

IMMUNE SYSTEM

FIGHTING DISEASES

WHAT ARE WE FIGHTING?

- Some illnesses are caused by a “bug” or germ of some sort.
- **PATHOGEN** – fancy word for a germ or what makes you sick.
- Pathogens can be shared/**transmitted**, they are **infectious**

GENERAL WAYS TO FIGHT PATHOGENS

- Skin
- Fever
- Mucus membranes
- Chemicals

Types of Pathogens

- BACTERIA**
- VIRUSES**
- FUNGI
- PROTOZOA
- PARASITES
- PRIONS

Transmission

- Direct contact
- Airborne
- Blood/body fluids
- Vectors – animals or insects
- Food

STOP

Immune system

- This system recognizes and “fights” foreign cells.
- Your body can recognize “foreign” cells
 - Recognizes information on the outside of the cell
- Your body tries to kill or eliminate foreign cells
 - This is what your White Blood Cells do

PARTS OF THE IMMUNE SYSTEM

- NON-SPECIFIC
- Non-specific defenses are used no matter what the pathogen is
- THE SPECIFIC DEFENSES WILL ONLY FIGHT ONE PATHOGEN AT A TIME.
- Ex: a T cell for chicken pox, will not help you fight the flu.

BARRIERS

- PREVENT THE PATHOGEN FROM ENTERING YOUR BODY
- SKIN
- MUCUOS
- TEARS

CHEMICALS

- KILL OR HARM THE PATHOGEN
- TEARS
- SALIVA
- MUCOUS
- SWEAT

INTERNAL DEFENSES

- FEVER
- WHITE BLOOD CELLS
- INFLAMMATION
 - HISTAMINES

STOP

SPECIFIC DEFENSES

- THE SPECIFIC DEFENSES WILL ONLY FIGHT ONE PATHOGEN AT A TIME.
- Ex: a T cell for chicken pox, will not help you fight the flu.
- B cells
 - fights the pathogen as it floats around in your body
- T cells
 - fights the pathogen AFTER it has infected your cells

B CELLS – fight pathogens outside your body cells (in blood)

- RECOGNIZE THE PATHOGEN AS FOREIGN
- BODY MAKES TAKES AN IMAGE OF THE PATHOGEN
- INFORMATION GOES TO THE B CELLS AND THEY MAKE ANTIBODIES TO GET RID OF THE PATHOGEN
- THESE ANTIBODIES ARE RELEASED INTO THE BLOOD AND DISABLE THE PATHOGEN

T CELLS – fight pathogens inside your body cells

- RECOGNIZE THE PATHOGEN AS FOREIGN
- BODY MAKES TAKES AN IMAGE OF THE PATHOGEN
- INFORMATION GOES TO THE T CELLS AND they learn to recognize the pathogen
- Some T cells go out and destroy all cells that have the pathogen in them

Immunity

- After your body fights a disease it creates a memory of the disease
- We call this memory immunity – it means that you won't get sick from this disease again

IMMUNITY

- Two forms
 - Passive – you inherit it
 - Active – you get it from experiencing the pathogen
- Caused when your body creates a memory of the pathogen

VACCINES

- Give a shot with a small amount of the disease in it that is disabled.
- Body recognizes the disease as foreign and “fights” it
- When we “give” immunity your body gets a memory of a disease it never had.
- Next time your body will remember the disease and easily fight it.

ALLERGIES

- Body is tricked into thinking that allergens are foreign particles
- Body over reacts in trying to get rid of the allergens
- You sneeze, get a runny nose and teary eyes

AUTOIMMUNE DISEASE

- Some diseases trick your body into thinking that your cells are foreign.
- You attack your own cells,
- HIV, diabetes, rheumatoid arthritis,