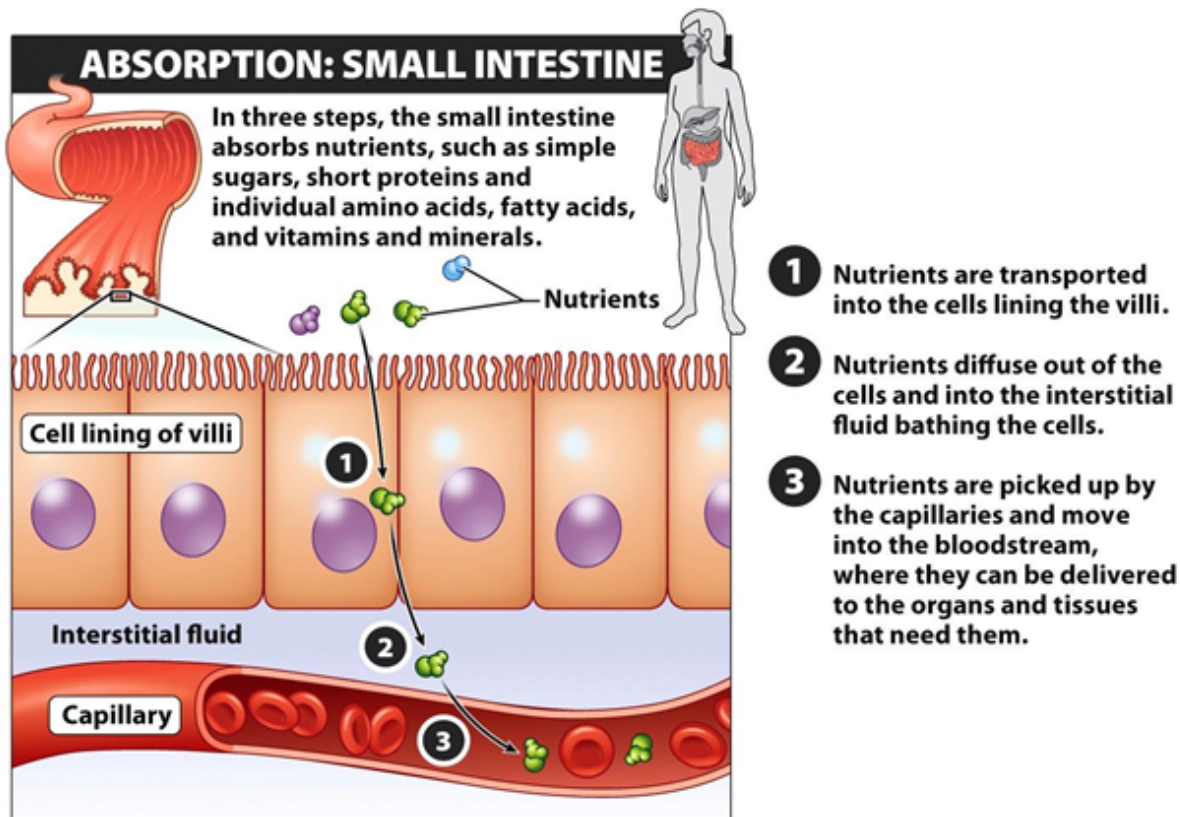


Nutrition



- Nutrition involves an interaction between food and the living organism
- When digestion is finished, nutrients enter the blood which distributes them to the tissues and utilized by the body's cells



- A nutrient is a substance that the body uses to maintain health

.the food plate / formerly the food pyramid gives an idea of what proportions and food variety we should have



Basically half the plate should be fruit and veggies.
For the test you should be able to fill in the labels for the food plate.

There are 6 different nutrients that the body needs.

1. Carbohydrates
2. Fats
3. Protein
4. Vitamins
5. Minerals
6. Water



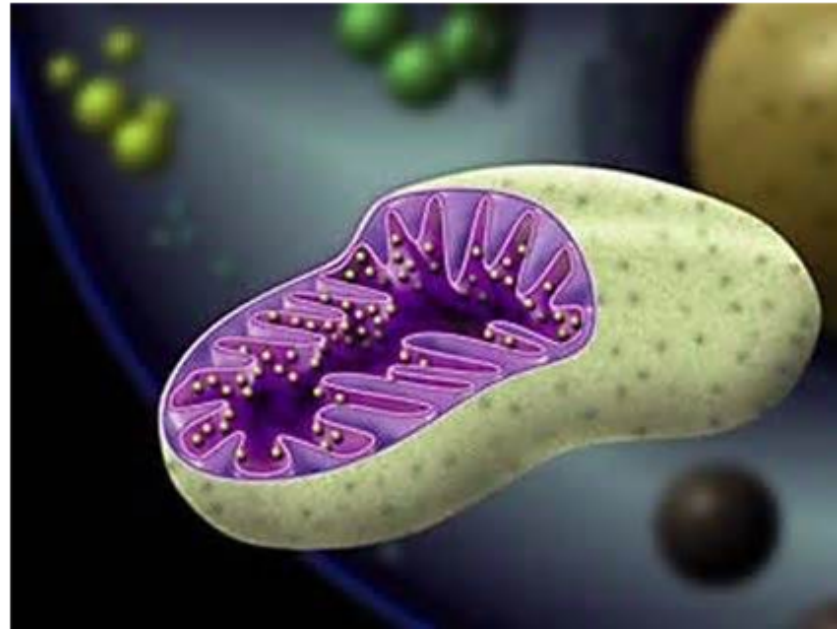
Energy Supplying Nutrients

Fats / Carbohydrates / Proteins



Carbohydrates

- Once a cell receives the blood supply, the mitochondria use the blood's sugar, 'glucose', to produce a constant supply of ATP for the cell
 1. glucose is the body's immediate energy source
 2. We need a constant supply of glucose because it is the brain's preferred energy source

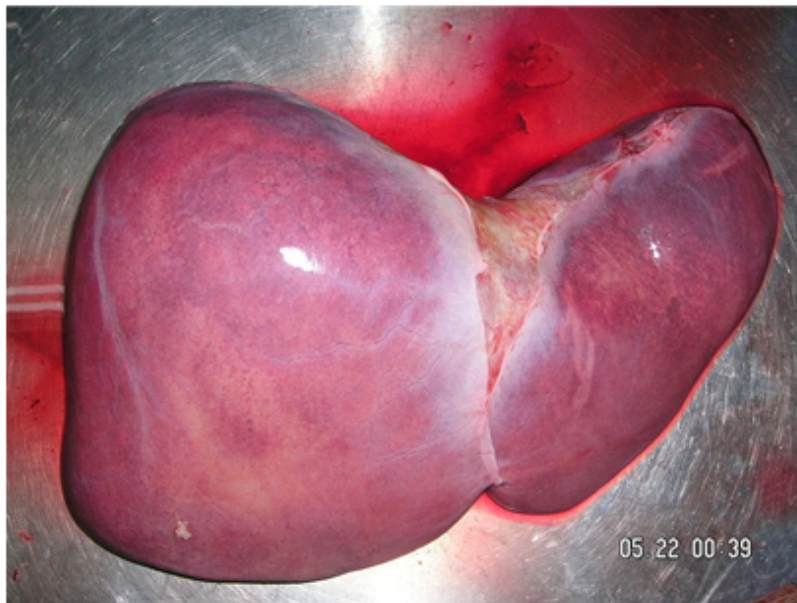


Fats

- When it comes to fats, the liver is the organ to consider. It chemically alters ingested fats to suit the body's needs

1. Essential Fatty Acids - fats that are required for construction of plasma membranes and for synthesis of messenger chemicals (body cannot make these on its own)

2. Fats are the long-term energy source after glucose



- You have the amount of fat cells that you will have for the rest of your life (barring any liposuction or injury where you lose tissue)

- Cells have the capability of converting sugars into fats for storage, hence the reason why sugar can also cause weight gain

Protein

- Proteins are made up of amino acids
- Amino acids from protein digestion are used by the cells to construct their own proteins including enzymes that carry out metabolism.
- Protein formation requires 20 different amino acids
- Your body makes 11 on its own (non-essential amino acids)
- Need to get 9 from our food sources (essential amino acids)



- Foods that have all 9 essential amino acids are called complete and include mostly animal proteins (milk, turkey, bacon the exception is soy as a complete plant protein)
- Foods that don't have all 9 amino acids are called incomplete and a combination of incompletes can make a complete

Non-Energy Supplying Nutrients

Vitamins / Minerals / Water



Vitamins

- Vitamins - Vital to life because they play an essential role in cellular metabolism
 - The body is unable to produce vitamins so they must be present in the diet
 - In cells, vitamins help with metabolic processes and can be used over and over again (that is why we only need small amounts)
- *2 categories; fat soluble (A, D, E, K) and water soluble (B-complex and C Vitamins)
1. A - synthesizes the visual pigments
 2. D - produces hormone that regulates calcium and phosphorus metabolism
 3. E - antioxidant
 4. K - blood clotting
 5. B-complex and C Vitamins - enzyme helpers / speed up specific reactions

- Minerals - occur in a single atom, cannot lose their identity, indestructible (do not need to be concerned with their cooking or processing)

1. We need larger amounts of the following; sodium, magnesium, phosphorus, chlorine, potassium, and calcium - these serve as parts of cells and body fluids and as structural components of tissues

2. We need smaller amounts of the following; iron, zinc, iodine, fluoride, copper, selenium, chromium, manganese, molybdenum - these have very specific functions as noted on table 15.4 (ex. formation of hemoglobin, manufacturing red blood cells, bone structure, maintaining glucose etc.)

Water - H₂O

- We should get 6-8 glasses a day minimum
- Other sources of Water - watery fruits, milk, drinks
- Stay away from drinks with diuretics because they actually take away more water than they put in- caffeine (coffee, sodas, tea)
- When exercising add 1-2 cups of water for every pound lost in water weight
 - Drink water BEFORE you are thirsty
- Hydration helps in focus / fatigue / concentration immune system

Eating Disorders

- Authorities recognize three primary eating disorders; obesity disorders, bulimia nervosa and anorexia nervosa
- All represented by the inability to maintain a normal body weight because of eating habits

Obesity Disorders

- Obesity - body weight of 20% or more above ideal weight for a person's height
- Also called Obsessive Over Eating / Emotional Eating / Compulsive Over Eating
- Most likely caused by a combination of hormonal, metabolic and social factors
- Body Frame = Overweight / obese
- Health Factors - Similar to Obesity; organ failure, joint pain, sleep apnea, cholesterol

Bulimia Nervosa

- eating to excess (binging) and then purging (to get rid of / usually vomiting or laxatives)
 - could be a body image issue or a control issue (anxiety etc.)
- Body frame = thin but not alarming most of the time
- Health Factors - blood composition is altered leading to abnormal heart rhythm, damage to kidneys, death, esophagus tears, damage to teeth, stomach rupturing

Anorexia Nervosa

- Based on the inability to maintain a healthy body weight
- Eating little to no calories (500 or less), intense fear of gaining weight
 - May induce vomiting or laxatives
 - Body Frame = emaciated / very very thin
- Health Factors = starvation, menstruation stops, internal organs including brain wont function properly, skin dries up, pancreas is impaired, death