



Tues, March 20, 2018

I like nonsense. It wakes up the brain cells.”

Pick up: none

Turn in Life's Greatest Miracle Questions/Pick your own seat for 4th quarter

Today you will:

1. DSQ
2. Understand the function of the immune system, how pathogens spread & how vaccines work

Homework/Planner:

Study for Friday's DIA-Study Guide due!!!!

Daily Science Question

- A student wonders, “Does the moisture content in soil affect how far a worm can dig?” Identify the variables that are being considered in this experiment and the variables that need to be controlled.
- **Independent =**
- **Dependent =**
- **Control Group=**
- **Constants=**

Daily Science Question

What are some ways of preventing heart disease?

LET'S MINGLE!

1. Everyone stand up and push their chair in
2. Find one other person & shake their hand, write down their name on a piece of paper
3. Now find one more person & shake their hand, write down their name next to the 1st.
4. Now, last one, find another, shake their hand, write down their name

What happens when someone sneezes?

What you need to know re. the Immune System

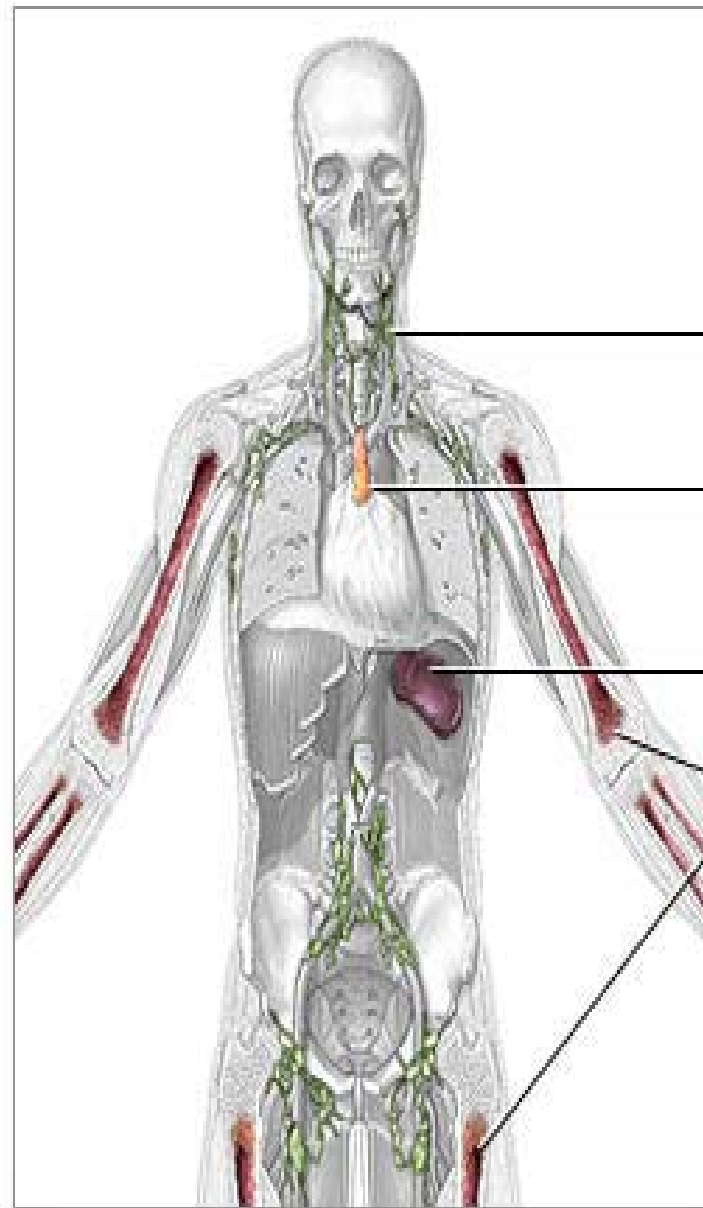
Chapter 31

- 1. Pathogens & the 5 types**
- 2. Vector**
- 3. Active vs Passive Immunity**
- 4. Specific vs Non Specific Response**
- 5. Antibiotics**
- 6. Antibiotic Resistance**
- 7. Vaccines**
- 8. Communicable Disease – communicated from one person to another-CONTAGIOUS**
- 9. Chronic Disease – long-lasting, controlled but not cured**
- 10.T cells vs B cells**

THE IMMUNE SYSTEM

COPY Overall Functions:

1. Microscopic armor that protects the cells of your body from bacteria, viruses, & poisons



Immune
system
structures

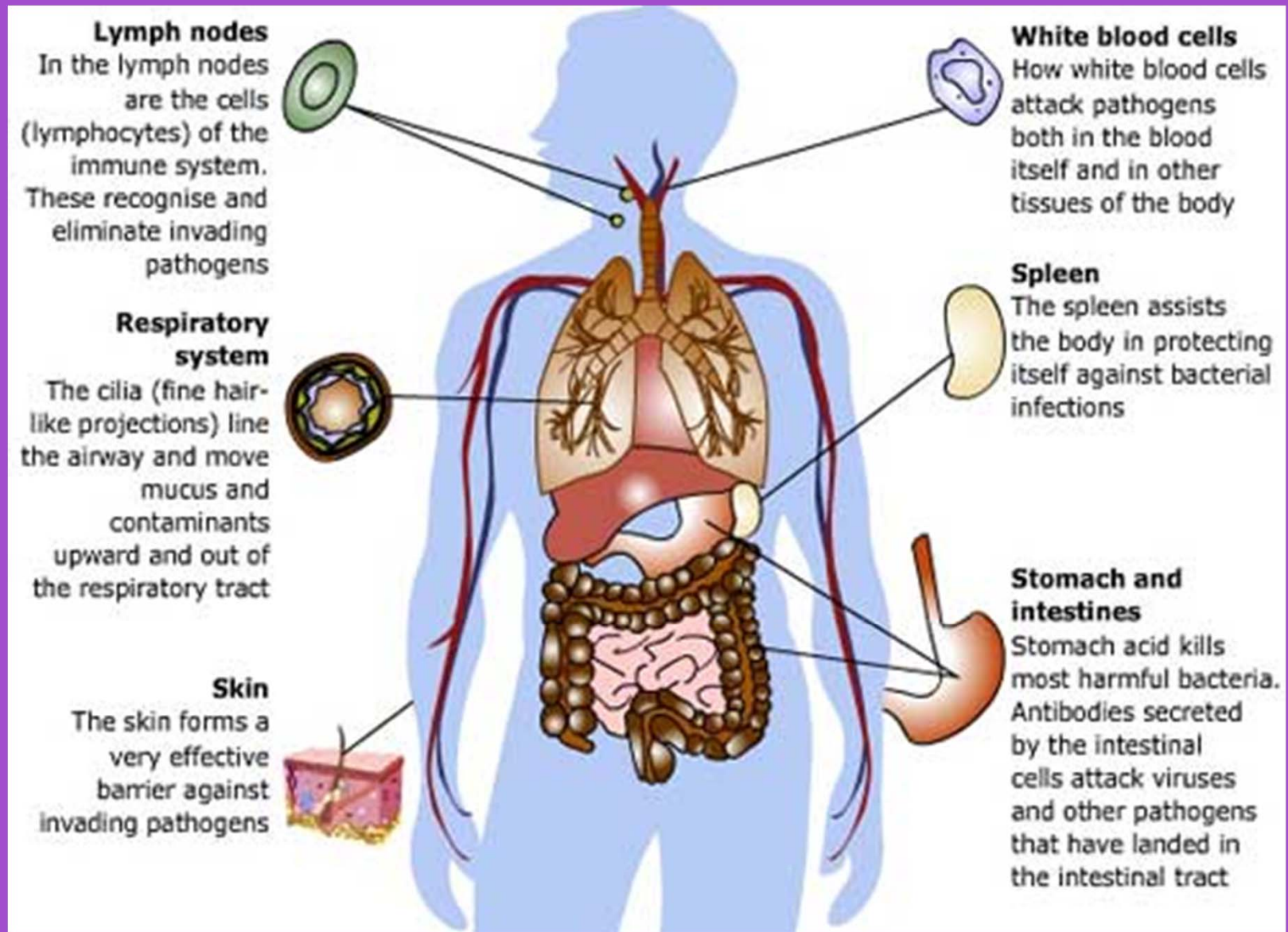
Lymph nodes

Thymus

Spleen

Long bones

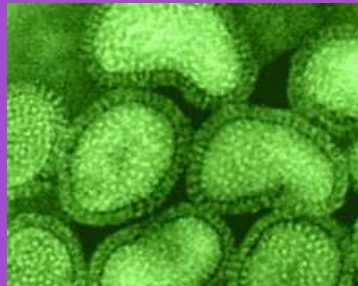
The immune system



Communicable Disease

1. Communicated from one person to another

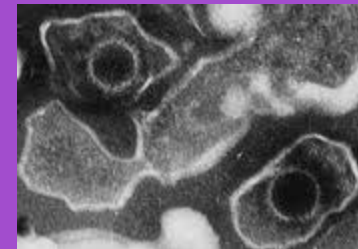
2. EX: Flu, cold, Epstein-Barr (mono), skin, athletes foot, ringworm



Chronic Disease

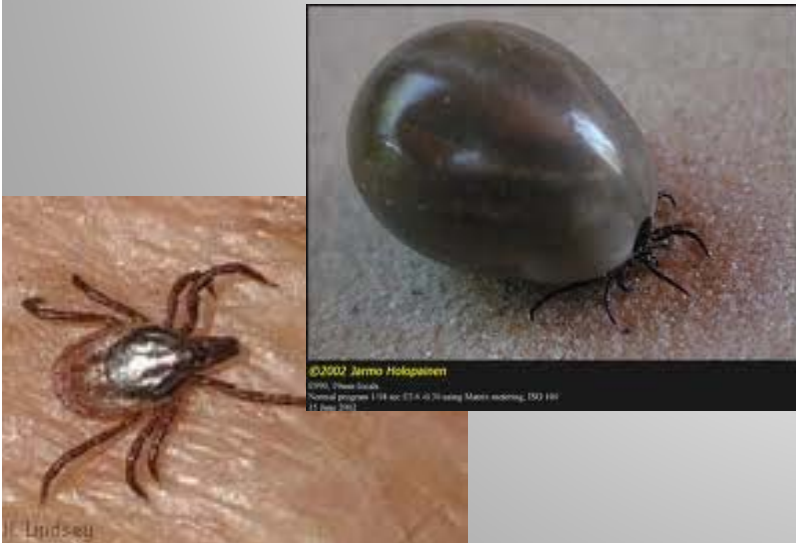
1. Long-lasting (more than 3 months) ; controlled but not cured

2. EX: Heart disease, cancer, diabetes, Alzheimer's, hypertension



Pathogens

1. Infectious microbes
→ disease causing
 1. Bacterial
 2. Viral
 3. Fungal
 4. Protozoa
 5. Parasitic



Vector

1. Latin for 'carrier'
2. Organism that transmits a pathogen
3. EX – below



Just think about what the words active and passive mean.

ACTIVE IMMUNITY

1. Requires body to work to produce antibodies.

a) For example, you get an infection → body produces antibodies to that infection → which induce your body to make antibodies for the immunization.

b) **Like getting a vaccination**

2. PROD IN HOST ITSELF – LIFE-LONG...

Passive Immunity

1. Does not require your body to work to produce antibodies → passed down from mom

a) For example, when a baby is born, the mothers activated T-cells/antibodies are passed along or activated antibodies are transferred directly to the host

2. SHORT LIVED – TEMP

AntiBiotics

1. Antibiotics – kill or keep bacteria from reproducing

- a) Some bind to specific sites in the bacterial cell wall and prevent the bacterium from making new cell wall, so the wall they have breaks down and the cell dies.
- b) Others prevent the production of proteins in bacteria, so they cannot reproduce or grow.
- c) Some bind to a protein that prevents the bacterium from being able to duplicate its DNA.
- d) Bacteriostatic antibiotics slow the growth of the bacteria and allow the immune system to kill it off.

2. Antibiotic Resistance – becoming immune

- If a virus is making you sick, taking antibiotics may do more harm than good. Each time you take antibiotics, you increase the chances that bacteria in your body will be able to resist them. Later, you could get or spread an infection that those antibiotics cannot cure. -

Specific Response

- Response on a cellular level
 1. Lead to immunity
 2. Involve T cells and B cells

Non Specific Response

- General responses by the body to every pathogen
 1. Inflammation
 - Swelling, itching, redness, pain, warmth.
 - Keeps pathogens from entering or becoming populated
 2. Fever
 - Low fever stimulates interferon production which keeps viruses from replicating