

## AUGUST IS NATIONAL IMMUNIZATION AWARENESS MONTH

During the last century, vaccines have literally transformed the world of medicine. While infectious diseases were the primary killers in the past, today the focus is on the prevention and treatment of chronic diseases like cancer, heart disease and diabetes. Before vaccines, parents in the United States could expect that every year:

- η Polio would paralyze 10,000 children
- η Rubella (German measles) would cause birth defects and mental retardation in as many as 20,000 newborns
- η Measles would infect about 4 million children, killing 3,000
- η Diphtheria would be one of the most common causes of death in school-aged children

Today, there are vaccines for 26 different diseases. Vaccines provide immunity by teaching your immune system to recognize, and destroy, bacteria and viruses (pathogens) before they can cause the illness. Vaccines provide protection without the risk associated with the symptoms and complications of disease. Many vaccine-preventable diseases can kill or cause permanent disability, such as paralysis (polio), liver damage (hepatitis B), deafness (meningitis), or brain damage (measles).

There are three ways to have immunity against a disease: INNATE (you are born with immunity), ACQUIRED (you become immune as a result of an event, such as actually having and recovering from a disease, or receiving a vaccine) or SHARED (you really aren't immune, but most of the people where you live, work or go to school are immune).

When you are exposed to a real pathogen, your body reacts by making proteins called antibodies. These antibodies act like soldiers, destroying the pathogen to prevent, or speed recovery, from the disease. While a vaccine does not “give” you the disease, the vaccine is made from the pathogen from which you will be protected. Some vaccines are weakened forms of the real pathogen (measles & chickenpox), a killed pathogen (polio) or just pieces of it (flu & pneumonia).

When a vaccine is injected or swallowed, it stimulates your immune system to produce antibodies, much like an actual infection. Antibodies that form against the vaccine intruder will quickly recognize, and work against, the real pathogen if you are exposed to it in the future. Most disease-acquired antibodies stay in your system, even after the illness is over. Some vaccine-acquired antibodies, such as tetanus, will need a periodic “booster” to maintain protection (immunity).

Trying to separate fact from myth can be difficult, especially when a possible vaccine-related event is reported in a sensationalized way. For example ...

*MYTH: Vaccines Aren't Safe.*

*The TRUTH is ...*

- η All recommended vaccines are rigorously tested by the FDA before they are licensed for public

use, and are continually monitored for safety. This process has led to the safer formulation of the pertussis vaccine, the shift from live (oral) polio to inactivated (injected) polio vaccine and the discontinuation of the rotavirus vaccine.

- η Sadly, babies die from SIDS, develop autism, have seizures ... whether they are vaccinated or not. When these events occur soon after a vaccination, it is easy to link the two as “cause and effect”. In fact, there is no scientific data to connect vaccination with any serious complications in children or adults ... side effects are usually limited to pain or tenderness where the shot was given or a low-grade fever.
- η There has been concern about thimerosal, a mercury-containing preservative used to reduce the risk of bacterial contamination of multi-dose vials of vaccine. While there is no data or evidence to indicate that children are exposed to dangerous levels of mercury from multiple childhood vaccinations, thimerosal has been removed, or is present in only trace amounts, in currently used vaccines.

*MYTH: Vaccines Aren't Necessary.*

*The TRUTH is ... in some ways, vaccines are the victims of their own success.*

“Most young parents today have never seen a case of mumps, measles or polio, stated W. David Richardson, Health Officer for the Manalapan Health Department. “Without first hand experience of their devastating consequences, it’s tempting to question the continued need for vaccines.” But ...

- η Some diseases, such as chickenpox, are still so prevalent in this country that a decision not to give a vaccine is a decision to get that disease.
- η Some diseases continue to lurk just below the surface. These diseases continue to occur, but at fairly low levels, such as measles, German measles and pertussis. If immunization rates drop, outbreaks of these diseases again will occur (this happened in the late 1980's when immunization rates against measles dropped - there were 100,000 cases of measles and more than 100 preventable deaths).
- η Some disease have been virtually eliminated from this country, such as polio and diphtheria. However, these diseases continue to flourish in other parts of the world, making new outbreaks just a plane trip away. International travel, immigration or commerce could easily import these diseases back into the United States.

Proper immunization is necessary to protect ourselves and the people around us. To learn more, or to ensure your child's immunizations are up-to-date, contact your physician or your local public health department.