

Organic Compounds

An organic compound is any chemical compound whose molecules contain carbon. It can be in the form of a gas, liquid, or a solid. Organic compounds are important to us because it is mainly what we are composed of as humans. It is found in our DNA and cellular membranes.

Healthy Eating Tips

- 1.) Change your diet slowly to allow your body to accommodate to healthier foods
- 2.) Eat in moderation, Over eating and under eating only hurts your body. **PACKING YOUR LUNCH REDUCES UNHEALTHY FOODS MAJORLY!**
- 3.) Have a wide variety of fruits and vegetables.
- 4.) Never go to a grocery store hungry; it only tempts you into buying excess and unnecessary food.

Exercise

As teenagers, you should get at least 60 minutes of exercise everyday. Adults should exercise at least 30 minutes everyday.

TIPS ON EXERCISE:

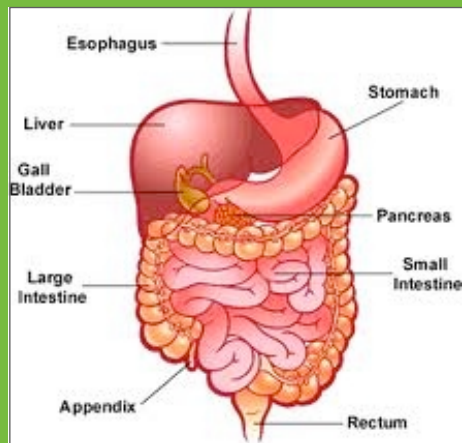
- Take the stairs instead of elevator.
- Park on the far side of the parking lot.
- Walk your dog
- Ride your bike

SLEEP

Every human being should get at least 8 hours of sleep each night.

DIGESTIVE SYSTEM

Digestion is the mechanical and chemical breaking down of food into smaller components that can be absorbed into the blood stream. When you swallow food it then enters the esophagus, which is a long muscular tube, that moves food to the stomach. The stomach mixes the food fragments with gastric acid which is produced to assist in digestion. Other acids and stomach juices are added to break down complex proteins, fats, lipids, and carbohydrates so they can be absorbed. Waste then exits the stomach through the pylorus, a small valve leading into the small intestine. As food travels through the 15-20 feet of the small intestine there is a great deal of nutrients that are absorbed. The small intestine is broken into three parts called the duodenum, the jejunum, and the ileum. These three parts work together to absorb things like iron, calcium, and absorption of fat soluble vitamins (A, D, E, and K). Waste then enters the large intestine through another one-way valve where excess fluids are absorbed. Through the whole process, antibacterial chemicals make sure that harmful bacteria don't enter your body.



HEALTHY HABITS

EATING HEALTHY

By:

Zakary LaButte

Samantha Deering

Josh Loukotka

Brett Joslin

This is a brochure to educate the public about the reasons why you need to eat healthy and be concerned about your health. Also the nutrients your body needs to grow and what may happen if you are lacking them.

Pinckney New Tech High School

Pinckney, Michigan

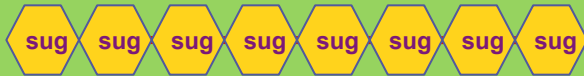
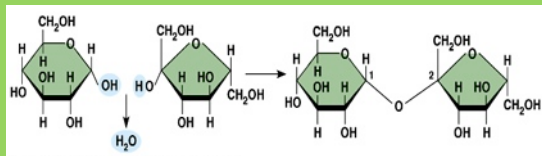
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CARBOHYDRATES

Carbohydrates are energy molecules with sugars as their building blocks. They function as energy storage, can be used for quick energy, and are the structures for cell walls in plants. Cell walls are structures that enclose the contents of a cell. Examples of carbohydrates are sugars, starches, and cellulose. (end in -ose)

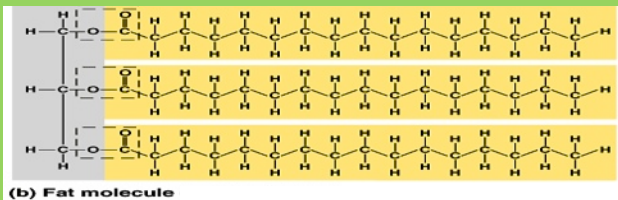
1 sugar = monosaccharide

2 sugars = disaccharide



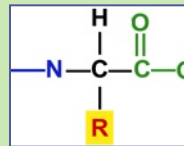
LIPIDS

Cell membranes are made out of lipids. Lipids are fats. Examples of Lipids are fats, oils, waxes, and hormones. It's function is to store energy (twice the energy amount of carbohydrates), to cushion cell membranes, and to insulate your body. Lipids do NOT have building blocks, it's simply just one big molecule. There are two types of lipids: **Saturated**, which are solid at room temperature, block arteries, and increases risk of heart disease, and **unsaturated** fats, which are liquid at room temperature. Cholesterol is a form of lipid; it is good for cell membranes, but too much can lead to heart diseases.



PROTEINS

Proteins are multipurpose molecules. You can find protein in muscles, hair, nails, insulin, and pepsin. It has many functions involving hormones, movement (muscles), immune system (protects against germs), and enzymes by aiding in chemical reactions. Amino acids are the building blocks of proteins. There are over 20 different amino acids, but our bodies can only make 12 of them. The other 8 are acquired through food. There are also two types of amino acids: hydrophobic and hydrophilic. Hydrophobic are "water fearing" amino acids that try and get away from water; hydrophilic is the exact opposite. Proteins must be the right shape to do their job. If their form is destroyed, called "denaturing", it can't do it's job. Wrong temperature and ph levels can denature an enzyme.



ENZYMES

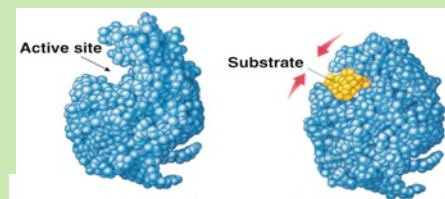
Enzyme: Helper protein molecule

Substrate: Molecule that enzymes work on

Products: What the enzyme helps produce from the reaction

Active site: Part of enzyme that the substrate fits into.

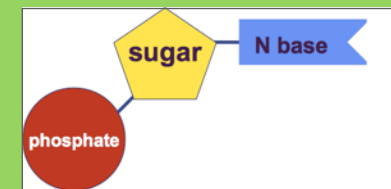
Enzymes either build up (synthesis) or break apart (digestion) molecules.



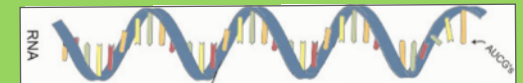
NUCLEIC ACIDS

Nucleic acids are information molecules. They make up DNA and RNA. The function of nucleic acids are to store information on genes and to give information on how to build a protein. It also transfers information by being a blueprint for new cells and next generations. The building blocks of nucleic acids are nucleotides.

There are five different types of nucleotides, which are nitrogen bases (A,T,C,G, and U).



Nucleotide chains: Nucleotides are chained into a polymer. A polymer is a natural process of molecules synthesizing. DNA is double sided, has two helix, and include the nucleotides A,C, G, and T. RNA is single sided and includes A,C,G, and U.



Base Pairing Rules: (DNA)

A must pair with T

C must pair with G



weak bonds
Weak bonds between the nitrogen bases join to two strands together.