



How vaccines for children and teens work

Have you ever wondered how a tiny shot can keep a baby from getting a serious disease? When they are born, babies have immunity to some diseases passed on to them by their mother. But this immunity does not last or get a child ready for long-term health into adulthood.

The good news is that a baby's immune system is ready to learn how to recognize and resist diseases at just the right time. Vaccines that support strong immunity are included in the American Academy of Pediatrics (AAP) Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger. Each year, experts, including pediatricians, review the most recent scientific data for each vaccine before approving the schedule.

Vaccines work in a few different ways

Vaccines are like teachers for your child's immune system, which learns to recognize and resist diseases. When your child gets a vaccine, the immune system gets to work right away. It takes what it learned from the vaccine so it can be ready if your child is exposed to harmful germs.

All of us are exposed to germs every day. Some might cause a cold or a minor illness. But then there are other viruses and bacteria that can make children very sick. Thankfully, pediatricians don't see many serious diseases like measles, diphtheria and polio any longer, but they are still around. That's why it's important to get vaccinated—so your child's immune system will know what to do, and set them up for a healthy life into adulthood.

How many diseases does a child's immune system learn to resist before they start kindergarten?

Immunization is one of the most important steps we can take to support kids' health, so they can learn, grow, and thrive. Following the AAP recommended vaccine schedule ensures that by the time your child is old enough to start kindergarten, their immune system will be ready to recognize and resist 16 diseases. This helps them get ahead of the germs so they can stay healthy and not miss out on all the fun activities at school. Vaccines keep their school friends, families and communities healthy, too. When more school kids have immunity, it's harder for dangerous contagious diseases to spread.

From birth to age 6 years old, infants and children benefit from the following immunizations: hepatitis B, respiratory syncytial virus (RSV), rotavirus, diphtheria, tetanus, whooping cough (pertussis), Haemophilus influenzae type b, polio, pneumococcal disease, COVID, flu (influenza), measles, mumps, rubella, chickenpox (varicella) and hepatitis A.

Sometimes, a child might have a medical reason why they should skip one or more shots. A medical exemption might be temporary or permanent, based on the child and their condition.



Learn more about the AAP
recommended vaccine schedule



Childhood Immunizations: Common Questions

There's a lot of information out there about vaccines. Sometimes it's hard to know if what you hear or read online is true. Read on for answers to some of the most common questions parents ask about vaccines. If you need more information about immunizations, talk with your pediatrician. Together, you can make informed decisions on how to keep your child healthy so they can focus on growing, playing and learning.

Q What is the benefit of getting my child immunized?

A Immunized kids are healthy kids who aren't sidelined by preventable diseases like polio, measles or chickenpox. Vaccines teach your child's immune system to recognize and resist serious germs that can make

them very sick. That means your child can focus on growing and learning. It also protects others in the community: When more people are vaccinated, it's harder for diseases to spread. That's especially important in crowded spaces like schools and child care centers.

Q Should all children follow the same vaccine schedule?

A The American Academy of Pediatrics' recommended vaccine schedule is based on how healthy kids' immune systems develop and learn. It's the plan that America's doctors, nurses and pharmacists trust. Exceptions are very rare. For example, if your child has a chronic condition or takes medicine that weakens their immune system, your

pediatrician may recommend a different schedule or vaccine.



Watch this video to learn more about the recommended timing and pace of vaccines.

Q Why does my child have to get some vaccines every year?

A Annual vaccines are like routine software updates for your phone: they update your child's immune system to help it stay ahead of preventable diseases. Some germs—like the viruses that cause influenza and COVID—change over time. The vaccines change to keep up with them. A yearly flu shot helps your child's immune system recognize and resist the latest version of these germs.

Q Can my child get vaccines if they are sick?

A Yes. Your child's immune system deals with thousands of germs every day. Getting a vaccine during a mild illness, like a cold, doesn't overburden it. Keeping up with vaccines helps their immune system prepare to resist serious diseases. That means your child (and you) won't have to miss school (or work) because of a serious preventable illness.



Watch this video for tips to keep your child healthy during respiratory virus season.

Q If I get a vaccine during pregnancy, is my baby protected?

A Yes. When moms get immunized during pregnancy, they pass important antibodies to their developing baby. Those antibodies continue to protect the baby in the first months of life. That's especially important for diseases like pertussis (whooping cough), influenza, COVID and respiratory syncytial virus (RSV). Babies who catch these contagious diseases can end up in the hospital because their lungs and airways are so tiny. Yet the baby's immune system isn't ready for most of those shots until age 6 months. Getting those vaccines during pregnancy gives your baby a healthy head start so they can grow and thrive.



Learn why moms need immunizations during pregnancy in this video.

Q Do some vaccines help my child develop lifelong protection?

A Researchers are always studying how long vaccine protection lasts, how many doses are needed, and how much time between doses works best. That is why your child needs the flu shot every year, for example. Other vaccines can help develop lifelong protection with two or more doses spaced months or years apart. For example, two shots of the varicella vaccine, at 12-15 months and 4-6 years, prevent chickenpox for life.

Take a closer look...



Vaccines contain either an antigen—a piece of the germ—or some instructions that tell our bodies how to make the antigen. They teach the immune system to produce antibodies to get rid of the virus or bacteria. Then, those antibodies remember what to do if we're exposed in the future.

In some vaccines, the antigen is a virus that has been weakened. This means it will not be able to reproduce in your body or make you sick. But it does a great job of teaching your immune system to be ready for the real thing in the future.

Other vaccines use a virus that has been killed, a tiny piece of a virus or bacteria, or a weakened form of a toxin, like the kind produced by the bacteria that cause diphtheria and tetanus. It can't make you sick, but it teaches your immune system to recognize the germ. Getting one or more doses of a vaccine later on gives the immune system a boost so it remembers what to do.

The recipe for most vaccines is pretty simple. Besides the antigen, some vaccines contain aluminum salts. This helps make the antigen work better so children can get a lower dose. The amount of aluminum in vaccines is small—much less than your child gets from everyday food and water. Some vaccines also include tiny amounts of preservative and other ingredients to keep germs out.

That's it! After your child gets a vaccine, their arm may feel sore or they may get a fever. That's a sign your child's immune system is getting stronger. After the vaccine does its job, it leaves the body and is gone. A week or two later your child's immune system is better able to protect your child.

Remember

Vaccines have been given to millions of children and teens. They are closely studied and we know they contribute to community immunity. In fact, vaccines work so well that most reduce your child's risk of getting these diseases by 90 percent or more! Childhood and teen immunization is an amazing way to support your child's health so they can stay healthy, grow, learn, and thrive.



Falling behind on vaccines happens, but your pediatrician can help your child get back on track. Watch this video to learn more.

same conclusion: Vaccines are not linked to autism. If you have concerns about vaccines and autism, talk with your pediatrician.

Q Do vaccines cause autism?

A No, vaccines do not cause autism. Medical researchers around the world have spent more than two decades studying this harmful claim. All have come to the

Learn more about the AAP recommended vaccine schedule



Follow pediatricians for trustworthy content on children's health

As you read up on things that affect your child's health, you may come across false rumors or outdated ideas—especially on the internet and social media. It's important to find trustworthy, up-to-date information. That can be hard when the internet and social media can elevate falsehoods and products that claim to improve kids' health. Pediatricians, on the other hand, chose their demanding profession because they care deeply about children and families. Here are some pediatricians, medical researchers and children's health experts the American Academy of Pediatrics trusts to be accurate and honest and to speak from a place of caring for kids.



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A children's health website you can trust

HealthyChildren.org is widely cited as a trustworthy source of accurate health information. HealthyChildren.org articles are written and reviewed by members of the American Academy of Pediatrics, pediatricians committed to the physical, mental, and social well-being of all children, teens, and young adults. Plus, all articles are available in Spanish on HealthyChildren.org en Español.



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