Creative Foods Class
Eden Prairie High School
Calorie: Measure of energy.

- **Fat** = 9 calories per gram
- Carbohydrates and Protein = 4 calories per gram.

If you consume more calories than you use up, it will be stored as **fat**.
Carbohydrates (CHO) are the body’s chief source of energy.

Three main types of carbohydrates:

1. Sugars: Refined or natural (Simple Carbohydrates)
   May be listed on food labels as glucose, sucrose, lactose, maltose, or fructose.

   Sources: sugar cane/ sucrose, sugar beets, fruit/ fructose, maltose.

Before the body can absorb starch, it must break the starch down into simple sugars.

Sources: grains, legumes, rice, potatoes.
3. Cellulose (fiber):
Your body can’t digest this carbohydrate. A high fiber diet may be a cancer preventative (prevents constipation).

**Sources:** bran, whole-grains, raw fruits, raw vegetables.

Experts recommend adults include 20 to 35 grams of fiber in their daily diets.
Fats

Types of Fats

1. Saturated Fats:
   - **Solid** at room temperature.
   - Found in **meat** and **dairy** products.
   - Can raise **blood** cholesterol.
   - Some sources include **butter**, **cheese**, **lard**, & **margarine**.
2. Unsaturated Fats:  
(Monounsaturated or polyunsaturated)

- Generally **liquid** at room temperature.

- Made from plant products.

- Sources: **corn oil, canola oil, olive oil**.
3. Trans Fats: (Trans fatty acids)

- A process called **hydrogenation** can make unsaturated fats (oils) solid at room temperature.

- Examples include **shortening** and many **margarines**.

- Raises **blood** cholesterol.
4. Essential Fatty Acids:

- Fatty acids the body **can not** produce.

- Needed to make other important compounds such as **hormones**.
5. Functions of Fats:

- Source of energy.

- Forms cushions to help protect internal organs from injury.

- Fat under skin forms a layer of insulation to maintain body temperature.

- Carries fat-soluble vitamins A, D, E, and K.

- Fats are part of the membrane that surrounds every cell in the body.
6. Limiting Excess Fats & Cholesterol:

- A high fat diet can lead to weight problems.
- Saturated and trans fats can lead to high cholesterol.
- Recommended to be no more than 30% of daily food intake.

7. What is cholesterol?
A chemical relative of fat manufactured in the liver and also contained in some foods. It can be deposited in fatty streaks along the inner lining of arteries, causing blocking.
Protein

Chemical compounds found in **every** body cell.

Made-up of Amino Acids. 9 of the amino acids are **essential** amino acids, which must be supplied by **complete** proteins.

Most common source of complete proteins is **animal** foods.

Needed for growth, maintenance, and repair of body tissues.
**Protein**

- Important in making antibodies, the body’s defense against infection.

- If body is low on CHO (carbohydrates) or fats, proteins will be used for energy.

- Incomplete proteins (ex. cereals, beans, corn, rice vegetables) lack 1 or more essential amino acids; can be combined to make up a high-quality protein meal. (ex. rice with beans or peanut butter with whole wheat bread)
**Vitamins**

**Fat-soluble Vitamins**

1. Vitamin A:
   - Helps eyes adapt to darkness.
   - Promotes normal growth and healthy skin.
   - Sources include liver, egg yolks, whole milk, and most dairy products, butter and fish oils. Carotene is another form of Vitamin A found in foods like spinach, squash and carrots.
   - Night blindness and rough skin may develop if there is a deficiency.
**Fat-soluble Vitamins**

**2. Vitamin D:**

- Works with calcium and phosphorus to produce strong **bones** and **teeth**.

- Found naturally in few foods: Egg yolks, liver, sardines, tuna, and **fish** livers oils.

- Vitamin D is added to **milk**, butter and margarine.

- The body can make vitamin D with exposure to **sunlight**.

- Deficiency can result in **rickets**.
Fat-soluble Vitamins

3. Vitamin E:

- Main function to act as an antioxidant.

- Sources include fats and oils, whole grain breads and cereals, liver, eggs, whole milk, dairy foods, and leafy green vegetables.
Fat-soluble Vitamins

4. Vitamin K:

- Helps blood to clot.
- Sources include leafy green vegetables, organ meats, and egg yolks.
- Most people get enough from the foods they eat.
Water-soluble Vitamins

1. Vitamin C:

- Also known as ascorbic acid.

- Helps form and maintain connective tissue (collagen), helps wounds and broken bones to heal.

- Helps fight infections.

- Sources include citrus fruits, strawberries, cantaloupe, leafy green vegetables, broccoli, and cabbage.
**Water-soluble Vitamins**

1. **Vitamin C:**
   - Can easily be destroyed by air, water and heat; keep juices and cut fruits and vegetables tightly covered and refrigerated.
   - Cook fruits and vegetables in a small amount of water.
   - Cannot be stored in the body.
   - Deficiency results in disease called Scurvy.
Water-soluble Vitamins

B-Complex Vitamins

2. Thiamin (B₁):

- Deficiency results in Beriberi, a disease of the nervous system.

- Helps the body release energy from food.

- Helps promote normal appetite and digestion.

- Keeps the nervous system healthy and prevents irritability.

- Sources include wheat germ, pork products, legumes and whole grain and enriched cereals.
Water-soluble Vitamins
B-Complex Vitamins

3. Riboflavin (B₂):

✿ Needed to breakdown carbohydrates.

✿ Helps cells use oxygen and helps keep skin normal.

✿ Sources include organ meats, milk and milk products, eggs and oysters, leafy green vegetables, whole grain and enriched cereal products.

✿ Deficiency can cause swollen and cracked lips and skin lesions.
Water-soluble Vitamins
B-Complex Vitamins

4. Niacin:

✿ Deficiency called Pellagra.

✿ Helps keep nervous system, mouth, skin, tongue, and digestive tract healthy.

✿ Sources include meats, poultry, peanuts, and peanut butter.
Water-soluble Vitamins
B-Complex Vitamins
5. Vitamin B₆:

✍️ Helps nerves function normally.

✍️ Good sources include meat, liver, vegetables, and whole grain cereals.

✍️ Deficiency rarely occurs.
Water-soluble Vitamins
B-Complex Vitamins
6. Folate:

-helps body produce normal blood cells.

-important in diet of pregnant women to help prevent birth defects to the brain and spinal cord of unborn babies.

-sources include broccoli, asparagus, leafy green vegetables, liver, yogurt, strawberries, bananas, oranges, and whole grain cereals.
Water-soluble Vitamins
B-Complex Vitamins
7. Vitamin B\textsubscript{12}:

- Promotes normal red blood cells.
- Found in animal products.
Minerals

1. Calcium

-needed for strong bones and teeth.

-helps blood to clot and keeps heart and nerves working properly.

-food sources are milk and milk products, fish, leafy green vegetables and broccoli.

-deficiency can result in a disease called Osteoporosis as people get older.
Minerals

2. Phosphorus

- Helps build bones and teeth.

- Aids body in storing and releasing energy.

- Helps balance alkalis and acids in the blood.

- Sources include meat, poultry, fish, eggs, and milk.
Minerals

3. Magnesium

- Helps cells use proteins, fats, and carbohydrates to produce energy.
- Helps regulate body temperature.
- Keeps nervous system working properly.
- Sources include whole grains, nuts, beans, meat, and dark green leafy vegetables.
Minerals

4. Sodium, Chlorine, and Potassium

❖ Work together to control osmosis, which is the flow in and out of the cells through the cell walls.

❖ Helps maintain fluid balance in the body.

❖ Helps nervous system and muscles function properly.

❖ Helps cells absorb nutrients.
Minerals

4. Sodium, Chlorine, and Potassium

Sodium is found in table salt, many processed foods, gravies, pickles, soups, snack foods, soy sauce, and catsup.

Good sources of potassium include meat, milk, oranges, bananas, and dark green leafy vegetables.

Deficiencies are rare, but too much sodium can result in high blood pressure.
Minerals

5. Trace Elements, Iron

✿ Combines with iron to form hemoglobin in red blood cells, which carry oxygen through the body.

✿ Deficiency results in anemia, with symptoms of loss of appetite, pale skin, and tiredness.

✿ Sources are liver, meat, egg yolks, legumes, leafy green vegetables, and enriched breads and cereals.

✿ Iodine, Magnesium, Copper, Zinc, and Fluorine are trace elements.
**Water**

You need 8 glasses of water each day.

Other sources include beverages or foods high in water content, such as lettuce or watermelon.

54% of water comes from beverages and 37% comes from food you eat.

Lack of water can cause dryness of the mouth, weakness, an increased pulse rate.

Pop is not a good source of water. It actually makes your body lose water!
DID YOU KNOW???

... that even “chicken” or “turkey” hot dogs can vary in fat content, from 11 grams of fat down to 1.5 grams of fat?

... that a large bucket of unbuttered popcorn at the theaters popped in coconut oil has almost three days worth of artery-clogging fat? Add the fake butter and you’ll boost the fat to almost 4 days worth!
DID YOU KNOW????

… that “Lunchables” average 5 tsp. of fat (that’s 54% of calories) and 1700 mg of sodium? One variety has more saturated fat than a McDonald’s Quarter Pounder!

… that if you eat 1 cup of Haagen-Dazs Butter Pecan Ice Cream that you’ve downed 48 grams of fat? That’s about as much as a half a stick of butter (44 grams of fat)! (11 grams per tablespoon)
The End