

## ACTIVE VS. PASSIVE IMMUNITY; VACCINATIONS

1. **Active Immunity:** Your lymphocytes recognize and remember the pathogen
  - You are exposed to the pathogen and your T and B cells win the challenge. Your memory cells keep you healthy from that pathogen in the future, possibly for the rest of your life.
  - Vaccinations (although these are generally not as effective as actually getting the disease) provide a piece (or pieces) of the pathogen that your T and B cells recognize and make memory cells.
2. **Passive Immunity:** You receive antibodies that circulate temporarily, providing temporary protection from the pathogen.
  - An infant that is being breast-fed receives passive immunity from its mother.
  - Immunoglobulin given immediately after suspected exposure to a disease, such as rabies, Hep B, HIV, etc.

### Some Common U.S. Vaccines

Vaccine Name	Protects against	Type of Vaccine	What are the antibodies made to?
DTap	<ul style="list-style-type: none"> <li>• <i>Corynebacterium diphtheria</i> toxin</li> <li>• <i>Clostridium tetani</i> toxin</li> <li>• <i>Bordatella pertussis</i></li> </ul>	Inactivated Bacterial	<ul style="list-style-type: none"> <li>• Diphtheria toxoid</li> <li>• tetanus toxoid</li> <li>• antigens of <i>B. pertussis</i> cell wall and its toxoid</li> </ul>
Hep B	<ul style="list-style-type: none"> <li>• Hepatitis B virus</li> </ul>	Inactivated viral	<ul style="list-style-type: none"> <li>• chunk of viral proteins</li> </ul>
Hib	<ul style="list-style-type: none"> <li>• <i>Haemophilus influenza</i> bacteria</li> </ul>	Conjugate (means the chunks are attached to a protein carrier)	<ul style="list-style-type: none"> <li>• Chunks of the bacterial cell wall</li> </ul>
HPV	<ul style="list-style-type: none"> <li>• Human papilloma virus</li> </ul>	Inactivated viral	<ul style="list-style-type: none"> <li>• chunk of viral proteins</li> </ul>
Influenza	<ul style="list-style-type: none"> <li>• Influenza virus</li> </ul>	Inactivated viral	<ul style="list-style-type: none"> <li>• chunk of viral proteins</li> </ul>
Influenza	<ul style="list-style-type: none"> <li>• Influenza virus</li> </ul>	Live attenuated viral	<ul style="list-style-type: none"> <li>• Various parts of the live virus</li> </ul>
MMR	<ul style="list-style-type: none"> <li>• Measles virus</li> <li>• Mumps virus</li> <li>• Rubella virus</li> </ul>	Live attenuated viral	<ul style="list-style-type: none"> <li>• Various parts of the live viruses</li> </ul>
Rotavirus	<ul style="list-style-type: none"> <li>• Rotavirus</li> </ul>	Live attenuated viral	<ul style="list-style-type: none"> <li>• Various parts of the live virus</li> </ul>
Varicella	<ul style="list-style-type: none"> <li>• Chickenpox</li> </ul>	Live attenuated viral	<ul style="list-style-type: none"> <li>• Various parts of the live virus</li> </ul>
Polio	<ul style="list-style-type: none"> <li>• Poliovirus</li> </ul>	Inactivated viral	<ul style="list-style-type: none"> <li>• chunk of viral proteins</li> </ul>
Pneumococcal	<ul style="list-style-type: none"> <li>• <i>Streptococcus pneumoniae</i></li> </ul>	Inactivated bacterial	<ul style="list-style-type: none"> <li>• Chunks of cell wall</li> </ul>