

The background of the slide features a dense pattern of vibrant green leaves, likely basil, with visible veins. At the bottom of the image, there are soft, circular ripples in a light blue-green water, suggesting freshness and natural ingredients.

# **NUTRITION NOTES**

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.



## 2. Starches: Complex carbohydrates.

- ✿ 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 (B<sub>1</sub>):**

- ✿ 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 (B<sub>2</sub>):**

- ✿ 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 B<sub>6</sub>:**

- ✿ 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<sub>12</sub>:**

- ✿ 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**