



PARENTS PACK

MONTHLY UPDATES ABOUT
VACCINES ACROSS THE LIFESPAN

PNEUMOCOCCAL VACCINES FOR KIDS (PART 1): THE LATEST NEWS

For most parents, they may know the pneumococcal vaccine for one of two reasons. Either they have heard of it as “the vaccine that protects against ear infections” or they remember it by the predictable schedule of administration at the 2-, 4-, 6-, and 12- to 15-month visits. Older adults tend to think of this vaccine differently, more commonly referring to it as “the pneumonia vaccine.”

What may be less familiar for either group are details about the infection that is prevented and the history of pneumococcal vaccine development, including very recent vaccine updates that have led to revised vaccine recommendations for both adults and children. To keep our readers abreast of the latest news about this vaccine and why recommendation changes were warranted, we are presenting a two-part series in this summer’s *Parents PACK* newsletter. This month (July 2023), we will focus on updated recommendations for children, and in the August 2023 issue, we will focus on updated recommendations for adults.

Pneumococcal disease in children

Streptococcus pneumoniae is a bacterium that lives in the nose and throat of some people. About 90 different types of pneumococcal bacteria have been identified. These types are identified by their unique sugar coating, called a polysaccharide. While any child can be infected and get sick from pneumococcus, infants less than 1 year of age are particularly susceptible because their immune system is not as good at making an immune response to the polysaccharide coating of this (or any other) bacteria.

When children are infected, they can get ear and sinus infections that require a trip to the doctor, or they can become more severely ill and require hospitalization for conditions like meningitis (an infection of the lining of the brain and spinal cord), bloodstream infection (also known as “sepsis”) or pneumonia (an infection of the lungs). Unfortunately, immunity to one type of pneumococcus (e.g., after infection) does not provide protection against future infection with other types, so children can have multiple infections throughout their childhood.

Evolution of vaccine development

From 1977 to 2000, only one kind of pneumococcal vaccine was available. Called the “pneumococcal polysaccharide” vaccine (PPSV), it contained the sugar coating against 14 or 23 types of pneumococcus that most commonly caused illness. While PPSV was effective in adults, it did not work in the most susceptible group — infants — because as mentioned earlier, their immune systems do not make strong enough immune responses to the sugar coating of bacteria.

This issue was resolved when scientists figured out how to attach a harmless protein to the polysaccharide and use that as the vaccine. Called “conjugated vaccines,” the benefit of adding the harmless protein was that as the immune system responded to the harmless protein, it also generated immunity against the polysaccharide. The pneumococcal conjugate vaccine (PCV) was first licensed in the U.S. in 2000 — and it was a game changer when it came to protecting our youngest family members against these potentially fatal bacteria.

The first pneumococcal conjugate vaccine protected against the seven most common types of pneumococcus that infected young children. It was called, “PCV7.” Within the first year of use, meningitis and bloodstream infections caused by pneumococcus dropped by almost 80%. Cases of pneumonia and ear infections caused by pneumococcus have also declined over time. Scientists and laboratories continued to collect data on what types of pneumococcus were still causing children to become ill, and a newer version of the vaccine was introduced in 2010 to replace PCV7. This newer version (PCV13) protected children against 13 types of pneumococcus.

More recently, two new PCV vaccines became available to protect against even more types. PCV15 became available in June 2022, and PCV20 was just recommended in June of this year (2023). Because of these new options, otherwise healthy children should get either the PCV15 or PCV20 versions as recommended for their age group. It is likely that PCV13 will soon stop being distributed now that these vaccines are available to protect children against more types of pneumococcus.

In addition to infants, some other children are recommended to get pneumococcal vaccine based on health conditions that increase their risk for infection. These children may require either PCV15 and the polysaccharide version (PPSV23) or just PCV20. Families with children that have complex or immune-compromising conditions should talk with their child’s healthcare provider to ensure that they are appropriately protected.

In sum: Today, we see far fewer cases of children hospitalized with meningitis, bloodstream infections, complicated pneumonia and sinusitis given that more than 80% of U.S. children are vaccinated against these bacteria before age 2. In this regard, the conjugate pneumococcal vaccine has been a remarkable success. Be sure to check out the August 2023 issue of *Parents PACK* to see how pneumococcal vaccine has also impacted adults.

DR. HANDY’S CORNER – Pneumococcal vaccine & kids



Find out more about pneumococcal infections in kids, the complications that can result in hospitalization, and why pneumococcal vaccines were more difficult to make than some other vaccine-preventable bacterial infections.

Watch the video: bit.ly/pneumo-vaccine-kids.

NEWS & NOTES

New film peeks behind the curtain at FDA

The Vaccine Makers Project (VMP), the classroom program of the Vaccine Education Center, recently released a new 30-minute documentary film. Called *Marion Gruber: Preparedness Is Prevention*, the film showcases Dr. Gruber’s years working as a scientist at the U.S. Food and Drug Administration (FDA). She was there for several recent public health emergencies, including the 2009 H1N1 influenza pandemic, several recent Ebola outbreaks, and most recently, the COVID-19 pandemic. She left the FDA in 2021 after COVID-19 booster shots were recommended for most, despite a lack of evidence to support their usefulness. For more info, please visit News & Notes online, bit.ly/July2023NN.

