# How Vaccines Work

## What is Immunity?

When disease germs enter your body, they start to reproduce. Your immune system recognizes these germs as foreign invaders and responds by making proteins called **antibodies**. These antibodies' first job is to help destroy the germs that are making you sick. They can't act fast enough to prevent you from becoming sick, but by eliminating the attacking germs, antibodies help you to get well.

The antibodies' **second** job is to protect you from future infections. They remain in your bloodstream, and if the same germs ever try to infect you again — even after many years — they will come to your defense. Only now that they are experienced at fighting these particular germs, they can destroy them **before** they have a chance to make you sick. **This is immunity**. It is why most people get diseases like measles or chickenpox only once, even though they might be exposed many times during their lifetime.

## Vaccines to the Rescue

Vaccines offer a solution to this problem. They help you develop immunity without getting sick first.

Vaccines are made from the same germs (or parts of them) that cause disease — measles vaccine is made from measles virus, for instance, and *Haemophilus influenzae* type B (Hib) vaccine is made from parts of the Hib bacteria. But the germs in vaccines are either killed or weakened so they won't make you sick.

Vaccines containing these weakened or killed germs are introduced into your body, usually by injection. Your immune system reacts to the vaccine the same as it would if it were being invaded by the disease — by making antibodies. The antibodies destroy the vaccine germs just as they would the disease germs — like a training exercise. Then they stay in your body, giving you immunity. If you are ever exposed to the real disease, the antibodies are there to protect you.

Immunizations help your child's immune system do its work. The child develops protection against future infections, the same as if he or she had been exposed to the natural disease. Except with vaccines your child doesn't have to get sick first to get that protection.