

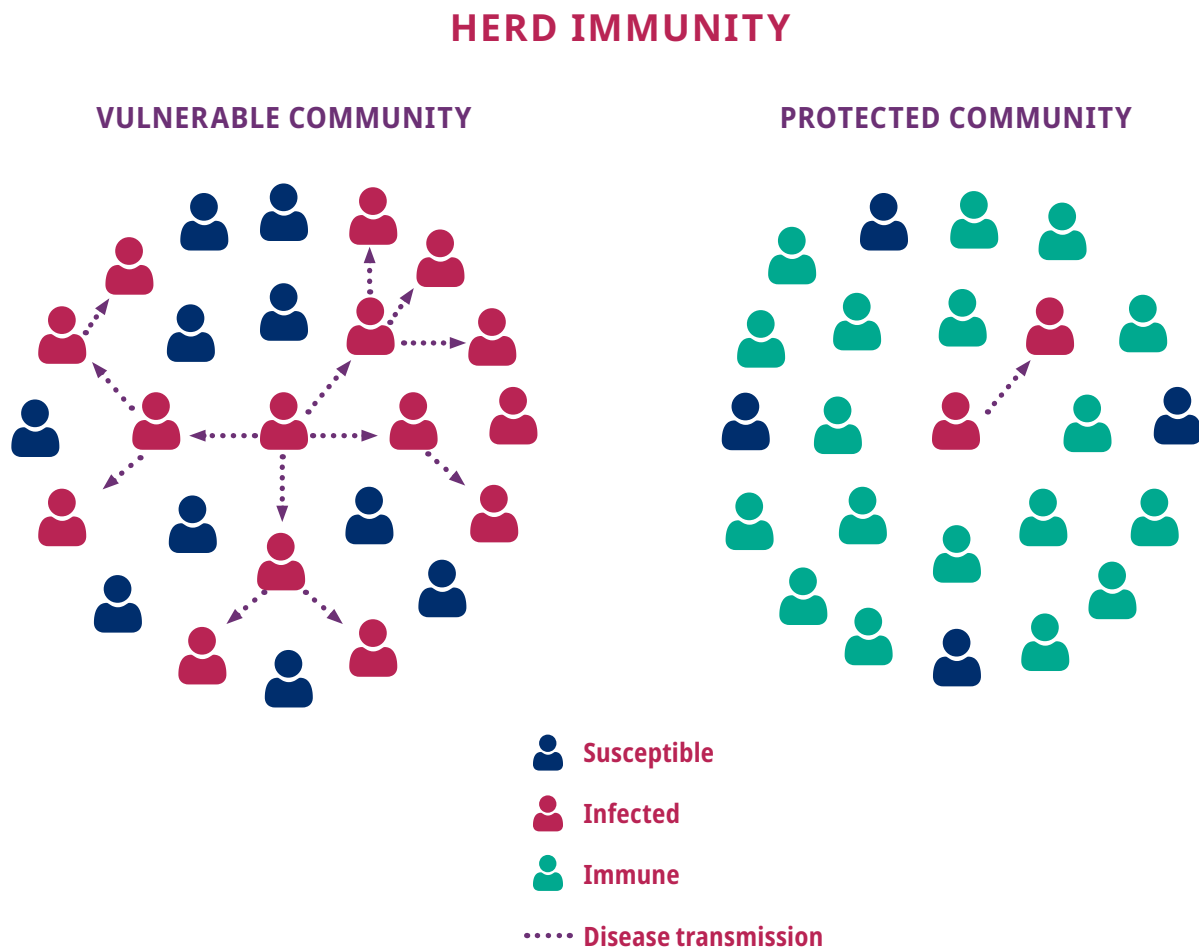
Vaccines Boost Herd Immunity

It may be surprising, but for a myriad of reasons, some people are not able to receive vaccinations, such as some infants, elderly individuals and those with compromised immune systems, just to name a few. This makes it more important for individuals who can get vaccinated, to do so to help provide herd immunity.¹

Herd immunity occurs when a large portion of the population becomes immune to an infectious disease, reducing the likelihood of disease spread and providing indirect protection to those who are not immune.² Herd immunity has successfully curbed the spread of diseases such as measles, polio and smallpox and protected vulnerable populations who cannot take vaccines. However, its effectiveness relies on maintaining sufficient immunization coverage to prevent outbreaks.

When insufficient herd immunity exists within a community, infectious diseases can spread rapidly, sickening or killing many people.

Below is the impact of disease and the consequences of what happens if communities do not maintain adequate immunization levels.





Disease	Herd Immunity Threshold	Number of People Each Sick Person Can Infect	Symptoms of Disease
Measles	92–94% ³ (9 in 10 individuals vaccinated)	12–18 ⁴	High fever, sore throat, runny nose, full-body rash, severe body aches. Complications include brain swelling, blindness, ear infections, and pneumonia, which is the leading cause of death in fatal measles cases. Children are particularly susceptible.
Polio	80% ⁵ (8 in 10 individuals vaccinated)	5–7 ⁶	Begins with flu-like symptoms, progresses into nervous system issues ranging from muscle weakness to paralysis. Immobilization of muscles may lead to suffocation. Survivors face chronic pain and may suffer from post-polio syndrome.
Mumps	83–86% ⁷ (8 in 10 individuals vaccinated)	4–7 ⁶	Fever, headache, and fatigue, often followed by painful swelling near the jaw. In severe cases mumps may cause swelling of the brain and other organs, which in extreme cases can be fatal.
Rubella	83–86% ⁸ (8 in 10 individuals vaccinated)	6–7 ⁶	Fever, fatigue, and headache. The virus often causes a rash that begins on the face and quickly spreads throughout the body. While rubella is often mild it can have devastating effects on unborn children. Rubella in pregnant women may lead to severe birth defects, including, deafness, heart defects, and/or cataracts.
Pertussis (whooping cough)	92–94% ⁹ (9 in 10 individuals vaccinated)	5–17 ⁶	Pertussis begins with mild cold-like symptoms. As the disease progresses, severe coughing fits can result in difficulty breathing. These coughing fits can be violent and lead to vomiting and broken ribs. In infants, the disease can cause suffocation or brain damage due to lack of oxygen.

¹ <https://www.cdc.gov/vaccines-adults/reasons/index.html>

² <https://my.clevelandclinic.org/health/articles/22599-herd-immunity>

³ <https://www.aap.org/en/patient-care/measles/measles-vaccine/>

⁴ https://wwwnc.cdc.gov/eid/article/30/9/24-0150_article

⁵ <https://www.who.int/news-room/questions-and-answers/item/herd-immunity-lockdowns-and-covid-19>

⁶ <https://www.tr.cocukenfeksiyondergisi.org/upload/documents/2020-01/2020-14-1-en-047-048.pdf>

⁷ https://www.tandfonline.com/doi/10.4161/hv.18444?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed#d1e109

⁸ <https://www.cdc.gov/mmwr/volumes/70/wr/mm7023a1.htm>

⁹ <https://pmc.ncbi.nlm.nih.gov/articles/PMC4826451/>