

# Adult vaccines: Are you up to date?

Each year, about 50,000 men and women in the U.S. die unnecessarily from vaccine-preventable diseases, and many more are hospitalized.

When it comes to vaccines, there is a great deal of complacency and ignorance among doctors and patients, according

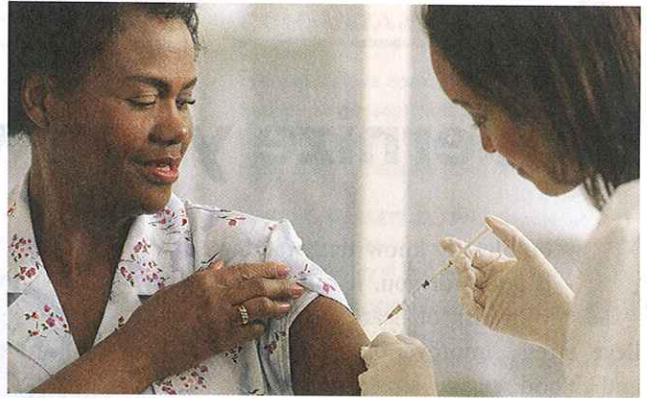
to William Schaffner, M.D., a professor and chairman of the department of preventive medicine at the Vanderbilt University School of Medicine in Nashville, Tenn. What's more, when you factor in all of the health insurance and Medicare barriers, "even well-intentioned providers and eager patients sometimes

The vaccine	The target	Efficacy	Who needs it?
<p><b>Hepatitis A (HAV)</b></p> <p>Two shots at least six months apart.</p>	An acute viral liver disease spread by the fecal-oral route. There is no specific treatment, but the total cost of the disease can reach \$2,500 per patient.	94% to 100% effective.	<ul style="list-style-type: none"> <li>Any adult seeking protection against HAV.</li> <li>Adults at high risk, including homosexual men, people with liver disease or clotting disorders, and travelers abroad (excluding Australia, Canada, Western Europe, Japan, and New Zealand).</li> </ul>
<p><b>Hepatitis B (HBV)</b></p> <p>Three shots over six months: two doses separated by no less than 4 weeks and the third dose 4 to 6 months after the second dose.</p>	A virus spread by blood, body fluids, sexual contact, and prenatal exposure that can cause liver failure and serious disease, including cirrhosis, cancer, and even death. About 1.4 million people in the U.S. are infected.	80% to 100% effective at preventing infection in those who receive all three doses.	<ul style="list-style-type: none"> <li>Those requesting protection and sexually active adults not in a relationship.</li> <li>Adults younger than 60 who have diabetes (type 1 or 2).</li> <li>Certain adults who have diabetes and are 60 or older, based on their need for blood-glucose monitoring and other risk factors.</li> <li>Those at high risk, including adults with kidney disease and predialysis, hemodialysis, and home-dialysis patients; homosexual men; international travelers (excluding Australia, Canada, Western Europe, Japan, and New Zealand); health-care workers, and people seeking treatment for an STD.</li> </ul>
<p><b>Human papillomavirus (HPV)</b></p> <p>Three shots: The second and third doses should be administered 2 and 6 months after the first dose, respectively.</p>	The most common sexually transmitted infection in the U.S.; about 6.2 million new HPV infections occur annually. HPV can lead to cervical and other genital cancers, plus oral and pharyngeal cancers.	Up to 97% effective against certain types of HPV.	<ul style="list-style-type: none"> <li>Women ages 19 to 26.</li> <li>Men 19 to 21 and those 22 to 26 who have conditions that compromise their immune systems.</li> </ul>
<p><b>Influenza</b></p> <p>One dose annually, ideally in October or November.</p>	The flu, a seasonal and highly contagious viral illness. There can be more than 200,000 flu-related hospitalizations each year, and almost 36,000 people die from the disease.	70% to 90% effective among healthy people younger than 65; about 40% effective among frail older adults.	All adults, especially those at high risk, including the very old; people who have asthma or diabetes; anyone with heart, lung, or kidney disease; women who are or will become pregnant; and caregivers of children or adults with medical conditions.
<p><b>Pneumococcal</b></p> <p>One shot for most and a booster for certain high-risk adults after 5 years.</p>	A serious bacterial infection that sends up to 300,000 adults ages 50 or older to the hospital annually. The infection causes more than a third of all cases of pneumonia and nearly a fifth of bacterial meningitis cases.	60% to 70% effective against the infection.	<ul style="list-style-type: none"> <li>Adults 65 or older</li> <li>Adults 19 to 64 who have certain risk factors, including heart, lung, or liver disease; diabetes; alcoholism; cochlear implants; conditions that compromise immunity; asthma; smokers; and those undergoing chemotherapy.</li> </ul>
<p><b>Tetanus, diphtheria, and acellular pertussis (whooping cough), known as Tdap.</b></p> <p>One shot, and a tetanus-diphtheria (Td) booster every 10 years.</p>	Potentially fatal bacterial diseases that can make it difficult to breathe. Unlike most vaccine-preventable diseases, the incidence of pertussis has been rising since the early 1980s.	Nearly 100% effective against tetanus and diphtheria infection, although less effective against pertussis—about 55% to 65%, according to research.	<ul style="list-style-type: none"> <li>Adults younger than 65, regardless of their last Td booster.</li> <li>Adults 65 or older who are in contact with an infant. (Otherwise, Td or Tdap can be used.)</li> </ul>
<p><b>Varicella/Shingles</b></p> <p>Two shots separated by at least 4 weeks; an additional shot to target shingles.</p>	The varicella zoster virus, which causes chicken pox and can persist in the body after the initial infection, resurfacing as shingles (the herpes zoster virus). Thirty-two percent of adults will develop shingles, with the rate increasing to 50% for those living until 85.	70% to 90% effective against any varicella disease.	<ul style="list-style-type: none"> <li>Adults who have not had chicken pox or the vaccination against the infection.</li> <li>A higher-dosed shingles-specific vaccine, <i>Zostavax</i>, is also recommended for adults 60 or older regardless of their history. (It is also approved for those 50 to 59.)</li> </ul>

find it difficult to access vaccines,” Schaffner says.

The problem isn't just theoretical. “Real issues are developing due to this lapse,” Schaffner says. For example, in 2010 California recorded its highest number of pertussis cases (whooping cough) in 63 years despite the availability of a vaccine for the infection. (Only 8 percent of U.S. adults have received it.)

To protect yourself, talk with your doctor and advocate for the necessary vaccinations. The chart below shows which ones you need as well as how much protection you can expect. You can also use the Centers for Disease Control and Prevention's interactive vaccine tool at [www2.cdc.gov/nip/adultimmsched/](http://www2.cdc.gov/nip/adultimmsched/), which covers shots for people 11 and older. ■



Current coverage	Vaccine options	Side effects	Precautions
<ul style="list-style-type: none"> <li>17% of adults ages 19 to 49 who travel to countries of high or intermediate risk.</li> <li>42% of high-risk adults ages 19 to 49.</li> <li>23% of people with diabetes ages 19 to 59 and 11% of people 60 or older with diabetes.</li> </ul>	<ul style="list-style-type: none"> <li>Two brands are available: <i>Havrix</i> and <i>Vaqta</i>.</li> <li><i>Twinrix</i>, a combination hepatitis A and B vaccine that requires three doses, is available for adults at risk for both viruses.</li> <li>Two brands are available: <i>Engerix-B</i> and <i>Recombivax HB</i>.</li> <li><i>Twinrix</i>, a combination hepatitis A and B vaccine that requires three doses, is available for adults at risk for both viruses.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 50% experience pain at the injection site.</li> <li>Less than 10% complain of fever or fatigue.</li> <li>About 25% report soreness at the injection site.</li> <li>1% experience a temperature of roughly 100° F or higher.</li> <li>Severe allergic reactions occur about once in 1.1 million doses.</li> </ul>	<p>The safety of the vaccine in pregnant women has not been studied. Discuss risks with your doctor.</p> <ul style="list-style-type: none"> <li>A booster is not routinely recommended for any group.</li> <li>Larger vaccine doses (2 to 4 times the normal dose) or an increased number of doses are required to protect many hemodialysis patients and may also be necessary in other immunocompromised adults.</li> <li>The safety of the vaccine in pregnant women has not been studied. Discuss risks with your doctor.</li> </ul>
<ul style="list-style-type: none"> <li>21% of women ages 19 to 26 receive at least one dose.</li> <li>Fewer than 1% of men ages 19 to 26 receive one or more doses.</li> </ul>	<ul style="list-style-type: none"> <li><i>Cervarix</i>, approved for females ages 10 to 25 for prevention of cervical cancers and precancers.</li> <li><i>Gardasil</i>, approved for females and males 9 to 26; also protects against genital warts.</li> </ul>	<ul style="list-style-type: none"> <li>Up to 90% experience pain, redness, or swelling at the injection site.</li> <li>Up to 13% report a fever of 100° F.</li> <li>No serious adverse events have been associated with either HPV vaccine, according to the CDC and the FDA.</li> </ul>	<ul style="list-style-type: none"> <li>Ideally, the vaccine is intended for those who haven't been sexually active or exposed to HPV.</li> <li>Women should not receive the vaccine while pregnant.</li> <li>Use of the vaccine does not eliminate the need for continued Pap screening; 30% of cervical cancers are caused by HPV types not included in the vaccine.</li> </ul>
28% of healthy adults; fewer than 20% of high-risk individuals.	<ul style="list-style-type: none"> <li><i>Trivalent</i> inactivated, the standard injection, contains an inactivated (or killed) virus; a few brands exist.</li> <li><i>FluMist</i>, a nasal-spray option, contains a weakened live virus (it can't cause the flu). Healthy, nonpregnant adults younger than 50 can receive it.</li> <li><i>Fluzone</i>, a higher-dose injection available for adults 65 or older.</li> </ul>	<ul style="list-style-type: none"> <li>Less than 1% report soreness, hoarseness, cough, fever, aches, headache, itching, or fatigue.</li> <li>Up to 40% report congestion, sore throat, cough, tiredness, or headache.</li> </ul>	<ul style="list-style-type: none"> <li>Nasal spray shouldn't be administered to people with a severe egg allergy because it contains traces of egg, as does the standard injection.</li> <li>Research suggests that roughly 1 of every 1 million people vaccinated might develop Guillain-Barre syndrome, a neurological disorder. The benefit of the shot far outweighs this risk, especially since the connection hasn't been proved.</li> </ul>
60% of adults age 65 or older; 19% of high-risk adults ages 19 to 64.	<ul style="list-style-type: none"> <li><i>Pneumovax</i>.</li> <li><i>Prevnar 13</i>, newly approved by the FDA's accelerated testing program. It's for adults 50 or older. Early research hints that this option might top <i>Pneumovax</i>.</li> </ul>	<ul style="list-style-type: none"> <li>About 50% report redness or pain at the injection site.</li> <li>Less than 1% develop fever, muscle aches, or more severe reactions.</li> </ul>	<ul style="list-style-type: none"> <li>5-year booster required for those vaccinated before age 65 or who are at extremely high risk.</li> <li>Vaccination should be considered for those in environments with an increased risk of pneumococcal disease or its complications, such as certain Native American populations.</li> </ul>
8% of adults ages 19 to 64.	Two brands are available: <i>Adacel</i> and <i>Boostrix</i> .	<ul style="list-style-type: none"> <li>Up to 4% experience moderate pain or swelling at the injection site.</li> <li>3% report nausea, vomiting, diarrhea, or stomachache.</li> </ul>	<ul style="list-style-type: none"> <li>For some, the Td booster will wear off before the 10-year mark. To ensure adequate protection, people who sustain a dirty wound should receive a booster if more than 5 years have elapsed since their last dose.</li> <li>In very rare instances, the component that helps fight tetanus has been associated with Guillain-Barre syndrome. A cause-and-effect relationship has not been established.</li> </ul>
<ul style="list-style-type: none"> <li>Less than 70% receive the varicella vaccine.</li> <li>14% of adults ages 60 or older receive the shingles vaccine.</li> </ul>	<ul style="list-style-type: none"> <li><i>Varivax</i>, to ward off varicella.</li> <li><i>Zostavax</i>, to further cut the risk of shingles in seniors.</li> </ul>	<ul style="list-style-type: none"> <li>24% of adults report pain or soreness around the injection of the varicella vaccine and 34 % with the shingles vaccine.</li> <li>A small generalized rash can occur with about 5% of varicella injections.</li> </ul>	<ul style="list-style-type: none"> <li>Women should not receive the varicella vaccine while pregnant or if planning to become pregnant.</li> <li>The shingles vaccine cannot be given to those with suppressed immune systems or in people receiving high-dose corticosteroid therapy.</li> <li>Research indicates that the varicella vaccine is very effective in preventing illness or modifying the severity of illness if used within 3 days, and possibly up to 5 days, after exposure.</li> </ul>