**3.1 The Immune System**

**(refer to pg. 100 – 114)**

*\*Complete Activity 3-1: Pass it on*

1) Explain how this activity demonstrates how an infection disease is transmitted

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* **Immune system:** the system that defends the body against \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substances such as bacteria, viruses and cancer cells.
* Pathogens **(**disease causing invaders) can infect people with a range of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ diseases

**Parts of the Immune System**

|  |  |
| --- | --- |
| **Structure**  | **Function** |
| Lymph Nodes  | Small bean shaped structures that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cells that fight infection  |
| Lymph vessels  | Vessels that connect the different parts of the immune system  |
| Spleen | Stores \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that fight disease and infection  |
| Bone Marrow  | Tissue in the center of the bone that produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**How can infectious diseases be passed on?**

**Our immune system has two lines of defense:**

**First Line of Defence**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: a physical barrier that stops pathogens from entering the body
* **Sweat and oil:** slightly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which prevents pathogens from growing on the surface of your body
* **Gastric juice**: acid secreted by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_which kills bacteria that enter
* **Mucus and cilia:** line nose and prevent pathogens from entering your respiratory system

**Second Line of Defence**

* If a pathogen makes it past the first line of defence your body will attack and destroy the invader
	+ Imagine each of your cells wears a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Your immune system recognizes the uniforms of unknown cells and attacks them
* **There are two types of immune responses:**

**1) Innate immune response:** the response you are born with

* + - Quick, general and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- Used against bacteria and some viruses
		- First step is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is the flow of fluid and cells to the site of infection. This causes a fever, swelling and redness.
		- Increase in white blood cells called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_which eat up the invaders.

**2) Acquired immune response:** highly specific attack on a particular pathogen or antigen

* + - **Antigen**: an non-living particle the body cannot recognize, from a virus to a splinter
		- Uses two special types of white blood cells: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		- **B Cells:** recognize the antigens and produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to fight them
		- **Helper T Cells:** recognizes an antigen and activates B Cells
		- **Killer T Cell:**  Directly destroy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Once the attack is over some antibodies stay in the body to protect against future infections, we call this \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Watch this video on the immune system** [**https://goo.gl/6uNxtp**](https://goo.gl/6uNxtp)

**3.2 Factors Affecting the Immune System**

**Vaccine:** special version of an antigen that gives you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ against a disease.

* Stimulate the immune system to create the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ against that disease

**Immune System Disorders**

**Allergy:** an unusually high sensitivity to a substance, which causes an immune reaction.

* Allergy symptoms are caused by the release of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is a chemical that your body release when it is fighting invaders.

**Acquired Immunodeficiency Syndrome (AIDS)**

* Caused by Human Immunodeficiency Virus (HIV), a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that attack the immune system and infects helper \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The body can no longer activate B or killer T cells to destroy the antigen or pathogen



*\*Complete pages 40, 42 – 43 of section 3.1 and page 46, 47 and 49 of section 3.2 in your workbook*