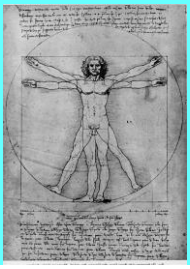
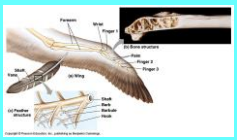
# Introduction to Human Anatomy and Physiology



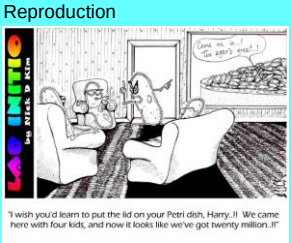
## I. Background

A. Anatomy- form and arrangement of parts.
B. Physiology- function of parts.
C. "Form fits Function"
D. Greek and Latin terms form the basis for words in A&P


## II. Characteristics of Life (metabolism)

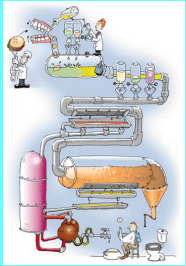
A. Movement
B. Responsiveness
C. Growth
D. Reproduction

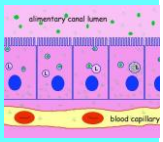



"I wish you'd learn to put the lid on your Petri dish, Harry..!! We came here with four kids, and now it looks like we've got twenty million..!!"

## II. Characteristics of Life (metabolism)

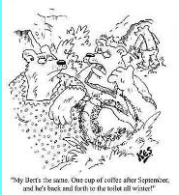
E. Respiration- using oxygen to release energy from foods.
F. Digestion
G. Absorption- moving substances through membranes and into body fluids.






## II. Characteristics of Life (metabolism)

H. Circulation
I. Assimilation (changing substances into chemically different forms)
J. Excretion



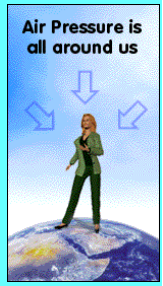
"My liver's the same. One cup of coffee after September, and he's back and forth to the toilet all winter!"

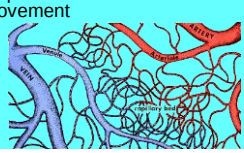
## III. Maintenance of Life

A. Water- provides environment for metabolic reactions, transports substances.
B. Food- provides energy, raw materials for building, chemicals for reactions.
C. Oxygen- releases energy from food materials.

## III. Maintenance of Life

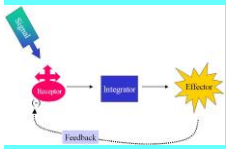
D. Heat- product of metabolism, helps regulate rates of reactions.
E. Pressure
   1. atmospheric(air) helps breathing
   2. hydrostatic(fluid) helps blood movement

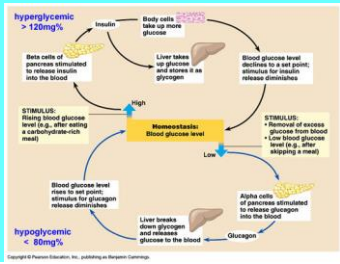



## III. Maintenance of Life

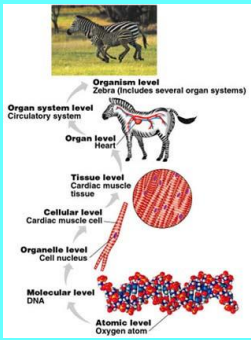
F. Homeostasis- maintain a stable internal environment
   1. Negative Feedback- Returns to set point
   2. Positive Feedback- Increases response



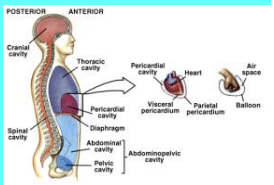

## IV. Levels of Organization

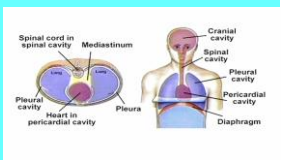
A. Atoms
B. Molecules
C. Macromolecules
D. Organelles
E. Cells (basic unit of structure and function)
F. Tissues
G. Organs
H. Organ Systems
I. Organism




## V. Organization of the Human Body

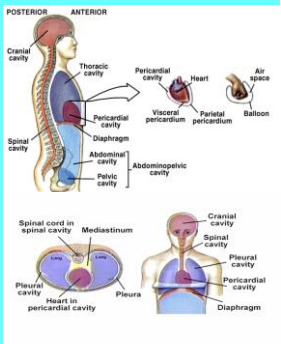
1. Body Cavities
   a. Dorsal Cavity- cranial and spinal cavities.
   b. Ventral Cavity- thoracic and abdominopelvic cavities.
      1) Pleural Cavity
      2) Pericardial Cavity
      3) Peritoneal Cavity
   c. Organs in a cavity are called viscera.
   d. Mediastinum- divides Pleural cavity into left and right.
   e. Other cavities- oral, nasal, orbital, middle ear.



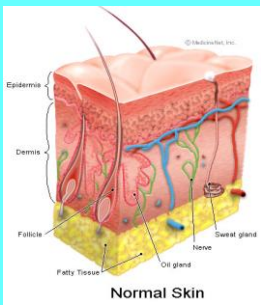

## V. Organization of the Human Body

2. Membranes
   a. Pleural Membranes- line thoracic cavity, cover lungs
   b. Pericardial Membrane- surrounds heart.
   c. Peritoneal membranes- line the abdominopelvic cavity, cover the organs inside.
   d. Visceral Pleura surround organs.
   e. Parietal Pleura line cavities.




## VI. Organ Systems

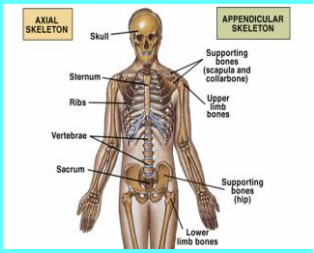
1. Integumentary System
   a. Body Covering
   b. Skin, hair, nails, sweat glands, sebaceous glands
   c. Protects underlying tissue
   d. Regulates body temperature
   e. Houses sensory receptors
   f. Synthesizes various substances.



## VI. Organ Systems

2. Skeletal System

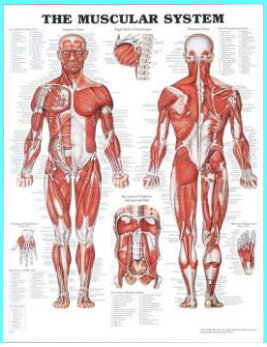
a. Support and Movement
b. Bones, cartilages, ligaments
c. Framework, protective shields, attachments for muscles, produces blood cells, stores inorganic salts.




## VI. Organ Systems

3. Muscular System

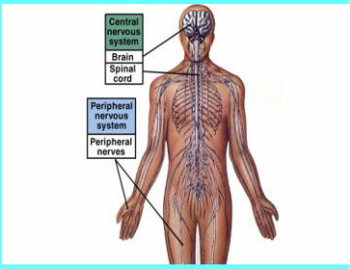
a. Moves body parts
b. Maintains posture
c. Produces body heat.




## VI. Organ Systems

4. Nervous System

a. Integration and Coordination
b. Brain, spinal cord, nerves, sense organs
c. Receives impulses from sensory parts
d. Interprets impulses
e. Acts on impulses by stimulating muscles or glands to respond.

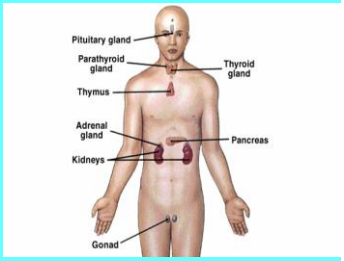



## VI. Organ Systems

5. Endocrine System

a. Pituitary, thyroid, parathyroid, adrenal, pineal, thymus glands, pancreas, ovaries, testes.

b. Glands that secrete hormones which help regulate metabolism.

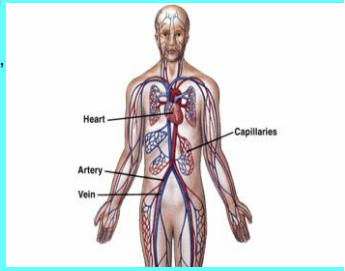



## VI. Organ Systems

6. Cardiovascular System

a. Heart, blood vessels, blood

b. Transports oxygen, nutrients, hormones, wastes.




## VI. Organ Systems

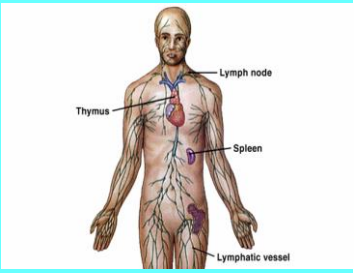
7. Lymphatic System

a. Lymphatic vessels, lymph nodes, thymus, spleen.

b. Transports lymph from tissue to blood

c. Carries some fats away from digestive organs

d. Aids in defending against disease.



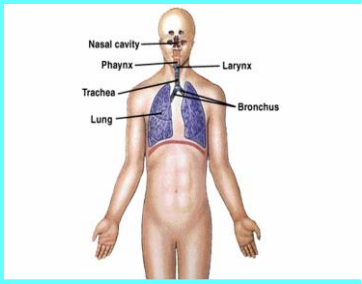
## VI. Organ Systems

8. Respiratory System

a. Nasal cavity, pharynx, larynx, trachea, bronchi, lungs.

b. Takes air in and out of the body

c. Exchanges gases between air and blood.




## VI. Organ Systems

9. Digestive System

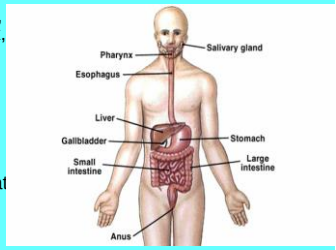
a. Mouth, tongue, teeth, salivary glands, pharynx, esophagus, stomach, liver, gallbladder, pancreas, small intestine, large intestine

b. Receives foods

c. Converts food molecules into forms that can pass through membranes

d. Eliminates materials not absorbed

e. Some organs secrete hormones



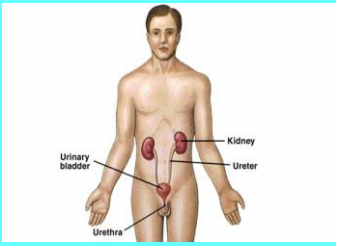

## VI. Organ Systems

10. Urinary System

a. Kidneys, ureters, urinary bladder, urethra

b. Filters waste from the blood

c. Helps maintain water and electrolyte balance



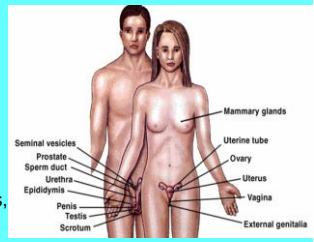

## VI. Organ Systems

11. Reproductive System

a. Produce, maintain, transport sex cells

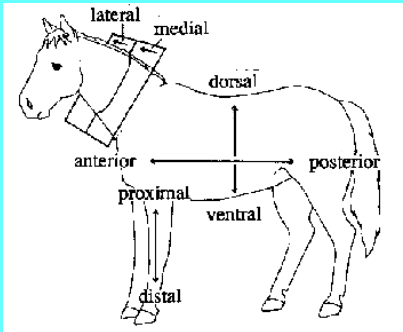
b. Male system- scrotum, testes, epididymides, vasa deferencia, seminal vesicles, prostate gland, bulbourethral glands, penis, urethra.

c. Female system- ovaries, fallopian tubes, uterus, vagina, clitoris, vulva.



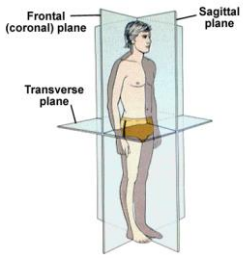

## VII. Relative Positions

1. Lateral
2. Medial
3. Dorsal
4. Ventral
5. Anterior
6. Posterior
7. Proximal
8. Distal
9. Superior
10. Inferior

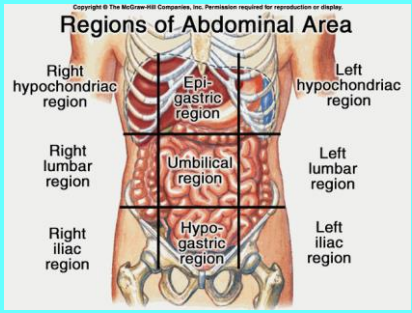



## VIII. Body Sections

1. Sagittal (medial)
2. Transverse (horizontal)
3. Coronal (frontal)



## IX. Abdominal Body Regions




## X. Body Regions