Immunizations: The basics

PEBTF
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Learning objectives

Immunizations: The basics

- Definition of terms
- Why immunize?
- Recommended immunizations for children, adolescents, adults
- Steps you can take to protect yourself
Definitions of terms

**Immunity**
Protection from an infectious disease. If you are immune to a disease, you can be exposed to it without becoming infected.

**Vaccine**
A product that stimulates a person’s immune system to produce immunity to a specific disease, protecting the person from that disease.

**Immunization**
A process by which a person becomes protected against a disease through vaccination.

**Vaccination**
The act of introducing a vaccine into the body to produce immunity to a specific disease.
Immunizations = life saver

The best way to protect you or your child from certain infectious diseases

Most are given as shots and sometimes called vaccines

- Sometimes a vaccine does not completely prevent the disease
- Some immunizations are needed only one time, while others require several doses over time to help your body fight the disease
Some reasons to immunize

<table>
<thead>
<tr>
<th>Immunizations protect you or your child from dangerous diseases</th>
<th>They help <strong>reduce the spread of disease</strong> to others</th>
<th>They are often needed for entrance into <strong>school or day care or employment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Getting immunized costs less</strong> than getting treated for the diseases that the vaccines protect you from</td>
<td><strong>The risk of getting a disease is much greater</strong> than the risk of having a serious reaction to the vaccine</td>
<td><strong>Traveling to other countries</strong> may be another reason to get immunized</td>
</tr>
</tbody>
</table>
Adults with **chronic conditions**

**More likely to develop complications from certain vaccine-preventable diseases**

People with asthma, chronic obstructive pulmonary disease (COPD) or other conditions affecting the lungs have a higher risk of complications from the flu.

People with type 1 or type 2 diabetes have a higher risk of Hepatitis B virus infection.

People with heart disease, or those who have had a stroke, have a higher risk of serious medical complications from the flu.
How vaccines prevent diseases

• Vaccines reduce the risk of infection by working with the body’s natural defenses to help it safely develop immunity to disease

• When germs, such as bacteria or viruses, invade the body, they attack and multiply
  – Invasion is called an infection, and the infection is what causes illness
  – Immune system has to fight the infection

• Vaccines help develop immunity by imitating an infection, so that the body can recognize and fight the vaccine-preventable disease in the future
Immunizations for children and adolescents

• Ask your doctor what shots your child should get
• Immunizations start right after birth, and many are given throughout a baby’s first 23 months
• Booster shots (the later doses of any vaccines that need to be repeated over time) occur throughout life
• Fewer immunizations are needed after age 6
• But older children and teens need shots too (such as those for bacterial meningitis and for tetanus, diphtheria, and whooping cough)
  – Some shots are also given during adulthood (such as a tetanus shot)
• It is important to keep a good record, including a list of any reactions to the vaccines
**Immunizations for children and adolescents**

*Figure 1. Recommended immunization schedule for persons aged 0 through 18 years - United States, 2015. (For those who fall behind or start late, see the catch-up schedule [Figure 2]).*

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are shaded.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>15-16 yrs</th>
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</thead>
<tbody>
<tr>
<td>Hepatitis B (HepB)</td>
<td>1st</td>
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<tr>
<td>Diphtheria, tetanus, &amp;acellular pertussis (DTaP)</td>
<td>1st</td>
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<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td>1st</td>
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<td>Pneumococcal conjugate (PCV13)</td>
<td>1st</td>
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<tr>
<td>Inactivated poliovirus (IPV)</td>
<td>1st</td>
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<tr>
<td>Varicella (VAR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st</td>
<td>2nd</td>
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<tr>
<td>Human papillomavirus (HPV2; females only; HPV4; males and females)</td>
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<tr>
<td>Meningococcal (Hib-MenCY ≥ 6 weeks; MenACWY ≥ 9 mos; MenHOM-CRM ≥ 2 mos)</td>
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</tbody>
</table>

This schedule includes recommendations in effect as of January 1, 2015. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at [http://www.cdc.gov/vaccines/hcp/acip-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/index.html). Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (https://vaers.hhs.gov) or by telephone (800-822-7967). Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for vaccination, is available from CDC online (http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.html) or by telephone (800-CDC-INFO [800-232-4636]).

This schedule is approved by the Advisory Committee on Immunization Practices (http://www.cdc.gov/vaccines/acip), the American Academy of Pediatrics (http://www.aap.org), the American Academy of Family Physicians (http://www.aafp.org), and the American College of Obstetricians and Gynecologists (http://www.acog.org).

**NOTE:** The above recommendations must be read along with the footnotes of this schedule.
Childhood immunizations

• Immunizations protect children from dangerous childhood diseases
• Like any medicines, vaccines can cause minor side effects
• It’s extremely rare, but vaccines can cause serious reactions – weigh the risks!
• If your child has a serious reaction, call your doctor or get the child to a doctor right away
• Don’t wait to vaccinate – Children under 5 are especially susceptible to disease because their immune systems have not built up the necessary defenses to fight infection
• Track shots using a health record
• Some children are eligible for free vaccinations
What vaccines are recommended for adults?

The vaccines you need as an adult depend on:

- Age
- Lifestyle
- Overall health
- Pregnancy status
- Who you are in close contact with
- What vaccines you had as a child

Talk to your doctor about which vaccines you need.
### Common adult vaccines

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu</td>
<td>Get this vaccine every year</td>
</tr>
<tr>
<td><strong>Pneumococcal</strong></td>
<td>Older people and those with certain medical conditions are most susceptible to pneumonia</td>
</tr>
<tr>
<td></td>
<td>• People under 65 will need a booster shot when they reach 65</td>
</tr>
<tr>
<td><strong>Hepatitis A</strong></td>
<td>Recommended for those who travel to other countries or live in a U.S. community with high rates of hepatitis A; or who have chronic liver disease, engage in male to male sex, or inject drugs. This vaccine is now routine for children.</td>
</tr>
<tr>
<td><strong>Hepatitis B</strong></td>
<td>More contagious than HIV, hepatitis B is the type of hepatitis most often spread through sexual contact</td>
</tr>
<tr>
<td><strong>Measles, mumps, rubella (MMR)</strong></td>
<td>People born after 1956 and all women of childbearing age who have not had these diseases or been vaccinated against them need to get the shots to be protected</td>
</tr>
</tbody>
</table>
## Common adult vaccines

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chickenpox</strong></td>
<td>Protection is necessary for those born in the U.S. after 1966 and have not had this disease and have not been vaccinated. Adults are at a far greater risk of complications.</td>
</tr>
<tr>
<td><strong>Shingles</strong></td>
<td>Caused by the same virus as chickenpox. People over 60 may receive a single dose of the shingles vaccine.</td>
</tr>
</tbody>
</table>
| **Tetanus, diphtheria and pertussis** | Booster doses of tetanus-diptheria (Td) are needed at 10-year intervals  
• People age 19-64 and those 65 and older who are in contact with infants should get a one-time dose of tetanus-diptheria-pertussis (Tdap) to also protect against whooping cough |
| **Human papillomavirus (HPV)** | Can protect male and female against diseases (including cancers) caused by HPV when given during the recommended age groups |
| **Vaccines for international travelers** | Many Veterans and other Americans travel abroad and are likely exposed to diseases common in those countries |
## Immunizations Schedule for Adults

### 2015 Recommended Immunizations for Adults: By Age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Flu (Influenza)</th>
<th>Td/Tdap (Tetanus, diphtheria, pertussis)</th>
<th>Shingles Zoster</th>
<th>Pneumococcal (PCV13)</th>
<th>Pneumococcal (PPSV23)</th>
<th>Meningococcal</th>
<th>MMR (Measles, mumps, rubella)</th>
<th>HPV (Human papillomavirus) for women</th>
<th>HPV (Human papillomavirus) for men</th>
<th>Chickenpox</th>
<th>Hepatitis A</th>
<th>Hepatitis B</th>
<th>Hib (Haemophilus influenzae type b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 - 21 years</td>
<td>Flu vaccine every year</td>
<td>Td booster every 10 years</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or more doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>22 - 26 years</td>
<td>1 dose of Tdap*</td>
<td>Flu vaccine every year</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>3 doses</td>
<td>3 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>3 doses</td>
<td>2 doses</td>
</tr>
<tr>
<td>27 - 49 years</td>
<td>Flu vaccine every year</td>
<td>Td booster every 10 years</td>
<td>1 dose</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or more doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td></td>
</tr>
<tr>
<td>50 - 59 years</td>
<td>Flu vaccine every year</td>
<td>Td booster every 10 years</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>3 doses</td>
<td>3 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>60 - 64 years</td>
<td>Flu vaccine every year</td>
<td>Td booster every 10 years</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>3 doses</td>
<td>3 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>65+ years</td>
<td>Flu vaccine every year</td>
<td>Td booster every 10 years</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>3 doses</td>
<td>3 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
</tbody>
</table>

### More Information:

- There are several flu vaccines available. Talk to your healthcare professional about which flu vaccine is right for you.
- If you are pregnant, you should get a Tdap vaccine during the 3rd trimester of every pregnancy to help protect your babies from pertussis (whooping cough).
- You should get zoster vaccine even if you’ve had shingles before.
- There are two different types of pneumococcal vaccine: PCV13 (conjugate) and PPSV23 (polysaccharide). Talk with your healthcare professional to find out if one or both pneumococcal vaccines are recommended for you.

### Recommended for you if you did not get it when you were a child:

- Your healthcare professional will let you know how many doses you need.
- If you were born in 1987 or after, and don’t have a record of being vaccinated or having had measles, mumps and rubella, talk to your healthcare professional about how many doses you may need.

For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit [www.cdc.gov/vaccines](http://www.cdc.gov/vaccines).
FAQs
Why may some adults need vaccines?

Some adults incorrectly assume that the vaccines they received as children will protect them for the rest of their lives. Generally this is true, except that:

• Some adults were never vaccinated as children

• Newer vaccines were not available when some adults were children

• Immunity can fade over time

• As we age, we become more susceptible to serious diseases caused by common infections (such as flu and pneumococcus)
What are the side effects of vaccines?

Most side effects from vaccines are minor, if they occur at all. Ask your doctor or pharmacist about the reactions that could occur.

- Redness, mild swelling, or soreness where the shot was given
- A slight fever
- Drowsiness, crankiness, and poor appetite
- A mild rash 7 to 14 days after chickenpox or measles-mumps-rubella shots
- Temporary joint pain after a measles-mumps-rubella shot
- Serious reactions, such as trouble breathing or a high fever are rare
  - If you or your child has an unusual reaction, call your doctor
Are vaccines **tested and monitored** for safety?

Vaccines are held to the highest standard of safety

- FDA requires testing to ensure safety, which takes 10 years or longer
- CDC and FDA monitor adverse events

Once in use, vaccines are continually monitored for safety and effectiveness
What do I need to know about international travel?

**Step 1**
Make sure you are up-to-date with all recommended vaccinations

**Step 2**
Visit the CDC Travel Health site for more information about recommendations and requirements for the locations you will be visiting during your travel

**Step 3**
Make an appointment to get recommended vaccinations at least 4 to 6 weeks before your trip
Take steps to protect yourself
Step 1

Learn about vaccines recommended for adults based on age and other factors

• A complete list of the recommended adult vaccines can be found on the Adult Immunity Schedule

• http://www.cdc.gov/vaccines/schedules/index.html
Talk with a healthcare professional about which vaccines are right for you

- Your doctor or other healthcare professional can advise you on which vaccines you need and why – as well as which vaccines may not be right for you based on certain factors, such as allergies to vaccine ingredients or health conditions.
- You can bring your customized printout of recommended vaccines from the Adult Vaccine Quiz (on CDC) to review at your next appointment with your provider.
Get vaccinated

• Ask your doctor about getting vaccines
• Most private health insurance plans cover the cost of recommended adult vaccines
  – Check with your insurance provider for details of coverage including where you can get vaccinated
Keep track of your vaccinations and make sure you stay up-to-date

- Ask your doctor, pharmacist, or other immunization provider for a copy of your vaccination record
Encourage your friends and loved ones to get vaccinated

- All adults need vaccinations to help prevent the spread of serious diseases.
- After getting your vaccinations, talk to your friends and loved ones about getting protected too!
Summary

Immunizations: The basics

• Immunizations are important for children and adults

• Talk to your doctor to learn more about which immunizations you may need

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