### ADULT VACCINE-PREVENTABLE DISEASES

<table>
<thead>
<tr>
<th>Disease</th>
<th>Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickenpox (Varicella)</td>
<td></td>
</tr>
<tr>
<td>COVID-19</td>
<td></td>
</tr>
<tr>
<td>Diphtheria</td>
<td></td>
</tr>
<tr>
<td>Haemophilus Influenzae Type B (Hib)</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td></td>
</tr>
<tr>
<td>Human Papillomavirus (HPV)</td>
<td></td>
</tr>
<tr>
<td>Influenza (Flu)</td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td></td>
</tr>
<tr>
<td>Meningococcal Disease</td>
<td></td>
</tr>
<tr>
<td>Mumps</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal Disease</td>
<td></td>
</tr>
<tr>
<td>Rubella</td>
<td></td>
</tr>
<tr>
<td>Shingles (Herpes Zoster)</td>
<td></td>
</tr>
<tr>
<td>Tetanus</td>
<td></td>
</tr>
<tr>
<td>Whooping Cough (Pertussis)</td>
<td></td>
</tr>
</tbody>
</table>

[Source: VaccinateYourFamily.org]
**CHICKENPOX (VARICELLA)**

Chickenpox, also known as varicella, is a viral infection that causes an itchy, blister-like rash. Chickenpox is very contagious to those who haven’t had the disease or been vaccinated against it. Unlike many other diseases prevented with vaccines, chickenpox can be worse in adults than in children. While most people recover from chickenpox just fine, some can get seriously sick or die due to infected blisters, pneumonia, bleeding disorders, or swelling of the brain. For pregnant persons who contract chickenpox during the first 20 weeks of pregnancy, their babies are at slight risk of a rare group of serious birth defects known as congenital varicella syndrome. Once an individual is infected with the varicella virus, it stays in the body for life and can reappear as shingles later on. Before routine chickenpox vaccination, almost all people had been infected by the time they reached adulthood, sometimes with serious complications. Today, the number of cases and hospitalizations is down dramatically.

**SYMPTOMS**

Chickenpox infection usually lasts about five to ten days. The rash is the telltale indication of chickenpox. Other signs and symptoms, which may appear 1-2 days before the rash, include:

- Fever
- Loss of appetite
- Headache
- Tiredness and a general feeling of being unwell

**PREVENTION**

The varicella vaccine is the best way to prevent chickenpox. Most kids today get two doses of the vaccine by age 6. But some adults might also need to be vaccinated, especially if they haven’t been vaccinated before or have never had chickenpox. Before becoming pregnant, if you have never been vaccinated against chickenpox and never became infected with the virus naturally you should speak to your doctor about getting vaccinated. For all adults, your doctor can help you decide whether you’re in a group that should be vaccinated against varicella.

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**ADULTS ARE 21 TIMES MORE LIKELY THAN YOUNG CHILDREN TO DIE FROM CHICKENPOX.**
COVID-19

COVID-19 is a disease caused by SARS-CoV-2, a new type of coronavirus that started spreading in people in 2019. During the first year of the COVID pandemic, the disease killed more than two million people and left more than 1.5 million children without one or more of their parents or grandparents worldwide. The virus is very contagious and it usually spreads by little drops of spit or mucous that flies out of the mouth or nose when you cough or talk. While COVID-19 looks a lot like the flu, it can lead to a wider range of symptoms and can leave people feeling sick for weeks or sometimes months.

SYMPTOMS

COVID-19 can affect people in a lot of different ways. Some people can get really sick, while others have mild or no symptoms. In fact, many people don’t even know they have the virus because they don’t have any symptoms, but they can still pass the virus on to other people who might get seriously sick or die because of it.

When people do feel sick with COVID-19, they can have a lot of different symptoms, including:

- Fever and chills
- Cough
- Difficulty breathing
- Feeling really tired
- Muscle or body aches
- Headache
- Loss of smell or taste
- Sore throat
- Stuffy or runny nose
- Feeling sick to your stomach or vomiting
- Diarrhea

Not everyone will have all of these symptoms, and they can show up anywhere from 2-14 days after you get the virus. Some people are more likely to get seriously sick or die from COVID-19, including those who are over 65 years old and anyone who lives with medical conditions like cancer, diabetes, obesity, lung or heart conditions, or sickle cell disease.

PREVENTION

In addition to following prevention measures like frequent hand washing recommended by public health experts, the best way to protect yourself from COVID-19 is by getting vaccinated. The CDC recommends everyone over 6 months old — including pregnant and breastfeeding people — get a COVID-19 vaccine.

Some people need additional doses of COVID-19 vaccine because of their age, medical conditions or because of where they live or work. Visit vaccinateyourfamily.org/covid19faq or ask your healthcare provider to help you determine how many doses of COVID-19 vaccine you need and when to get them.
DIPHTHERIA

Diphtheria is a serious bacterial disease that causes heart and nerve problems. The disease can be spread from an infected person (or someone who carries the bacteria but has no symptoms) by coughing and sneezing. Diphtheria can also be spread by contaminated objects or foods. Once infected, dangerous substances called toxins, caused by the bacteria, can spread through the bloodstream to other organs and cause significant damage such as injury to the heart, kidneys and other organs. Nerve damage and paralysis can also result.

**SYMPTOMS**

Signs and symptoms of diphtheria may include:

- A sore throat and painful swallowing
- Swollen glands (enlarged lymph nodes) in the neck
- A thick, gray coating in the throat and nose
- Difficulty breathing or rapid breathing
- Open sores or ulcers on the skin (if the bacteria infects the skin)
- Weakness

Signs and symptoms usually begin two to five days after a person becomes infected.

**PREVENTION**

When the diphtheria vaccine is combined with the tetanus vaccine it is called the Td vaccine, and when protection against pertussis is also added, it is called Tdap vaccine.

Adults should get at least one dose of the Tdap vaccine — if they didn’t get it when they were younger— followed by a Td vaccine “booster” every 10 years.

If you aren’t sure whether you’re up to date with your tetanus booster (which should also protect you from diphtheria and possibly pertussis) talk to your healthcare provider about whether you’re due for a dose of Td or Tdap vaccine.
Many of those who survive Hib meningitis have hearing loss or neurological issues.

**Haemophilus influenzae type B (Hib)**

*Haemophilus influenzae* type b (Hib) is a very serious illness caused by bacteria. It mostly affects children under 5 years old, but some adults can also get seriously sick with Hib. The most common types of serious Hib disease are meningitis (infection of the covering of the brain and spinal cord), pneumonia (lung infection), bacteremia (bloodstream infection) and epiglottitis (infection and swelling of the throat). Hib disease can cause lifelong disability and be deadly. Hib spreads when an infected person coughs or sneezes. Usually, the Hib bacteria stay in a person’s nose and throat and do not cause illness. But if the bacteria spread into the lungs or blood, the person will get very sick.

**Symptoms**

Hib causes different symptoms depending on which part of the body is affected. Symptoms can include:

- Fever, headache, confusion, stiff neck, and pain when looking into bright lights (meningitis)
- Poor eating and drinking, and vomiting
- Fever and chills, headache, cough, shortness of breath, and chest pain (pneumonia)
- Fever and chills, excessive tiredness, and confusion (bacteremia)
- Trouble breathing (epiglottitis)

**Prevention**

The Hib vaccine is the best prevention against this dangerous disease. Most kids get vaccinated against Hib when they’re small, but some adults might also need the vaccine. If you have sickle cell disease, asplenia (when your spleen has been removed or isn’t working properly), or if you’ve had a hematopoietic stem cell transplant, you should talk to your doctor about whether you should be vaccinated against Hib.
HEPATITIS A

Hepatitis A is a disease of the liver caused by the hepatitis A virus. It can range in severity from a mild illness lasting a few weeks to a severe illness lasting several months. Hepatitis A is usually spread by contact with people who are infected or from contact with objects, food, water or drinks contaminated by the stool (poop) of an infected person, which can easily happen if someone doesn’t wash his or her hands properly after using the toilet.

SYMPTOMS

Not all people with hepatitis A have symptoms. However, if symptoms develop, they usually appear two to six weeks after being infected and may include:

- Extreme tiredness
- Nausea and vomiting
- Stomach pain or discomfort, especially in the area of the liver on the right side beneath the lower ribs
- Loss of appetite
- Low-grade fever (under 100.4)
- Dark urine
- Muscle pain
- Yellowing of the skin and eyes (jaundice)

PREVENTION

The hepatitis A vaccine can prevent infection with the virus. Most children get the hepatitis A vaccine during childhood, but many adults have never received it. The CDC recommends that adults be vaccinated against hepatitis A especially if they are at higher risk, including people traveling to a country with widespread hepatitis A, experiencing homelessness, or who might work or live with those who could have an infection. If you don’t know if you’re at risk for hepatitis A, talk to your doctor and take this quiz from the CDC.
HEPATITIS B

Hepatitis B is a serious liver infection caused by the hepatitis B virus. For some, hepatitis B infection becomes chronic, leading to liver failure, liver cancer or cirrhosis — a condition that causes permanent scarring of the liver. Hepatitis B is perhaps best known as a sexually-transmitted infection, but sex isn’t the only way the virus spreads. An individual who is unaware that they have hepatitis B can easily pass the disease on to an unvaccinated child when giving birth (spread from infected mother to baby), through contact with their blood from cuts or sores, or through actions as simple as the sharing of a toothbrush.

SYMPTOMS

Not everyone with hepatitis B will have symptoms. But when they do, it can often take around three months for the symptoms to show up. These symptoms can be anything from mild to severe and include:

- Stomach pain
- Dark urine
- Fever
- Joint pain
- Loss of appetite
- Nausea and vomiting
- Weakness and extreme tiredness
- Yellowing of your skin and the whites of your eyes (jaundice)

PREVENTION

Getting vaccinated is the best way to protect against hepatitis B. Most kids today are fully up to date on hepatitis B vaccinations, but many adults have never been vaccinated against the virus. Hepatitis B vaccination is recommended for adults under 60. Talk to your doctor or pharmacist about whether you’re up to date.
Human papillomavirus (HPV) is a virus that spreads through sexual contact, including through sexual acts using your hands or mouth. HPV is so common that 8 in 10 adults in the U.S. will be infected with the virus at some point in their lives. HPV can be passed even when an infected person has no signs or symptoms. In most cases, HPV goes away on its own and people infected with the virus never knew they had it. However, when HPV does not go away, it can cause health problems such as genital warts and cancers which may take years to develop.

**Symptoms**
HPV can have many serious consequences in both men and women including:

- Cervical cancer
- Vulvar cancer
- Vaginal cancer
- Anal cancer
- Penile cancer
- Oropharyngeal cancer (cancer in the back of throat, including the base of the tongue and tonsils)
- Genital warts
- Recurrent respiratory papillomatosis (RRP), a rare condition in which warts grow in the throat

**Prevention**
The HPV vaccine is a cancer-prevention vaccine that is recommended for both boys and girls at ages 11-12, before sexual activity. All adults are recommended to receive HPV vaccine through age 26. Adults can also get the vaccine up to age 45 — even if they’ve had HPV before. As an adult you should consult your doctor to help decide whether you should get vaccinated against HPV.
Flu is a serious and contagious disease caused by flu viruses. People with flu can spread it to others up to about 6 feet away. Flu spreads when infected people cough, sneeze, or talk; or when a person touches a surface or object that has the flu virus on it and then touches their own mouth or nose. Flu is different than the common cold and it is also more dangerous.

Serious complications of flu can result in hospitalization or death, even in healthy people, but some groups are more likely than others to get seriously sick. People at highest risk of getting hospitalized or dying from flu include adults over 65 and those who are pregnant or have certain medical conditions.

**SYMPTOMS**

Symptoms of the flu usually come on quickly and may include:

- Fever over 100°F (38°C)
- Sore throat
- Cough
- Muscle and body aches
- Chills and sweats
- Headache
- Extreme tiredness and weakness
- Stuff or runny nose
- Vomiting and diarrhea (more common in children than adults)

*Not everyone who has flu will have a fever.

**PREVENTION**

The flu vaccine is recommended for everyone 6 months and older each season, including pregnant people. The best way to protect yourself and your family from the flu and its serious complications is to get the flu vaccine every year.

Vaccination can help reduce your risk of getting very sick, being hospitalized or even dying from the flu. It can also help you protect those around you who can’t be vaccinated because they are too young (under 6 months old) and those who may not have a strong immune response due to older age or certain health conditions. It usually takes about two weeks after getting vaccinated for protection against flu to begin.

Learn more about the importance of flu vaccination for the entire family at Vaccinateyourfamily.org.
Measles is a highly contagious respiratory disease caused by a virus. The disease spreads quickly and can be serious or even fatal for anyone, but especially young children, those with weakened immune systems, and pregnant women. Even in previously healthy people, measles can be a serious illness requiring hospitalization. According to the CDC, about 1 in 5 unvaccinated individuals who get measles are hospitalized, and measles during pregnancy can lead to babies being born too early or too small.

**SYMPTOMS**

Measles signs and symptoms appear seven to fourteen days after exposure to the virus. Signs and symptoms of measles typically include:

- Cough
- Runny nose
- Sore throat
- Red eyes
- Rash of tiny, red spots that start at the head and spread to the rest of the body

**PREVENTION**

Because measles is so contagious, it is important to get vaccinated. Most kids get two doses of the measles, mumps and rubella (MMR) vaccine. But some adults also need 1 or 2 doses of the vaccine, especially if they were born after 1956 and weren't vaccinated as kids or if you are traveling internationally. Your doctor or a travel vaccine clinic can help you decide whether you might need a dose or two of the MMR vaccine.
MENINGOCOCCAL DISEASE

Meningococcal disease is a serious bacterial illness that can cause blood infections and meningitis, an infection of the fluid around the brain and spinal cord.

Hundreds of people get meningococcal disease each year in the U.S., and 10-15 percent of these people die — sometimes within 24 hours. Of those who survive, as many as 1 in 5 will have permanent disabilities such as brain damage, hearing loss, loss of kidney function or limb amputations.

SYMPTOMS

It’s easy to mistake the early signs and symptoms of meningococcal disease for the flu. Signs and symptoms may develop over several hours or over one or two days, including:

- Sudden high fever
- Severe headache
- Stiff neck
- Vomiting or nausea with headache
- Confusion or difficulty concentrating
- Seizures
- Sleepiness or difficulty waking up
- Sensitivity to light
- Lack of interest in drinking and eating
- Skin rash

PREVENTION

Meningococcal vaccines are the best way to prevent meningococcal disease. Two different vaccines can help protect you against five different types of the bacteria. It is important to ask your doctor about getting vaccinated — especially if you’re heading off to college, or the military, have high risk health conditions, or plan to travel somewhere where meningococcal disease is common.
MUMPS

Mumps is a contagious disease caused by a virus. It is spread from person to person through coughing and sneezing and through close contact (even regular conversation) with infected people. The primary — and best known — sign of mumps is swollen salivary glands that cause the cheeks to puff out. While usually a mild disease, mumps can also cause complications such as meningitis (swelling around the brain and spinal cord) and deafness. In addition, about one out of every four teenage or adult men who get mumps will develop a painful swelling of the testicles. Outbreaks across the country continue to put people at risk.

SYMPTOMS

Some people with the mumps virus have either no signs or symptoms or very mild ones. When signs and symptoms do develop, they usually appear about 2-3 weeks after exposure to the virus and may include:

- Puffy cheeks and tender, swollen jaw caused by swollen salivary glands
- Fever
- Headache
- Weakness and extreme tiredness
- Loss of appetite
- Muscle aches

PREVENTION

The best way to prevent mumps is with the combined measles, mumps, and rubella (MMR) vaccine. Most kids today in the U.S. get two recommended doses of the vaccine, but some adults might need to get vaccinated too, especially if they’re unvaccinated or aren’t sure they’re immune. Your doctor can help you find out if you’re up to date on MMR vaccination or if you’re in a group that should get vaccinated, especially during local outbreaks.
PNEUMOCOCCAL DISEASE

Pneumococcal disease is caused by bacteria spread by coughing and sneezing. When the bacteria gets inside the body, it can cause a wide range of problems, including pneumonia, ear infections, and meningitis (swelling around the spine and brain). Serious pneumococcal infections are most common in young kids and the elderly.

**SYMPTOMS**

Symptoms depend on the type of pneumococcal disease, but generally include fever and/or chills. Additional symptoms may include:

- Cough, shortness of breath and chest pain (pneumonia)
- Stiff neck, headache, confusion and pain when looking at lights (meningitis)
- Poor eating and drinking
- Vomiting (babies with meningitis)
- Low alertness (bacteremia)
- Ear pain, red/swollen ear drum and sleepiness (middle ear infection)

**PREVENTION**

Pneumococcal vaccines are the best way to prevent pneumococcal disease. Adults who are 65 years old and older should get at least one dose of a pneumococcal vaccine (sometimes called the “pneumonia shot.”) Younger adults should also be vaccinated if they smoke or have certain medical conditions like diabetes, sickle cell disease, or a weakened immune system. Your doctor can help you decide whether you’re in a group that should be vaccinated against pneumococcal disease.
Rubella, also called German measles, is a contagious viral infection best known by its distinctive red rash. While the disease is usually mild in children and adults, rubella can be especially dangerous during pregnancy because it can cause miscarriage, stillbirth, premature birth, and/or birth defects such as heart problems, hearing and vision loss, intellectual disabilities (also known as mental retardation), and liver or spleen damage. This group of health problems is called congenital rubella syndrome (CRS). A person can spread the virus to others by sneezing or coughing.

**SYMPTOMS**

The symptoms of rubella are often so mild they’re difficult to notice, especially in children. If symptoms do occur, they generally appear 2-3 weeks after coming into contact with someone who had the virus and last two to three days. Symptoms may include:

- Mild fever of 102°F (38.9°C) or lower
- Headache
- Stuffy or runny nose
- Inflamed, red eyes
- Enlarged, tender lymph nodes
- A fine, pink rash that begins on the face and quickly spreads to the chest and midsection and then the arms and legs, before disappearing in the same sequence
- Aching joints

**PREVENTION**

The most effective way to prevent rubella is with the measles, mumps, and rubella (MMR) vaccine. Most children get the MMR during early childhood, but unvaccinated adults born after 1956 should get vaccinated too. If you aren’t sure if you’ve been vaccinated or have questions about whether you should get the MMR, talk to your doctor about what might be best for you.
Shingles is caused by the varicella zoster virus, which is the same virus that causes chickenpox. You can only get shingles if you had chickenpox. After you recover from chickenpox, the virus stays in your body and goes dormant in the roots of the nerves. In some people, the virus stays that way, but for many others, the virus “wakes up” many years later and causes shingles.

Shingles cannot be passed from one person to another. However, the varicella zoster virus can spread from a person infected with shingles to cause chickenpox in someone who never had chickenpox or the chickenpox vaccine. The virus is spread through direct contact with fluid from the rash blisters caused by shingles. A person is not infectious before the blisters appear or once the blisters have crusted over. The risk of someone with shingles spreading the virus to others is low if the rash is covered.

**SYMPTOMS**

Shingles causes a painful, blistering rash, typically in a stripe alongside one side of the body or face which can cause acute pain (aching, burning, stabbing, or shock-like). Shingles on the face can affect the eye and cause vision loss. The blisters scab over after about 7-10 days and usually go away within 2-4 weeks. Besides the rash, shingles can cause other symptoms, including:

- Tingling or itching a few days before the rash shows up
- Fever
- Chills
- Headache
- Feeling sick to your stomach
- Tiredness

The most common complication of shingles is post-herpetic neuralgia (PHN). People with PHN have severe pain in the areas where they had the shingles rash after (at least 90 days) the rash clears up. The pain from PHN usually goes away in a few weeks or months; however, for some people, the pain from PHN can last for years and may interfere with their everyday life. As people get older, they are more likely to develop PHN, and the pain is more likely to be severe. PHN rarely occurs in people under 40 years of age.

In addition to PHN, shingles may lead to serious complications involving the eye. Very rarely, shingles can lead to pneumonia, hearing problems, blindness, brain inflammation or death.

**PREVENTION**

Shingles can be prevented with two doses of the shingles vaccine. In the U.S., the shingles vaccine is recommended for everyone over 50 years — even if they’ve had shingles before or had been vaccinated with an older shingles vaccine.
TETANUS

Commonly known as lockjaw, tetanus is a severe disease that causes stiffness and spasms of the muscles. Unlike other vaccine-preventable diseases, which are transferred from person to person, tetanus bacteria are found in places such as soil/dirt, dust, and manure, so it can never be eradicated (gone from the planet). The bacteria enter the body through any break in the skin, such as a cut or a puncture wound. A person can also be infected after a burn or animal bite. There’s no cure for tetanus. Treatment focuses on managing complications until the effects of the tetanus toxin resolve. Tetanus is deadlier for those who haven’t been vaccinated against it.

SYMPTOMS

Common signs and symptoms of tetanus, in order of appearance, are:

- Spasms and stiffness in jaw muscles
- Stiffness of neck muscles
- Difficulty swallowing
- Stiffness of abdominal muscles
- Painful body spasms lasting for several minutes, typically triggered by minor occurrences, such as a draft, loud noise, physical touch or light

PREVENTION

Vaccination is the most effective way to prevent tetanus. The tetanus vaccine, Tdap, also protects adults from diphtheria and pertussis (whooping cough). The kids’ version of the vaccine is called DTaP. When tetanus is just combined with diphtheria, the vaccine is called Td. For the best protection against tetanus, adults should get “booster” doses of Tdap or Td every 10 years.
WHOOPING COUGH (PERTUSSIS)

Whooping Cough (also known as pertussis) is a highly contagious respiratory tract infection that can cause intense coughing fits that leave people exhausted and gasping for air. People of all ages can be affected by whooping cough, including adults, but young infants are particularly vulnerable to getting seriously sick or dying from pertussis. Whooping cough is still common in the United States, and outbreaks still occur putting children at great risk. According to the CDC, there are about 15,000 to 40,000 cases of whooping cough and up to 20 deaths each year in the U.S.

SYMPTOMS

Whooping cough can often be milder in adults than it is in kids. Symptoms take 1-3 weeks to appear and can feel a lot like the common cold, at least in the beginning. After a week or two, signs and symptoms worsen. Thick mucus accumulates inside the airways, causing uncontrollable coughing. Severe and prolonged coughing attacks may cause:

• Vomiting
• A red or blue face
• Extreme tiredness
• Broken ribs
• “Whoop” sounds as the lungs attempt to refill with air

PREVENTION

For the best protection against whooping cough, adults should be vaccinated with Tdap, the adult version of the diphtheria, tetanus and pertussis vaccine every ten years. Pregnant women are recommended to receive a Tdap vaccine during EVERY pregnancy during the third trimester, so that the immunity from the vaccine can be passed along, protecting the baby from pertussis until they’re old enough to be fully vaccinated themselves. Family members and caregivers of infants and young children should also get a Tdap vaccination prior to the baby’s arrival to create a cocoon of protection against this serious disease.
Vaccinate Your Family in a non profit organization founded in 1991. Our mission is to protect people of all ages from vaccine-preventable diseases.

RECOMMENDED WEBSITES

Vaccinate Your Family
www.vaccinateyourfamily.org

VYF’s Paying for Vaccines Online Tool
www.vaccinateyourfamily.org/paying-for-vax

CDC and the Recommended Immunization Schedule
www.cdc.gov/vaccines/parents

American College of Obstetricians and Gynecologists
www.acog.org/womens-health

Vaccine Education Center at The Children’s Hospital of Philadelphia
www.chop.edu/centers-programs/vaccine-education-center

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