PUBLIC HEALTH NEWS

HIGHTSTOWN HEALTH DEPARTMENT ▪ ▪ ▪ FALL 2010

BE WISE ... IMMUNIZE!

There are three ways to have **IMMUNITY** against a disease:

- **INNATE** or "natural" immunity provides an immediate "first line" of defense to continuously ward off pathogens. Since it is not stimulated by prior sensitization to a specific antigen, such as an infection or vaccination, innate immunity is generally nonspecific.
- **ACQUIRED** or "adaptive" immunity is specific to a particular antigen. It is the result of an event, such as having and recovering from a disease, or receiving a vaccine against a particular disease. This response takes days to develop, so while it may not prevent an initial invasion, it will normally prevent a subsequent infection and helps to clear up longer-lasting infections.
- **SHARED** or "herd immunity" occurs when the majority of people who live, work, or go to school together are vaccinated, providing protection to the minority of unprotected individuals. Infections that pass person-to-person need a new, unprotected person to keep spreading. The higher the proportion of a group that is immune, the lower the likelihood that a susceptible (unprotected) person will come into contact with someone who is infectious.

Before vaccines, parents in the United States could expect that every year:

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

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 prevention and treatment of chronic diseases like cancer, heart disease and diabetes.

Fortunately, today's parents - and younger healthcare providers - have never witnessed firsthand the consequences of these diseases. Many vaccine preventable diseases can kill or cause permanent disability including paralysis (polio), liver damage (hepatitis B), deafness (meningitis) or brain damage (measles).

Since it is hard to imagine the magnitude of these disease-related consequences, fear of disease has been replaced by fear of the rare, but well publicized vaccine-related side effects. Go to ***www.immunize.org/photos*** to understand the actual impact of these diseases. With the exception of smallpox, these vaccine-preventable diseases are still circulating on our planet.

IMMUNIZATION RESOURCES

Allied Vaccine Group
www.vaccine.org

Autism Science Foundation
www.autismsciencefoundation.org

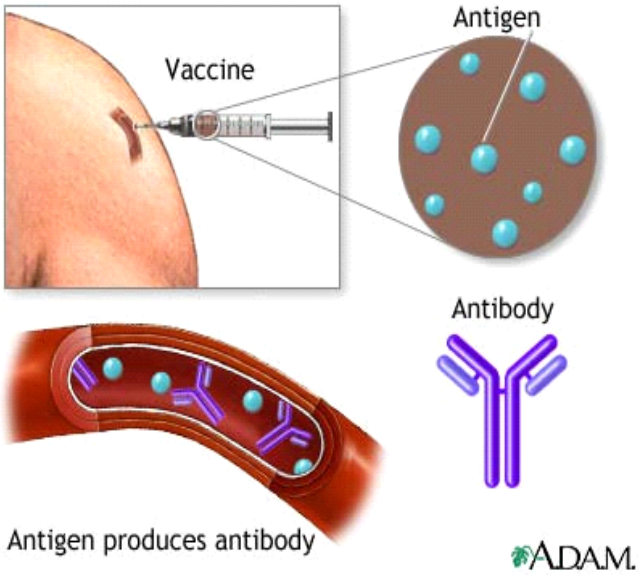
Centers for Disease Control
www.cdc.gov

Immunization Action Coalition
www.immunize.org

Vaccine Education Center
www.vaccine.chop.edu

HOW DO VACCINES WORK?

Today, there are vaccines for 26 different diseases. Vaccines teach your immune system to recognize and destroy bacteria and viruses before they can cause the illness. ***Vaccines provide protection without the risk associated with the symptoms and complications of disease.***



Every day your body is bombarded with bacteria, viruses and other germs (pathogens) that can make you sick. When you are infected with a disease-causing pathogen, your immune system recognizes an intruder in your body and mounts a defense against it by making antibodies (immune cells).

These antibodies destroy the pathogen to prevent or speed recovery from disease. Once you have developed immunity, you usually only get that disease once. The next time you encounter the same pathogen, your immune system quickly recognizes and eliminates it before you become sick.

Similar to an actual infection, a vaccine stimulates your immune system to produce antibodies. Like exposure to the actual pathogen, antibodies that form against the vaccine will quickly recognize and attack the real pathogen in infected cells if you are exposed to it in the future.

While vaccination 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 a real pathogen (chickenpox and flu nasal spray), a killed pathogen (polio) or just pieces of it (flu shot).

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 immunity.

HIGHTSTOWN HEALTH DEPARTMENT

Public Health
Prevent. Promote. Protect.

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Doug Davidson	Sr. Environ. Health Specialist
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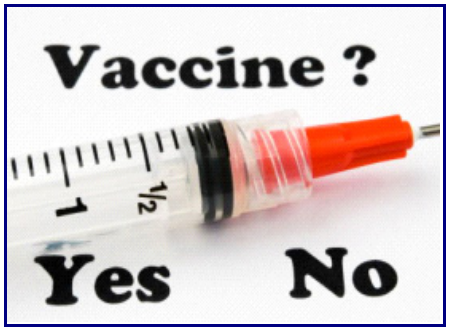
ANTIBIOTIC WARNING

Never take antibiotics for a viral infection. Antibiotics can only cure illnesses caused by bacteria ... they cannot kill viruses.

Each time we take antibiotics sensitive bacteria are killed, but a few resistant ones are left to grow and multiply, passing their resistance to future generations of the mutated bacteria. These bacteria have learned ways to become immune to the effect of antibiotics, becoming *antibiotic* or *antimicrobial resistant*.

Take medicine as prescribed by your health care provider. ALWAYS complete the full course of antibiotics, even if you are feeling better before the medicine is finished. Never save some of the medicine to treat yourself or others later.

VACCINE MYTHS



Many serious childhood infectious diseases that are highly contagious are vaccine-preventable. Adults should also be certain their vaccines are up-to-date since these “childhood” diseases are much more serious if experienced in adulthood, as well as being a potential source of infection to under-vaccinated children. BUT ...

... 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 Are Not Safe.

- 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 polio to inactivated polio vaccine and the re-manufacturing of the rotavirus vaccine.
- 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 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.
- 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 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 childhood vaccines.

MYTH: Vaccines Are Not Necessary.

In some ways, vaccines are the victims of their own success. Without first hand experience of their devastating consequences, it’s tempting to question the continued need for vaccines. However ...

- 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.
- 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 fall, outbreaks of these diseases will occur again. This happened in the late 1980's when immunization rates against measles dropped, resulting in 100,000 cases of measles and more than 100 preventable deaths.
- Some diseases have been virtually eliminated from this country, such as polio and diphtheria. Yet 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.

BE WISE ... IMMUNIZE AT EVERY AGE!

ALL THOSE BABY SHOTS! Within the first two years of life, a baby will receive vaccinations for up to 14 vaccine-preventable diseases:

HepA and **HepB:** Hepatitis A and B

PCV: pneumococcal conjugate vaccine

Hib: *Haemophilus influenzae* type b

RV: rotavirus infection

MMR: measles, mumps, rubella (German measles)

Polio

Dtap: diphtheria, tetanus, pertussis (whooping cough)

Varicella (chickenpox)

Influenza (annual flu shot)

Guidelines for the vaccine schedule are carefully designed - and regularly reviewed - for efficacy (effectiveness) and safety by the Centers for Disease Control's Advisory Committee on Immunization Practices (ACIP).

- Within the first month of life infants loses 50 percent of the maternal antibodies acquired before birth, leaving them unprotected. Early infection in infants is often more dangerous, one reason that the vaccine schedule is so intense.

- Some parents ask to "spread out" vaccinations over a longer period of time. This isn't necessary (or helpful) since the human immune system is designed to handle multiple antigens - including vaccines - at once. And research shows that delaying vaccination does **not** decrease adverse or side effects ... it just leaves infants unprotected.

For qualifying families, the Health Department offers FREE vaccinations as part of the Child Health Conference (Well Baby Clinic), as well as "catch up" shots for older children. Call (609) 936-8400 for more information.

THE 'TWEEN' YEARS

While the many years between babyhood and adulthood aren't as vaccine-intense as the first two years of life, children ages 2 - 18 may need "catch up" vaccinations.

In addition, talk with your healthcare provider about the following vaccinations:

Annual flu shot

MCV4: meningococcal conjugate and **Tdap booster** (required for 6th graders as they turn 11 years)

HPV: human papilloma-virus (for girls and boys ages 11-26)

..Vaccinations protect lives at **every** age. Whether you are a young adult or a senior citizen, make sure you keep your shots up-to-date. In addition to an **annual flu shot**, ask your health care provider if you need any of the following immunizations:

Tetanus, diphtheria, pertussis
Hepatitis A and/or B
MMR: Measles, mumps, rubella
HPV: human papillomavirus
Varicella
Pneumococcal
Zoster (shingles)
Meningococcal