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## CHILDHOOD VACCINES

Many serious childhood illnesses can be prevented by the administration of vaccines. For maximum protection, it is necessary for your child to complete the full series of immunizations. In this office, the immunization schedule advised by the American Academy of Pediatrics and the Advisory Committee on Immunization Practices will be recommended for your child, unless there are sound medical reasons for not administering the vaccine.

We feel that it is important for you - the parents - to understand the diseases against which immunizations afford protection, the possible consequences for your child if he or she were to get a disease, and the possible side effects from the vaccine itself. Please read this information sheet carefully, keep it in a safe place for future reference, and ask any questions you may have of your pediatric provider. In addition to our information sheet, the government has provided condensed versions of this material in Vaccine Information Sheets that we are required, by law, to offer to a legal representative of the child when the vaccines are administered

### EXPLANATION OF DISEASES:

**Diphtheria** is a very serious disease that can affect people in different ways. It can cause an infection in the nose and throat that interferes in breathing. It can also cause a skin infection, heart failure or paralysis. About 1 out of 10 people who get diphtheria will die from it.

**Tetanus** results when wounds become infected with bacteria often found in dirt. The bacteria in the wound make a poison which causes the muscles of the body to go into spasm. Babies who are born out of the hospital and whose cords are cut improperly as well as unimmunized persons are very likely to get the disease. 3 out of every 10 who get the disease will die from it.

**Pertussis**, or whooping cough, causes severe spells of coughing which can interfere with eating, drinking, and breathing. The cough may last for several weeks. It is very easily passed from one person to another. The incidence of reported cases of whooping cough has tripled in the last few years. This increase is partially due to some kids being inadequately immunized. Pertussis is most dangerous to babies. As many as 16 out of 100 babies with pertussis get pneumonia, 2 out of 100 get convulsions, 1 out of 200 are brain damaged and 1 out of 200 die. In addition, whooping cough is hard to diagnose early and, once established is more difficult to treat. In order to be protected, a child needs a minimum of 4 doses of vaccine. A lot of new cases are young infants who have not yet had the full series of shots. This office alone sees 4-6 new cases a year.

**Polio** used to be a common disease in the United States. Before the polio vaccine, as many as 20,000 people per year were paralyzed by this disease. Because of the vaccine, only a few cases of polio now occur here each year. However, in other countries, there are still thousands of cases per year. This very dangerous disease is caused by a virus. People who get polio became paralyzed and may die. There is no cure. There are two types of polio vaccines. The live vaccine has been recommended because it is more effective, but, wild-type polio is no longer endemic in the U.S. In fact only 8 cases of polio occur in the United States each year and this is believed to be from the oral vaccine.

**Measles** is a serious disease that is very easily transmitted from one person to another. It causes a high fever, cough, red eyes and a typical rash. The incidence of measles is increasing and up to 28,000 new cases have been reported in recent years. 1 out of 10 children who catch measles will get pneumonia, 1 out of 1000 gets encephalitis (inflammation of the brain) with convulsions (seizures, fits, spasms, twitching, jerking, or staring spells), and you may die from it.

**Mumps** was a common disease in children. Usually it causes fever, headache, and inflammation of the salivary glands. It can be very serious and is easily passed from person to person. In recent years, up to 13,000 cases have been reported per year. It may cause spinal meningitis (inflammation of the coverings of the brain and spinal cord) in 1 child in 10 who get the disease. It may also cause encephalitis and deafness. 1 out of every 4 adult males who get the disease develops a painful inflammation and swelling of the testicles which may cause sterility.

**Rubella** is also called German Measles. It is usually a mild disease but, if a pregnant woman catches the disease, the unborn baby is at great risk. One half of those babies will be lost, or born with serious problems. People who catch rubella usually have a mild fever, swollen glands in the neck and a rash. The illness lasts about three days. Sometimes, there may be swelling and aching of the joints for a week or two.

**Haemophilus Influenza Type B** is a bacterial illness not at all related to the "Flu". It causes serious infections in children less than 5 years of age. Most cases of **meningitis**, epiglottitis, pericarditis and many cases of cellulitis, pneumonia, and arthritis are caused by this bacteria. Before the development of the vaccine, the risk of a child developing an illness from this bacteria was 1 in 200. The disease is highly contagious.

**Hepatitis B:** is a very serious viral infection of the liver that is spread through contact with blood or semen. An estimated 200,000-300,000 cases occur every year and over 1 million Americans are carriers. Hepatitis B is responsible for over 50,000 deaths each year. **Hepatitis B is the number one cause of vaccine related death in adults.** Although, primarily contracted by adults, hepatitis B virus infection is almost always asymptomatic in infants and young children, the deaths occurring as adults.

**Varicella:** (Chickenpox) is one of the most common childhood diseases and "**the number one cause of vaccine-preventable death in children**" (Centers for Disease Control). It is highly contagious, affecting 4 million people every year. Fortunately, most cases are mild but an average of 105 people die every year from this disease and over 9,000 people are hospitalized. Among children under 13 years of age, 1 in every 200 cases will require hospitalization. In addition, it is a major cause of lost school time and, for parents, lost work time. Chickenpox is characterized by a rash with small blisters that are painful and itchy. These scab over and often scar. In addition, there usually is a fever that may be as high as 105 degrees. The illness lasts 7-14 days. Chickenpox may cause pneumonia, encephalitis (swelling of the brain), and, most commonly, infections of the skin. Those who have been infected with chickenpox often develop shingles when they are older. This condition is caused because the chickenpox virus remains in the body and it later comes out as a very painful clump of blisters that is also very contagious and also potentially lethal. Most children who get chickenpox once will not get it again but as many as 20 - 30% of children get it more than once, usually as a milder disease. It is important not to purposely expose children to this potentially lethal disease.

**Pneumococcus:** is a bacteria that causes a small percentage of ear infections, pneumonia and other illnesses. It can cause severe infections particularly in the young and elderly or in patients with impaired respiratory function.

**Meningococcus:** is a bacteria that causes a very rare but very deadly meningitis. It is not highly contagious nor does it cause epidemics.

**Hepatitis A** is a virus transmitted from fecal contamination of food or water. It attacks the liver and causes an acute illness that can show up as fever, malaise, nausea, and jaundice. Community outbreaks may originate in restaurants or day care centers.

**Influenza (“the flu”):** a virus that is prevalent in the community each winter. It may cause fever, malaise, body aches, nasal congestion, and nausea. The flu is usually a self-limited disease, but in babies or chronically ill children it may cause severe complications or even death.

**Rotavirus** is a very common virus that causes diarrhea in young children during the winter months. If you have school age children, they have almost certainly been exposed to this illness. Each year rotavirus causes 400,000 doctor visits, 70,000 hospitalizations, and 20 to 60 deaths.

**HPV (human papilloma virus)** is the cause of most cases of cervical cancer and genital warts. This is not the same as HIV, the human immunodeficiency virus that causes AIDS, or HSV, the herpes simplex virus. About 50% of people are exposed to HPV by sexual contact during their lifetime. Most will clear the virus and never have any signs or symptoms, but some will go on to develop cervical cancer or genital warts. Each year there are *half a million* new cases of cervical cancer worldwide. In the U.S., about 3,700 women will die from cervical cancer this year.

#### EXPLANATION OF THE VACCINES:

**It is important to understand that no vaccine is 100% effective. Vaccines do not provide a bubble for your child but, if your child should come into contact with these illnesses, the vaccines improve the immune response of your child to help him or her successfully fight them and, in most cases, ending up with no illness or only mild symptoms of the disease.**

**DPT Vaccine:** Most children have little or no problem from the DPT shot. Diphtheria, pertussis, and tetanus are combined to make it easier to get protection. However, several injections are needed to get optimal protection. The shots are given at 2, 4, 6, and 18 months with a booster at 4-5 years of age before Kindergarten. There is a pure Acellular Pertussis vaccine currently licensed for use. This vaccine has been proven to have a better response rate and far fewer side effects than the older vaccine no longer in use. The risk of fever in this age group is less than 5%.

**Haemophilus Influenza Vaccine (HiB):** This vaccine appears to be quite safe. Fever over 101 degrees has been reported in less than 1% of the recipients. Redness, swelling or soreness at the injection site has occurred in 3-4%, but these symptoms subsided within 48 hours. It is given in combination with the hepatitis vaccine. This vaccine has reduced the serious illnesses associated with this bacteria by 99%!

**Tetanus Vaccine:** Side effects to this vaccine are limited to redness and soreness at the site of injection that may last 48 - 72 hours. After the first booster at 11 to 12 years of age, it should be given every seven years.

**Polio Vaccine:** In the past, oral polio vaccine (OPV) was given and very, very rarely caused polio in the person who got the vaccine (once in about every 8.1 million doses) or in contacts of that person (once in about every 5 million doses). Now inactivated polio is given by injection (IPV) for all 4 doses. This may be as effective while reducing the risks of getting the disease from the vaccine.

**Measles, Mumps, and Rubella Vaccine (MMR):** 1 out of every 10 children who get the measles part of the vaccine will develop a slight rash and fever 7-14 days after the first shot. Such a reaction

is unusual after the booster. 1 out of every 7 may get swelling of the lymph nodes in the neck 1-2 weeks after the Rubella vaccine. In addition, painful swelling of the joints (arthritis) may occur in 1 out of 100 children who get the Rubella vaccine. Occasionally there is swelling of the salivary glands under the jaw from the Mumps vaccine. Children 6 months through 6 years of age can, rarely, have a brief convulsion usually occurring with the fever 1-2 weeks after the MMR.

Recent years have seen heightened awareness of autism, a developmental disorder characterized by impaired language and social skills. Concerns have been raised that the MMR vaccine causes autism, but these claims have been refuted. The largest study took place in Denmark and enrolled all the children born in the entire country over an 8 year period. The autism rate in Danish children who received the MMR vaccine was no different than the rate in those who did not. A comprehensive 2004 review by the Institute of Medicine of the National Academy of Sciences unanimously concluded that the body of scientific evidence shows no causal relationship between MMR and autism.

**Hepatitis B (HBV) Vaccine:** This vaccine also appears to be safe and well tolerated. Reactions are rare and may include pain at the site of the injection and low grade fever. Infants receive the first vaccine in the hospital soon after birth. In addition, New York State Public Health Law 2164 now requires the series of three shots to be complete prior to seventh grade entry.

**Varicella Vaccine:** This vaccine protects against both chickenpox and its subsequent shingles. It appears to be as effective at providing immunity as natural chickenpox and its effects appear to last as long as other childhood vaccines. In fact, some studies have demonstrated solid immunity lasting over twenty years! Even better than natural chickenpox, 90 -95% of recipients of the vaccine will not get the disease and, of those that do, it is very mild. There are few side effects to the vaccine and these appear to be mainly soreness and redness at the site of injection in about 10% of those immunized. There is universal agreement that the vaccine is safe and effective. Furthermore, New York State Public Health Law 2164 has now made the Varicella vaccine mandatory for school entry and, for those born after January 1, 2000, mandatory for pre-school or daycare.

**Prevnar:** This vaccine protects against the pneumococcus bacteria. It is recommended for all children under the age of two years. There is a 20% incidence of side effects.

**Menactra:** This vaccine against the Meningococcus bacteria is recommended at age 11-12, at age 15, or prior to entering college.

**Hepatitis A vaccine:** The vaccine is given in 2 doses. Side effects are mild and usually limited to local redness or soreness.

**Rotateq** (rotavirus vaccine) is the only oral (swallowed) vaccine routinely given to children in the U.S. It is given at 2, 4, and 6 months of age. Mild temporary stomach upset is the only side effect that has been seen. In 1999, another rotavirus vaccine was withdrawn from the market after it was found to be associated with intussusception, an intestinal blockage. Rotateq is a completely different vaccine that has been tested extensively without evidence of this association.

**Influenza vaccine:** Because the virus mutates yearly, a new vaccine is needed each season. The vaccine is most strongly recommended for children 6 months to 18 years of age, household contacts of children younger than 6 months, and children with chronic diseases like asthma, diabetes, or sickle cell anemia. The first time a child younger than 9 years old receives the flu shot, he or she needs 2 doses a month apart to maximize immune response.

Thimerosal is a mercury-containing preservative that was used in vaccines for over 50 years. Even though *there is no scientific evidence of harm from vaccines with this preservative*, manufacturers have voluntarily agreed to work to make their vaccines thimerosal-free. The influenza vaccine is the **only** vaccine now routinely given to children that contains thimerosal in tiny amounts (less than 0.0002%). In New York State, only thimerosal-free flu vaccine is given to children younger than 3.

**Gardasil (HPV vaccine)** is given to young men and women. It is a 3 dose series; the follow-up doses are given 2 and 6 months after the initial dose. The vaccine is effective at preventing 90% of genital warts and 70% of cervical cancer. This is exciting because Gardasil is the first vaccine to target a cancer, and it is so effective against a potentially lethal disease.

The vaccine can be given to patients from age 9 to 26. For maximum effectiveness, it should be given before the onset of sexual activity. The vaccine will not protect against other sexually transmitted diseases or pregnancy. It also does not replace the need for routine gynecologic care. The American College of Obstetricians and Gynecologists (ACOG) recommends that all young women have their first Pap screening at age 21 or 3 years after the onset of sexual activity, whichever comes first. Surveys consistently show that more than half of high school students have had sex.

We realize that parents may be uncomfortable with these issues or feel that their children are too young to be affected. Please discuss any concerns with your doctor. *The reality is that this vaccine is intended for all people who will ever have sex, and it will save lives.*

#### VACCINE SCHEDULE:

<u>At birth in hospital:</u>	Hepatitis B
<u>1 Month:</u>	Hepatitis B
<u>2 Months:</u>	Pentacel (DTaP/IPV/Hib) Prevnar Rotateq (oral)
<u>4 Months:</u>	Pentacel (DTaP/IPV/Hib) Prevnar Rotateq (oral)
<u>6 Months:</u>	Penatacel (DTaP/IPV/Hib) Prevnar Rotateq (oral)
<u>Yearly 6 Months through 5 years:</u> Influenza	
<u>12 Months:</u>	Prevnar Hepatitis B Hepatitis A
<u>15 Months:</u>	MMR Varicella
<u>18 Months:</u>	DTaP Hib Hepatitis A
<u>4Years:</u>	MMR Varicella
<u>5Years:</u>	DTaP IPV
<u>11 Years:</u>	Tetanus/Pertussis Booster

<u>11 to 12 Years:</u>	Menactra
<u>11 years and up:</u>	Gardasil (3 dose series)
<u>16 Years:</u>	Menactra

WARNINGS:

Children who are severely ill should not receive a vaccine. However, low grade fevers and common illness like ear infections are not reasons to delay the vaccine. Also, any history of anaphylactic reaction to the previous administration of a vaccine or its constituents contraindicates the use of that vaccine. Specific contraindications are as follows:

DTaP:	Encephalopathy within 7 days of administration Fever >40.5C (105F) within 48 hours Collapse or shock within 48 hours Seizures within 3 days (any history of epilepsy should be decided on an individual basis) Persistent, inconsolable, high-pitched crying lasting >3 hrs
Polio:	Infection with HIV or household contact with HIV Immunodeficiency in patient or household contact Steroid therapy in patient or household contact Pregnancy Anaphylactic reaction to neomycin or streptomycin
MMR:	Anaphylactic reaction to neomycin Pregnancy Immunodeficiency Steroid use Recent administration of gamma globulin
Varicella:	Pregnancy Steroid Use AIDS Immunodeficiency Anaphylactic reaction to neomycin
Influenza:	Anaphylactic reaction to egg

WHAT TO DO IF YOUR CHILD HAS A SIDE EFFECT:

If your child experiences a severe reaction after the administration of a vaccine, notify your pediatrician. If he is not available at the time, talk with the pediatrician covering in order to obtain immediate advice, but be certain to discuss your child's reaction with him later so that he may advise you further and make a note of this reaction in your child's medical record. In addition, certain reactions need to be reported to the Centers for Disease Control.

If your child experiences an uncomfortable, but non-severe reaction, you may wait until office hours to discuss it with your pediatrician and you may do the following:

- \*For fussiness, soreness, or mild to moderate fever - acetaminophen
- \*For soreness - apply cold pack or cold, wet washcloth at the site

A U.S. government program (The Vaccine Adverse Event Reporting System) provides compensation in the rare cases of persons injured by vaccines. For more information you may call this toll-free number: 1-800-822-7967, or visit their Web site at <http://vaers.hhs.gov>.

For additional general information, please visit <http://www.cispimmunize.org>.

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