**Immune system Guided Notes**

**Immune System**

The function of the immune system is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-Pathogens- organism that causes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-The body has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ defenses to infection.

**Types of Pathogens**

Bacteria- \_\_\_\_\_\_\_\_\_\_\_\_ celled organism. They release \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are \_\_\_\_\_\_\_\_\_\_\_ to the host or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ healthy body cells. Examples include strep throat, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, anthrax, \_\_\_\_\_\_

Viruses-genetic material \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ coat. They force the \_\_\_\_\_\_\_ cells to make more \_\_\_\_\_\_\_\_\_\_\_\_ and are very \_\_\_\_\_\_\_\_\_\_\_\_. Examples include HIV, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, smallpox, \_\_\_\_\_\_\_\_\_\_

Fungi- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or single-celled. They take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the host cells. Occur in moist, \_\_\_\_\_\_\_\_\_\_ places. Examples include Athlete’s foot, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, some \_\_\_\_\_\_\_\_\_\_\_ infections.

Protozoa- \_\_\_\_\_\_\_\_\_\_\_\_ celled. They use the host cells to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ life cycle. They take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the host’s cells. Examples include malaria, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, African Sleeping Sickness

Parasites- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They grow and feed on \_\_\_\_\_\_\_\_\_\_\_. They can possibly kill the \_\_\_\_\_\_\_\_. Examples include scabies, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Nonspecific Defenses**

1st line of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to keep \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ out of the body.

Nonspecific defenses:

-Skin- most \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-\_\_\_\_\_\_\_\_\_\_\_\_, saliva, and \_\_\_\_\_\_\_\_\_\_\_ contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which breaks down bacteria cell \_\_\_\_\_\_\_\_.

-Inflammatory response- when a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is detected, the immune system produced millions of \_\_\_\_\_\_\_\_\_\_\_\_ blood cells. Many of the \_\_\_\_\_\_\_\_\_ blood cells are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which engulf and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bacteria.

**Specific Defenses**

-Antigen- a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an immune response in the body.

-Antibody- a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ made by \_\_\_\_\_\_ cells that binds to molecules on pathogens to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the pathogens.

-Antibodies \_\_\_\_\_\_\_\_\_\_\_\_ to and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ viral particles that have not yet \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ body cells.

**Specific Responses**

Specific immune responses begin with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Antigens are surface \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on pathogens. Each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ antigen.

**Immune System Response**

-\_\_\_\_\_\_\_ cells destroy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ body cells

-\_\_\_\_\_\_\_ cells produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and produce proteins that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pathogens

**Immune Responses**

Both responses produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells. Specialized \_\_\_\_\_\_ and \_\_\_\_\_\_ cells provide \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (active) immunity

**Immune System Response**

If you are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a pathogen, it means that you will \_\_\_\_\_\_ get sick when that pathogen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ your body.

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ immunity- occurs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the body’s undergoing an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ response.

Examples: passed through \_\_\_\_\_\_\_\_, generations

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_ immunity- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that your body \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in response to a specific pathogen that’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ your body. Examples: cold, \_\_\_\_\_\_

**Overreactions of the Immune System**

-Allergies- occur when the immune system responds to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ antigens such as pollen, dust and pet dander.

-Both \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ factors play a role

When it recognizes an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, it releases chemicals such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which fight off the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This causes allergy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Autoimmune Disorders**

In \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ diseases, \_\_\_\_\_\_\_\_\_\_ blood cells \_\_\_\_\_\_\_\_\_\_\_\_\_ the body’s healthy cells.

Autoimmune diseases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the immune system. White blood cells \_\_\_\_\_\_\_\_\_\_\_\_\_ recognize \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells. White blood cells \_\_\_\_\_\_\_\_\_\_\_\_\_\_ healthy body cells.

Your immune system \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ healthy \_\_\_\_\_\_\_\_\_\_\_\_ for pathogens. The result-the body \_\_\_\_\_\_\_\_\_\_\_\_\_\_ its own \_\_\_\_\_\_\_\_\_. Some examples include multiple sclerosis, rheumatoid arthritis and type 1 diabetes.

**Ways to Control Pathogens**

1. Antiseptics- soap, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ weaken cell membranes so \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ leak \_\_\_\_\_\_\_

2. Antibiotics- target \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or fungi and keep them from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or reproducing.

-Antibiotic resistance-bacteria can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so they aren’t affected by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- contains the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Vaccines**

Vaccines contain a \_\_\_\_\_\_\_\_\_\_\_ or weakened form of the disease causing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the body to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ antibodies. Vaccines \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contain antibodies. A good vaccine will \_\_\_\_\_\_ cause a person to get the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Vaccines result in a \_\_\_\_\_\_\_\_\_\_\_\_\_ immune response (the immune system will be able to \_\_\_\_\_\_\_\_\_ off the disease.

**Diseases that Weaken the Immune System**

Leukemia is characterized by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ white blood cells. It occurs because \_\_\_\_\_\_\_\_\_\_\_\_ blood cells \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fight off \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If the immune system were \_\_\_\_\_\_\_\_\_\_\_\_\_, it would fight off \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**HIV-AIDS**

-HIV is a \_\_\_\_\_\_\_\_\_\_\_\_ that attacks and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the immune system

-With the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ immune system, the body is \_\_\_\_\_\_\_\_ likely to get other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-HIV is a virus, AIDS is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of having a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ immune system.

-Transmission-bodily fluids, \_\_\_\_\_\_\_\_\_\_\_, mothers to \_\_\_\_\_\_\_\_\_\_, and hypodermic needles

**Antibiotics**

Antibiotics fight \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ diseases by \_\_\_\_\_\_\_\_\_\_\_\_/slowing the growth of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by stopping the formation of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in their cell \_\_\_\_\_\_\_\_.

-Problems:

-Antibiotic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Unlike vaccines, the body is only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when a person is taking \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_