

# Infection Prevention and You



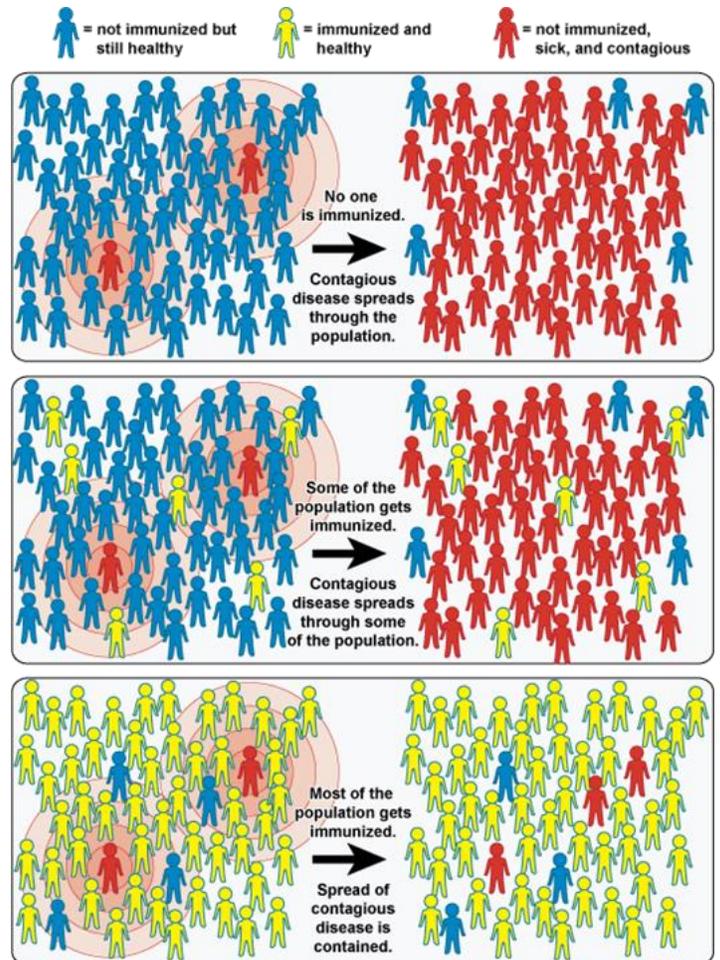
## Herd immunity

### What is herd immunity?

Herd immunity (or community immunity) occurs when a high percentage of the community is immune to a disease (through vaccination and/or prior illness), making the spread of this disease from person to person unlikely. Even individuals not vaccinated (such as newborns and the immunocompromised) are offered some protection because the disease has little opportunity to spread within the community.

Vaccines prevent many dangerous and deadly diseases. In the United States, smallpox and polio have both been stamped out because of vaccination. However, there are certain groups of people who cannot get vaccinated and are vulnerable to disease: babies, pregnant women, and immunocompromised people, such as those receiving chemotherapy or organ transplants. For example, the earliest a baby can receive their first pertussis or whooping cough vaccine is at two months, and the earliest a child can receive their first measles vaccine is at one year, making them vulnerable to these diseases.

Herd immunity protects the most vulnerable members of our population. If enough people are vaccinated against dangerous diseases, those who are susceptible and cannot get vaccinated are protected because the germ will not be able to “find” those susceptible individuals.



Credit: NIAID

### Why are there still outbreaks of vaccine-preventable diseases?

Measles was declared eliminated in 2000. Yet in 2014, there were 668 cases reported. The disease was spread when infected people traveled to the United States. These infected people then exposed unprotected people to the disease. There are a number of reasons why people are unprotected: some protection from vaccines “wanes” or “fades” after a period of time. Some people don’t receive all of the shots that they should to be completely protected. For example you need two measles, mumps, and rubella (MMR) injections to be adequately protected. Some people may only receive one and mistakenly believe they are protected. Some people may object because of religious reasons, and others are fearful of potential side effects or are skeptical about the benefits of vaccines.

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## When doesn't herd immunity work?

One of the drawbacks of herd immunity is that people who have the same beliefs about vaccinations frequently live in the same neighborhood, go to the same school, or attend the same religious services, so there could be potentially large groups of unvaccinated people close together. Once the percentage of vaccinated individuals in a population drops below the herd immunity threshold, an exposure to a contagious disease could spread very quickly throughout the community.

## What can you do?

Talk to your healthcare provider. Ask about your immunization status and if you and your family members are up-to-date on your shots. Staying on schedule with vaccinations not only keeps you safe, but also keeps your loved ones and your community safe.

## Additional resources

Vaccination saves lives—APIC consumer alert <http://www.apic.org/For-Consumers/Monthly-alerts-for-consumers/Article?id=vaccination-saves-lives>

For parents: Vaccines for your children—CDC <http://www.cdc.gov/vaccines/parents/index.html>

Community immunity—Vaccines.gov <http://www.vaccines.gov/basics/protection/>

Measles death points to need for herd immunity—MedPage Today <http://www.medpagetoday.com/InfectiousDisease/GeneralInfectiousDisease/52473>

Community immunity—NIAID <http://www.niaid.nih.gov/topics/pages/communityimmunity.aspx>

Recommended immunizations for children from birth through 6 years old—CDC <http://www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf>

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