



# HOW CAN VACCINES PROTECT ME?

When you make the decision to get vaccinated, you're making the choice to protect not just yourself, but your loved ones, and your community.

🗉 Vaccines. With the exception of safe water, no other modality, not even antibiotics, has had such a major effect on mortality reduction.<sup>1</sup> 🗉



World Health Organization

## HOW OUR IMMUNE SYSTEM FIGHTS DISEASE<sup>2</sup>

### 1A INFECTION

Pathogen enters the body and multiplies



### 2A ILLNESS

Pathogen causes the person to become ill



### 3A IMMUNE SYSTEM RESPONDS

In a few weeks, the body produces immune cells and antibodies that recognize components of the pathogen, known as 'antigens'



Antibodies

### 4A IMMUNE SYSTEM FIGHTS THE INFECTION

Immune system destroys the pathogen and infected cells



In some instances infections can overwhelm your body causing severe illness



## HOW VACCINES HELP<sup>2</sup>

### 1B VACCINATION

Vaccines expose the body to antigens that mimic the pathogen, but do not cause severe disease



### 2B MINOR SYMPTOMS

Vaccines may cause minor symptoms such as pain at the site of injection, a slight fever or muscle aches



### 3B IMMUNE SYSTEM RESPONDS

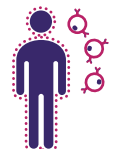
The body starts producing immune cells and antibodies that recognize antigens.



Antibodies

### 4B IMMUNE SYSTEM REMEMBERS THE ANTIGENS / PATHOGEN

The immune system produces memory cells



**Vaccines teach the immune system to develop protection against certain illnesses by exposing the body to antigens (a substance foreign to the human body that induces an immune response), which mimic components of a pathogen (a bacterium, virus, or other disease-causing microorganism), but does not cause severe disease.<sup>2</sup>**

## **HOW THE IMMUNE SYSTEM PROTECTS US FROM DISEASE<sup>2</sup>**

- 1** When the body is infected for the first time, the immune system can take several days to recognize and respond to the infection. During this time, the pathogen is able to multiply in the body.
- 2** As the pathogen multiplies, the infection can spread and cause the person to become ill.
- 3** To protect us against the infection, the immune system recognizes parts of the pathogen, known as 'antigens', as foreign and produces immune cells and antibodies to protect the body against the disease.
- 4** In most cases, the immune response is powerful enough to fight the pathogens and clear them from the body, so that you feel better in a matter of days or weeks. In other instances, infections can overwhelm your body and cause severe illness, which can result in death.



**Exposure to both natural infection and vaccines create memory cells. Memory cells ensure that the immune system recognizes the pathogen during a future (real) infection, and responds faster and more effectively before you get seriously ill.<sup>2</sup>**

### **References**

1. WHO, UNICEF, World Bank. *State of the world's vaccines and immunization*, 3rd ed. Geneva, World Health Organization, 2009.
2. Understanding how vaccines work. Available at: <https://www.cdc.gov/vaccines/hcp/conversations/understanding-vacc-work.html>  
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