovax 1 year later. If 65 and have a certain high-risk condition (for example, asthma, heart, lung, or ki suppression, or lack of a functioning spleen, or are a smoker),* you need 1 or bo healthcare provider to find out when you need them.*
Tetanus, diphtheria, whooping cough (pertussis) (Tdap, Td)	***Yes!*** Adults who have not not received a dose of Tdap during their lifetime need t whooping cough vaccine). And, all women need to get a dose during each pregna a Td booster dose every 10 years. Consult your healthcare provider if you haven't and diphtheria toxoid-containing shots sometime in your life or if you have a deep
Varicella (Chickenpox)	***Maybe.*** If you've never had chickenpox, never were vaccinated, or were vaccinated talk to your healthcare provider to find out if you need this vaccine.*
Zoster (shingles)	***Maybe.****If you are age 60 or older, you should get a 1-time dose of this vaccine

* Consult your healthcare provider to determine your level of risk for infection and your need for this vaccine.

Are you planning to travel outside the United Disease Control and Prevention's (CDC) web destinations/list for travel information, or co

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www.immunize.org/catg.

Also available for adults with specific health conditions.

Adults: Patient-friendly Schedules

Vaccinations for adults – you're never too old to get vaccinated!
One-page sheet describes vaccinations that adults need [#P4030]
Languages: SPANISH • ARABIC • CHINESE • FRENCH • KOREAN
RUSSIAN • VIETNAMESE

Vaccinations for adults with diabetes
One-page sheet describes the vaccines for adults with diabetes [P4043]
Language: SPANISH

Vaccinations for adults with heart disease
One-page sheet describes the vaccines for adults with heart disease [P4044]
Language: SPANISH

Vaccinations for adults with hepatitis C infection
One-page sheet describes vaccinations that HCV-positive adults need [#P4042]
Language: SPANISH

Vaccinations for adults with HIV infection
One-page sheet describes vaccinations that HIV-positive adults need [#P4041]
Language: SPANISH

Vaccinations for adults with lung disease
One-page sheet describes the vaccines for adults with lung disease [P4045]
Language: SPANISH

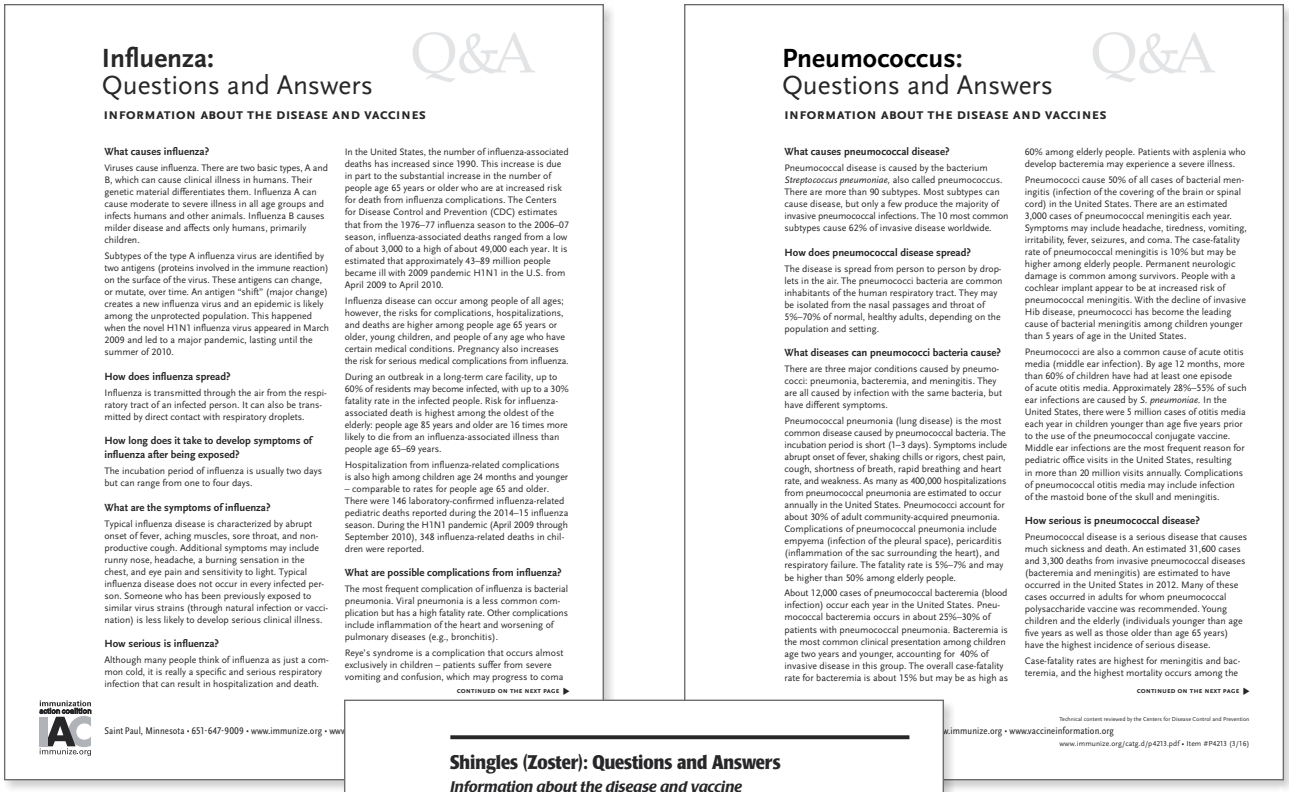
Vaccinations for adults without a spleen
One-page sheet describes vaccinations that adults without a spleen need [#P4047]

Vaccinations for men who have sex with men
One-page sheet describes vaccinations that men who have sex with men need [#P4046]

Vaccinations for pregnant women
One-page sheet describes the vaccines for pregnant women. [P4040]
Language: SPANISH

To access current, ready-to-copy versions of Q&As on a variety of vaccines, visit

www.immunize.org/handouts/vaccine-questions.asp



Influenza: Questions and Answers

Q&A

INFORMATION ABOUT THE DISEASE AND VACCINES

What causes influenza?

Viruses cause influenza. There are two basic types, A and B, which can cause clinical illness in humans. Their genetic material differentiates them. Influenza A can cause moderate to severe illness in all age groups and infects humans and other animals. Influenza B causes milder disease and affects only humans, primarily children.

Subtypes of the type A influenza virus are identified by two antigens (proteins involved in the immune reaction) on the surface of the virus. These antigens can change, or mutate, over time. An antigen "shift" (major change) creates a new influenza virus and an epidemic is likely among the unprotected population. This happened when the novel H1N1 influenza virus appeared in March 2009 and led to a major pandemic, lasting until the summer of 2010.

How does influenza spread?

Influenza is transmitted through the air from the respiratory tract of an infected person. It can also be transmitted by direct contact with respiratory droplets.

How long does it take to develop symptoms of influenza after being exposed?

The incubation period of influenza is usually two days but can range from one to four days.

What are the symptoms of influenza?

Typical influenza disease is characterized by abrupt onset of fever, aching muscles, sore throat, and nonproductive cough. Additional symptoms may include runny nose, headache, a burning sensation in the chest, and eye pain and sensitivity to light. Typical influenza disease does not occur in every infected person. Someone who has been previously exposed to similar virus strains (through natural infection or vaccination) is less likely to develop serious clinical illness.

How serious is influenza?

Although many people think of influenza as just a common cold, it is really a specific and serious respiratory infection that can result in hospitalization and death.

In the United States, the number of influenza-associated deaths has increased since 1990. This increase is due in part to the substantial increase in the number of people age 65 years or older who are at increased risk for death from influenza complications. The Centers for Disease Control and Prevention (CDC) estimates that from the 1976–77 influenza season to the 2006–07 season, influenza-associated deaths ranged from a low of about 3,000 to a high of about 49,000 each year. It is estimated that approximately 43–89 million people became ill with 2009 pandemic H1N1 in the U.S. from April 2009 to April 2010.

Influenza disease can occur among people of all ages; however, the risks for complications, hospitalizations, and deaths are higher among people age 65 years or older, young children, and people of any age who have certain medical conditions. Pregnancy also increases the risk for serious medical complications from influenza.

During an outbreak in a long-term care facility, up to 60% of residents may become infected, with up to a 30% fatality rate in the infected people. Risk for influenza-associated death is highest among the oldest of the elderly: people age 85 years and older are 16 times more likely to die from an influenza-associated illness than people age 65–69 years.

Hospitalization from influenza-related complications is also high among children age 24 months and younger – comparable to rates for people age 65 and older. There were 146 laboratory-confirmed influenza-related pediatric deaths reported during the 2014–15 influenza season. During the H1N1 pandemic (April 2009 through September 2010), 348 influenza-related deaths in children were reported.

What are possible complications from influenza?

The most frequent complication of influenza is bacterial pneumonia. Viral pneumonia is a less common complication but has a high fatality rate. Other complications include inflammation of the heart and worsening of pulmonary diseases (e.g., bronchitis).

Reye's syndrome is a complication that occurs almost exclusively in children – patients suffer from severe vomiting and confusion, which may progress to coma

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Pneumococcus: Questions and Answers

Q&A

INFORMATION ABOUT THE DISEASE AND VACCINES

What causes pneumococcal disease?

Pneumococcal disease is caused by the bacterium *Streptococcus pneumoniae*, also called pneumococcus. There are more than 90 subtypes. Most subtypes can cause disease, but only a few produce the majority of invasive pneumococcal infections. The 10 most common subtypes cause 62% of invasive disease worldwide.

How does pneumococcal disease spread?

The disease is spread from person to person by droplets in the air. The pneumococci bacteria are common inhabitants of the human respiratory tract. They may be isolated from the nasal passages and throat of 5%–70% of normal, healthy adults, depending on the population and setting.

What diseases can pneumococci bacteria cause?

There are three major conditions caused by pneumococci: pneumonia, bacteremia, and meningitis. They are all caused by infection with the same bacteria, but have different symptoms.

Pneumococcal pneumonia (lung disease) is the most common disease caused by pneumococcal bacteria. The incubation period is short (1–3 days). Symptoms include abrupt onset of fever, shaking chills or rigors, chest pain, cough, shortness of breath, rapid breathing and heart rate, and weakness. As many as 400,000 hospitalizations from pneumococcal pneumonia are estimated to occur annually in the United States. Pneumococci account for about 30% of adult community-acquired pneumonia. Complications of pneumococcal pneumonia include empyema (infection of the pleural space), pericarditis (inflammation of the sac surrounding the heart), and respiratory failure. The fatality rate is 5%–7% and may be higher than 50% among elderly people.

About 12,000 cases of pneumococcal bacteremia (blood infection) occur each year in the United States. Pneumococcal bacteremia occurs in about 25%–30% of patients with pneumococcal pneumonia. Bacteremia is the most common clinical presentation among children age two years and younger, accounting for 40% of invasive disease in this group. The overall case-fatality rate for bacteremia is about 15% but may be as high as 60% among elderly people. Patients with asplenia who develop bacteremia may experience a severe illness.

Pneumococci cause 50% of all cases of bacterial meningitis (infection of the covering of the brain or spinal cord) in the United States. There are an estimated 3,000 cases of pneumococcal meningitis each year. Symptoms may include headache, tiredness, vomiting, irritability, fever, seizures, and coma. The case-fatality rate of pneumococcal meningitis is 10% but may be higher among elderly people. Permanent neurologic damage is common among survivors. People with a cochlear implant appear to be at increased risk of pneumococcal meningitis. With the decline of invasive Hib disease, pneumococci has become the leading cause of bacterial meningitis among children younger than 5 years of age in the United States.

Pneumococci are also a common cause of acute otitis media (middle ear infection). By age 12 months, more than 60% of children have had at least one episode of acute otitis media. Approximately 28%–55% of such ear infections are caused by *S. pneumoniae*. In the United States, there were 5 million cases of otitis media each year in children younger than age five years prior to the use of the pneumococcal conjugate vaccine. Middle ear infections are the most frequent reason for pediatric office visits in the United States, resulting in more than 20 million visits annually. Complications of pneumococcal otitis media may include infection of the mastoid bone of the skull and meningitis.

How serious is pneumococcal disease?

Pneumococcal disease is a serious disease that causes much sickness and death. An estimated 31,600 cases and 3,300 deaths from invasive pneumococcal diseases (bacteremia and meningitis) are estimated to have occurred in the United States in 2012. Many of these cases occurred in adults for whom pneumococcal polysaccharide vaccine was recommended. Young children and the elderly (individuals younger than age five years as well as those older than age 65 years) have the highest incidence of serious disease.

Case-fatality rates are highest for meningitis and bacteremia, and the highest mortality occurs among the

CONTINUED ON THE NEXT PAGE ▶

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www.immunize.org/catg.d/p4213.pdf • Item #P4213 (3/16)

Shingles (Zoster): Questions and Answers

Information about the disease and vaccine

What causes shingles?
Both chickenpox and shingles are caused by the same virus, the varicella zoster virus (VZV). After a person has had chickenpox, the virus rests in the body's nerves permanently. Approximately 30% of all people who have been infected with chickenpox will later develop herpes zoster, commonly known as zoster or shingles.

Why do some people develop shingles and others don't?
Shingles occurs when VZV reactivates and causes recurrent disease. It is not well understood why this happens in some people and not others. The risk of getting shingles increases as a person gets older. People who have medical conditions that keep the immune system from working properly, or people who receive immunosuppressive drugs are also at greater risk to get shingles.

What are the symptoms of shingles?
Shingles usually starts as a rash with blisters that scab after 3 to 5 days. The most frequently mentioned symptom is pain. The rash and pain usually occur in a band on one side of the body, or clustered on one side of the face. The rash usually clears within 2 to 4 weeks.

Before the rash develops, there is often pain, itching, or tingling in the area where the rash will develop. Other symptoms of shingles can include fever, headache, chills, and upset stomach.

What are possible complications from shingles?
Very rarely, shingles can lead to pneumonia, hearing problems, blindness, scarring, brain inflammation (encephalitis), or death.

For about one person in five, severe pain can continue even after the rash clears up, a situation called post-herpetic neuralgia (PHN). As people get older, they are more likely to develop PHN, and it is more likely to be severe and long lasting. The pain may be sharp or throbbing, and it may extend beyond the area of the original rash. The skin may be unusually sensitive to touch and to changes in temperature. PHN can last for months, or even years.

Is there a treatment for shingles?
Several antiviral medicines can be used to treat shingles. These medications should be started as soon as possible after the rash appears. They can help shorten the length and severity of the episode. Antiviral treatment is most effective if administered within 24 to 72 hours of the appearance of the rash. Pain medicine may also help with pain caused by shingles.

Is there a test for shingles?
Yes. Shingles is usually diagnosed based on symptoms and the appearance of the rash. Definite diagnosis is made by growing the varicella virus from a skin lesion.

Can you catch shingles from an infected person?
No, shingles cannot be passed from one person to another such as through sneezing, coughing, or casual contact. While it is possible for the VZV virus to be spread from a person with active shingles to a person who has never had chickenpox or never been vaccinated against chickenpox (if they have direct contact with the rash), the person exposed would develop chickenpox, not shingles.

How common is shingles in the United States?
It is estimated that one million cases of shingles occur annually.

Can you get shingles more than once?
Yes, but rarely. Most people will have only one occurrence of shingles in their lifetime, but second and third occurrences have been reported.

When did zoster vaccine first become available?
Zoster vaccine (Zostavax by Merck) was licensed on May 25, 2006.

What kind of vaccine is it?
The zoster vaccine is a live, attenuated vaccine. This means the live, disease-producing virus was modified, or weakened, in the laboratory to produce an organism that can grow and produce immunity in the body without causing illness.

How is this vaccine given?
This vaccine is given by an injection, usually in the fat into the back of the upper arm.

Who should get this vaccine?
The Advisory Committee on Immunization Practices recommends that all adults age 60 years and older

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6-page handout

4-page handout

2-page handout

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www.immunize.org/handouts/vaccine-summaries.asp#

Protect yourself from **shingles**… Get vaccinated!

What is shingles?

Shingles is a painful disease caused by the same virus that causes chickenpox. It is also called zoster.

Shingles usually includes a painful rash with blisters that can occur anywhere on your body, even the face and eyes.

The main symptom of shingles is severe pain. Some people have compared it with the pain of childbirth or kidney stones.

Is it serious?

Yes. For about 1 out of 5 people with shingles, severe pain can continue for months, or even years.

Get vaccinated against shingles if you're 60 or older!

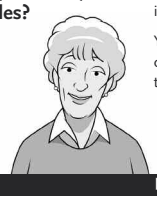
This long-lasting pain can be so bad that it interferes with eating and sleeping. Some people with severe pain from shingles have even committed suicide.

Although some medicines can help treat shingles, there is no cure.

Am I at risk?

Anyone who has ever had chick… more likely to develop shingles…

How can I protect myself from shingles?



The best way to prevent shingle… is to get vaccinated.

You should get the shingles sho… older, even if you've already had… the disease more than once.

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Protect yourself from **hepatitis B**… Get vaccinated!

What is hepatitis B?

Hepatitis B is a serious liver disease caused by a virus.

How do you catch it?

You can get infected with hepatitis B if you have contact with an infected person's blood or other body fluids. This can happen during sex, or just by sharing personal items like a toothbrush or razor. Babies can get infected from their mother during birth.

Is it serious?

Ask your healthcare provider if you need this vaccine!

Yes! If you get infected, you can be sick for weeks or months, be hospitalized, and even die. Some people don't feel sick but can still spread the virus to others.

For some people, the virus remains in their body for years. During this time, the virus can attack the liver and cause serious problems like liver failure or cancer.

Am I at risk?

You are more likely to become infected with the virus if you are exposed to blood on your job, have sex with an infected person, travel to certain countries, or use illegal drugs. However, many people are not sure how they got infected.

How can I protect myself from hepatitis B?

Vaccination is the best way to prevent hepatitis B.

Older children and teens who weren't vaccinated as infants should get a series of hepatitis B shots as soon as possible.

Many adults need hepatitis B vaccination too.

▶For more information, visit www.vaccineinformation.org

For other vaccine handouts in this series, visit www.immunize.org/vaccine-summaries

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