

What do you think about vaccines, doctor?

An Update on Immunizations for Teenagers

When it comes to “shots”, the past six months have been a dizzy time, even for professionals. Not only have new vaccines been approved and released into the market, but there are complicated new recommendations for old vaccines.

This article will address six vaccines in particular:

1. Pertussis (whooping cough) booster
2. Human Papilloma virus (HPV) vaccine
3. Varicella (chicken pox) booster
4. Meningitis vaccine
5. Flu vaccine
6. Hepatitis A

PERTUSSIS

“The Whooping cough shot.” Pertussis is short for *Bordetella Pertussis*, the bacteria that causes whooping cough, so named because of the characteristic “whoop” of inhaled air at the end of a long and exhausting spasm of cough typical of this respiratory infection. Pertussis vaccination has long been part of the arsenal of shots given to babies and children under age two. Although most severe and worrisome in young babies, pertussis can be quite debilitating, lasting up to two months with congestion and cough, and is frequently underdiagnosed in adolescents and adults. There may be as many as one million cases a year. Beyond the concern for the sick individual is the greater concern for unvaccinated infants and incompletely vaccinated babies in such a patient’s midst.

Until recently, the Tetanus booster was typically given around age 15. The recommendation has now changed to give Tetanus and Pertussis together at the 11-12 year old check up. This shot, called the Tdap and marketed under two names-Boostrix and Adacel- should be given to any child who has not had the Pertussis booster. *This means that many older adolescents who may have already had a tetanus shot need to be re-vaccinated with the combined Tetanus/Pertussis vaccine.*

HUMAN PAPILOMA VIRUS (HPV) VACCINE

“The cervical cancer shot” The Human Papillomavirus (HPV) is associated with 99% of cervical cancers. HPV is a sexually transmitted virus, usually causing little or no symptoms and first detected through abnormalities on a Pap smear. Over time, about one in a thousand of these infections will lead to cervical cancer. Considering that over 5 million new cases of HPV are diagnosed every year, there is a huge reservoir of people who can transmit or harbor the virus, and eventually contribute to a large number of new cases of cancer.

In addition to cervical infection, HPV can cause genital warts in both men and women. It should be noted that about 80% of all HPV infections will clear spontaneously over time. The vaccine will prevent genital warts and undetectable infection with dangerous strains.

In a large, well respected study published in the Journal of the American Medical Association, 55% of sexually active, uninfected adolescents acquired an HPV infection within three years of entering the study. Since adolescents are at particularly high risk for HPV infection, the focus of the vaccine development has been on teens.

The current recommendation is that all girls, age 11-12 and all females aged 13-26 should be immunized. The vaccine is a three part series, given over six months.

VARICELLA

“The Chicken Pox shot” Immunization against Chicken Pox was first implemented in 1995. Many young adolescents have had the vaccine; although the number is smaller with each passing year, there are still many teens who have had the actual disease. Those who had disease are presumed, as they always have been, to be immune for life.

Recent research has shown that between 15 and 20% of recipients of only one dose of vaccine fail to develop immunity to varicella. Giving a second dose of the shot increases the immunity to about 98%. Sometimes the issue with giving a booster is that the antibodies and immunity wanes with time, but in the case of Chicken Pox, it appears that just one dose of the vaccine is insufficient in as many as a quarter of those vaccinated.

The current recommendation is to give the first dose between 12 and 15 months and a second dose of the vaccine between 4 and 6 years. For those

older kids who received one dose so far, the recommendation is to give a second catch-up dose as soon as possible.

MENINGITIS VACCINE

“The ‘college’ shot”

Meningococcal meningitis is a serious bacterial infection of the lining of the brain. About 2600 people a year used to contract the disease and it has a 15% death rate. For unclear reasons college freshman are at particularly high risk for this form of bacterial meningitis. For many years Menomune vaccine has been a rite of passage at the pre-college checkup.

Last year a new version of this vaccine, called Menactra, was licensed for use in younger adolescents. *It is now recommended to be given at the 11 or 12 year old checkup.* Menactra provides immunity for a longer period of time than Menomune. Unfortunately, since the recommendation was made last Spring to vaccinate all young teens, there has been a national shortage. In my office, I am limited to a delivery of five vaccines per month. Hopefully this will be resolved soon.

INFLUENZA VACCINE

“The flu shot”

Annual vaccination with “flu” (or influenza) vaccine is now recommended for all people over 6 months of age. A new batch is made each year trying to keep up with the clever mutation skills of the influenza virus. Hopefully this call for “universal vaccination” will not engender another national shortage.

HEPATITIS A VACCINE

“The traveller’s shot”

Hepatitis A is a highly contagious illness that causes “stomach virus-like” symptoms. It often causes mild, or even undetectable symptoms in young children, but can cause much more severe symptoms in older children and adults.

Until recently only people in high risk areas or travelers were routinely immunized. *The current recommendation is to vaccinate all children under 2. Two shots are required over a six month period and confer immunity for about 20 years. It is highly recommended to immunize travelers of all ages outside of North America, Western Europe and Australia. Some experts have suggested that routine universal vaccination would be a good idea.*

With all of this information, it is hard to know what to do first. How many shots is it reasonable to have at once and over what period of time? There are not always answers to these questions. A few guidelines are helpful:

- For all healthy individuals, the most pressing shot is probably the Meningitis shot because the disease is fairly random, rapid and devastating.
- For anyone with asthma, heart disease or other chronic illnesses, the Flu vaccine is critical.
- Third in importance is the new HPV vaccine that should be given to all teenage girls before they become sexually active.
- Under most circumstances it is safe (but not so friendly) to give as many as three shots at one time. In our office we try to spread them out over time in order of priority.

Recently a younger colleague was bemoaning all these new shots to me so I reminded him: “Not me,” I said. “I remember when we had to close wards for chicken pox outbreaks. And I remember how ill asthmatics got from “just” the flu. And I remember when teenagers died suddenly of meningitis on my watch.” “Not me,” I said.