

VACCINATE ADULTS!

A bulletin for adult medicine specialists from the Immunization Action Coalition

Highlighting the latest developments in routine adult immunization and chronic hepatitis B virus infection.



Artwork courtesy of New York State Department of Health

Ask the Experts

Editor's note: The Immunization Action Coalition thanks William L. Atkinson, MD, MPH; Andrew T. Kroger, MD, MPH; Eric E. Mast, MD; and Linda A. Moyer, RN, of the Centers for Disease Control and Prevention (CDC) for answering the following questions for our readers. Dr. Atkinson is a medical epidemiologist, and Dr. Kroger is a medical officer, both at CDC's National Immunization Program. Dr. Mast is acting director, and Ms. Moyer is an epidemiologist, both at CDC's Division of Viral Hepatitis.

Immunization questions

by William L. Atkinson, MD, MPH, and Andrew T. Kroger, MD, MPH

Some of my patients refuse influenza vaccination because they insist they "got the flu" after receiving the vaccine in the past. What can I tell them?

There are several reasons why this misconception persists: (1) Less than 1% of people who are vaccinated with the injectable vaccine develop flu-like symptoms, such as mild fever and muscle aches, after vaccination. These side effects are not the same as having influenza, but people confuse the symptoms. (2) Protective immunity doesn't develop until 1–2 weeks after vaccination. Some people who get vaccinated later in the season (De-

Immunization questions?

- Email nipinfo@cdc.gov
- Call CDC's Immunization Information Hotline at (800) 232-2522
- Call your state health dept. (phone numbers at www.immunize.org/coordinators)

ember or later) may get influenza shortly afterward. These late vaccinees may develop influenza because they were exposed to someone with the virus before they became immune. It is not the result of the vaccination. (3) To many people "the flu" is any illness with fever and cold symptoms. If they get any viral illness, they may blame it on the influenza vaccine or think they got "the flu" despite being vaccinated. Influenza vaccine only protects against certain influenza viruses, not all viruses. (4) The influenza vaccine is not 100% effective, especially in older persons. The vaccine is effective in protecting 90% of healthy young adult vaccinees from illness when the vaccine strain is similar to the circulating strain. However, the vaccine is only 30%–40% effective in preventing illness among frail elderly persons (although among elderly persons, the vaccine is 50%–60% effective in preventing hospitalization and 80% effective in preventing death).

Which health care workers should be vaccinated against influenza?

It is important to vaccinate all hospital and outpatient-care personnel who have direct contact with patients. In addition to physicians and nurses, vaccination in hospital settings also includes full-time and part-time employees in radiology, laboratories, pharmacy, human resources, facilities management (housekeeping), food services, and laundry. Vaccinate volunteers as well. Others who should be vaccinated are emergency response workers, employees of nursing homes and assisted living programs, and providers of home care.

I am a 30-year-old health care worker. Can I be vaccinated with the live attenuated intranasal influenza vaccine (LAIV)?

Yes, you can be vaccinated with LAIV, provided you do not have a medical contraindication (e.g., chronic medical condition, pregnant) or have close contact with a severely immunosuppressed person who requires care in a protective environment (e.g., a bone marrow transplant patient). Otherwise, you should be vaccinated with trivalent inactivated influenza vaccine (TIV).

What type of thermometer is good for measuring temperatures in a vaccine storage unit?

The National Immunization Program recommends a certified calibrated thermometer in each com-

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VACCINATE ADULTS!

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The **Immunization Action Coalition**, a 501(c)3 nonprofit organization, publishes practical immunization information for health professionals to help increase immunization rates and prevent disease.

The **Hepatitis B Coalition**, a program of IAC, promotes hepatitis B vaccination for all children 0–18 years; HBsAg screening for all pregnant women; testing and vaccination for high-risk groups; and education and treatment for people chronically infected with hepatitis B.

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partment (refrigerator and freezer). While all thermometers are calibrated during manufacturing, certified calibrated thermometers undergo a second individual calibration against a reference standard from an appropriate agency. They are then given a certificate indicating successful completion of this process. The certificate is provided with the instrument when purchased and is different from the manufacturer's warranty.

Can we buy these types of thermometers at a hardware store?

No. You will need to purchase them through a scientific supply company or other specialized vendor. Your state immunization program may be able to refer you to some suppliers. Be sure to look for a thermometer with a "traceable certificate," usually to a National Institute of Standards and Technology (NIST) or American Society for Testing and Materials (ASTM) standard. These thermometers may cost a bit more than the average hardware store thermometer, but it is better to invest in a more reliable model than to risk damaging thousands of dollars worth of vaccine because of inaccurate readings.

How often should temperatures be checked and recorded on our vaccine storage unit's log?

It is important that you check and record the temperatures of both the refrigerator and freezer units at the beginning and end of the day. You should also record the room temperature on your log.

We are carefully logging our vaccine storage unit's temperatures each day. Is there anything else that could go wrong?

Congratulations on all your hard work. You would be surprised at the number of people who, just like you, do a careful job of recording temperatures and then fail to act on them when they go out of range. Always take immediate action when you notice an

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out-of-range temperature. You may need to move the vaccines temporarily to a more reliable storage unit and determine the source of the problem. It may be something quite fixable (e.g., excessive lint or dust on the coils) and you will be back in business after you determine that the temperature is back in range after a few hours. Above all, don't chart it and not act on it!

Can we store vaccine in the same unit where we store employees' lunches?

No, don't use the same unit. Frequent opening of the refrigerator's door to retrieve food items can adversely affect the internal temperature of the unit and potentially damage the vaccines.

There is a vent in our refrigerator that brings in cold air from the freezer. Vaccines stored near this vent are colder to the touch. Could this be a problem?

Yes. Vaccines that are in the refrigerator should be moved away from this vent as the cold air from the freezer can cause your vaccines to freeze. Inactivated vaccines must be kept at 35–46° F (2–8° C).

To obtain CDC's 2004 recommendations "Prevention and Control of Influenza," go to www.cdc.gov/mmwr/pdf/rr/rr5306.pdf or call (800) 232-2522.

Hepatitis A and B

by Linda A. Moyer, RN, and Eric E. Mast, MD

Can administering hepatitis B vaccine with a needle that's too short cause non-response or other problems for an individual?

Yes. Hepatitis B vaccine needs to be administered into the muscle for maximum effectiveness. If a needle is too short, the vaccine might be deposited subcutaneously, causing a lower immunogenic response.

For all intramuscular injections, the needle should be long enough to reach the muscle mass and prevent vaccine from seeping into subcutaneous tissue. However, it should not be so long that it could involve underlying nerves and blood vessels or bone. Consider these criteria when selecting needle size and injection site: the person's age, the volume of material to be administered, the size of the muscle, and the depth below the muscle surface into which the material is to be injected. For adults the suggested needle size is 1 to 2 inches and 22–25 gauge.

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Which travelers should be offered hepatitis A vaccine?

Hepatitis A vaccine is recommended for ALL susceptible persons 2 years of age and older who travel to or will work in countries outside the United States, EXCEPT Western Europe, New Zealand, Australia, Canada, and Japan. Data are not available regarding the risk of hepatitis A virus (HAV) infection for persons traveling to developed areas of the Caribbean, although vaccine should be considered if travel to areas that have questionable sanitation is anticipated. For optimal protection, the first dose of vaccine should be given at least 4 weeks prior to travel. Therefore, the first dose of hepatitis A vaccine should be administered as soon as travel to a high-risk area is planned. Persons traveling to at-risk areas less than 4 weeks after the initial dose of hepatitis A vaccine should also be given immune globulin (IG; 0.02mL/kg), but at a different injection site. A second vaccine dose is necessary for long-term protection. Travelers who are allergic to a vaccine component or who choose not to be vaccinated should receive a single dose of IG (0.02mL/kg), which provides effective protection against HAV infection for up to 3 months. Travelers whose travel period exceeds 2 months should be administered IG at 0.06mL/kg, which must be repeated if the travel period exceeds 5 months. Travelers less than 2 years of age should be given IG, because the vaccine is currently not licensed for use in this age group.

If a person has had HAV infection, should they still receive the vaccine if planning international travel?

No, as long as there are medical records that document that the person was previously infected with HAV (i.e., positive test for antibody to HAV). If there is any doubt that the person actually was infected with HAV, hepatitis A vaccine or IG should be given. The vaccine or IG will not harm a person who is already immune.

Do you have patients who are HBsAg-positive?

They need medical monitoring, including liver cancer screening; many can benefit from treatment.

FDA currently licenses three medications for use in the United States.

1. interferon alfa-2b, recombinant (administered subcutaneously)
2. lamivudine (administered orally)
3. adefovir dipivoxil (administered orally)

Consult a liver specialist experienced in the treatment of viral hepatitis for appropriate monitoring guidelines and for help in determining which of your patients might benefit from treatment.



Hepatitis A and B lab tests

Hepatitis A lab nomenclature

anti-HAV: *Antibody to hepatitis A virus.* This diagnostic test detects total antibody of both IgG and IgM subclasses of HAV. Its presence indicates either acute or resolved infection.

IgM anti-HAV: *IgM antibody subclass of anti-HAV.* Its presence indicates a recent infection with HAV (≤ 6 mos). It is used to diagnose acute hepatitis A.

Hepatitis B lab nomenclature

HBsAg: *Hepatitis B surface antigen* is a marker of infectivity. Its presence indicates either acute or chronic HBV infection.

anti-HBs: *Antibody to hepatitis B surface antigen* is a marker of immunity. Its presence indicates an immune response to HBV infection, an immune response to vaccination, or the presence of passively acquired antibody. (It is also known as **HBsAb**, but this abbreviation is best avoided since it is often confused with abbreviations such as HBsAg.)

anti-HBc (total): *Antibody to hepatitis B core antigen* is a nonspecific marker of acute, chronic, or resolved HBV infection. It is *not* a marker of vaccine-induced immunity. It may be used in prevaccination testing to determine previous exposure to HBV infection. (It is also known as **HBcAb**, but this abbreviation is best avoided since it is often confused with other abbreviations.)

IgM anti-HBc: *IgM antibody subclass of anti-HBc.* Positivity indicates recent infection with HBV (≤ 6 mos). Its presence indicates acute infection.

HBeAg: *Hepatitis B "e" antigen* is a marker of a high degree of HBV infectivity, and it correlates with a high level of HBV replication. It is primarily used to help determine the clinical management of patients with chronic HBV infection.

Anti-HBe: *Antibody to hepatitis B "e" antigen* may be present in an infected or immune person. In persons with chronic HBV infection, its presence suggests a low viral titer and a low degree of infectivity.

HBV-DNA: *HBV Deoxyribonucleic acid* is a marker of viral replication. It correlates well with infectivity. It is used to assess and monitor the treatment of patients with chronic HBV infection.

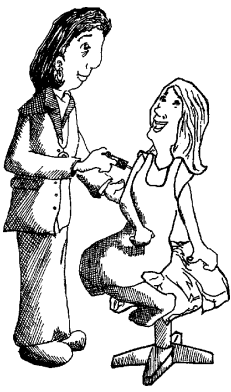
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Vaccinations for Adults

You're NEVER too old to get immunized!

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

Vaccine ▼ Age ►	19–49 years	50–64 years	65 years & older
Influenza	You need a dose yearly if you have a chronic health problem, are a health care worker, or have close contact with certain individuals.*	You need a dose every fall (or winter).	
Pneumococcal	You need 1–2 doses if you have certain chronic medical conditions.*		You need 1 dose at age 65 (or later); you may also need a 2nd dose.*
Tetanus, diphtheria (Td)	If you haven't had at least 3 tetanus and diphtheria-containing shots sometime in your life, you need to get them now. Start with dose #1, followed by dose #2 in 1 month, and dose #3 in 6 months. You need a booster dose every 10 years. Consult your health professional if you have a deep or dirty wound.		
Hepatitis B (HepB)	You may need to complete a 3-dose series (dose #1 now, followed by dose #2 in 1 month, and dose #3 usually given 5 months later). Ask your health professional whether you need this vaccine.		
Hepatitis A (HepA)	You may need 2 doses spaced 6–18 months apart. Ask your health professional whether you need this vaccine.		
Measles, mumps, rubella (MMR)	You need at least 1 dose of MMR if born in 1957 or later. You may also need a 2nd dose.*		
Varicella (Chickenpox)	If you've never had chickenpox, you should get vaccinated now (2 doses, 1–2 months apart).		
Meningococcal	If you are a young adult going to college, ask your health professional about your risk of meningococcal disease and if you need to get vaccinated.		

*Consult your health professional to determine your level of risk for infection and your need for this vaccine.

Do you travel outside the United States? If so, you may need additional vaccines, including hepatitis A and meningococcal vaccines. The Centers for Disease Control and Prevention (CDC) operates an international traveler's immunization hotline. Call (877) 394-8747 or visit CDC's website at www.cdc.gov/travel for information about your destination. You may also consult a travel clinic or your health professional.

Summary of Recommendations for Adult Immunization

Adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP)* by the Immunization Action Coalition, July 2004

Vaccine name and route	For whom it is recommended	Schedule for routine and “catch-up” administration	Precautions and contraindications (mild illness is not a contraindication)
<p>Influenza</p> <p>Trivalent inactivated influenza vaccine (TIV) <i>Give IM</i></p> <p>Live attenuated influenza vaccine (LAIV) <i>Give intranasally</i></p>	<ul style="list-style-type: none"> All adults who are 50yrs of age or older. People 6m–50yrs of age with medical problems (e.g., heart disease, lung disease, diabetes, renal dysfunction, hemoglobinopathies, immunosuppression) and/or people living in chronic-care facilities. People (≥6m of age) working or living with at-risk people. Women who will be pregnant during the influenza season. All health care workers and other persons who provide direct care to at-risk people. Household contacts and out-of-home caregivers of children ages 0–23m. Travelers at risk for complications of influenza who go to areas where influenza activity exists or who may be among people from areas of the world where there is current influenza activity (e.g., on organized tours). Persons who provide essential community services. Students or other persons in institutional settings (e.g., those who reside in dormitories). Anyone wishing to reduce the likelihood of becoming ill with influenza. 	<ul style="list-style-type: none"> Given every year. October through November is the <i>optimal</i> time to receive annual influenza vaccination to maximize protection. Influenza vaccine may be given at any time during the influenza season (typically December through March) or at other times when the risk of influenza exists. May give with all other vaccines. 	<ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine, to any of its components, or to eggs. Moderate or severe acute illness. Do not give live attenuated influenza vaccine to persons ≥50 years of age, pregnant women, or to persons who have: asthma, reactive airway disease or other chronic disorder of the pulmonary or cardiovascular systems; an underlying medical condition, including metabolic diseases such as diabetes, renal dysfunction, and hemoglobinopathies; a known or suspected immune deficiency disease or who are receiving immunosuppressive therapy; a history of Guillain-Barré syndrome. See Special Notes in columns 2–3 regarding who may not receive LAIV.
<p>Pneumococcal polysaccharide (PPV23) <i>Give IM or SC</i></p>	<ul style="list-style-type: none"> Adults who are 65yrs of age or older. People 2–64yrs of age who have chronic illness or other risk factors, including chronic cardiac or pulmonary diseases, chronic liver disease, alcoholism, diabetes mellitus, CSF leaks, candidate for or recipient of cochlear implant, as well as people living in special environments or social settings (including Alaska Natives and certain American Indian populations). Those at highest risk of fatal pneumococcal infection are people with anatomic asplenia, functional asplenia, or sickle cell disease; immunocompromised persons including those with HIV infection, leukemia, lymphoma, Hodgkin’s disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome; persons receiving immunosuppressive chemotherapy (including corticosteroids); and those who received an organ or bone marrow transplant. Pregnant women with high-risk conditions should be vaccinated if not done previously. 	<ul style="list-style-type: none"> Routinely given as a one-time dose; administer if previous vaccination history is unknown. One-time revaccination is recommended 5yrs later for people at highest risk of fatal pneumococcal infection or rapid antibody loss (e.g., renal disease) and for people ≥65yrs of age if the 1st dose was given prior to age 65 and ≥5yrs have elapsed since previous dose. May give with all other vaccines. 	<ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine or to any of its components. Moderate or severe acute illness. Note: Pregnancy and breastfeeding are not contraindications to the use of this vaccine.
<p>Hepatitis B (Hep B) <i>Give IM</i></p> <p>Brands may be used interchangeably.</p>	<ul style="list-style-type: none"> All adolescents. High-risk adults, including household contacts and sex partners of HBsAg-positive persons; users of illicit injectable drugs; heterosexuals with more than one sex partner in 6 months; men who have sex with men; people with recently diagnosed STDs; patients receiving hemodialysis and patients with renal disease that may result in dialysis; recipients of certain blood products; health care workers and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities; and certain international travelers. <p>Note: Prior serologic testing may be recommended depending on the specific level of risk and/or likelihood of previous exposure. Note: In 1997, the NIH Consensus Development Conference, a panel of national experts, recommended that hepatitis B vaccination be given to all anti-HCV positive persons. Ed. note: Provide serologic screening for immigrants from endemic areas. When HBsAg-positive persons are identified, offer appropriate disease management. In addition, screen their sex partners and household members and, if found susceptible, vaccinate.</p>	<ul style="list-style-type: none"> Three doses are needed on a 0, 1, 6m schedule. Alternative timing options for vaccination include 0, 2, 4m and 0, 1, 4m. There must be 4wks between doses #1 and #2, and 8wks between doses #2 and #3. Overall there must be at least 16wks between doses #1 and #3. Schedule for those who have fallen behind: If the series is delayed between doses, DO NOT start the series over. Continue from where you left off. May give with all other vaccines. 	<ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine or to any of its components. Moderate or severe acute illness. Note: Pregnancy and breastfeeding are not contraindications to the use of this vaccine.
<p>Hepatitis A (Hep A) <i>Give IM</i></p> <p>Brands may be used interchangeably.</p>	<ul style="list-style-type: none"> People who travel outside of the U.S. (except for Western Europe, New Zealand, Australia, Canada, and Japan). People with chronic liver disease, including people with hepatitis C; people with hepatitis B who have chronic liver disease; illicit drug users; men who have sex with men; people with clotting-factor disorders; people who work with hepatitis A virus in experimental lab settings (not routine medical laboratories); and food handlers when health authorities or private employers determine vaccination to be cost effective. <p>Note: Prevacination testing is likely to be cost effective for persons >40yrs of age as well as for younger persons in certain groups with a high prevalence of hepatitis A virus infection.</p>	<p>For Twinrix™ (hepatitis A and B combination vaccine [GSK]), three doses are needed on a 0, 1, 6m schedule.</p> <ul style="list-style-type: none"> Two doses are needed. The minimum interval between dose #1 and #2 is 6m. If dose #2 is delayed, do not repeat dose #1. Just give dose #2. May give with all other vaccines. 	<ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine or to any of its components. Moderate or severe acute illness. Safety during pregnancy has not been determined, so benefits must be weighed against potential risk. Note: Breastfeeding is not a contraindication to the use of this vaccine.

Special Notes on the use of influenza vaccines

- Inactivated influenza vaccine may be given to any person ≥6 months of age for whom the vaccine is not contraindicated. Live attenuated influenza vaccine may be given to healthy, non-pregnant persons 5–49 years of age for whom the vaccine is not contraindicated.
- Use of inactivated influenza vaccine is preferred for persons in close contact with severely immunosuppressed persons during periods when the immunocompromised person requires a protective environment (e.g., persons with bone marrow transplants).

Summary of Recommendations for Adult Immunization (continued)

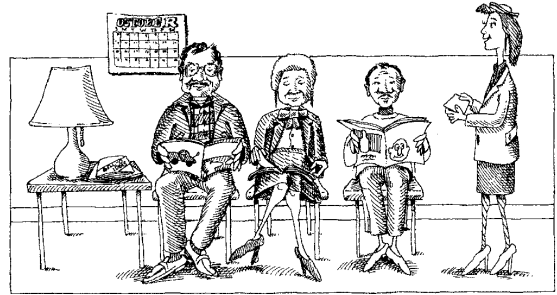
Vaccine name and route	For whom it is recommended	Schedule for routine and “catch-up” administration	Precautions and contraindications (mild illness is not a contraindication)
Td (Tetanus, diphtheria) <i>Give IM</i>	<ul style="list-style-type: none"> All adolescents and adults. After the primary series has been completed, a booster dose is recommended every 10yrs. Make sure your patients have received a primary series of 3 doses. A booster dose as early as 5yrs later may be needed for the purpose of wound management, so consult ACIP recommendations.* Use Td, not tetanus toxoid (TT), for all indications. 	<ul style="list-style-type: none"> Give booster dose every 10yrs after the primary series has been completed. For those who are unvaccinated or behind, complete the primary series (spaced at 0, 1–2m, 6–12m intervals). Don’t restart the series, no matter how long since the previous dose. May give with all other vaccines. 	<ul style="list-style-type: none"> Previous anaphylactic or neurologic reaction to this vaccine or to any of its components. Moderate or severe acute illness. <p>Note: Pregnancy and breastfeeding are not contraindications to the use of this vaccine.</p>
MMR (Measles, mumps, rubella) <i>Give SC</i>	<ul style="list-style-type: none"> Adults born in 1957 or later who are ≥18yrs of age (including those born outside the U.S.) should receive at least one dose of MMR if there is no serologic proof of immunity or documentation of a dose given on or after the first birthday. Adults in high-risk groups, such as health care workers, students entering colleges and other post–high school educational institutions, and international travelers, should receive a total of two doses. Adults born before 1957 are usually considered immune but proof of immunity may be desirable for health care workers. All women of childbearing age (i.e., adolescent girls and premenopausal adult women) who do not have acceptable evidence of rubella immunity or vaccination. Special attention should be given to immunizing women born outside the United States in 1957 or later. 	<ul style="list-style-type: none"> One or two doses are needed. If dose #2 is recommended, give it no sooner than 4wks after dose #1. May give with all other vaccines. If varicella vaccine and MMR are both needed and are not administered on the same day, space them at least 4wks apart. If a pregnant woman is found to be rubella-susceptible, administer MMR postpartum. 	<ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine or to any of its components. Pregnancy or possibility of pregnancy within 4 weeks (use contraception). Persons immunocompromised because of cancer, leukemia, lymphoma, immunosuppressive drug therapy, including high-dose steroids or radiation therapy. Note: HIV positivity is NOT a contraindication to MMR except for those who are severely immunocompromised. If blood, plasma, and/or immune globulin were given in past 11m, see ACIP statement <i>General Recommendations on Immunization*</i> regarding time to wait before vaccinating. Moderate or severe acute illness. <p>Note: Breastfeeding is not a contraindication to the use of this vaccine. Note: MMR is not contraindicated if a tuberculin skin test (i.e., PPD) was recently applied. If PPD and MMR not given on same day, delay PPD for 4–6wks after MMR.</p>
Varicella (Var) (Chickenpox) <i>Give SC</i>	<p>All susceptible adults and adolescents should be vaccinated. It is especially important to ensure vaccination of the following groups: susceptible persons who have close contact with persons at high risk for serious complications (e.g., health care workers and family contacts of immunocompromised persons) and susceptible persons who are at high risk of exposure (e.g., teachers of young children, day care employees, residents and staff in institutional settings such as colleges and correctional institutions, military personnel, adolescents and adults living with children, non-pregnant women of childbearing age, and international travelers who do not have evidence of immunity).</p> <p>Note: People with reliable histories of chickenpox (such as self or parental report of disease) can be assumed to be immune. For adults who have no reliable history, serologic testing may be cost effective since most adults with a negative or uncertain history of varicella are immune.</p>	<ul style="list-style-type: none"> Two doses are needed. Dose #2 is given 4–8wks after dose #1. May give with all other vaccines. If varicella vaccine and MMR are both needed and are not administered on the same day, space them at least 4wks apart. If the second dose is delayed, do not repeat dose #1. Just give dose #2. 	<ul style="list-style-type: none"> Previous anaphylactic reaction to this vaccine or to any of its components. Pregnancy or possibility of pregnancy within 4 weeks (use contraception). Persons immunocompromised because of malignancies and primary or acquired cellular immunodeficiency including HIV/AIDS. (See <i>MMWR</i> 1999, Vol. 48, No. RR-6.) Note: For those on high-dose immunosuppressive therapy, consult ACIP recommendations regarding delay time.* If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP statement <i>General Recommendations on Immunization*</i> regarding time to wait before vaccinating. Moderate or severe acute illness. <p>Note: Breastfeeding is not a contraindication to the use of this vaccine. Note: Manufacturer recommends that salicylates be avoided for 6wks after receiving varicella vaccine because of a theoretical risk of Reye’s syndrome.</p>
Polio (IPV) <i>Give IM or SC</i>	<p>Not routinely recommended for persons 18yrs of age and older.</p> <p>Note: Adults living in the U.S. who never received or completed a primary series of polio vaccine need not be vaccinated unless they intend to travel to areas where exposure to wild-type virus is likely. Previously vaccinated adults can receive one booster dose if traveling to polio endemic areas.</p>	<ul style="list-style-type: none"> Refer to ACIP recommendations* regarding unique situations, schedules, and dosing information. May give with all other vaccines. 	<ul style="list-style-type: none"> Previous anaphylactic or neurologic reaction to this vaccine or to any of its components. Moderate or severe acute illness. <p>Note: Pregnancy and breastfeeding are not contraindications to the use of this vaccine.</p>
Meningococcal <i>Give SC</i>	Vaccinate people with risk factors. Discuss disease risk and vaccine availability with college students. Consult ACIP statement* on meningococcal disease (6/30/00) for details.		

* For specific ACIP immunization recommendations, refer to the statements, which are published in *MMWR*. To obtain a complete set of ACIP statements, call (800) 232-2522, or to access individual statements, visit CDC’s website: www.cdc.gov/nip/publications/ACIP-list.htm or visit IAC’s website: www.immunize.org/acip
This table is revised yearly because of the changing nature of U.S. immunization recommendations. Visit the Immunization Action Coalition’s website at www.immunize.org/adultrules to make sure you have the most

current version. We extend our thanks to William Atkinson, MD, MPH, from CDC’s National Immunization Program, and Linda Moyer, RN, from the Division of Viral Hepatitis, at CDC’s National Center for Infectious Diseases for their assistance. This table is published by the Immunization Action Coalition, 1573 Selby Avenue, St. Paul, MN 55104, (651) 647-9009. Email: admin@immunize.org

Patient name: _____ Date of birth: ____/____/____
 (mo.) (day) (yr.)

Screening Questionnaire for Adult Immunization



For patients: The following questions will help us determine which vaccines you may be given today. If a question is not clear, please ask your health care provider to explain it.

	Yes	No	Don't Know
1. Are you sick today?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Do you have allergies to medications, food, or any vaccine?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Have you ever had a serious reaction after receiving a vaccination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do you have cancer, leukemia, AIDS, or any other immune system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you take cortisone, prednisone, other steroids, or anticancer drugs, or have you had x-ray treatments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. During the past year, have you received a transfusion of blood or blood products, or been given a medicine called immune (gamma) globulin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Have you received any vaccinations in the past 4 weeks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Form completed by: _____ Date: _____

Form reviewed by: _____ Date: _____

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 record card, ask your health care provider to give you one! Bring this record with you every time you seek medical care. Make sure your health care provider records all your vaccinations on it.

Standing Orders for Administering Influenza Vaccine to Adults

Purpose: To reduce morbidity and mortality from influenza by vaccinating all patients who meet the criteria established by the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses may vaccinate patients who meet the criteria below.

Procedure:

1. Identify adults in need of influenza vaccination based on the following criteria:
 - a. Age 50 years or older
 - b. Age less than 50 years with any of the following conditions:
 - chronic disorder of the pulmonary or cardiovascular system, including asthma
 - chronic metabolic disease (e.g., diabetes mellitus), renal dysfunction, hemoglobinopathy, or immunosuppression (e.g., caused by medications, HIV) that has required regular medical follow-up or hospitalization during the preceding year
 - will be pregnant during the influenza season
 - c. Residence in a nursing home or other chronic-care facility that houses persons of any age who have chronic medical conditions
 - d. In an occupation or living situation that puts one in proximity to persons at high risk, including:
 - a health care worker, caregiver, or household member in contact with person(s) at high risk of developing complications from influenza
 - a household contact or out-of-home caretaker of a child 0–23 months of age
 - e. Wish to reduce the likelihood of becoming ill with influenza
2. Screen all patients for contraindications and precautions to influenza vaccine:
 - a. **Contraindications:** serious reaction (e.g., anaphylaxis) after ingesting eggs or after receiving a previous dose of influenza vaccine or an influenza vaccine component. For a list of vaccine components, go to www.cdc.gov/nip/publications/pink/appendices/a/excipient.pdf Do not give live attenuated influenza vaccine (LAIV) to pregnant women or immunosuppressed persons. Use of inactivated influenza vaccine is preferred over LAIV for close contacts of severely immunosuppressed persons during periods when the immunocompromised person requires a protective environment.
 - b. **Precautions:** moderate or severe acute illness with or without fever
3. Provide all patients with a copy of the most current federal Vaccine Information Statement (VIS). Although not required by federal law, it is prudent to document in the patient’s medical record or office log, the publication date of the VIS and the date it was given to the patient. Provide non-English speakers with a VIS in their native language if available; these can be found at www.immunize.org/vis
4. Administer 0.5 mL inactivated influenza vaccine IM (22–25g, 1–1½" needle) in the deltoid muscle. Alternatively, healthy persons 5–49 years of age without contraindications may be given 0.5 mL of LAIV; 0.25 mL is sprayed into each nostril while the patient is in an upright position.
5. Document each patient’s vaccine administration information and follow up in the following places:
 - a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
 - b. **Personal immunization record card:** Record vaccination date and the name/location of the administering clinic.
6. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications.
7. Report all adverse reactions to influenza vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.org or (800) 822-7967. VAERS report forms are available at www.vaers.org

This policy and procedure shall remain in effect for all patients of the _____ until rescinded or until _____ (date).
(name of practice or clinic)

Medical Director’s signature: _____ Effective date: _____

What should I do if I think I've been exposed to HAV?

If you think you have been exposed to HAV, consult your health professional or health department. You might need immune globulin, which if given in time, can immediately protect you after being exposed to HAV. You might also want to receive the hepatitis A vaccine at this time, for future protection.

If you do become ill with hepatitis A, you will need to get information from your health professional on how to take care of yourself. Your household and sexual contacts might need immune globulin so they do not get hepatitis A.

If I've been vaccinated against hepatitis B, will this protect me from HAV?

No. Hepatitis B vaccine will not protect you from HAV infection. However, there is a vaccine that is available to protect adults against both hepatitis A and hepatitis B.

Will hepatitis A vaccine protect me against hepatitis B or hepatitis C?

No. Hepatitis A, B, and C are different viruses. Hepatitis B virus (HBV) and HAV infections can be prevented by vaccination; unfortunately, there is no vaccine to prevent infection with hepatitis C virus at this time.

Everyone needs vaccinations!

If you can't afford shots or don't know where to get them, call (800) 232-2522, or call your local or state health department.



Hepatitis A is a serious liver disease



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The Immunization Action Coalition (IAC) encourages you to make and distribute copies of this brochure. If you alter it, please acknowledge that it was adapted from IAC. The technical content was reviewed by the Centers for Disease Control and Prevention.

Vaccination can protect you

What is hepatitis A?

Hepatitis A is a serious liver disease caused by infection with the hepatitis A virus (HAV).

How is HAV spread?

HAV is usually spread from getting particles of fecal material into your mouth that might be too small to be seen. This happens through household or sexual contact with an infected person or by eating HAV-contaminated food or drinking HAV-contaminated

water. Casual contact, such as in a school or work setting, does not spread HAV.



What are the symptoms of hepatitis A?

Infected persons can have no symptoms at all or be extremely ill. Only 30% of children less than six years of age develop symptoms, while 70% of older children and adults develop symptoms.

If a person does develop symptoms, they might include fever, tiredness, loss of appetite, nausea, abdominal pain, dark urine, and/or jaundice (yellowing of the eyes and skin). These symptoms can last up to six months. With or without symptoms, people with HAV infection can spread the infection to others.

How serious is hepatitis A?

About 15% of people with hepatitis A require hospitalization. Adults who become ill often miss several weeks of work. There are approximately 100 deaths each year in the U.S. from hepatitis A.

How can HAV infection be prevented?

A safe and effective vaccine to prevent HAV infection has been available in the U.S. since 1995. Good hand washing might also help stop

the spread of HAV. Always wash your hands with soap and water after using the toilet, changing a diaper, and before preparing or eating food.

Who should get hepatitis A vaccine?

If you fall into any of the following groups, you should consult with your health professional about getting vaccinated against HAV:

- men who have sex with men
- users of street drugs (injecting and non-injecting)
- children, two years of age and older, who live in areas with historically increased rates of hepatitis A (for information about these areas, contact your local health department)
- people who travel or work in any area of the world except the U.S., Canada, Western Europe, Japan, New Zealand, and Australia
- people with chronic liver disease, including hepatitis C
- people working with live hepatitis A virus
- people with clotting factor disorders, such as hemophilia

What if I don't fit into any of these groups, but still want to be protected against HAV infection?

If you want to receive hepatitis A vaccine, there is no medical reason it cannot be given (a child must be two years of age or older). The cost of the vaccine might not be covered by your health insurance, so you might have to pay for it yourself.

How can I protect myself against HAV when traveling?

Get vaccinated against HAV before traveling to any area of the world except the U.S., Canada, Western Europe, Japan, New Zealand, and

Australia. Discuss this with your health professional in advance of your departure, as it takes about four weeks for immunity to begin after the first dose of hepatitis A vaccine. If you don't have at least four weeks advance notice when traveling, check with your health professional about receiving a shot called immune globulin. This preparation provides short-term protection against HAV infection.

How long does hepatitis A vaccine protect you?

Research suggests that protection will last for at least 20 years.

How safe is hepatitis A vaccine? Does it have any side effects?

Many studies have shown that hepatitis A vaccine is very safe. Since 1995, more than seven million doses of hepatitis A vaccine have been given in the U.S. with no reports of serious health problems linked to the vaccine. Side effects might include soreness at the injection site, headache, and tiredness. These symptoms, if they occur, last for only a short time.

How effective is hepatitis A vaccine?

Almost 100% of people are protected from HAV infection after getting two doses of vaccine.

How many shots are needed?

Children and adults need two doses of hepatitis A vaccine, spaced at least six months apart. At least 94% of people will be protected after the first dose, but a second dose is necessary to assure long-term protection.



