

Shots are a Good Thing

A presentation on vaccination and the immune system for 6 to 10 year old children

This presentation was developed by graduate students in the Department of Microbiology and Immunology at Loyola University Chicago as part of an "educate the public" initiative. The presentation has 10 color cartoons and a script associated with it. You are welcome to download both the script and cartoons for use in your not-for-profit presentations. For more background information about this project, see "Shots are a Good Thing" by M. A. Swanson and C. Kamperschroer.

Vaccinations

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Start Script

How many of you have gone to the Dr.'s office and gotten a shot?

Does anyone know why we need to have shots?

Anticipated answer 1.) to get better (antibiotics)
 2.) to keep us from getting sick

Sometimes we go to the doctor's office to get a shot that will help us get better. Sometimes we get shots when we feel perfectly fine. Have any of you gone in for a 'physical' and had to get a shot before leaving? That shot is special because it prevents you from getting sick.

Does anyone know another word for a type of shot that prevents you from getting sick? They are called **VACCINATIONS** (Drawing 1). Can you say vaccinations with me? Vaccinations, or another word, Vaccines, keep us healthy!!

Does anyone know HOW vaccines help us?

A vaccine trains your body to fight off germs. Does everyone know what germs are? What do germs look like? Germs are bad for us, so we need a way to combat them. Each of us has an army to fight off germs called our immune system. Can you say that with me? (Drawing 2) Your immune system contains a lot of different cells that work together as an army and are constantly at war with germs to keep us healthy. Even though you don't realize it, your immune army is fighting off germs every minute of every day.

So if we have this army to keep us healthy, can you imagine why we need vaccines?

One reason is that there are some germs that are really strong. When they attack the body, they beat up initially on our body and we get sick. Another reason is that sometimes there are too many germs for our immune army to fight, so it takes a while for our army to fight back.

Have anyone of you been sick lately? What was wrong?

Anticipated answers: cold, flu, chicken pox

These were all caused by germs that beat up on our army. Eventually the army fights back and defends you. Since your immune army fought back, you got better.

Wouldn't it be great if there was a way to prepare our army for germs? Then, they wouldn't be able to beat up on our bodies. Well, **What do regular armies do to prepare for a battle?** (Diagram 3) They train!! This is what vaccines do for OUR IMMUNE ARMY. Vaccines train our armies against certain germs so that they can prepare for attack if germs get into your body!! Let's learn how vaccines work!!

When you get a shot or a vaccine, you get a weakened form of the germ. (Diagram 4) This germ can't hurt you because it is weak, but it can be recognized by your immune army. Once the immune army recognizes what the germ looks like and they can practice defeating the germ. They learn what the germ looks like and they take turns practicing to defeat them. Next time, when the really dangerous germ gets into your body, your immune army is ready to defeat the germs!!

What happens when your immune army wins?

YOU STAY HEALTHY!!!

So far, we have talked quite a bit about what the army does. Do you want to know who are the main members of the immune army and their jobs? Let's learn who is protecting you from the dangerous germs!

The first member of your immune army that we are going to talk about today is called Bobby the B cell. (Diagram 5) Bobby the B cell is like a footsoldier in the army. He is continually roaming the body looking for germs. He hops into the bloodstream and checks out your liver: no germs there. He also checks out your heart, your arms and legs, everywhere!! He makes sure there are no germs threatening you. But after a vaccination, Bobby spots the germ. Bobby the B cell goes up to the germ and checks him out with what we call antibodies.

(Diagram 6) Can you say that with me? The antibodies are like ultra powered magnets that Bobby uses to stick onto objects that he finds in the body. He continues patrolling until his antibodies stick onto a germ. Once Bobby locks onto a germ, he uses the magnet to pull off a piece of the germ for proof that germs have invaded the body. Now Bobby knows that he needs to make the rest of the immune system aware that there are germs in the body and the immune army needs to go into action.

In an army, what do foot soldiers do when they come in contact with important information?

Anticipated answer: They tell it to a general or superior officer

This is exactly what Bobby the B cell does. (Diagram 7) Once he has proof that a germ has invaded, he goes to tell his general that there are germs invading, the body. So Bobby hops into the bloodstream again, and starts to search for his superior officer. His superior officer is called Tina the T cell. Tina is the general in the immune army. Once he finds her, he shows her this important piece of information. Tina looks at Bobby's finding and has to make the decision whether the immune army should attack. Once Tina has determined that Bobby has found a germ, she tells them to find these germs and attack. (Diagram 8). Now they know what the bad germs look like and hunt them down throughout the body. They move all throughout the body, looking for more germs. They don't quit until every germ is gone. Now, Bobby the B cell has been trained and the B cell soldiers become stronger and remember to be on the lookout for the germ. So Bobby and Tina work as a team to fight germs. Bobby looks out for the germs and presents them to Tina. Tina then tells Bobby and other B cells to attack. The B cells go all throughout your body and kill every germ. After training against all of these weakened germs, the immune army becomes stronger and smarter. (Diagram 9) Bobby next time will remember what the dangerous germ looks like and he will be able to quickly defeat the germ. When your immune army is trained, you stay healthy! (Diagram 10) The amazing thing is that all of this goes on without you even thinking about it.

NOW, how many of you think that it is worth getting shots?!!

That's right, getting shots or **VACCINATIONS** keep us healthy!