

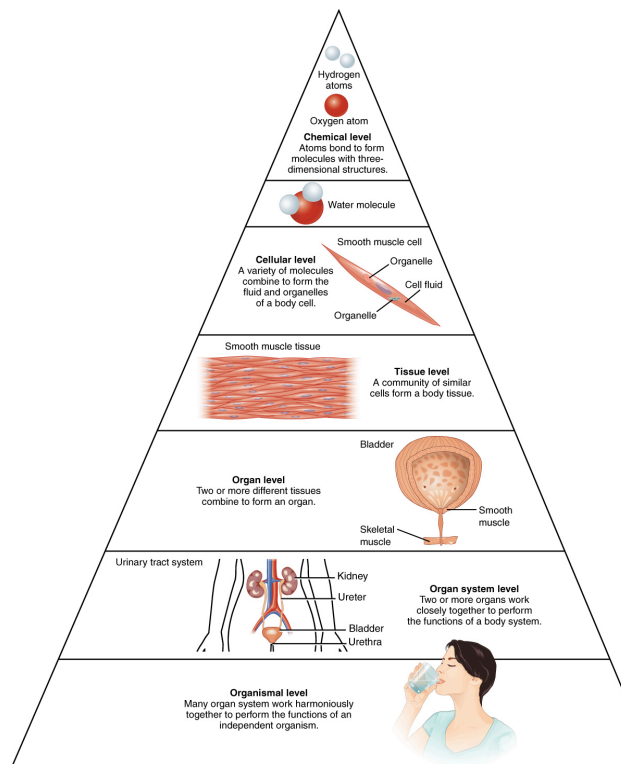
Anatomy Unit 1 Notes

(Ch.1-4)

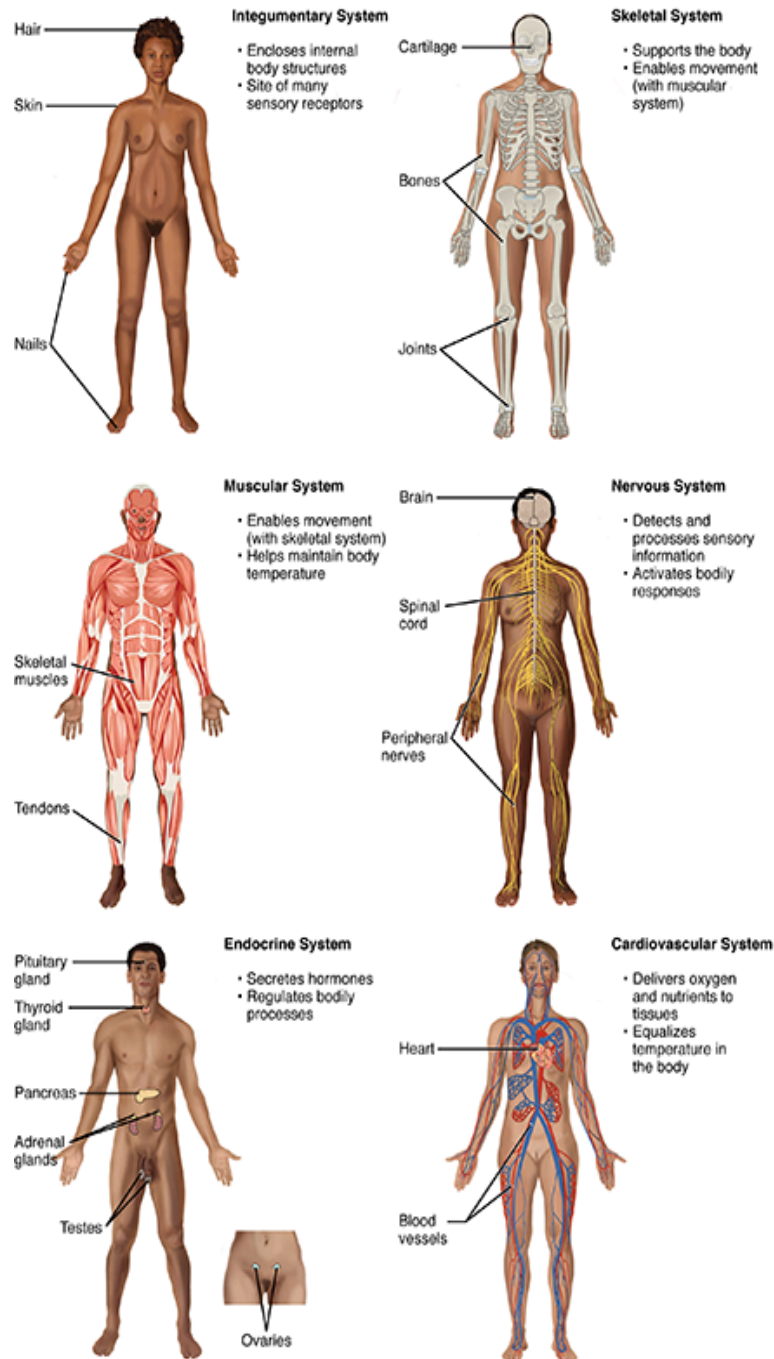
_____ - structure of the body

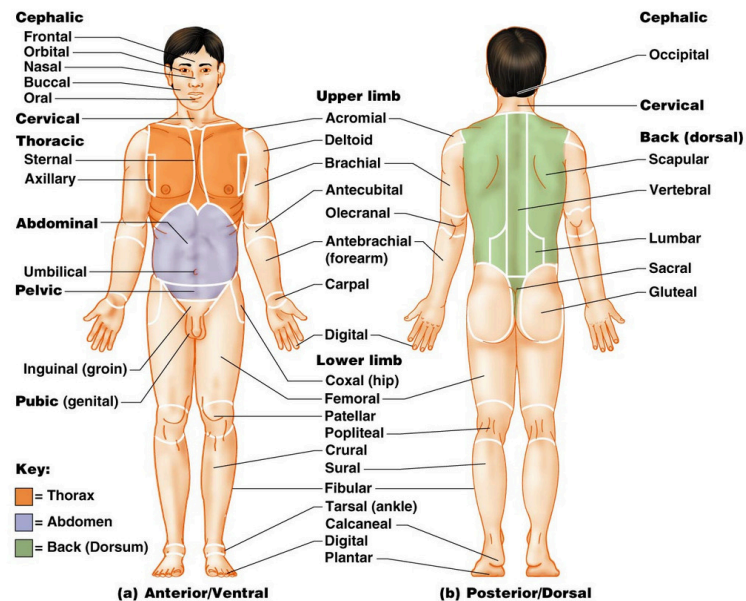
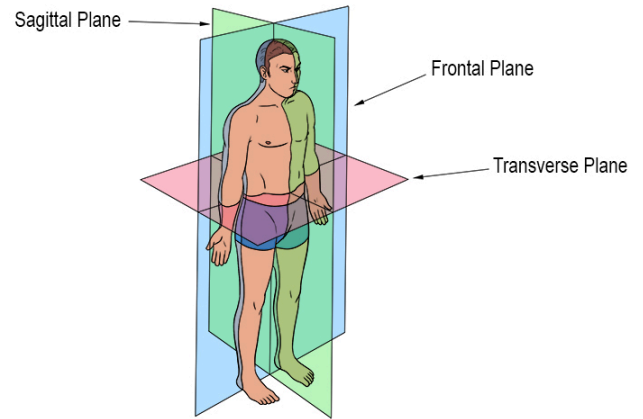
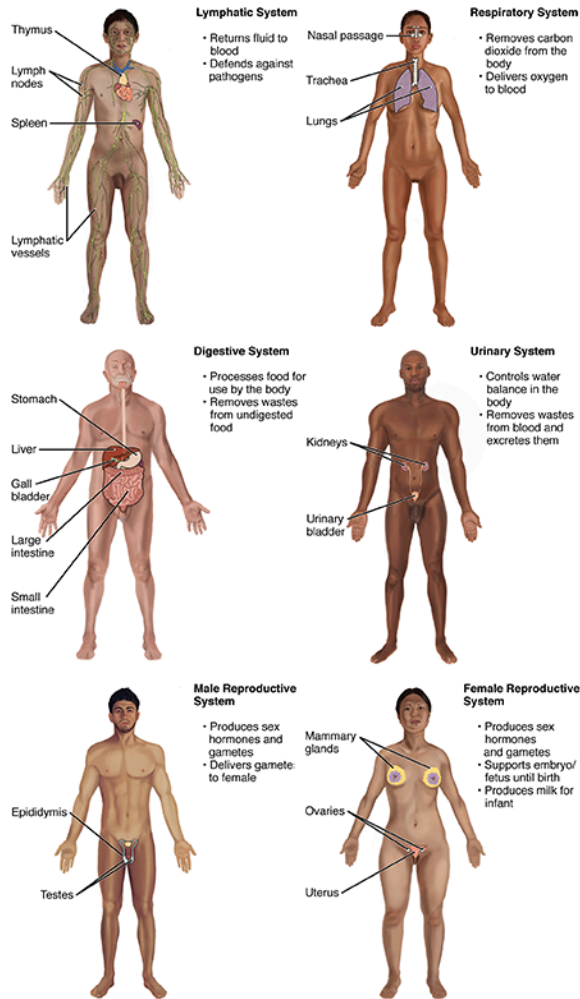
_____ - how the body functions

_____ - the study of the processes that disturb normal function (patho-suffering/disease)



Body Systems





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Anatomical/ Directional Terms

Distal - further from trunk
Proximal - closer to trunk

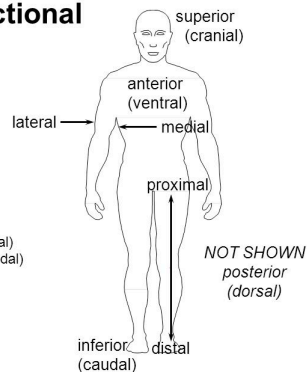
Lateral - away from midline
Medial - closer to midline

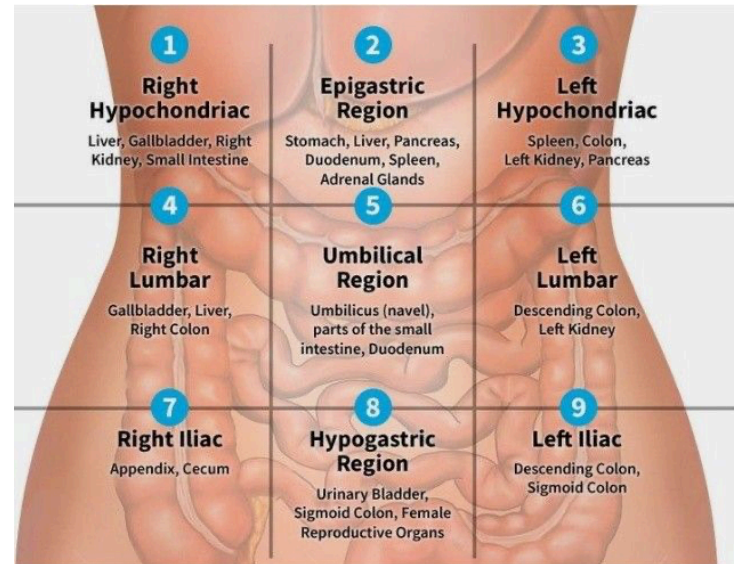
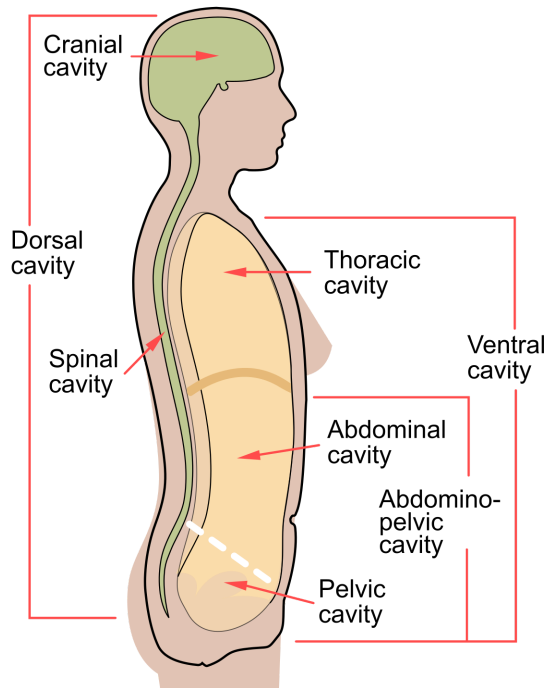
Anterior - front side (aka ventral)
Posterior - back side (aka dorsal)

Superior - closer to head (aka cranial)
Inferior - further from head (aka caudal)

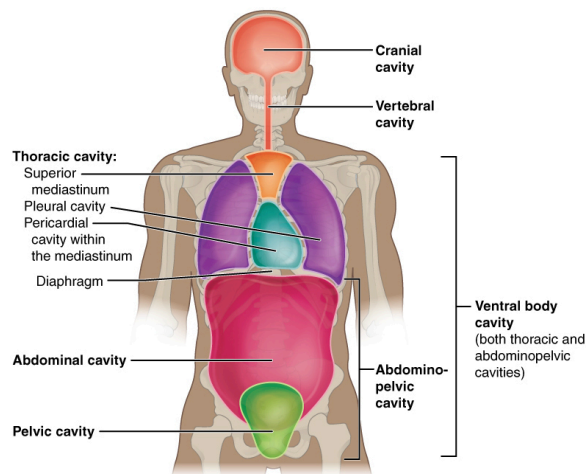
Superficial - closer to surface
Deep - further from surface

Plantar - bottom of foot
Dorsal - top of foot

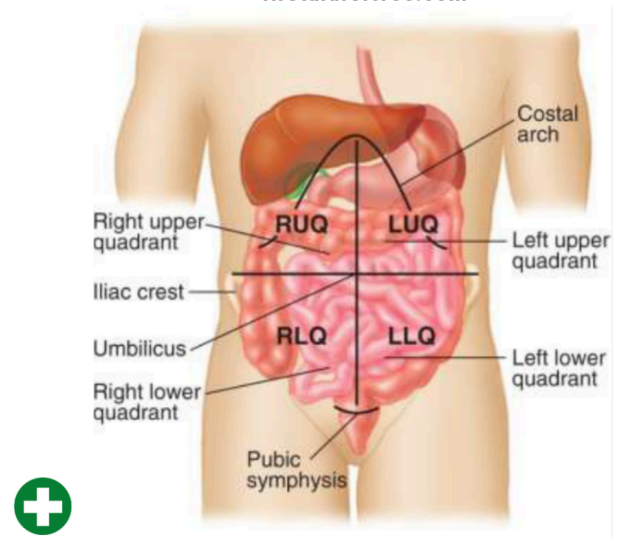




ABDOMINAL QUADRANTS



firstaidforfree.com



_____ - pain
resulting from a disorder in an
entirely different area of the
body

_____ - the body maintaining a relatively constant internal environment despite change in external conditions; maintaining a dynamic equilibrium

_____ - active balance

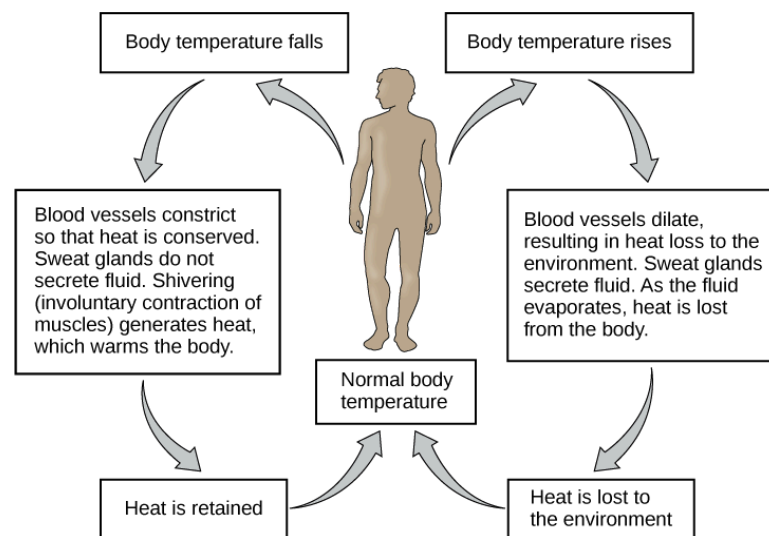
_____ - the range of normal temperature, fluids, and chemicals

_____ - process of adjustment involving:

1. A receptor- receives info about change in environment
2. A control center- receives and processes info from the receptor
3. An effector- responds to signals from control center by opposing or enhancing stimulus

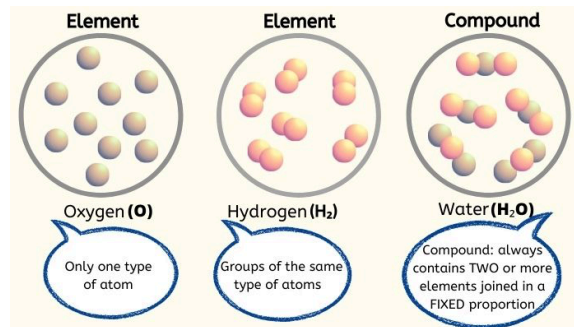
_____ (more common) - when the effector opposes the stimulus and reverses the direction

_____ - when the effector reinforces the stimulus and amplifies the direction of change

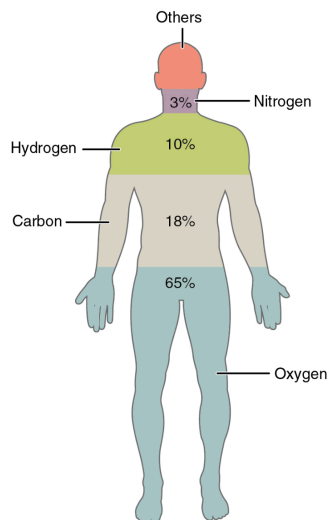


Anatomy Chapter 2 Notes: Chemistry of the Body

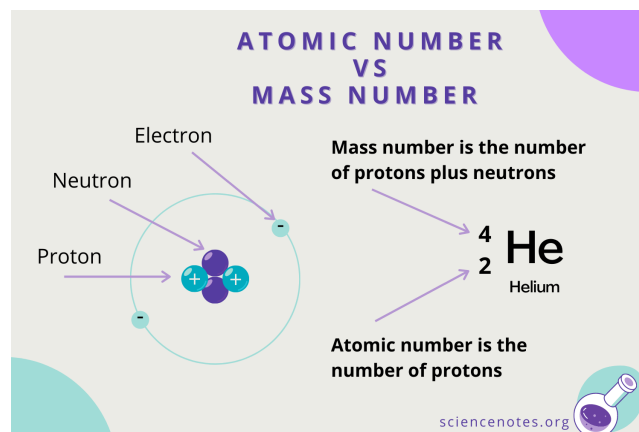
Matter- anything that has mass and occupies space



Fast Fact: If the body becomes contaminated with elements that don't serve a purpose in the body- such as lead or mercury- serious illness or disease may occur. For example, exposure to lead or mercury can lead to heavy-metal poisoning.



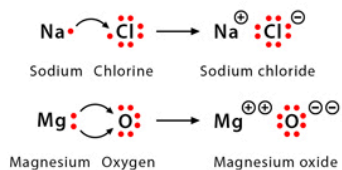
Element	Symbol	Percentage in Body
Oxygen	O	65.0
Carbon	C	18.5
Hydrogen	H	9.5
Nitrogen	N	3.2
Calcium	Ca	1.5
Phosphorus	P	1.0
Potassium	K	0.4
Sulfur	S	0.3
Sodium	Na	0.2
Chlorine	Cl	0.2
Magnesium	Mg	0.1
Trace elements include boron (B), chromium (Cr), cobalt (Co), copper (Cu), fluorine (F), iodine (I), iron (Fe), manganese (Mn), molybdenum (Mo), selenium (Se), silicon (Si), tin (Sn), vanadium (V), and zinc (Zn).		less than 1.0



Types of Chemical Bonds

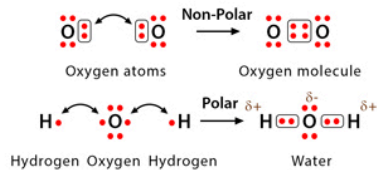
1. Ionic Bond

Metal atom loses electron(s) to nonmetal atom



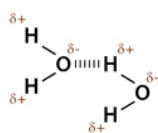
2. Covalent Bond

Two nonmetal atoms share electrons



3. Hydrogen Bond

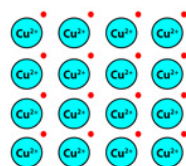
Hydrogen attracts an electronegative atom electrostatically



Two water molecules

4. Metallic Bond

Positive metal ions attract conducting electrons



Copper ions immersed in an electron cloud

ChemistryLearner.com

What Is Energy?

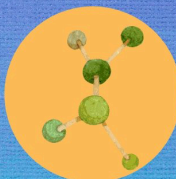
Energy is the ability to do work or heat objects.



Electrical Energy



Mechanical Energy



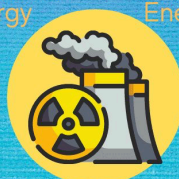
Chemical Energy



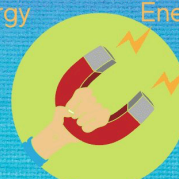
Gravitational Energy



Radiant Energy

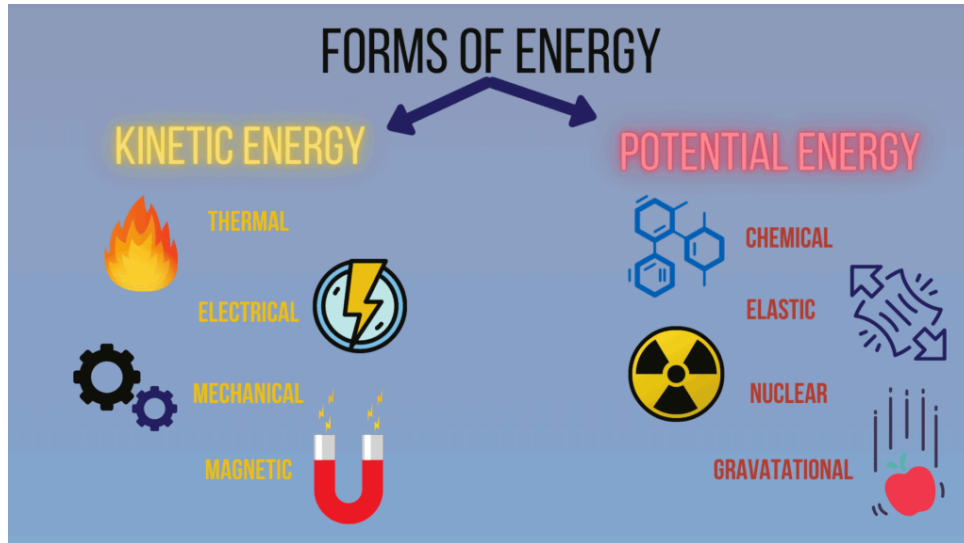


Nuclear Energy

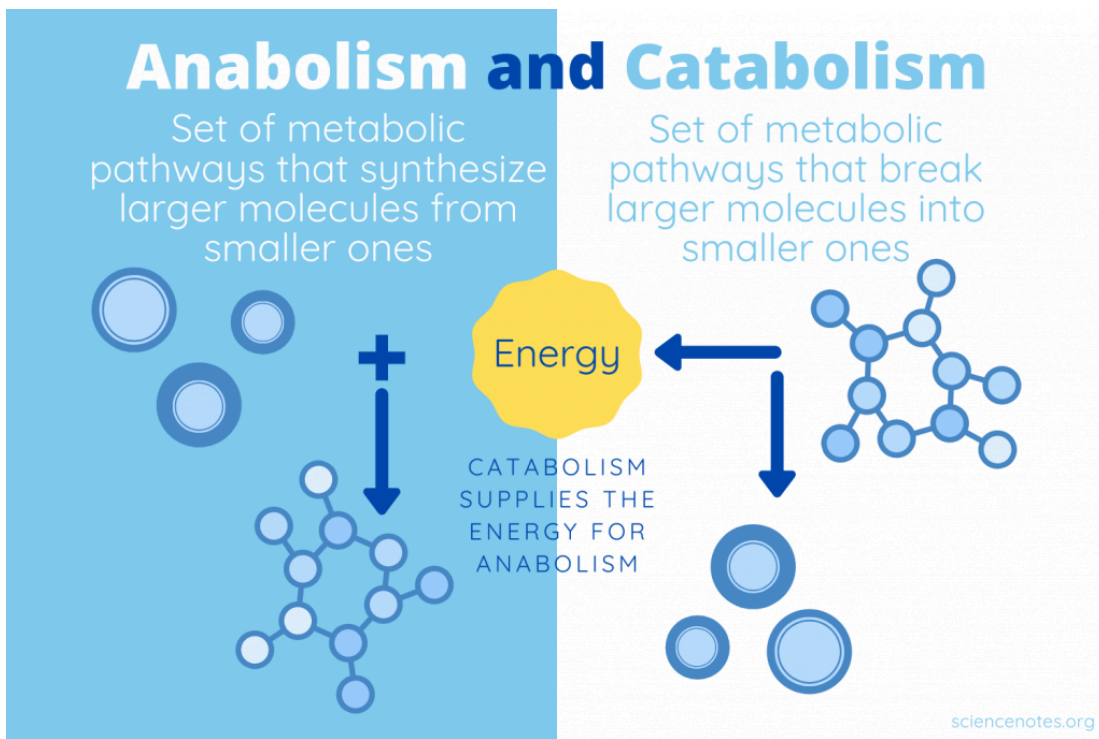


Magnetic Energy

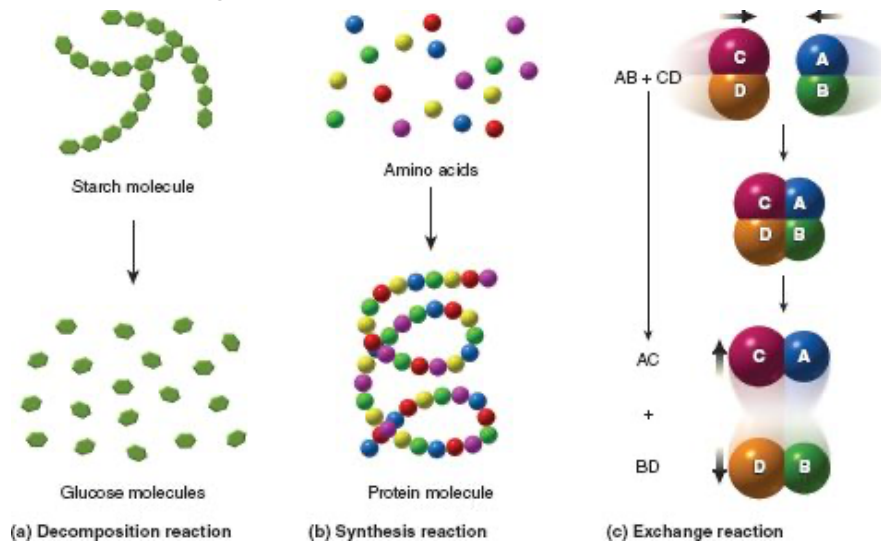
sciencenotes.org



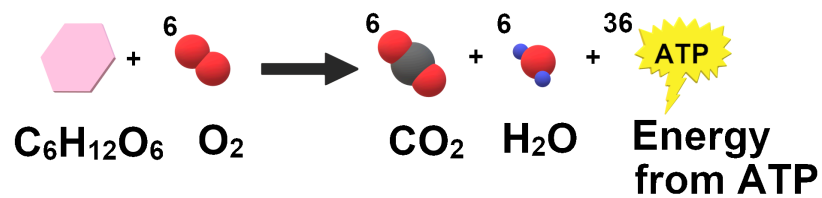
Metabolism- the sum of all chemical reactions in the body



Types of Chemical Reactions



Cellular Respiration



Water in the Human Body

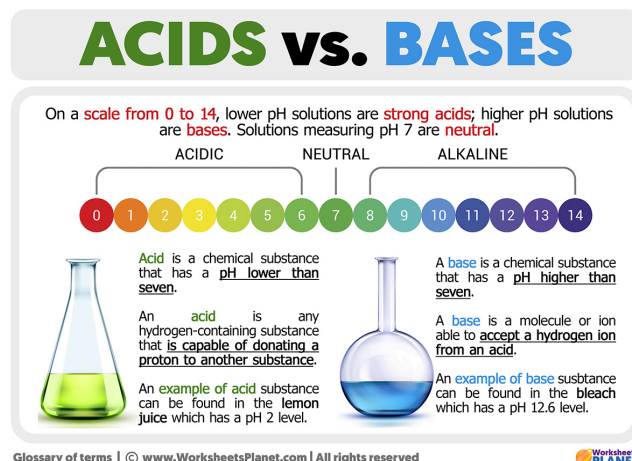
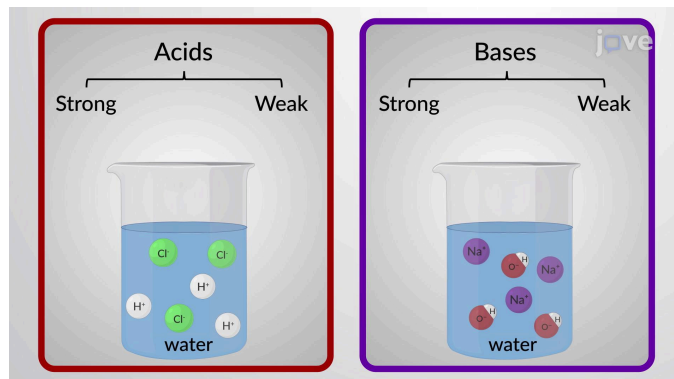
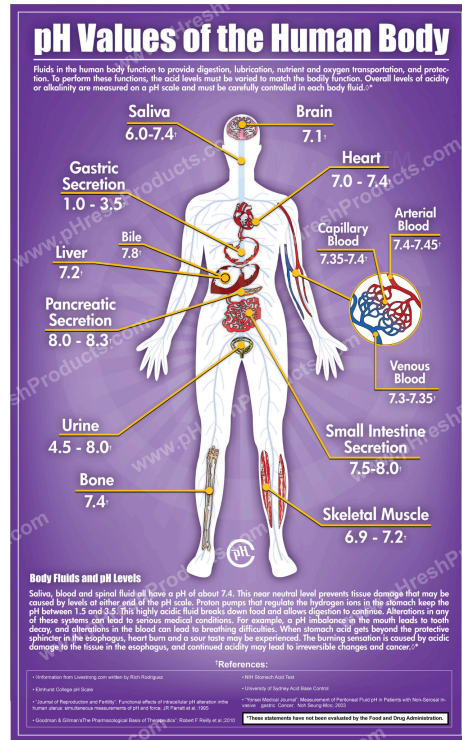
- Main component of most cells
- Necessary for growth and reproduction
- Aids digestion
- Helps deliver oxygen
- Regulates temperature
- Acts as shock absorber
- Lubricates joints
- Keeps membranes moist
- Flushes body waste
- Used to make hormones and neurotransmitters

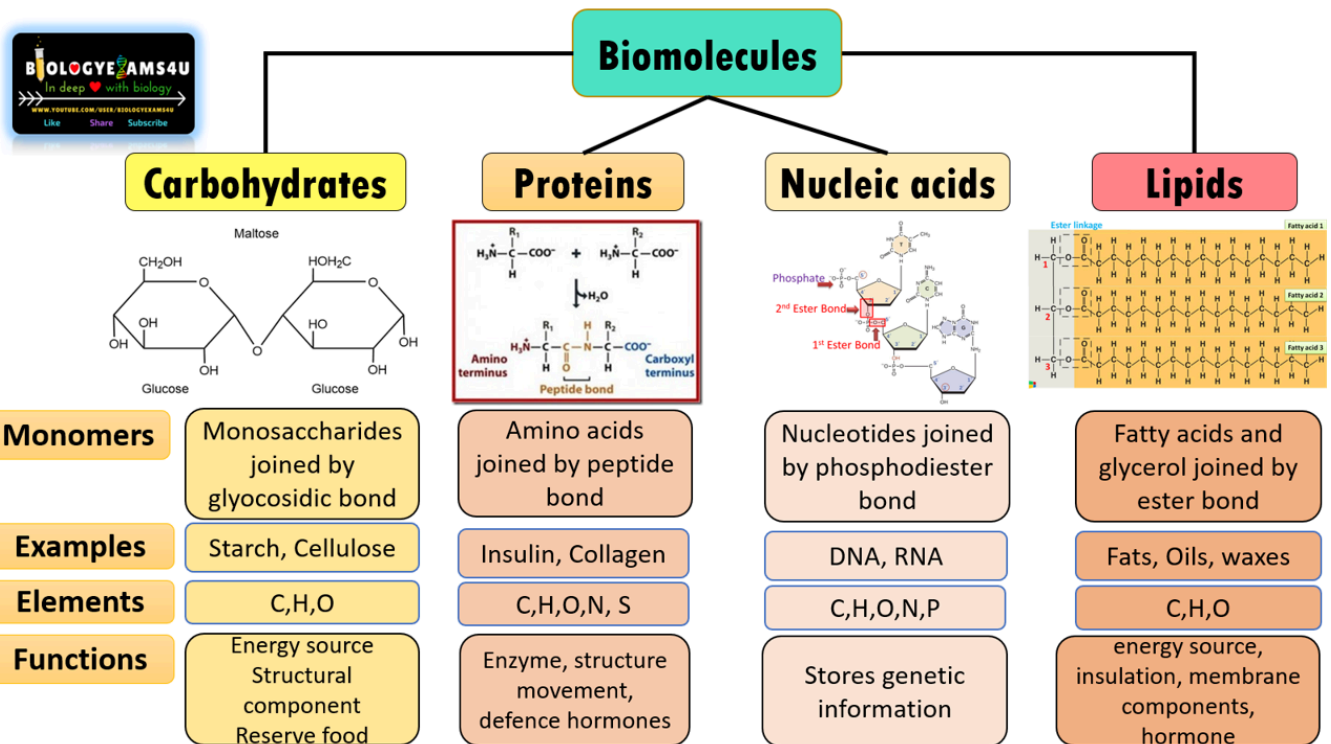
Water content in the human body:

- 55% in men
- 60% in women
- 75% in infants

sciennotes.org

Body fluids can be compounds or mixtures



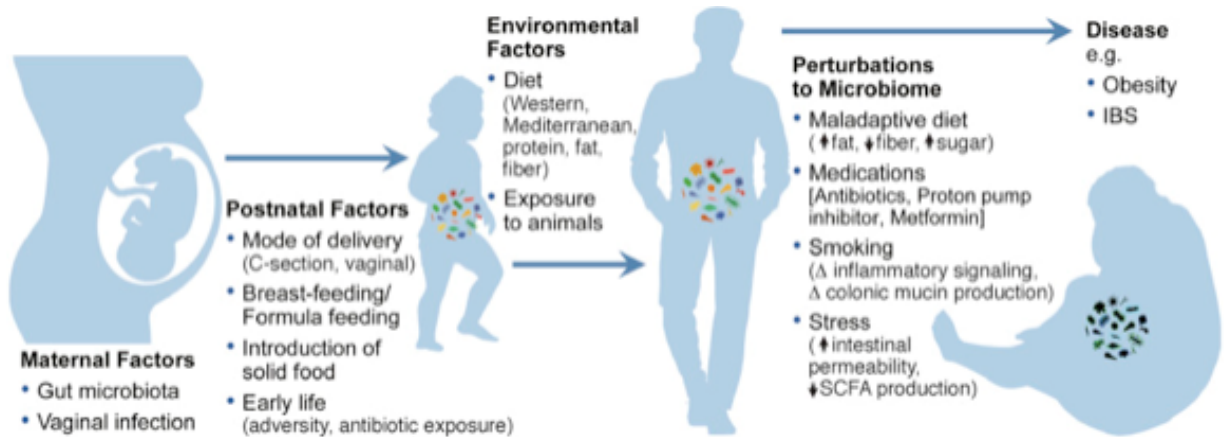


Anatomy Chapter 4 Notes MICROBIOME

- Your body contains more microbes than it does human cells
- Human microbiome- community of microbes
- Human Microbiome Project
 - For 5 years, scientists followed 242 healthy adults, sampling bacteria from 15 or more sites on the body
 - The microbiome had more than 100 trillion microscopic life forms, with most being bacteria, but some viruses, fungi, and archaea
 - A lot of disease causing bacteria were there, living peacefully with the other parts of the microbiome
 - From person to person, the microbiome varied greatly

WHAT DOES IT DO?

- Roles of microorganisms in microbiome
 - They digest food
 - Synthesize vitamins
 - Form a barricade against disease-causing bacteria
 - Perhaps alter brain chemistry
 - Absorb nutrients
 - Play a role in energy production



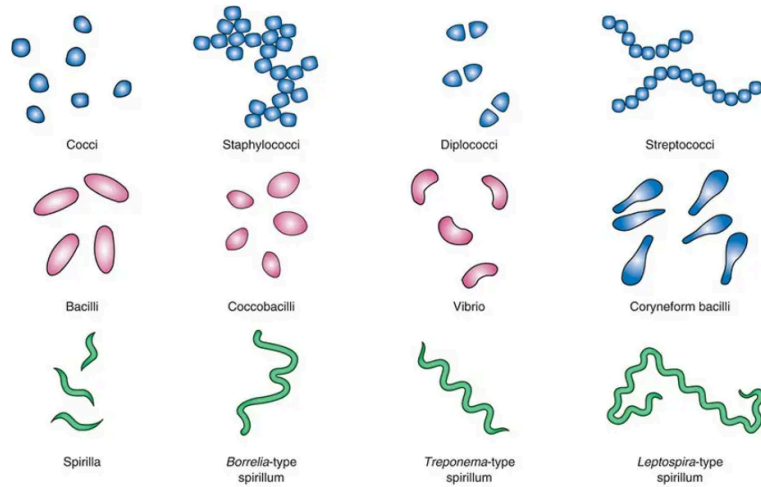
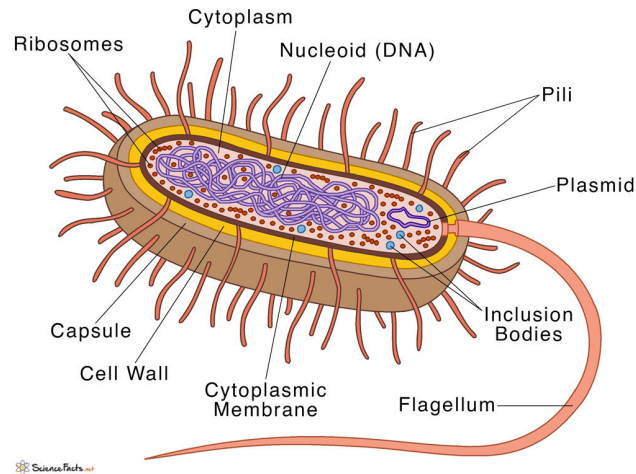
What boosts microbiome

- High-fiber plant based diet
- Foods with polyphenols
- Probiotics
- Prebiotics
- Fermented foods
- Exercise
- Time outdoors
- No unnecessary antibiotics

What threatens microbiome

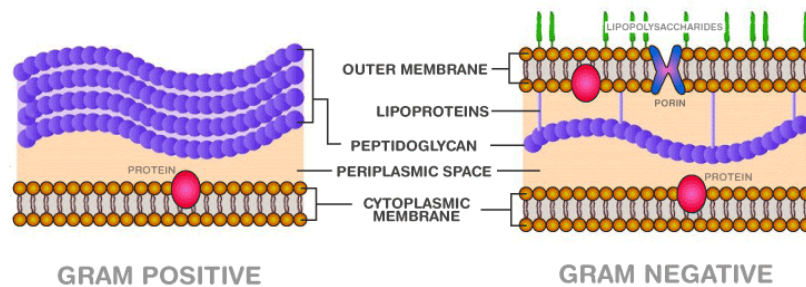
- High-fat, high-sugar diet
- Stress
- Smoking
- Air pollution
- Sedentary lifestyle
- Overuse of sanitizing products
- Invasion of disease causing bacteria

Bacteria Cell

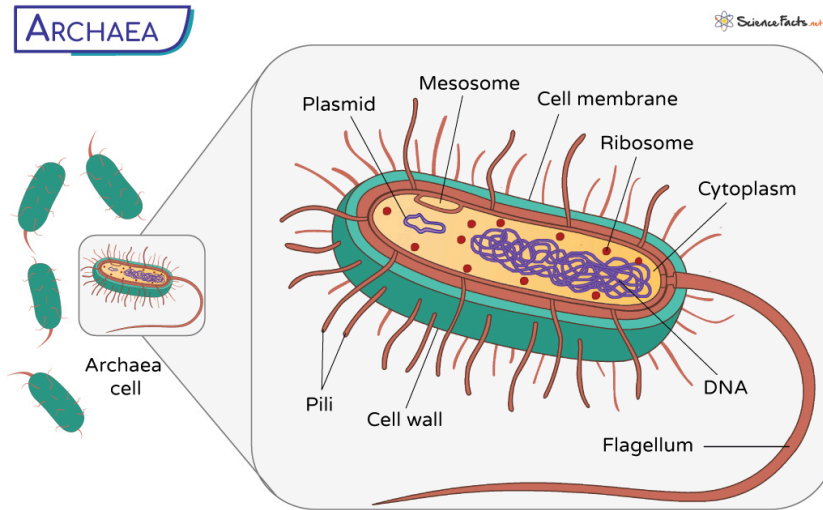


GRAM-POSITIVE AND GRAM-NEGATIVE BACTERIA

BYJU'S
The Learning App



Mycobiome- community of fungi in microbiome



Examples of viruses

