



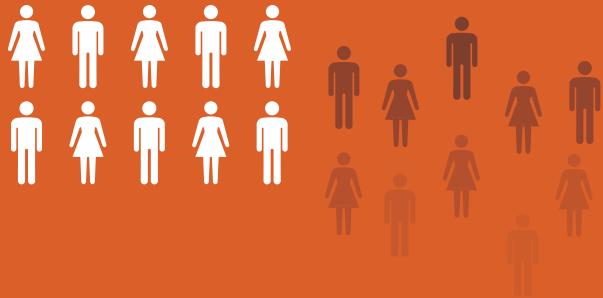
# PROTECT YOUR CHILD

IMMUNIZE ON TIME, EVERY TIME.

Diphtheria	Haemophilus Influenzae Type B (Hib)	Hepatitis A	Hepatitis B
Human Papillomavirus (HPV)	Influenza (Flu)	Measles	Meningococcal Disease
Mumps	Pertussis (Whooping Cough)	Pneumococcal Disease	Polio
Rotavirus	Rubella	Tetanus	Varicella (Chickenpox)

WITHOUT TREATMENT,

**40% TO 50%**  
OF INFECTED PEOPLE DIE FROM DIPHTHERIA



WITH THE HIGHEST DEATH RATES OCCURRING IN  
**THE VERY YOUNG & THE ELDERLY.**

# 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 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 hoarseness
- Painful swallowing
- Swollen glands (enlarged lymph nodes) in the neck
- A thick, gray membrane covering the throat and tonsils
- Difficulty breathing or rapid breathing
- Nasal discharge
- Fever and chills

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

## PREVENTION

The diphtheria vaccine is usually combined with vaccines that protect against tetanus and pertussis (whooping cough). This three-in-one vaccine is known as the DTaP vaccine for children. For adolescents and adults, it is called the Tdap vaccine.

To be fully protected from diphtheria, your children need to receive all of the five recommended doses of the DTaP vaccine. Booster doses of Tdap are needed for adolescents and adults. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

+ DIPHTHERIA

HAEMOPHILUS  
INFLUENZAE  
TYPE B (HIB)

HEPATITIS A

HEPATITIS B

HUMAN  
PAPILLOMAVIRUS  
(HPV)

INFLUENZA (FLU)

MEASLES

MENINGOCOCCAL  
DISEASE

MUMPS

PERTUSSIS  
(WHOOPIING COUGH)

PNEUMOCOCCAL  
DISEASE

POLIO

ROTAVIRUS

RUBELLA

TETANUS

VARICELLA  
(CHICKENPOX)

PRIOR TO THE VACCINE,  
MENINGITIS RESULTING FROM HIB INFECTION

KILLED  
600  
CHILDREN  
EACH YEAR,

AND CAUSED  
SEIZURES AMONG MANY SURVIVORS  
AS WELL AS  
PERMANENT DEAFNESS  
AND INTELLECTUAL DISABILITY.

# HAEMOPHILUS INFLUENZAE TYPE B (HIB)

*Haemophilus Influenzae* type b (Hib) is a serious illness caused by a bacteria and often affects children under 5 years old. Hib can cause meningitis, pneumonia and other serious infections. It 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.

The most common severe effects of Hib are:

- Pneumonia (lung infection)
- Bacteremia (bloodstream infection)
- Meningitis (infection of the covering of the brain and spinal cord)

## PREVENTION

The Hib vaccine is the best prevention against this dangerous disease.

To be fully protected from Hib, your children need to receive all three to four (depending on vaccine brand) recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

	DIPHTHERIA
+	HAEMOPHILUS INFLUENZAE TYPE B (HIB)
	HEPATITIS A
	HEPATITIS B
	HUMAN PAPILLOMAVIRUS (HPV)
	INFLUENZA (FLU)
	MEASLES
	MENINGOCOCCAL DISEASE
	MUMPS
	PERTUSSIS (WHOOPIING COUGH)
	PNEUMOCOCCAL DISEASE
	POLIO
	ROTAVIRUS
	RUBELLA
	TETANUS
	VARICELLA (CHICKENPOX)



APPROXIMATELY

**1 IN 5 PEOPLE  
WITH HEPATITIS A**

HAVE TO BE  
**HOSPITALIZED.**



# 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 from contact with objects, food, or drinks contaminated by the feces of an infected person, which can easily happen if someone doesn't wash his or her hands properly after using the toilet.

## SYMPTOMS

Signs and symptoms of hepatitis A may include:

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

## PREVENTION

The hepatitis A vaccine can prevent infection with the virus.

To be fully protected from hepatitis A, your children need to receive the two recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

DIPHTHERIA
HAEMOPHILUS INFLUENZAE TYPE B (HIB)
<b>+</b> HEPATITIS A
HEPATITIS B
HUMAN PAPILLOMAVIRUS (HPV)
INFLUENZA (FLU)
MEASLES
MENINGOCOCCAL DISEASE
MUMPS
PERTUSSIS (WHOOPIING COUGH)
PNEUMOCOCCAL DISEASE
POLIO
ROTAVIRUS
RUBELLA
TETANUS
VARICELLA (CHICKENPOX)



NEWBORNS THAT BECOME INFECTED WITH HEPATITIS B VIRUS HAVE A

**90% CHANCE**  
OF DEVELOPING  
**LIFELONG INFECTION.**

# 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.

An individual who is unaware that they have hepatitis B can easily pass the disease onto an unvaccinated child through actions as simple as a kiss on the mouth, the sharing of a toothbrush or contact with blood (as can happen when kissing a bruise or cut).

Over two-thirds of children contract the virus from someone other than their mother.

## SYMPTOMS

Signs and symptoms of hepatitis B usually appear about three months after infection and can range from mild to severe, including:

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

## PREVENTION

The best way to prevent hepatitis B is by getting the vaccine.

To be fully protected from hepatitis B, your children need to receive all three recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

- DIPHTHERIA
- HAEMOPHILUS INFLUENZAE TYPE B (HIB)
- HEPATITIS A
- +** HEPATITIS B
- HUMAN PAPILLOMAVIRUS (HPV)
- INFLUENZA (FLU)
- MEASLES
- MENINGOCOCCAL DISEASE
- MUMPS
- PERTUSSIS (WHOOPIING COUGH)
- PNEUMOCOCCAL DISEASE
- POLIO
- ROTAVIRUS
- RUBELLA
- TETANUS
- VARICELLA (CHICKENPOX)



APPROXIMATELY

**20 MILLION**  
AMERICANS

ARE CURRENTLY INFECTED WITH HPV,  
AND ANOTHER

**6.2 MILLION**

PEOPLE BECOME NEWLY INFECTED  
EACH YEAR.

# HUMAN PAPILOMAVIRUS (HPV)

Human papillomavirus (HPV) is the most common sexually transmitted infection and can cause a variety of cancers in men and women. Most people who become infected with HPV do not even know they have it until cancerous cells develop.

In most cases, the body fights off HPV naturally. Sometimes, HPV can cause genital warts. If an HPV infection is not cleared by the immune system, it can linger for many years and turn into cancer over time.

## SYMPTOMS

HPV can have many serious consequences including:

- Genital warts
- Recurrent respiratory papillomatosis (RRP), a rare condition in which warts grow in the throat
- Cervical cancer
- Other, less common, but serious cancers, including genital cancers and a type of head and neck cancer called oropharyngeal cancer (cancer in the back of throat, including the base of the tongue and tonsils).

## PREVENTION

The HPV vaccine is the best prevention against human papillomavirus.

The vaccine offers the greatest health benefits to males and females who receive all three recommended doses before having any type of sexual activity.

To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

	DIPHTHERIA
	HAEMOPHILUS INFLUENZAE TYPE B (HIB)
	HEPATITIS A
	HEPATITIS B
+	HUMAN PAPILOMAVIRUS (HPV)
	INFLUENZA (FLU)
	MEASLES
	MENINGOCOCCAL DISEASE
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	PERTUSSIS (WHOOPIING COUGH)
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	ROTAVIRUS
	RUBELLA
	TETANUS
	VARICELLA (CHICKENPOX)



EACH YEAR IN THE U.S., MORE THAN

**20,000 CHILDREN**  
UNDER THE AGE OF 5 ARE HOSPITALIZED

AND APPROXIMATELY

**100**

DIE AS A RESULT OF THE FLU.

# INFLUENZA (FLU)

Seasonal influenza (flu) is caused by viruses which infect the respiratory tract (the nose, throat and lungs). It is not the same as the common cold or the stomach “flu” viruses that cause diarrhea and vomiting.

The flu season is unpredictable, but it often occurs from October to May and usually peaks in January or February.

Serious complications of flu can result in hospitalization or death, even in healthy children. Children are at particularly high risk if they are less than 5 years of age or have chronic health conditions.

## SYMPTOMS

Common signs and symptoms of the flu include:

- Fever over 100°F (38°C)
- Severe respiratory distress
- Aching muscles, especially in the back, arms and legs
- Chills and sweats
- Headache
- Dry cough
- Fatigue and weakness
- Nasal congestion

Most children will recover in a few days to less than two weeks, but children can develop complications (such as pneumonia) and require hospitalization as a result of the flu.

## PREVENTION

The best way to prevent the flu is to get the flu vaccine every year. There are two kinds of vaccine – the shot and the nasal spray. Talk to your healthcare provider to find out which type of vaccine is best for each member of your family. Adults, particularly pregnant women, also need to be vaccinated against the flu every year. Vaccination during pregnancy, protects both mothers and babies. Learn more about the importance of flu vaccination for the entire family at [Flu.gov](https://www.cdc.gov/flu).

To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](https://www.cdc.gov/immunization) and talk to your healthcare provider.

	DIPHTHERIA
	HAEMOPHILUS INFLUENZAE TYPE B (HIB)
	HEPATITIS A
	HEPATITIS B
	HUMAN PAPILLOMAVIRUS (HPV)
+	INFLUENZA (FLU)
	MEASLES
	MENINGOCOCCAL DISEASE
	MUMPS
	PERTUSSIS (WHOOPIING COUGH)
	PNEUMOCOCCAL DISEASE
	POLIO
	ROTAVIRUS
	RUBELLA
	TETANUS
	VARICELLA (CHICKENPOX)



IN THE U.S., ROUGHLY

# 1 IN 5 PEOPLE

WHO DEVELOP MEASLES REQUIRE  
HOSPITALIZATION FOR

# 1 OR MORE COMPLICATIONS

FROM THE DISEASE.

# MEASLES

Measles is a highly contagious respiratory disease caused by a virus. It can be serious and even fatal for small children. The disease kills hundreds of thousands of children a year around the world, most under the age of 5. Measles is highly contagious and spreads quickly.

Even in previously healthy children, measles can be a serious illness requiring hospitalization. As many as 1 out of every 20 children with measles gets pneumonia, and about 1 child in every 1,000 who get measles will develop encephalitis. (This is an inflammation of the brain that can lead to convulsions, and can leave the child deaf or intellectually disabled.)

Recently, measles has re-emerged as a threat in the United States, despite being eliminated in 2000. Outbreaks across the country have put children at risk.

## SYMPTOMS

Measles signs and symptoms appear seven to 14 days after exposure to the virus. Signs and symptoms of measles typically include:

- Fever, potentially leading to encephalopathy (swelling of the brain)
- Dry cough
- Runny nose
- Sore throat
- Inflamed eyes (conjunctivitis)
- Sensitivity to light
- Tiny white spots inside the mouth
- A skin rash made up of large, flat blotches

## PREVENTION

To prevent measles, children should be vaccinated with the combined measles, mumps, and rubella (MMR) vaccine.

To be fully protected from measles, your children need to receive the two recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

	DIPHTHERIA
	HAEMOPHILUS INFLUENZAE TYPE B (HIB)
	HEPATITIS A
	HEPATITIS B
	HUMAN PAPILLOMAVIRUS (HPV)
	INFLUENZA (FLU)
+	MEASLES
	MENINGOCOCCAL DISEASE
	MUMPS
	PERTUSSIS (WHOOPIING COUGH)
	PNEUMOCOCCAL DISEASE
	POLIO
	ROTAVIRUS
	RUBELLA
	TETANUS
	VARICELLA (CHICKENPOX)



1 OUT OF EVERY 10

PEOPLE WITH MENINGOCOCCAL DISEASE

WILL DIE OR SUFFER LIFELONG DISABILITIES.

# MENINGOCOCCAL DISEASE

Meningococcal disease is a serious bacterial illness and the leading cause of meningitis in children ages 2 through 18. Meningitis is an infection of the fluid surrounding the brain and spinal cord. Meningococcal disease also causes blood infections.

About 1,000–2,600 people get meningococcal disease each year in the U.S. and 10–15 percent of these people die. Of those who survive, another 11–19 percent will lose their arms or legs, become deaf, have problems with their nervous systems, develop severe intellectual disabilities, or suffer seizures or strokes.

## 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

The meningococcal vaccine is the best way to prevent meningococcal disease. Although it cannot prevent all types of meningococcal disease, it can prevent many types of the disease.

To be fully protected from meningococcal disease, your children need to receive the two recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

	DIPHTHERIA
	HAEMOPHILUS INFLUENZAE TYPE B (HIB)
	HEPATITIS A
	HEPATITIS B
	HUMAN PAPILLOMAVIRUS (HPV)
	INFLUENZA (FLU)
	MEASLES
+	MENINGOCOCCAL DISEASE
	MUMPS
	PERTUSSIS (WHOOPIING COUGH)
	PNEUMOCOCCAL DISEASE
	POLIO
	ROTAVIRUS
	RUBELLA
	TETANUS
	VARICELLA (CHICKENPOX)



**1** IN EVERY **4**  
**TEENAGE BOYS**  
WHO CONTRACT MUMPS IS AT RISK OF  
**STERILITY.**

# 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 persons.

While usually a mild disease, mumps can also cause swelling of the brain, nerves and spinal cord which in some cases leads to paralysis, seizures and fluid in the brain. About one out of every four teenage or adult men who get mumps will develop a painful swelling of the testicles which can lead to sterility and testicular cancer.

Outbreaks across the country continue to put people at risk.

## SYMPTOMS

Some children infected with the mumps virus have either no signs or symptoms or very mild ones. When signs and symptoms do develop, they usually appear about two to three weeks after exposure to the virus and may include:

- Swollen, painful salivary glands on one or both sides of your face (parotitis)
- Fever
- Headache
- Weakness and fatigue
- Loss of appetite
- Pain while chewing or swallowing

The primary — and best known — sign of mumps is swollen salivary glands that cause the cheeks to puff out.

## PREVENTION

To prevent mumps, children should be vaccinated with the combined measles, mumps, and rubella (MMR) vaccine.

To be fully protected from mumps, your children need to receive the two recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

	DIPHTHERIA
	HAEMOPHILUS INFLUENZAE TYPE B (HIB)
	HEPATITIS A
	HEPATITIS B
	HUMAN PAPILLOMAVIRUS (HPV)
	INFLUENZA (FLU)
	MEASLES
	MENINGOCOCCAL DISEASE
+	MUMPS
	PERTUSSIS (WHOOPIING COUGH)
	PNEUMOCOCCAL DISEASE
	POLIO
	ROTAVIRUS
	RUBELLA
	TETANUS
	VARICELLA (CHICKENPOX)



OF PERTUSSIS-ASSOCIATED DEATHS HAVE BEEN AMONG

**INFANTS**

LESS THAN ONE YEAR OLD.

# PERTUSSIS (WHOOPIING COUGH)

Pertussis (whooping cough) is a highly contagious respiratory tract infection. In many children, it's marked by a severe hacking cough followed by a high-pitched intake of breath that sounds like a "whoop."

People of all ages can be affected by pertussis. However, infants, particularly those younger than 1 year old, are at particularly high risk of severe complications, hospitalization and death. Most unvaccinated children living with a family member with pertussis will contract the disease.

Pertussis is still common in the United States. Recently between 10,000 and 50,000 cases have been reported each year.

## SYMPTOMS

Symptoms take one to three weeks to appear. They're usually mild at first and resemble those of a common cold. 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 fatigue
- Broken ribs
- "Whoop" sounds as the lungs attempt to refill with air

## PREVENTION

To protect against pertussis, it is recommended that children receive the DTaP vaccine, which also prevents against tetanus and diphtheria. Adolescents and adults need to be vaccinated with Tdap, the adult version of the pertussis vaccine.

Pregnant women and all family members and caregivers of new infants should also get vaccinated. The strategy of protecting infants by vaccinating those around them is called "cocooning."

To be fully protected from pertussis, your children need to receive all five recommended doses of the DTaP vaccine. Booster doses of Tdap are needed for adolescents and adults. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

- DIPHTHERIA
- HAEMOPHILUS INFLUENZAE TYPE B (HIB)
- HEPATITIS A
- HEPATITIS B
- HUMAN PAPILLOMAVIRUS (HPV)
- INFLUENZA (FLU)
- MEASLES
- MENINGOCOCCAL DISEASE
- MUMPS
- +** PERTUSSIS (WHOOPIING COUGH)
- PNEUMOCOCCAL DISEASE
- POLIO
- ROTAVIRUS
- RUBELLA
- TETANUS
- VARICELLA (CHICKENPOX)



BEFORE THE VACCINE WAS  
AVAILABLE IN THE U.S.,  
**PNEUMOCOCCAL DISEASE**  
CAUSED AT LEAST

**1,400**

CASES OF MENINGITIS;

**17,000**

CASES OF BACTEREMIA;

**71,000**

CASES OF PNEUMONIA;

AND

**5 TO 7 MILLION**

MIDDLE EAR INFECTIONS

EACH YEAR AMONG

CHILDREN YOUNGER THAN 5 YEARS OLD.

# PNEUMOCOCCAL DISEASE

Pneumococcal disease is caused by bacteria that are present in many children's noses and throats. It is still unknown why it suddenly invades the body and causes disease in some children.

Pneumococcal disease is spread by coughing and sneezing. Serious pneumococcal infections are most common in infants, toddlers, and the elderly. It can be fatal. In some cases, it can result in long-term problems, such as brain damage, hearing loss, and limb loss.

## SYMPTOMS

Pneumococcal disease can cause pneumonia (an infection of the lungs), bacteremia (an infection of the blood), meningitis (an infection of the covering of the brain and spine), and otitis media (ear infections).

Symptoms depend on the type of infection pneumococcal disease causes, but generally include an abrupt onset of fever and shaking or chills. Other symptoms may include headache, cough, chest pain, disorientation, shortness of breath, weakness and occasionally a stiff neck.

## PREVENTION

The pneumococcal vaccine is the best way to prevent pneumococcal disease.

To be fully protected from pneumococcal disease, your children need to receive all four recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

DIPHTHERIA

HAEMOPHILUS  
INFLUENZAE  
TYPE B (HIB)

HEPATITIS A

HEPATITIS B

HUMAN  
PAPILLOMAVIRUS  
(HPV)

INFLUENZA (FLU)

MEASLES

MENINGOCOCCAL  
DISEASE

MUMPS

PERTUSSIS  
(WHOOPIING COUGH)



PNEUMOCOCCAL  
DISEASE

POLIO

ROTAVIRUS

RUBELLA

TETANUS

VARICELLA  
(CHICKENPOX)

BEFORE THE POLIO VACCINE WAS AVAILABLE, AN AVERAGE OF

50,000

CASES OF POLIO

WAS REPORTED IN THE U.S.

EACH YEAR.

# POLIO

Polio is a crippling and potentially deadly virus that spreads from person to person invading the brain and spinal cord and causing paralysis.

Polio was one of the most dreaded childhood diseases of the 20th century with annual epidemics, primarily during the summer months. This often left thousands of victims — mostly children — permanently in braces, crutches, wheelchairs or in iron lungs. Because polio can paralyze the diaphragm, in the 1940s and 1950s, entire wards of hospitals housed polio victims who were dependent on large iron lungs to breathe for them.

## SYMPTOMS

Polio can cause paralysis. Signs of paralytic polio include:

- Loss of reflexes
- Severe muscle aches or spasms
- Loose and floppy limbs (flaccid paralysis), often worse on one side of the body

Polio does not always cause paralysis. Signs of nonparalytic polio, which last one to 10 days, include:

- Fever
- Sore throat
- Headache
- Vomiting
- Fatigue
- Pain or stiffness in the back, neck, arms or legs
- Muscle spasms or tenderness
- Meningitis

## PREVENTION

Polio vaccination is the best way to protect children and the only way to stop the disease from spreading.

To be fully protected from polio, your children need to receive all four recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

DIPHTHERIA

HAEMOPHILUS INFLUENZAE TYPE B (HIB)

HEPATITIS A

HEPATITIS B

HUMAN PAPILOMAVIRUS (HPV)

INFLUENZA (FLU)

MEASLES

MENINGOCOCCAL DISEASE

MUMPS

PERTUSSIS (WHOOPIING COUGH)

PNEUMOCOCCAL DISEASE

**+** POLIO

ROTAVIRUS

RUBELLA

TETANUS

VARICELLA (CHICKENPOX)



BEFORE THE ROTAVIRUS VACCINE WAS INTRODUCED IN THE UNITED STATES, ROTAVIRUS WAS RESPONSIBLE FOR UP TO

**70,000**

HOSPITALIZATIONS,  
APPROXIMATELY

**250,000**

EMERGENCY ROOM VISITS  
AMONG CHILDREN YOUNGER  
THAN 5 YEARS OF AGE AND

**60 DEATHS EVERY YEAR.**

# ROTAVIRUS

Rotavirus is a virus that causes gastroenteritis (inflammation of the stomach and intestines). Severe dehydration from rotavirus can require intravenous fluids in the hospital for the child.

Dehydration is a serious complication of the illness and a major cause of childhood deaths in developing countries. Rotavirus is responsible for an estimated 453,000 deaths among infants around the world each year.

## SYMPTOMS

A rotavirus infection usually starts with a fever and vomiting, followed by three to eight days of watery diarrhea. The infection can cause abdominal pain as well. In adults who are otherwise healthy, a rotavirus infection may cause only mild signs and symptoms — or none at all.

## PREVENTION

Vaccination is the most effective way to prevent rotavirus infection in infants.

To be fully protected from rotavirus, your children need to receive all two to three (depending on vaccine brand) recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the **CDC's immunization schedule** and talk to your healthcare provider.

DIPHTHERIA

HAEMOPHILUS  
INFLUENZAE  
TYPE B (HIB)

HEPATITIS A

HEPATITIS B

HUMAN  
PAPILLOMAVIRUS  
(HPV)

INFLUENZA (FLU)

MEASLES

MENINGOCOCCAL  
DISEASE

MUMPS

PERTUSSIS  
(WHOOPIING COUGH)

PNEUMOCOCCAL  
DISEASE

POLIO

**+** ROTAVIRUS

RUBELLA

TETANUS

VARICELLA  
(CHICKENPOX)



**90%**  
**OF INFANTS**

**BORN TO WOMEN INFECTED WITH  
RUBELLA WILL DEVELOP  
CONGENITAL RUBELLA SYNDROME,  
RESULTING IN HEART DEFECTS,  
CATARACTS, MENTAL RETARDATION  
AND/OR DEAFNESS.**

# RUBELLA

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, up to 90 percent of infants born to mothers infected with rubella during the first trimester of pregnancy will develop congenital rubella syndrome (CRS). It can also cause premature birth, low birth weight, neonatal thrombocytopenia (an abnormal drop in the number of blood cells involved in forming blood clots), anemia and hepatitis.

Rubella virus can be found in nose and throat secretions, such as saliva or nasal mucus, of infected people. The virus can spread to others through 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 two to three weeks after exposure to 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 trunk and then the arms and legs, before disappearing in the same sequence
- Aching joints

## PREVENTION

To prevent rubella, children should be vaccinated with the combined measles, mumps, and rubella (MMR) vaccine.

To be fully protected from rubella, your children need to receive the two recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the **CDC's immunization schedule** and talk to your healthcare provider.

- DIPHTHERIA
- HAEMOPHILUS INFLUENZAE TYPE B (HIB)
- HEPATITIS A
- HEPATITIS B
- HUMAN PAPILOMAVIRUS (HPV)
- INFLUENZA (FLU)
- MEASLES
- MENINGOCOCCAL DISEASE
- MUMPS
- PERTUSSIS (WHOOPIING COUGH)
- PNEUMOCOCCAL DISEASE
- POLIO
- ROTAVIRUS
- +** RUBELLA
- TETANUS
- VARICELLA (CHICKENPOX)

APPROXIMATELY  
**30%**  
OF REPORTED  
TETANUS CASES END IN

DEATH.

# 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 grow in soil and can therefore never be eradicated. The bacterium usually enters the body through a cut or a puncture wound to the skin.

There's no cure for tetanus. Treatment focuses on managing complications until the effects of the tetanus toxin resolve. Fatality is highest in individuals who haven't been immunized.

## 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, DTaP, also protects children from diphtheria and pertussis. The adolescent and adult version of this vaccine is known as Tdap. When tetanus is just combined with diphtheria, the vaccine is called Td.

To be fully protected from tetanus, your children need to receive all of the five recommended doses of the DTaP vaccine. Booster doses of Tdap and Td are needed for adolescents and adults. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

DIPHTHERIA

HAEMOPHILUS  
INFLUENZAE  
TYPE B (HIB)

HEPATITIS A

HEPATITIS B

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ROTAVIRUS

RUBELLA

**+** TETANUS

VARICELLA  
(CHICKENPOX)

# VARICELLA (CHICKENPOX)

Varicella (chickenpox) is a viral infection that causes an itchy, blister-like rash. Chickenpox is highly contagious to children who haven't had the disease or been vaccinated against it. It can lead to severe illness with complications such as secondary bacterial infections, severe dehydration, pneumonia, central nervous system irregularities and shingles.

Once an individual is infected with the varicella virus it remains in the body for life and may reappear as shingles, particularly in elderly persons.

Before routine chickenpox vaccination, virtually all people had been infected by the time they reached adulthood. Although often thought of as a mild childhood disease, chickenpox has been known to cause serious complications and even death.

## 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 one to two 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.

To be fully protected from chickenpox, your children need to receive the two recommended doses of the vaccine. To see if your children are up-to-date on their vaccines, look at the [CDC's immunization schedule](#) and talk to your healthcare provider.

DIPHTHERIA

HAEMOPHILUS  
INFLUENZAE  
TYPE B (HIB)

HEPATITIS A

HEPATITIS B

HUMAN  
PAPILLOMAVIRUS  
(HPV)

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MEASLES

MENINGOCOCCAL  
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PERTUSSIS  
(WHOOPIING COUGH)

PNEUMOCOCCAL  
DISEASE

POLIO

ROTAVIRUS

RUBELLA

TETANUS

**+** VARICELLA  
(CHICKENPOX)

BEFORE THE VARICELLA VACCINE,  
THE U.S. REPORTED AN ESTIMATED  
**4 MILLION**  
CASES OF CHICKENPOX A YEAR,

LEADING TO APPROXIMATELY

**11,000**  
HOSPITALIZATIONS

AND

**100**  
DEATHS.



WWW.ECBT.ORG

Every Child By Two – Carter/Bumpers Champions for Immunization strives to protect all children from vaccine-preventable diseases by raising parental awareness of the critical need for timely infant immunizations, fostering the establishment of a systematic method to locate and immunize children, and providing convenient access to immunization services into the future.

#### **RECOMMENDED WEBSITES**

Every Child By Two

[www.ecbt.org](http://www.ecbt.org)

ECBT's Vaccinate Your Baby Program

[www.VaccinateYourBaby.org](http://www.VaccinateYourBaby.org)

CDC/Recommended Immunization Schedule

[www.cdc.gov/vaccines/parents](http://www.cdc.gov/vaccines/parents)

American College of Obstetricians and Gynecologists

[www.immunizationforwomen.org](http://www.immunizationforwomen.org)

Vaccine Education Center at The Children's Hospital of Philadelphia

[vaccine.chop.edu](http://vaccine.chop.edu)