

Nutrition

Lesson 1

1. Nutrients

a. Substances found in foods that your body needs to grow, have energy, and stay healthy. In order for a person to gain all the nutrients he/she needs each day, he/she must eat a variety of food. The Food Guide Pyramid is a good tool that can be used as a guideline to healthy eating.

b. 6 types of nutrients

- Carbohydrates
- Proteins
- Fats
- Vitamins
- Minerals
- Water

2. Carbohydrates

- a. Sugar and starches found in food, examples include: potatoes, bread, noodles, crackers, fruit, vegetables
- b. Our bodies use carbohydrates as our MAIN energy source.
- c. Carbohydrates provide **4 calories per every gram.**

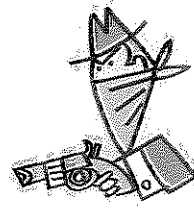
Types:

1. Simple Carbohydrates: Found in foods with natural or processed sugar, examples include: table sugar, sucrose, lactose, fructose, glucose, high fructose corn syrup etc.
2. Complex Carbohydrates: Found in foods like potatoes, beans, whole grain cereals and whole grain breads. The body has to break these down (digest) to make them into sugar.
 - a. Starches, fiber, whole grain, etc.
 - b. Fiber is a complex carb. that the body cannot break down or use for energy. Great for helping your digestive system work.

*Complex carbohydrates should be a major part of your diet; about half of your daily calories should come from carbohydrates -- mostly from grains, cereals, fruits and vegetables. Only a few of your daily calories should come from simple carbohydrates like table sugar.



Fat



The Good, the Bad and the Ugly

Some are necessary and healthy!

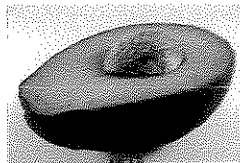
Facts:

- Fat provides us with 9 calories per gram so it is a source of fuel.
- Fat makes our food taste better
- We need fat to help absorb vitamins A, D, E and K
- Fat cushions our organs
- Fat keeps us warm
- Keep hormones doing their jobs
- Allows our nervous system to send messages
- Keeps our cell walls healthy

The “Good” Fats

Unsaturated Fats (polyunsaturated and monounsaturated):

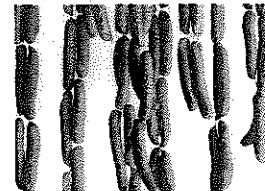
- Usually liquid at room temperature and from a plant source
- Does not cause heart disease
- Some may lower the BAD type of cholesterol and RAISE the good cholesterol
- Sources of unsaturated fats:
 - Olive, canola, corn, peanut, vegetable, and soybean oils
 - Nuts
 - Avocados
 - Salmon



The “Bad” Fats

Saturated Fats

- Usually solid at room temperature
- Can be found in all animal products unless it has been removed (example milk)
- INCREASE the risk of heart disease
- Raise the “Bad” cholesterol level in the blood
- Sources of saturated fats:
 - Dairy products (whole milk, real butter, any kind of cream, cheeses and ice cream)
 - Fatty meats like bologna, salami, hotdogs
 - Solid Crisco (lard)
 - Processed snack foods



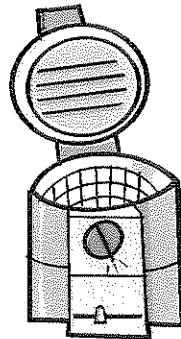
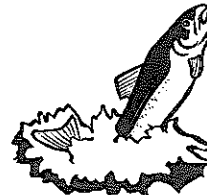
Trans Fat

- Trans-fatty acids are vegetable oils that have been changed from liquids to solids through a process called **hydrogenation**
- These products are used in processed foods to give foods more body, and to help them have a ridiculous shelf-life (preserve them).
- Hydrogenated fat can cook all day in a French fry vat and not burn up!
- Partially-hydrogenated fat are linked with clogged arteries, otherwise known as **Heart Disease!**
- Sources of Trans Fat
 - Solid margarines
 - Shortening
 - Fast food burgers, fries, fish, and chicken nuggets
 - Crackers, cookies, donuts and chips

The “Ugly”

Cholesterol

- We need cholesterol and our bodies actually make it! We need it to make bile for digestion and certain hormones
- Two types:
 - HDL (high density) is the good kind. It grabs onto the LDL and takes it to the liver to be broken down.
 - LDL (low density) is the bad kind. Sticks on the walls of the arteries. Not Good!
- Sources of HDL
 - Onions
 - Salmon
 - High fiber grain foods like cereals and oats
 - Brown rice
 - Apples, grapes and oranges
 - Beans
 - Dark green veggies like spinach and broccoli
- Sources of LDL
 - Egg yolks
 - Whole milk
 - Ice cream
 - Cheeses
 - Salad dressings
 - Fatty meats
 - Fried food, chips and snacks



Vitamins and Minerals

We have to eat many types of vitamins every day. We must eat a VARIETY of food to get them all. **Vitamins are chemical compounds that help regulate body processes.**

There are two kinds of vitamins:

1. **Fat soluble:** These vitamins dissolve in fat and can be stored in fat cells.
Examples: Vitamins A, D, E, K
2. **Water soluble:** These vitamins dissolve in water and are not stored in the body.
Examples: the B vitamins and vitamin C

SUPER IMPORTANT VITAMINS

Anti-oxidant vitamins:

These are vitamins that have been found to help prevent cancer.

Examples:

- Vitamin C:** Oranges, red pepper, tomatoes, kiwi fruit
- Vitamin E:** Cereal, sunflower seeds, almonds, peanut butter
- Vitamin B9:** Peanuts, split peas, chili beans, corn, asparagus
- Vitamin B6:** Cereal, hummus, beef, turkey, brown rice

ANOTHER SUPER IMPORTANT VITAMIN –

Vitamin D! This vitamin keeps the calcium levels of our blood normal. It also is needed in order for our bones to absorb calcium. Without vitamin D, our bones will not grow and stay strong.

- To use vitamin D properly, we need 10 minutes of sun light a day.

Minerals

Minerals are chemical compounds that occur naturally in the Earth. They are especially needed for healthy teeth and bones, keeping our blood healthy, and to be sure all our organs are working properly.

SUPER IMPORTANT MINERALS

Electrolytes: These minerals are found in body fluids and blood that have an electrical charge. They are necessary for our muscles and heart to contract or work properly.

If we dehydrate, we lose electrolytes and our muscles get weak and cramp up. Our hearts can also beat in an irregular way. NOT GOOD!

The main electrolytes are:

1. **Sodium** – (table salt): It's practically in everything!
2. **Potassium:** Tuna fish, baked potato, bananas, tomatoes, yogurt
3. **Calcium:** Dairy products, spinach
- 3b. **Magnesium:** Bananas, almonds, peas, whole grain foods

OTHER IMPORTANT MINERALS:

Iron: Iron is a mineral in every cell of our body. It is needed to make the part of our red blood cells that carries oxygen. Without iron, we get tired and winded easily.

GOOD SOURCES OF IRON:

1. Eggs
2. Iron-fortified cereals
3. Red meat/beef
- 3b. Broccoli/asparagus
5. Salmon
6. Whole grains/brown rice

Boys: 11 mg per day

Girls: 15 mg per day

Calcium and Vitamin D

Did you know that **80% of girls and 60% of boys** aged 9-18 fail to get enough calcium? Instead of drinking milk, many kids and teens drink pop, juice, high energy drinks, water and sports drinks.

How much calcium does a kid need each day? No less than **1300 mg**

Also, **smoking and caffeine** actually **interfere** with the way our bodies absorb and use calcium.

What does calcium do for our bodies?

1. It helps to build strong bones and teeth that have to last for a lifetime.
2. It helps our muscles contract when we move and play.
3. It helps our blood to clot when we get a cut.
- 3b. It helps our heart beat in a regular pattern.
5. It helps our bodies use special chemicals called hormones.

If we don't get enough calcium (deficiency), major problems could develop.

- Kids can develop a disease called **rickets**. **Symptoms** include:
 1. Deformed skeleton
 2. Bowed legs
 3. Curved spine
 - 3b. Fragile bones
 5. Slowed growth of the bones and muscles
 6. Dental problems
 7. Bone pain
 8. Muscle weakness

Adults can develop a disease called **osteoporosis**. **Symptoms** include:

1. Brittle and breakable bones
2. loss of height
3. Curved upper back
- 3b. Fractures from minor injuries to the hip, wrist, and spine