

# VIRAL DISEASE & Vaccines



Coronavirus



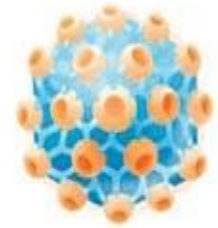
Rhinovirus



Parainfluenza



Adenovirus



Herpes



Hepatitis B



Mumps



Measles



Astrovirus



Rotavirus



Smallpox Virus



HPV



HIV

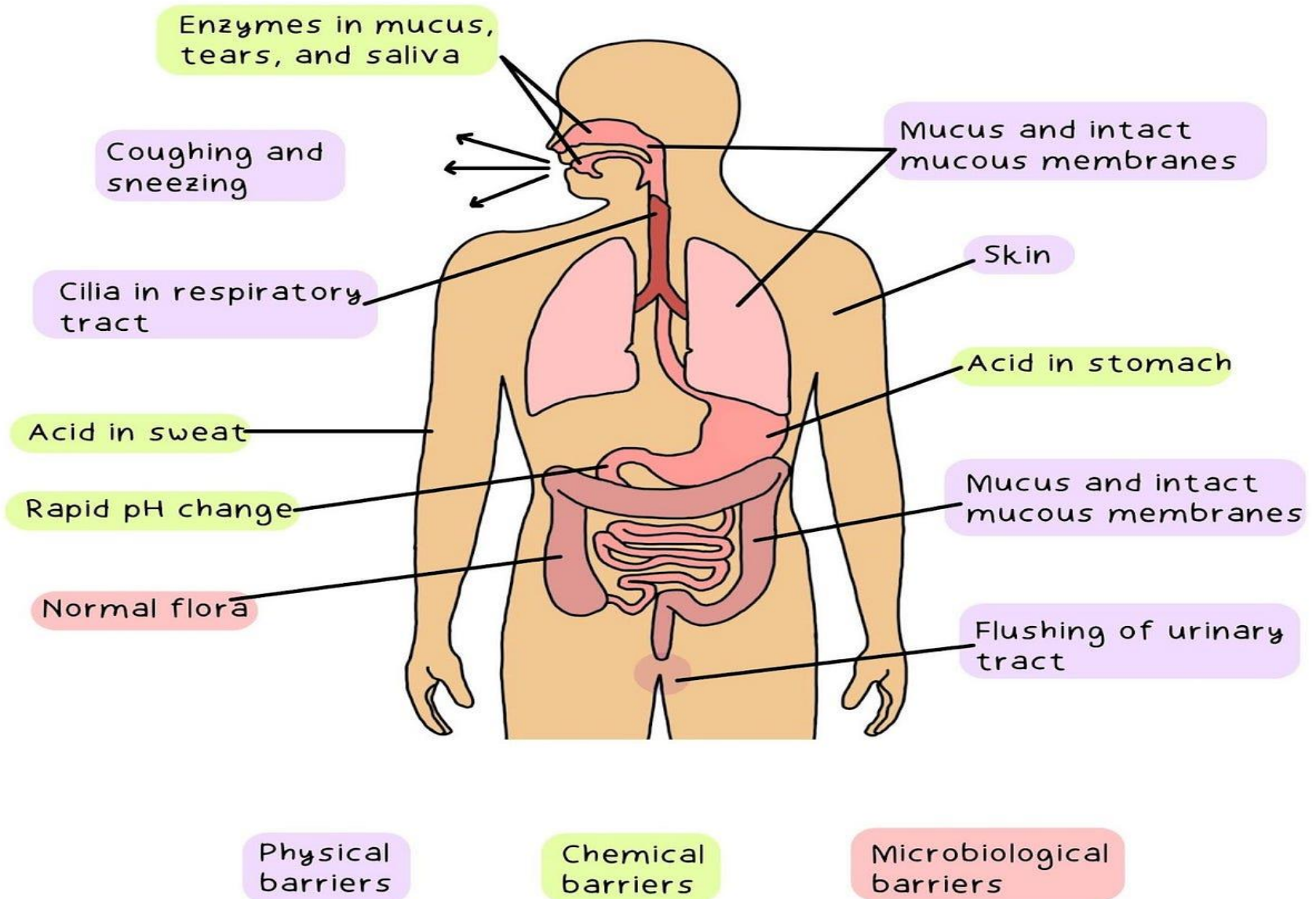


Rabies Virus

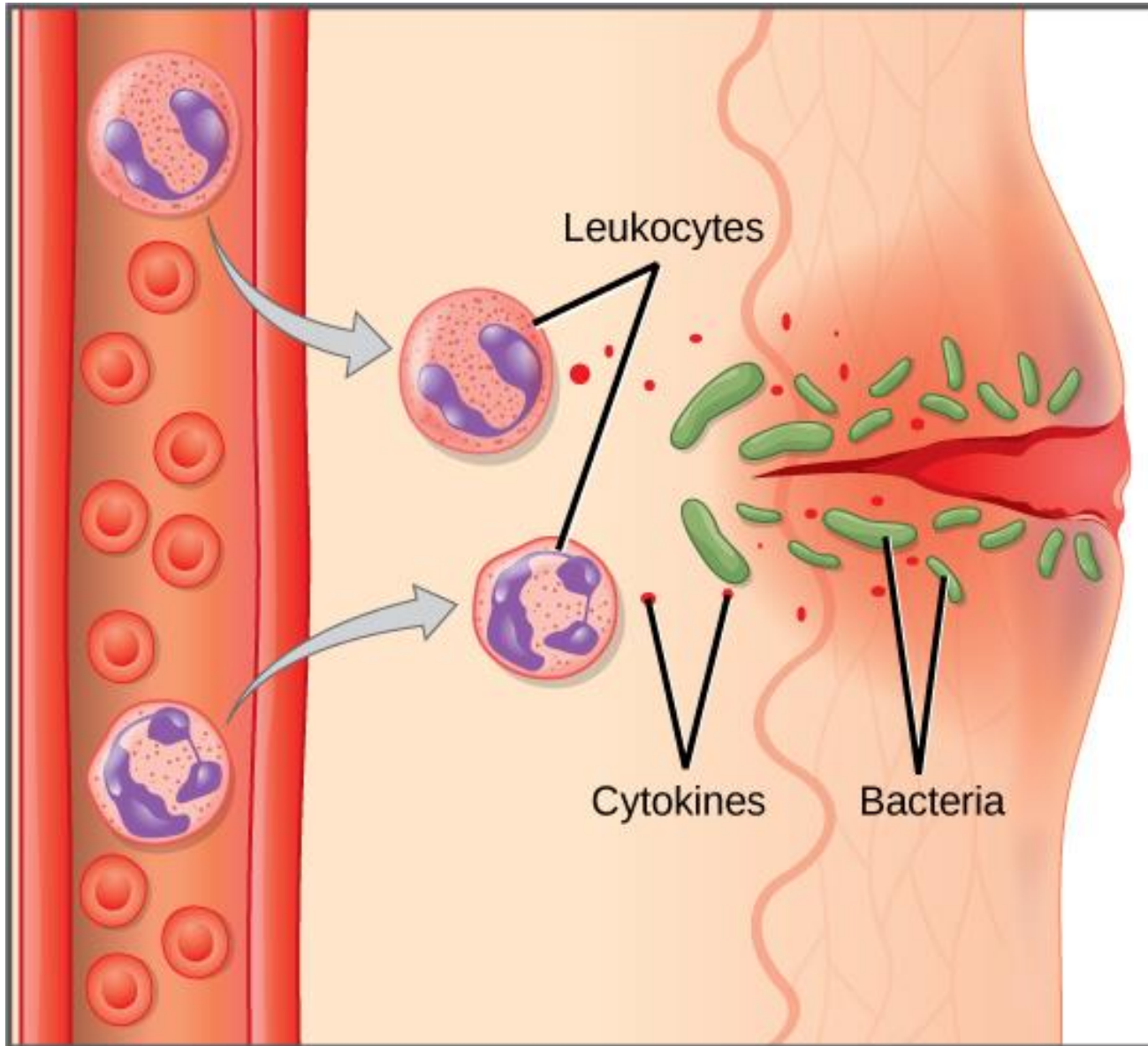


Norovirus

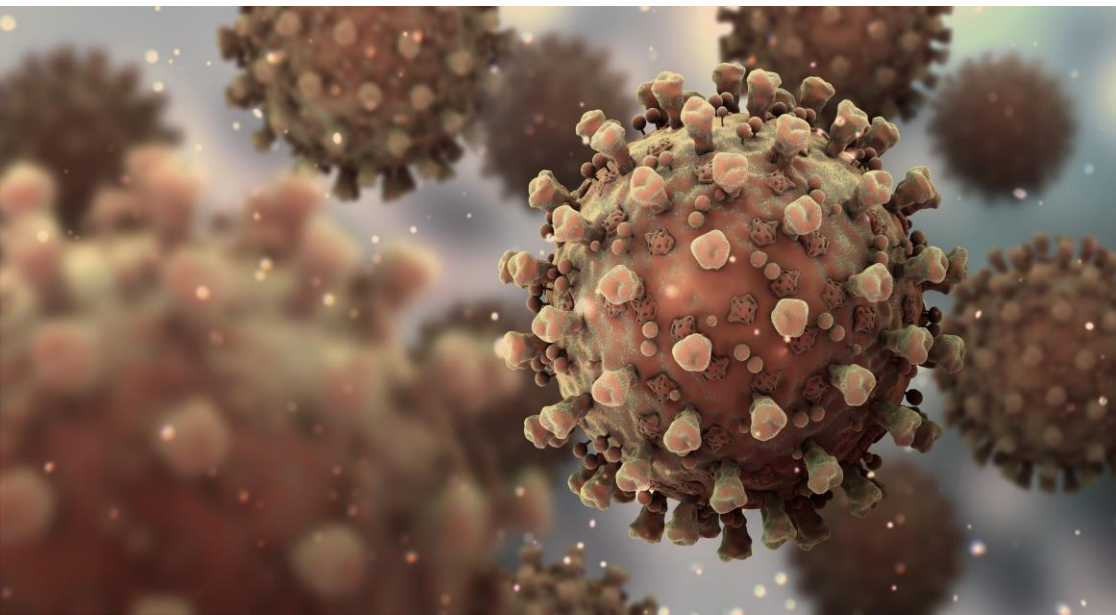
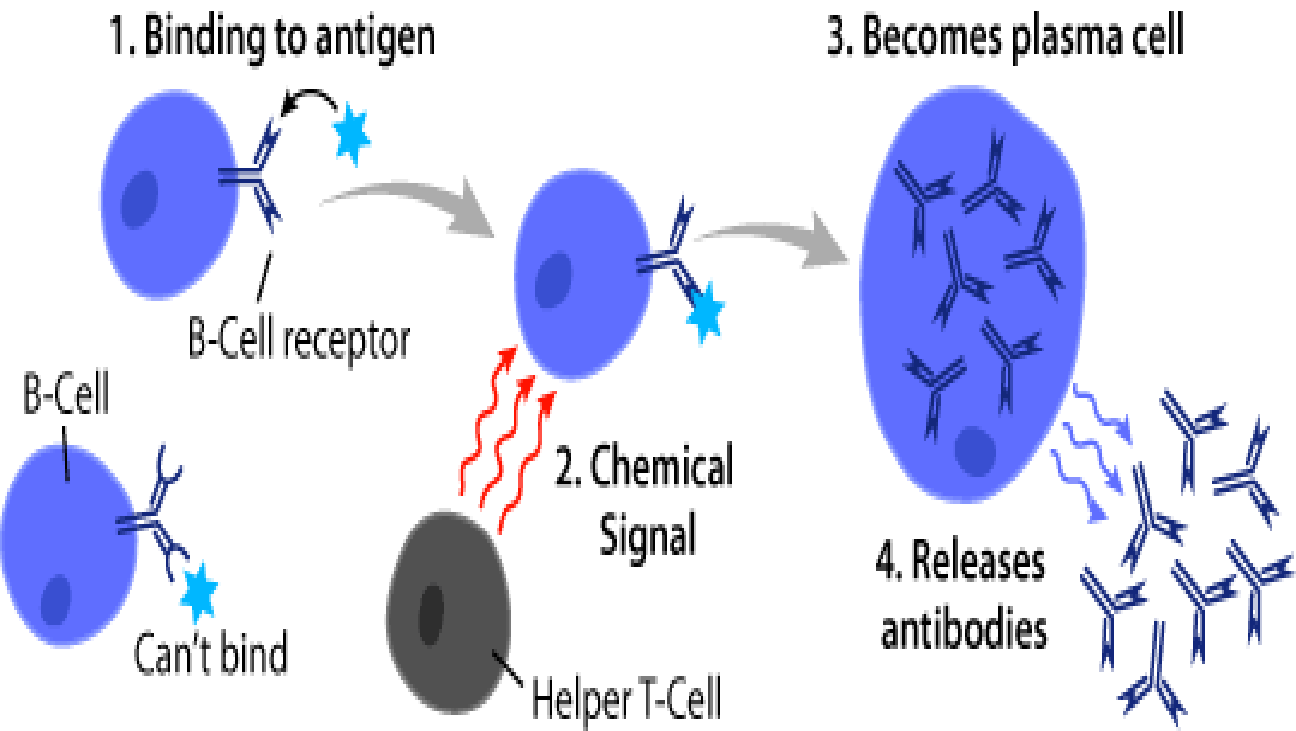
# FIRST LINE OF DEFENSE



# NON-SPECIFIC RESPONSE



**This  
works  
in initial  
hours  
of  
infection**



# SPECIFIC IMMUNE RESPONSE

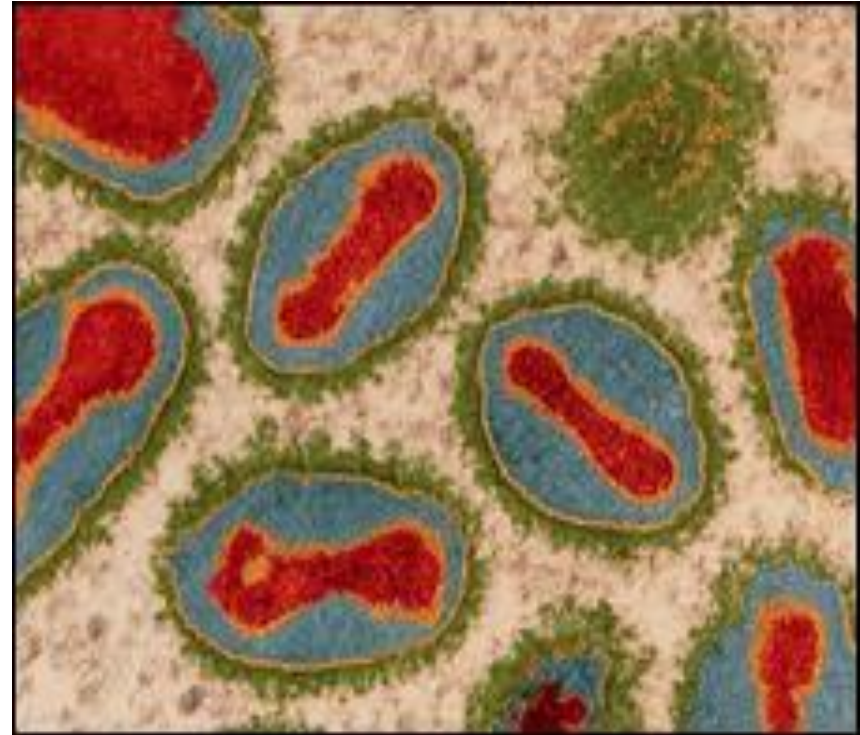
But it  
takes days

# VACCINES to the Rescue

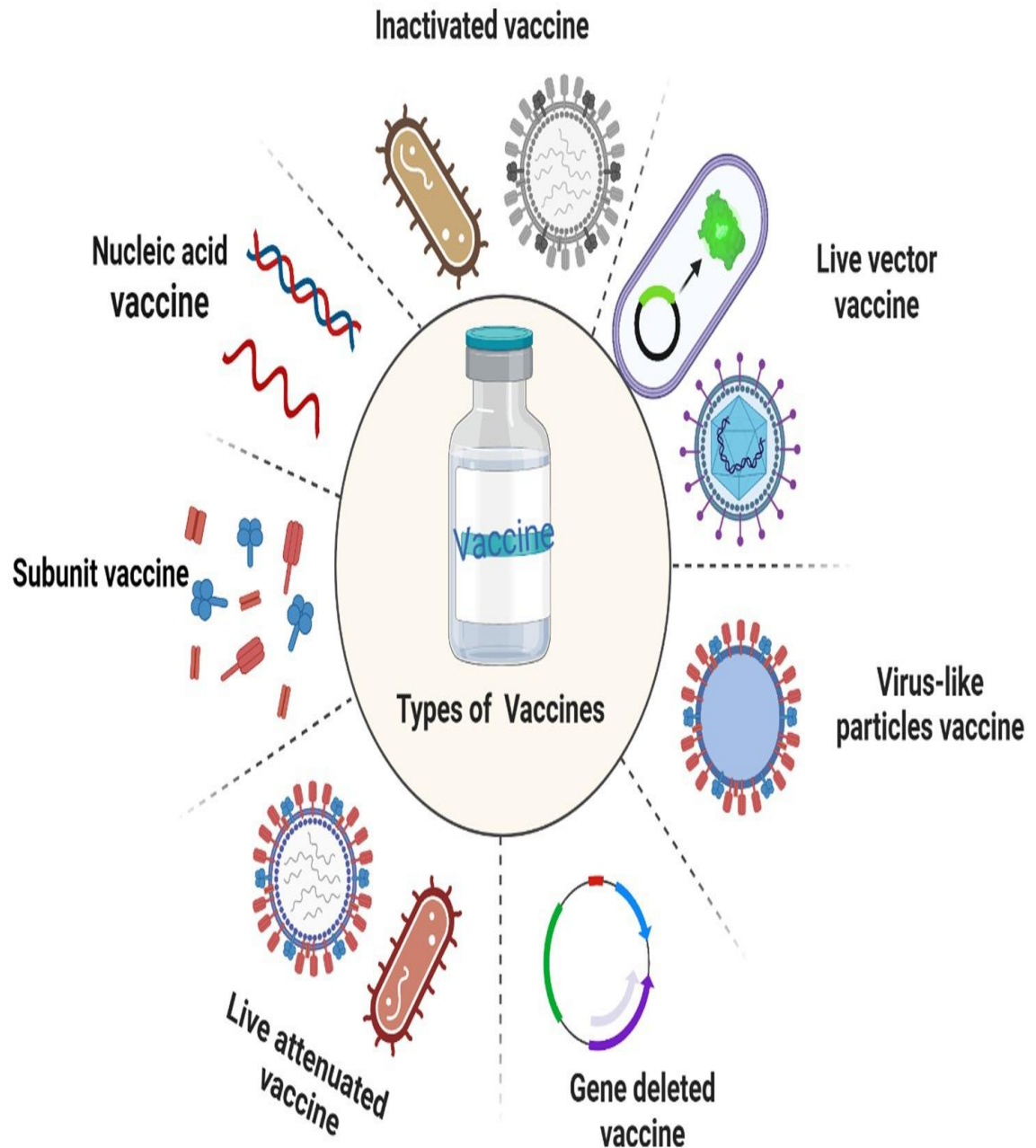
- Before Humans truly understood how our immune system worked. They recognized that individuals that were exposed to a particular disease and had acquired it and fought it off, seemed to develop a resistance to getting that disease again. Something we now call **IMMUNITY**. Example: Most people get Chicken Pox only once!



*New York State Department of Health Photograph*



**-A vaccine is something that is introduced to the body. This inoculation, then slowly triggers the immune system to build the appropriate antibodies that specifically attack the infectious agent. This way your immune system has an army of memory cells and antibodies ready to roll, so that when the real enemy enters... You immediately wipe it out**

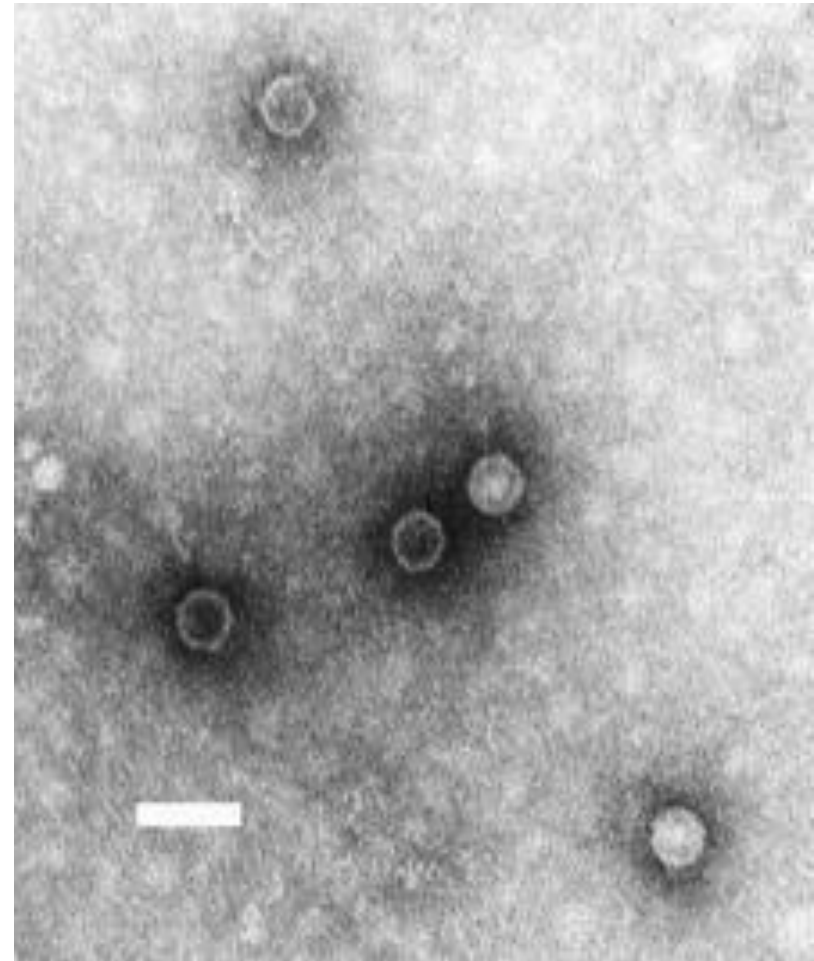


# SMALLPOX VACCINE

**Dr. Edward Jenner, believed that people who had been infected with a mild disease called “COWPOX” had partial immunity to the more deadly “SMALLPOX” - So What Did He DO?**



**Another big killer, was POLIO : The polio virus attacks the nervous system. For some individuals, they would end up crippled due to paralysis. For others, the virus attacked the nerves that controlled the breathing muscles... Diaphragm and intercostal muscles.**

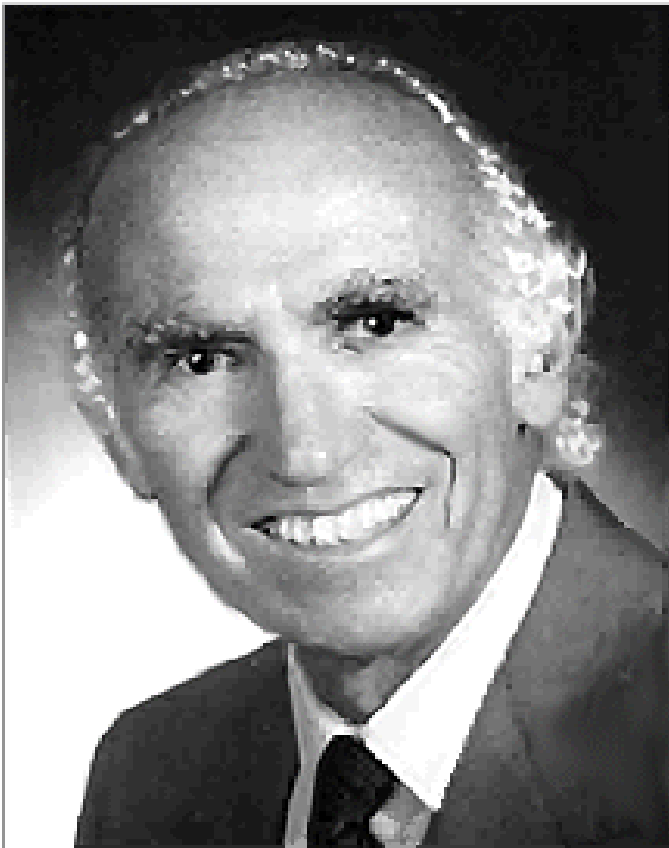






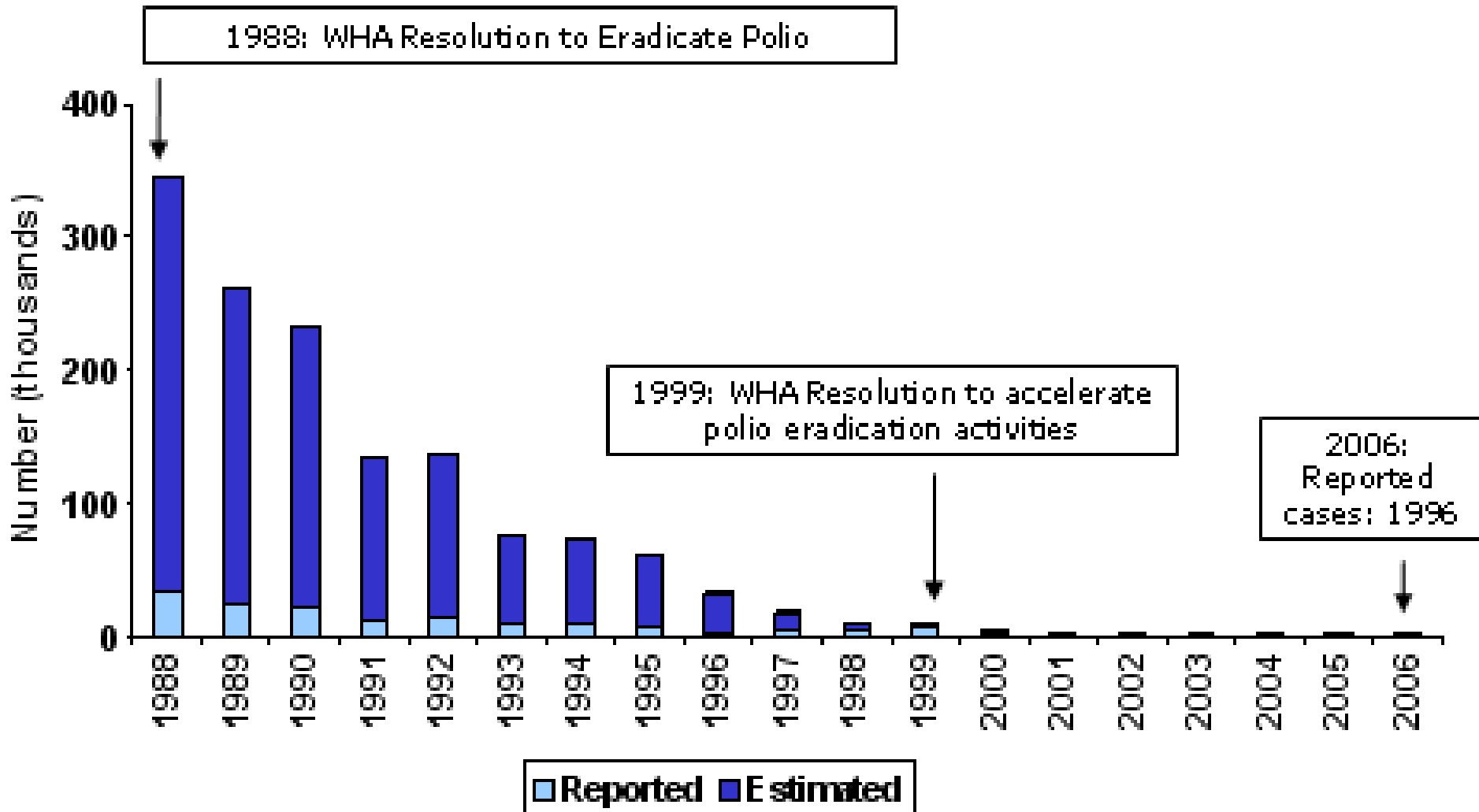
# Mass Immunization - VACCINES

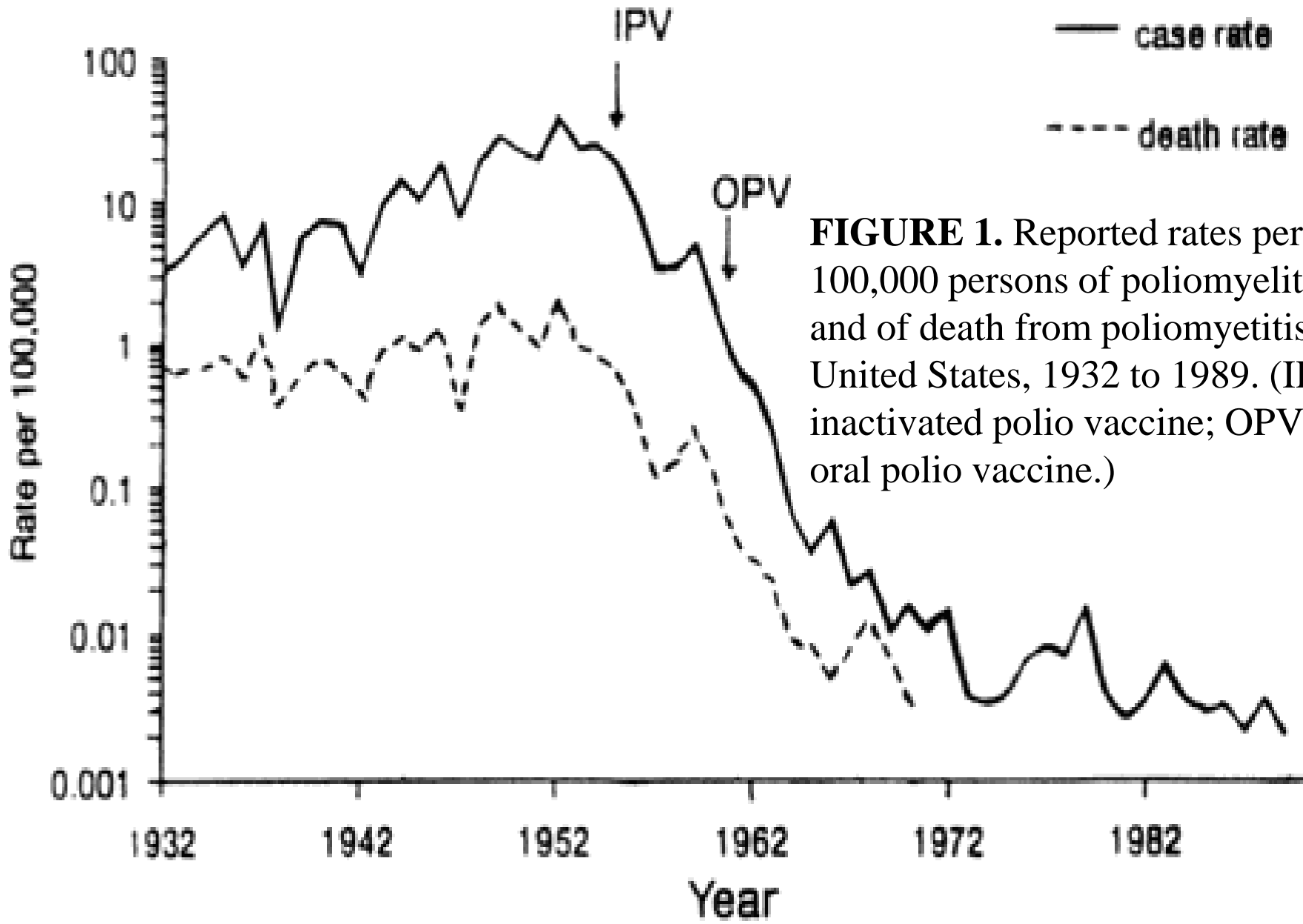
**After 1952 mass immunization programs using the Salk vaccine for poliomyelitis.**



# Progress in Polio Eradication

## Global Wild Poliovirus Cases, 1988-2006





**FIGURE 1.** Reported rates per 100,000 persons of poliomyelitis and of death from poliomyelitis, United States, 1932 to 1989. (IPV = inactivated polio vaccine; OPV = oral polio vaccine.)

**Other newly developed vaccines (Tuberculosis, Measles, Mumps, and *Small Pox- late 1800's*) were used throughout the western world to reduce deaths from disease, in many cases totally eradicating such problems.**



The brother of King Oskar II died from tuberculosis in 1852, age 25.



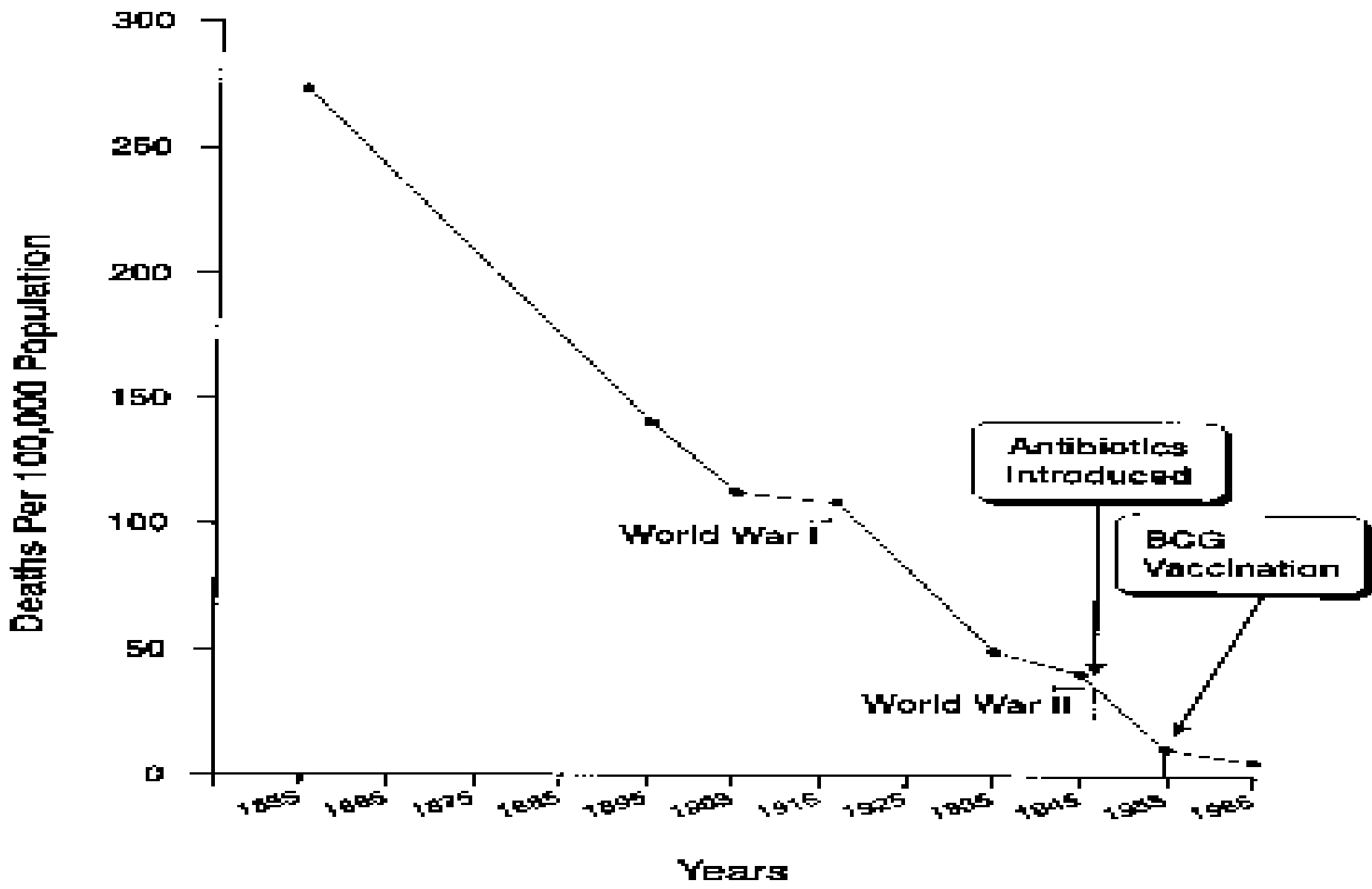
ON THIS DAY IN

1980

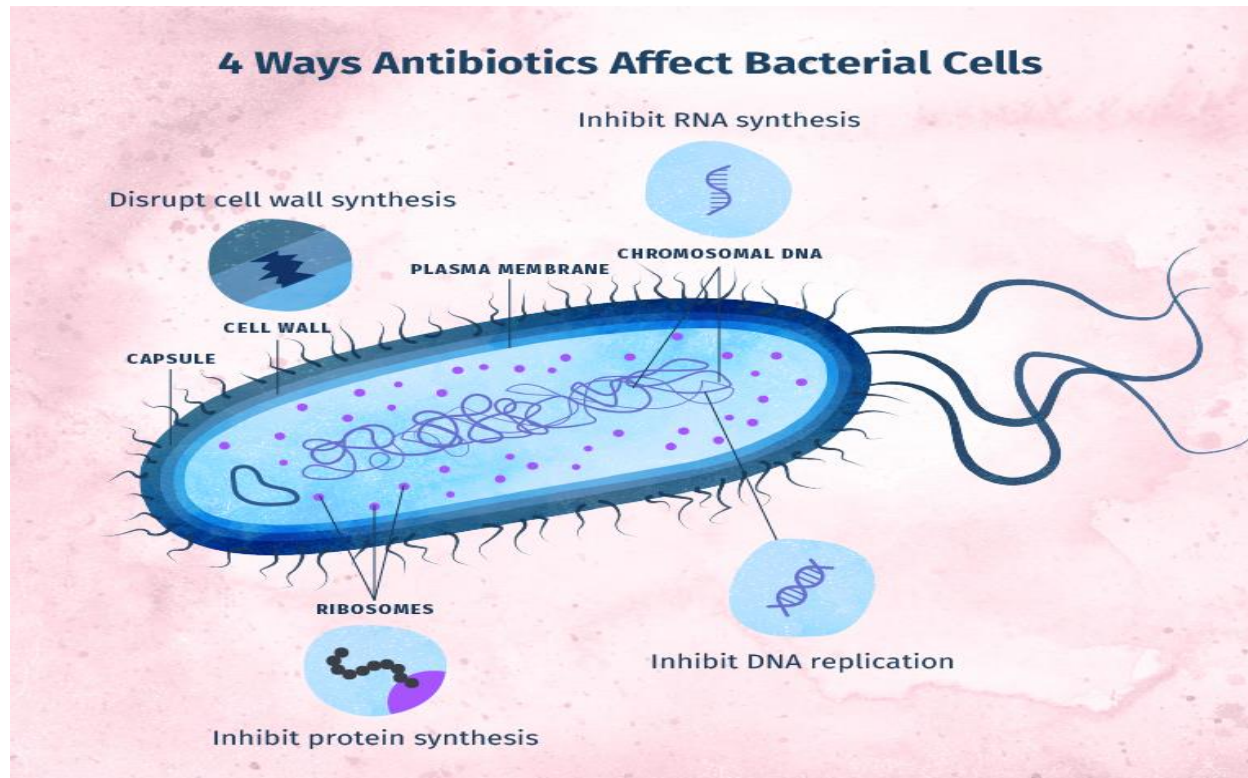
**World Health Assembly  
declared the world free of  
smallpox**

May 8, 1980

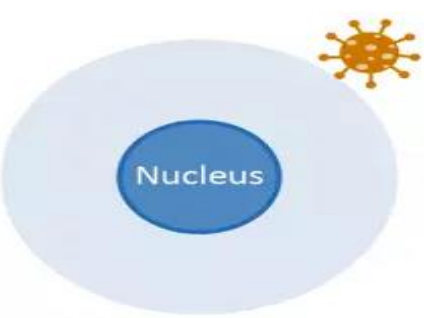
# England 1855-1964: Decennial Death Rates From Respiratory Tuberculosis



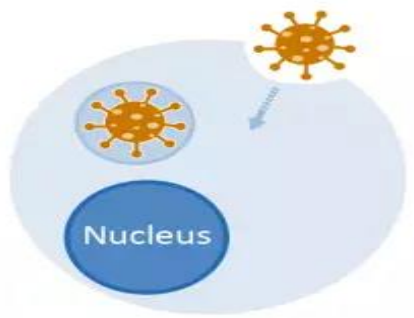
# ANTIVIRALS vs Antibiotics



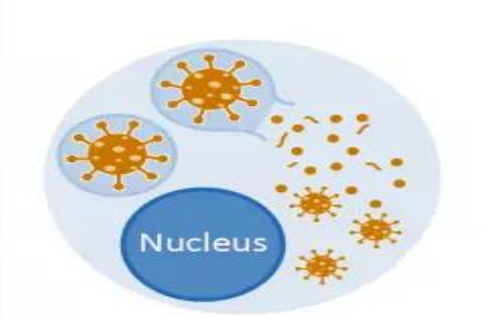
**Stop viruses from attaching**



**Stop viruses from entering**



**Stop viruses from reproducing**



**Stop viruses from leaving**

