It's Time for Your Booster Dose!

What is a vaccine?

A vaccine is a product that is given to babies, children, and adults to produce immunity to specific harmful diseases. Vaccines come in a variety of forms including needles (injections), by mouth (orally), and sometimes even sprayed into the nose (nasally). Vaccines are produced to protect babies, children, and adults from serious and potentially deadly diseases.[1]

Vaccines 'teach the body' how to respond to future exposure to virus' and bacterias. They give the immune system the tools to fight disease without the person having to risk the side effects that the disease could bring. Vaccines train your immune system so that it can fight a disease when it comes in contact with it in the future. It is safer for babies, children, and adults to get vaccines than it is to catch the disease.[2]

How do vaccines work?

When a baby, child, or adult receives a vaccine, their immune system responds. The immune system sees a vaccine the same way it does the real disease or infection and it goes to work. When a person receives a vaccine, their immune system responds by doing three main things:

1. The immune system sees the antigen from the vaccine or illness as a foreign germ.

2. The immune system responds by making antibodies for the germ.

3. The vaccine teaches the immune system how to respond to future exposures to the disease so that if you ever come into contact with the disease in the future, your immune system already knows how to quickly fight it off.[2] Not all vaccines create long term immunity. For example, the Influenza vaccine is recommended each year and Tetanus vaccine every 10 years.

The proteins that our body makes to help fight off harmful diseases are called antibodies. There are a few different ways that our body protects us from harmful diseases. We may be born with short-term immunity from harmful diseases (this is from maternal antibodies) or we may build protection from vaccines or after we have an infection. Maternal antibodies are when the mother passes some of their antibodies through the placenta to their baby before the baby is born.[3,4] The duration of maternal antibodies is short lived and no memory is created in the immune system.[5]

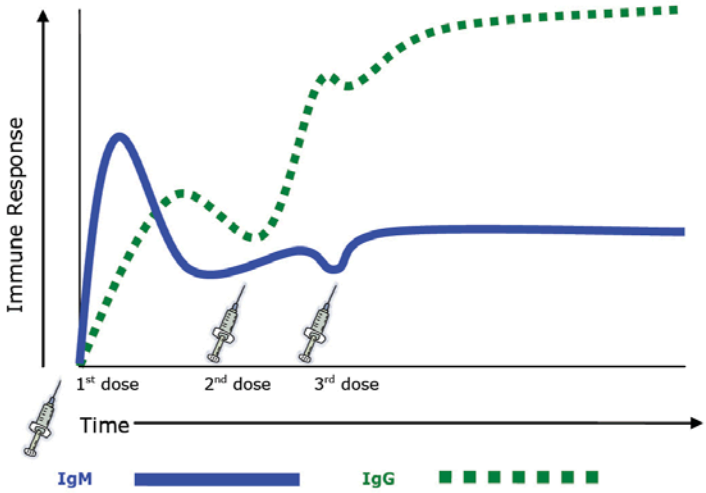
When we receive a vaccine our immune system goes to work to make antibodies to fight against the harmful disease. Your immune system has a great memory and those antibodies will fight against the disease if you come into contact with it in the future. Your antibodies help protect you, meaning you might not get as sick, or you might not get sick at all.[3] Not all vaccines create long term immunity. For example, the Influenza vaccine is recommended each year and Tetanus vaccine every 10 years.

What is the immune system?

The body has a natural defense system and it is called the immune system. It is made up of many parts including organs, cells, and tissues. Your body's immune system helps fight against harmful infections and diseases to help keep you healthy and protect your body.[2,3]

Why do we need more than one dose of inactivated vaccines?

Figure 8 – Immune Response to Non-Replicating Vaccines



IgM represents short term response and IgG represents long term memory[#5]

The graph represents how our body responds to three doses of an inactivated vaccine. Individuals need to receive more doses of killed vaccines to build a strong, lasting immune response to the germ.

Vaccine Dose #1: The body's reaction is short and has low intensity. The first dose of vaccine gets the immune system ready for an immune response.[5,6] The first dose "primes" the immune system.[6]

Vaccine Dose #2 + #3: The body's immune system remembers the vaccine and is able to make specific antibodies more rapidly.[5] The second and third dose produces a protective immune response.[6]

Booster Doses: Immunity from inactivated vaccines can decrease over time. To make sure individuals have continued protection, they need to receive booster doses of the vaccine. An example of a vaccine that needs a booster dose is Tetanus.[6]

It is safer for babies, children, and adults to get vaccines than it is to catch the disease the vaccine is working to prevent.[2]

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Basic Immunization Schedule for Healthy Children Starting Series at 2 Months of Age

	2 Months	4 Months	6 Months	On or after 1st Birthday	18 Months	4-6 Years	Grade 6	Grade 9
DTaP-HB-IPV-Hib (or DTaP-IPV-Hib and HB) (Diphtheria, Tetanus, Pertussis, Hepatitis B, Polio, Haemophilus influenzae type b)	X	X	X					
PCV13 (Pneumococcal Conjugate)	X	X		X				
Men-C-C (Meningococcal C Conjugate)	X			X				
Rotavirus	X	X	X					
HA (Hepatitis A)			X (Aboriginal infants only)		X (Aboriginal infants only)			
Flu (Influenza)			X					
MMR (Measles, Mumps, Rubella)				X				
Varicella (Chicken Pox)				X			X (not required if 2 doses already received)	
DTaP-IPV-Hib (Diphtheria, Tetanus, Pertussis, Polio, Haemophilus influenzae type b)					X			
Tdap-IPV (Tetanus, Diphtheria, Pertussis, Polio)						X		
MMRV (Measles, Mumps, Rubella, Varicella)						X		
HPV9 (Human Papillomavirus) (Two dose series)							X	
Men-C-ACYW (Meningococcal Quadrivalent Congugate)								X
Tdap (Tetanus, Diphtheria, Pertussis)								X

**Note: Some exceptions apply. For full schedule, including exceptions and reasoning, please visit Communicable Disease Control Manual, Chapter 2: Immunization, Part 1: Immunization Schedules.*

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