

The Immune System
Your own little army...

Name _____

Date _____

Block _____

Infectious what?

- 150 years ago, surgery was very dangerous because surgeons didn't believe in washing their hands
- _____ tried to find out the cause for the high death rates – suggested that there were '_____ in the air' that caused sickness, and he suggested washing equipment and hands in strong _____.
- Death rates _____.

- _____ is another man who lived around the same time – came up with the idea that there were organisms in liquids and foods that caused them to _____.
- Suggested that this could be fixed by _____ the foods/liquids up for a short time to kill the organisms
We know this as '_____'.
• Also developed the concept of _____ – showed that some diseases (eg. rabies) could be prevented by being exposed to a _____ form of the disease.

How to get a disease...

- 1) _____ – shaking hands, sharing drinks, body fluids
 - More germs are passed by shaking hands than kissing

- 2) _____
 - Being near an infected person
 - airborne germs can travel up to ___ m

- 3) _____
 - Eating foods that are not _____ properly
 - Infected _____
 - E. Coli and Salmonella are two examples.
 - Walkerton Ontario (2000) – 7 people died, and over 2300 people became ill from E. Coli Poisoning.
 - 1993 – 4 children died, and hundreds of people got ill from eating from 'Jack in the Box'
 - Mad cow disease/chicken flu

- 4) _____
 - Rabies can be passed to humans from infected animals
 - Louis Pasteur developed the vaccine by taking a weakened form of the virus and injecting it into affected people.

First Line of Defense

- You are constantly in contact with _____ (disease causing invaders)
- Your _____ is the first barrier – _____ (slightly acidic) prevents some pathogens from growing.
- _____, _____, and other internal linings trap pathogens and sweep them out.
- Stomach _____ (gastric juice) kills some bacteria

Second Line of Defense

- If the pathogen makes it past the first line, then your body has ways to recognize cells that belong and things that don't.
- If it recognizes a foreign cell/object, it responds in two ways...
 - _____ immune response
 - _____ immune response.

Innate Immune Response:

- Quick and _____ – just like a police force that will take care of any trouble makers.
- The response is the same for anything the body does not recognize as belonging there – eg. bacteria, some viruses.
 - _____, _____, dissolved substances to to site of infection
 - Causes _____, swelling, and _____ (inflammation)
 - _____ (white blood cells) that search and destroy invaders flock to the infection site.

Acquired Immune Response

- A _____ attack on a _____ pathogen, or antigen.
- Calls in the 'special forces' – two different types of white blood cells – _____ cells and _____ cells.
- Can take up to a week to develop or '_____ ' the acquired immune response.

B Cells

- _____ the antigen invaders
- Produce a specifically trained army called '_____ '
- Antibodies attach themselves to the invader, and either prevent it from doing more harm, or mark it for destruction by other cells.
- Some antibodies (_____) stick around after the antigens are destroyed in case you're infected again = _____.

T cells

- _____ T cells recognize the invader and call over the B cells to make the antibodies.
- _____ T cells can destroy the antigens and pathogens on their own.