**Active and Passive Immunity**

***Antigens*** are molecules on the surface of viruses and bacteria that the immune system recognizes as being from outside your body. ***Antibodies*** are proteins that bind to only one kind of antigen. Antibodies bind to the antigens, inactivate the virus or bacteria, clump them together, and mark them for destruction by other immune cells. After fighting off a disease, some antibodies remain in the body as a form of immune system memory. Many of these antibodies are stored in the lymph nodes. If the same pathogen appears, the immune system responds quickly since antibodies do not need to be produced again. This future resistance to a particular pathogen due to the presence of antibodies is called ***immunity***. There are two different kinds of immunity: ***passive immunity*** and ***active immunity***.

In active immunity, the body ***naturally*** produces its own new antibodies in response to disease. For example, when you get the flu, your body produces antibodies after exposure to the virus. Active immunity can also be produced ***artificially*** when a person is healthy, to prevent infection in the future. This is what happens when you get vaccinated. Vaccinations contain dead or weakened versions of viruses that are injected into the body to stimulate immunity. In active immunity, the antibodies produced last for long periods of time.

In passive immunity, you receive antibodies to a disease from another source instead of making them yourself. This can occur ***naturally*** when mothers breastfeed their children and pass antibodies through the milk to the baby. Passive immunity an also be ***artificially*** stimulated when you are given antibodies to diseases such as rabies, tetanus, botulism, or snakebites. These antibodies can be used to prevent illness in a patient who has been unexpectedly exposed to certain infectious agents or toxins. In most examples of passive immunity, the antibodies do not last more than a few weeks.