

# Types of Vaccines

## POLIO VACCINE

Polio is a disease caused by a virus. It enters the body through the mouth. Usually it does not cause serious illness. But sometimes it causes paralysis (can't move arm or leg), and it can cause meningitis.

No wild polio has been reported in the India since last 2 years. But the disease is still common in some parts of the world. It would only take one case of polio from another country to bring the disease back if we were not protected by vaccine. If the effort to eliminate the disease from the world is successful, some day we won't need polio vaccine. Until then, we need them.

We are using OPV since long but as we are on a transition phase to polio eradicated country we are switching over to IPV (polio injection ) gradually. IPV is a shot, given in the leg , depending on age. Polio vaccine may be given at the same time as other vaccines. Some "combination" vaccines contain IPV.

## DTP VACCINE

Diphtheria, tetanus, and pertussis are serious diseases caused by bacteria. Diphtheria and pertussis are spread from person to person. Tetanus enters the body through cuts or wounds.

- **DIPHTHERIA** causes a thick covering in the back of the throat. It can lead to breathing problems, paralysis, heart failure, and even death.
- **TETANUS** (Lockjaw) causes painful tightening of the muscles, usually all over the body. It can lead to "locking" of the jaw so the victim cannot open his mouth or swallow. Tetanus leads to death in up to 2 out of 10 cases.
- **PERTUSSIS** (Whooping Cough) causes coughing spells so bad that it is hard for infants to eat, drink, or breathe. These spells can last for weeks. It can lead to pneumonia, seizures (jerking and staring spells), brain damage, and death.

DTP vaccine can help prevent these diseases. Most children who are vaccinated with DTP will be protected throughout childhood.

After vaccination children may get fever, redness & swelling at injection site which subsides in few days. Child may need some ice pack application at injection site if it is severe.

## HIB VACCINE

It is a serious disease caused by bacteria. It usually strikes children under 5 years old.

Before Hib vaccine, Hib disease was the leading cause of bacterial infection of the lining of the brain and spinal cord among children under 5 years old .Hib disease can also cause deafness of ear, Pneumonia, Other sever infection of body organs. The germs spread from person to person. If the germs stay in the child's nose and throat, the child probably will not get sick. But sometimes the germs spread into the lungs or the bloodstream, and then Hib can cause serious problem

Hib vaccine can prevent Hib disease. Since use of Hib vaccine began, the number of cases of invasive Hib disease has decreased by more than 90%.

If any local effect occur like redness, swelling & fever , they usually begin soon after the shot and last 2 or 3 days.

## **HEPATITIS B VACCINE**

Hepatitis B is a serious infection that affects the liver. It is caused by the hepatitis B virus.

Acute (short-term) illness.

This can lead to:

- Loss of appetite
- Diarrhea and vomiting
- Tiredness
- Jaundice (yellow skin or eyes)
- Pain in muscles, joints, and stomach

Chronic (long-term) infection.

Some people go on to develop chronic hepatitis B infection. Most of them do not have symptoms, but the infection is still very serious, and can lead to:

- Liver damage (cirrhosis)
- Liver cancer
- Death

Chronic infection is more common among infants and children than among adults.

Hepatitis B vaccine can prevent hepatitis B, and the serious consequences of hepatitis B infection, including liver cancer and cirrhosis.

Hepatitis B vaccine may be given by itself or in the same shot with combination vaccines

## **MMR VACCINE**

Measles, Mumps, and Rubella are serious diseases. Before vaccines they were very common, especially among children.

Measles

- Measles virus causes rash, cough, runny nose, eye irritation, and fever.
- It can lead to ear infection, pneumonia, seizures (jerking and staring), brain damage, and death.

Mumps

- Mumps virus causes fever, headache, muscle pain, loss of appetite, and swollen glands.
- It can lead to deafness, meningitis (infection of the brain and spinal cord covering), painful swelling of the testicles or ovaries, and rarely sterility.

### Rubella (German Measles)

- Rubella virus causes rash, arthritis (mostly in women), and mild fever.
- If a woman gets rubella while she is pregnant, she could have a miscarriage or her baby could be born with serious birth defects.

These diseases spread from person to person through the air. You can easily catch them by being around someone who is already infected.

Tell your doctor if the person getting the vaccine:

- Has HIV/AIDS, or another disease that affects the immune system
- Is being treated with drugs that affect the immune system, such as steroids
- Has any kind of cancer
- Is being treated for cancer with radiation or drugs
- Has ever had a low platelet count (a blood disorder)
- Has gotten another vaccine within the past 4 weeks
- Has recently had a transfusion or received other blood product

Some babies usually get following problem within 6-14 days after the shot. They occur less often after the second dose.

- Fever (up to 1 person out of 6)
- Mild rash (about 1 person out of 20)
- Swelling of glands in the cheeks or neck (about 1 person out of 75)

### ROTAVIRUS VACCINE

Rotavirus is a virus that causes diarrhea, mostly in babies and young children. The diarrhea can be severe, and lead to dehydration. Vomiting and fever .

Before rotavirus vaccine, rotavirus disease was a common and serious health problem for children all over world. Almost all children had at least one rotavirus infection before their 5th birthday in past.

Since the introduction of the rotavirus vaccine, hospitalizations and emergency visits for rotavirus have dropped dramatically. Two brands of rotavirus vaccine are available. Your baby will get either 2 or 3 doses, depending on which vaccine is used.

Almost all babies who get rotavirus vaccine will be protected from severe rotavirus diarrhea. The vaccine will not prevent diarrhea or vomiting caused by other germs.

- Babies might become irritable, or have mild, temporary diarrhea or vomiting after getting a dose of rotavirus vaccine.

### CHICKENPOX VACCINE

Chickenpox (also called varicella) is a common childhood disease. It is usually mild, but it can be serious, especially in young infants and adults.

- It causes a rash, itching, fever, and tiredness.
- It can lead to severe skin infection, scars, pneumonia, brain damage, or death.
- The chickenpox virus can be spread from person to person through the air, or by contact with fluid from chickenpox blisters.
- A person who has had chickenpox can get a painful rash called shingles years later.

Chickenpox vaccine can prevent chickenpox. A “combination” vaccine called MMRV, which contains both chickenpox and MMR vaccines, may be given instead of the two individual vaccines to people 12 years of age and younger.

Most people who get chickenpox vaccine will not get chickenpox. But if someone who has been vaccinated does get chickenpox, it is usually very mild. They will have fewer blisters, are less likely to have a fever, and will recover faster.

## **HEPATITIS –A VACCINE**

Hepatitis A is a serious liver disease caused by the hepatitis A virus (HAV). HAV is found in the stool of people with hepatitis A.

It is usually spread by close personal contact and sometimes by eating food or drinking water containing HAV. A person who has hepatitis A can easily pass the disease to others within the same household.

Hepatitis A can cause:

- “flu-like” illness
- jaundice (yellow skin or eyes, dark urine)
- severe stomach pains and diarrhea (children)

People with hepatitis A often have to be hospitalized (up to about 1 person in 5).

Adults with hepatitis A are often too ill to work for up to a month.

Sometimes, people die as a result of hepatitis A (about 3-6 deaths per 1,000 cases).

Hepatitis A vaccine can prevent hepatitis A.

## **FLU VACCINE**

Flu is caused by influenza viruses, and is spread mainly by coughing, sneezing, and close contact.

Anyone can get flu, but the risk of getting flu is highest among children. Symptoms come on suddenly and may last several days. They can include:

- Fever/chills
- Sore throat
- Muscle aches
- Fatigue
- Cough
- Headache

- Runny or stuffy nose

Flu can make some people much sicker than others. These people include young children, people 65yr of age and older, pregnant women, and people with certain health conditions – such as heart, lung or kidney disease, nervous system disorders, or a weakened immune system. Flu vaccination is especially important for these people, and anyone in close contact with them.

Flu can also lead to pneumonia, and make existing medical conditions worse. It can cause diarrhea and seizures in children.

**Flu vaccine** is the best protection against flu and its complications. Flu vaccine also helps prevent spreading flu from person to person.

### **CONJUGATE PNEUMOCOCCAL VACCINE**

Pneumococcal disease is caused by bacteria that can spread from person to person through close contact. It can cause ear infections, and it can also lead to more serious infections of the:

- Lungs (pneumonia),
- Blood (bacteremia), and
- Covering of the brain and spinal cord (meningitis).

Pneumococcal meningitis can cause deafness and brain damage, and it kills about 1 child in 10 who get it.

Anyone can get pneumococcal disease, but children under 2 years of age and adults 65 years and older, people with certain medical conditions, and cigarette smokers are at the highest risk.

Pneumococcal conjugate vaccine (called PCV13) protects against 13 types of pneumococcal bacteria.

PCV13 is routinely given to children at 2, 4, 6, and 12–15 months of age. It is also recommended for children and adults 2 to 64 years of age with certain health conditions, and for all adults 65 years of age and older. Your doctor can give you details.

### **MENINGOCOCCAL ACWY VACCINE**

Meningococcal disease is a serious illness caused by a type of bacteria called *Neisseria meningitidis*. It can lead to meningitis (infection of the lining of the brain and spinal cord) and infections of the blood. Meningococcal disease often occurs without warning – even among people who are otherwise healthy.

Meningococcal disease can spread from person to person through close contact (coughing or kissing) or lengthy contact, especially among people living in the same household.

There are at least 12 types of *N. meningitidis*, called "serogroups." Serogroups A, B, C, W, and Y cause most meningococcal disease.

Anyone can get meningococcal disease but certain people are at increased risk, including:

- Infants younger than one year old

- Adolescents and young adults 16 through 23 years old
- People with certain medical conditions that affect the immune system
- Microbiologists who routinely work with isolates of *N. meningitidis*
- People at risk because of an outbreak in their community

Even when it is treated, meningococcal disease kills 10 to 15 infected people out of 100. And of those who survive, about 10 to 20 out of every 100 will suffer disabilities such as hearing loss, brain damage, kidney damage, amputations, nervous system problems, or severe scars from skin grafts.

**Meningococcal ACWY vaccines** can help prevent meningococcal disease caused by serogroups A, C, W, and Y. A different meningococcal vaccine is available to help protect against serogroup B.

## HPV VACCINE

Preteens and teens need the HPV vaccine *now* to prevent HPV-related cancers later.

### What is HPV?

HPV is short for human papillomavirus, a virus that is extremely common. Most of the time, the body naturally suppresses HPV. Cervical cancer caused by this virus is one of the Most leading cause of death in women worldwide . these cancers could be prevented by vaccination with HPV vaccine.

### When can kids get the HPV vaccine?

HPV vaccine is recommended for girls aged 10yrs & above.. All adolescents are recommended to get three shots at this age: HPV, Tdap (which prevents tetanus, diphtheria, and pertussis), and meningococcal vaccine, which can help protect against meningitis. Studies show that these shots are safe and effective when given at the same time.

### Why does my child need the HPV vaccine now?

Studies show that kids who complete all three doses of HPV vaccines by age 14 irrespective of menstrual cycle initiation (Menarchy) have much lower rates of cervical pre-cancer and genital warts than those who are vaccinated later. Pre-teens make more antibodies from the vaccine shots, which may translate into better protection.

### Is the HPV vaccine safe?

The HPV vaccine has a very good safety record. More than 170 million doses have been distributed, and there have been no serious safety concerns. The vaccine continues to be monitored for safety in over 80 countries around the world.

### **What are the side effects from the HPV vaccine?**

As with any vaccine, a child might have pain or redness in the arm after the injection. Some preteens and teens can faint after any type of procedure, so it's a good idea to have them sit in the doctor's office or waiting room for about 15 minutes after any shot.

### **Does my child need to get all 3 shots?**

HPV vaccines are given in a series of 3 shots over a six-month period. For the best protection, it is important for your child to get all 3 shots. Before you leave the doctor's office after the first one, ask to schedule the next one.

### **Remember**

Take advantage of any visit to the doctor—checkups, sick visits, even physicals for sports or college—to ask the doctor about what shots your preteens and teens need. If your daughter is older than 11 or 12 and has not started these shots, it is not too late to schedule an appointment to begin the series.

## **VACCINATION IN PRETERM**

Some parents of preterm and low birth weight babies are concerned about immunizing their newborns according to the standard schedule created by the Indian Academy Of Pediatric (IAP) and other organizations. Their main worry is whether the recommendations were made with full-term, normal weight babies in mind and whether the same guidelines apply to their own newborns. Parents may think that their newborns are just too fragile to be vaccinated because of low birth weight and possible health problems that came with their baby's preterm birth.

Your pediatrician will tell you that all of these babies should be given the routinely recommended childhood vaccinations. They should get every immunization on the standard schedule when they reach the ages at which these shots are normally given to all children.

- If preterm babies get the infections that vaccines can prevent, they have a greater chance of having disease-related problems.
- All of the available vaccines are safe when given to preterm and low birth weight babies.
- Any side effects associated with the vaccines are similar in both full-term and preterm babies.

## **TEENAGE & ADOLSCENT VACCINATION**

Many parents tend to think of vaccines as something needed for infants and young children but less important later in life. In fact, teenagers and young adults often get a number of vaccine-preventable diseases, including pertussis, measles, and meningitis. They need protection against infectious illnesses as well.

Teenagers should continue to see their pediatricians on a regular basis. All teens (or their parents) should keep an updated record of their immunizations. Many will need more vaccinations as teenagers, particularly if they have fallen behind on some of their other immunizations. To name a

few Tdap, MMR, Chickenpox, Pneumococcal, Meningococcal, Hepatitis–A , Hepatitis –B, influenza are the vaccines which your teenage child should get if he/she is not protected against his.

### **MANAGING A CHILD PAIN IN VACCINATION**

For most children, the mere thought of having a needle inserted into their arms/leg is very upsetting. Anxiety before receiving a shot is common, no matter how old your child is. That worry is often heightened when more than one vaccine is given at a time.

Yet in most cases, the bark is worse than the bite. The pain associated with the majority of immunizations is minor. By 5 years of age, most children object only minimally, if at all, to receiving a shot. If there are any tears, they rarely last for more than a few minutes.

To make the experience as acceptable as possible, prepare your child in advance for the vaccines that he / she'll be receiving, no matter how old he/she is. Be honest; show them that you care. If your child is old enough to understand, explain how the shots will help them avoid becoming sick. *Never* describe the shots as punishment or use them as a threat.

In a newborn, you feed them just before or after vaccination . This can often ease their worry. For most young children, you can soothe and stroke them to help them get through an immunization and rock them afterward to decrease their crying. Holding your child on your lap may help calm them.

For older children, it may help to distract them during and after each shot. Try “blowing away the pain” or use soap bubbles, pinwheels, or music to divert their attention. Telling them stories or reading books to them may help as well. Some older children feel better hugging their parent, chest to chest, when the shot is given. If your doctor believes it is appropriate, let your older kids choose the site of the injections, giving them a sense that they have a degree of control over the process.

Afterward, if a mild fever develops, ask your doctor about giving your child paracetamol or equivalent to make them more comfortable. Through it all, keep reminding yourself that guarding your child against serious health risks is worth the short-term discomfort and tears that may be part of getting immunized.

### **MISSED VACCINATION**

My child has missed some of her vaccinations. In fact, the time when she was supposed to get them passed long ago. Do we have to start all over again at the beginning?

No. If a particular immunization such as the diphtheria, tetanus, and acellular pertussis or hepatitis B vaccine is given in a series of doses and your child has missed one or more of them, just pick up where you've left off. The vaccines she has already received still count. At the next doctor's visit, she can restart her childhood vaccinations until she's caught up. This is called catch up immunization & your doctor will guide you.

Some Children Should Not Get Certain Vaccines

Most children can safely get all of these vaccines. But there are some exceptions:

- A child who has a mild cold or other illness on the day vaccinations are scheduled may be vaccinated. A child who is moderately or severely ill on the day of vaccinations might be asked to come back for them at a later date.
- Any child who had a life-threatening allergic reaction after getting a vaccine should not get another dose of that vaccine. *Tell the person giving the vaccines if your child has ever had a severe reaction after any vaccination.*
- A child who has a severe (life-threatening) allergy to a substance should not get a vaccine that contains that substance. *Tell the person giving your child the vaccines if your child has any severe allergies that you are aware of.*

Talk to your doctor before your child gets:

DTaP vaccine, if your child ever had any of these reactions after a previous dose of DTaP:

- A brain or nervous system disease within 7 days,
- Non-stop crying for 3 hours or more,
- A seizure or collapse,
- A fever of over 105°F.

### Risks of a Vaccine Reaction

With any medicine, including vaccines, there is a chance of side effects. These are usually mild and go away on their own. Most vaccine reactions are not serious: tenderness, redness, or swelling where the shot was given; or a mild fever. These happen soon after the shot is given and go away within a day or two. They happen with up to about half of vaccinations, depending on the vaccine.

As with any medicine, there is a very remote chance of a vaccine causing a serious injury or death. severe allergic reaction from a vaccine are very rare, estimated at about 1 in a million doses, and would happen within a few minutes to a few hours after the vaccination.

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