# Why Vaccinate?

Vaccination's immediate benefit is individual immunity: It provides long-term, sometimes lifelong protection against a disease. The vaccines recommended in the early childhood immunization schedule protect children from measles, chicken pox, pneumococcal disease, and other illnesses. As children grow older, additional vaccines protect them from diseases that affect adolescents and adults, as well as for diseases they may encounter during travel to other regions. Travelers to certain parts of South America and Africa, for example, are required to receive the yellow fever vaccine, as the disease is still prevalent there.

The secondary benefit of vaccination, however, is herd immunity, also known as community immunity. Herd immunity refers to the protection offered to everyone in a community by high vaccination rates. With enough people immunized against a given disease, it's difficult for the disease to gain a foothold in the community. This offers some protection to those who are unable to receive vaccinations—including newborns and individuals with chronic illnesses—by reducing the likelihood of an outbreak that could expose them to the disease. It also protects vaccinated individuals who may not have been fully immunized against a disease (no vaccine is 100% effective).

When community vaccination rates drop below the threshold of herd immunity, widespread disease outbreaks can occur. The threshold of herd immunity for polio, for example, is estimated to be between 80% and 86%;[1] if the vaccination rate drops significantly below this level, the level of community protection may not be enough to prevent the disease from spreading—primarily to those who have no prior immunity because they haven't been vaccinated (due to chronic illnesses or vaccine refusal) or because they were vaccinated, but it was not effective.

This is precisely what happened in England when MMR (measles, mumps, and rubella) vaccination rates dropped. Measles is extremely infectious; therefore, it has a higher herd immunity threshold than most other diseases. In the late 1990s, MMR vaccination rates began to drop from more than 90% to 80% or lower—well below the level required for herd immunity against measles. In response, the number of cases began to rise: while only 56 cases were confirmed in Wales and England in 1998, 1,348 were confirmed by 2008. A disease whose spread in the country had been halted more than a decade prior was once again endemic.[2]

Vaccination does more than just protect an individual; it protects entire communities. Sufficient vaccination levels can provide protection against disease for members of the community who would otherwise be left vulnerable.

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### *Source*


1. CDC. History and Epidemiology of Global Smallpox Eradication. (10.4 MB). Accessed 01/25/2018.
2. Ramsay, M.E., Jin, L., White, J., Litton, P., Cohen, B., & Brown, D. The elimination of indigenous measles transmission in England and Wales. Journal of Infectious Diseases. 2003;187(Supplement 1), S198-S207. Accessed 01/25/2018.