

Adolescent Immunizations

Tdap - Tetanus, Diphtheria and Pertussis

- Tetanus - Tetanus is a bacteria that lives all over the environment - in dust, soil and manure. Tetanus enters the body with breaks in the skin - wounds, burns, animal bites, etc. It causes muscle spasms all over the body, which can be severe enough to break bones and cause suffocation. Almost 1/3 of tetanus cases are fatal.
- Diphtheria - The dangers associated with diphtheria come from the toxin released by the bacterium, *Corynebacterium diphtheriae*. The toxin makes it difficult for children to breathe and swallow, but it also attacks the heart, kidneys and nerves. Prior to the development of the diphtheria vaccine in the 1940's, diphtheria was a common cause of death in children and adolescents. The vaccine has eliminated diphtheria from the US. In the 1990's, we saw a severe outbreak of diphtheria following a decline in immunization rates in Eastern Europe (>50,000 cases reported at the peak). This taught us how quickly outbreaks can return and therefore we need to keep immunization rates high.
- Pertussis - Pertussis (also known as Whooping cough) is highly contagious and deadly. Prior to the vaccine, pertussis caused about 8,000 deaths in the United States every year. Now about 10 children die every year from pertussis. It is estimated that currently between 600,000 to 900,000 cases occur in adolescents and adults. Coughing can last months, and the cough can be so violent that people with pertussis crack ribs, break blood vessels, or develop hernias.

The Tdap vaccine should be given at 11 years old, and then subsequently every 10 years. Side effects may include soreness at the injection site.

Meningococcal

- About 1 in 20 children with meningitis caused by meningococcus and about 1 in 3 children with bloodstream infections (i.e., sepsis) caused by meningococcus will die from the infection. Death from sepsis can occur within 12 hours of the beginning of the illness — it is one of the most rapid and overwhelming infectious diseases known to man! Every year about 800 to 1,500 people in the United States are infected with meningococcus and about 120 die. Consequences of meningococcal infection occur in about 12 of every 100 survivors and include limb amputation, skin grafting, hearing loss, seizures, kidney disease and mental retardation. Immunization is the most effective way to reduce the incidence of death and permanent sequelae caused by meningococcus.

The meningococcal vaccine should be given at 11-12 years of age, with a 2nd booster dose given at 16. Side effects may include a mild headache that day.

HPV

Human papillomavirus is a virus that infects the skin, genital area and lining of the cervix. HPV infection leads to genital warts and several types of cancer - cervical, penile, anal and oropharyngeal (mouth and throat). HPV is the most common sexually transmitted disease in the United States and in the world. Twenty million Americans are currently infected with HPV and an additional 6 million Americans are infected every year. Half of those newly infected with HPV are between 15 and 24 years of age. Although most HPV infections typically resolve on their own, some persist. Every year in the United States about 26,000 HPV-associated cancers occur - about 18,000 of these are in females and about 8,000 are in males. 4,000 women die each year from cervical cancer in the US, 300,000 die worldwide. HPV can also cause changes in the cervix which lead to miscarriage and premature delivery of babies.

The HPV vaccine has been studied for 12 years and more than 1 million doses have been given in the United States. Despite concerns raised by the media and some citizen groups, no cause-effect links have been found between HPV vaccine and adverse events.

Abstinence is the only way to prevent HPV. Exposure can happen with any kind of experimentation that involves genital contact - intercourse isn't necessary. Most people who have HPV don't know they have it, so it can be hard to avoid. Condoms do NOT always prevent the spread of this infection. Even if your child abstains until marriage, remember that 1/4 of the fish in the sea are infected with HPV at some point in their lifetime. The reason that the vaccine is recommended at 11-12 years is because the adolescent's immune system is primed to respond best to the vaccine at a younger age. As far as we can tell, the 3 dose series at this age will protect them for life. Studies show that there is NOT an increase in risky behavior after this immunization series has been completed.

Gardasil is given as 3 injections over 6 months. Fainting can happen after receiving Gardasil, so we will have you remain seated for 15 minutes after each vaccine.