Fats and Oils

PAPER 1 BA I HONS

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Fat Is…

- The most concentrated source of food energy

There are 9 calories in every gram of fat

- **Fats that are liquid at room temperature are called oils.**

  (Examples: vegetable oil, canola oil, olive oil, etc.)

- **Fats that are firm at room temperature are called solids.**

  (Examples: lard, butter, shortening, etc.)

In a 2,000 calorie diet…

- It is recommended that the maximum number of grams of fat a person should have in a day is 66 grams.
- No more than 30% of a person's total calories should come from fat sources.

- No more than 10% (22 grams) of the total fat should come from saturated fat

- 20% (44 grams) should be from monounsaturated and polyunsaturated fat sources

Calculating the Percent of Calories From Fat:

1. Take grams of fat and multiply by 9
2. Divide by total calories
3. Multiply by 100

EXAMPLE:

Honey Grahams

- Serving Size = 2 crackers
- Calories = 130
- Protein = 2 grams
- Carbs = 21 grams
- Fat = 4 grams

28% calories from fat

What is Cholesterol?

- Cholesterol is NOT fat.
- It is a "fat-like" substance present in all body cells that is needed for many essential body processes.
- It contributes to the *digestion of fat* and the skin's production of vitamin D.
- Adults manufacture all the cholesterol they need, mostly in the liver.
- All animals also have the ability to manufacture cholesterol.

Cholesterol In Foods

- Because all animals make cholesterol, if you eat any animal product, including ***meat***, ***poultry*** ***and*** ***fish***, you will be consuming some "extra" cholesterol.
- Other foods high in cholesterol are:
  - Egg Yolks
  - Liver / Organ Meats
  - Some Shellfish

LDL's and HDL's

- A certain amount of cholesterol circulates in the blood. It does not float through the bloodstream on its own, but in chemical "packages" called lipoproteins. There are two major kinds of lipoproteins:

1. LDL's (Low-Density Lipoprotein)
2. HDL's (High-Density Lipoprotein)

Low-Density Lipoproteins

- Takes cholesterol from the liver to wherever it is needed in the body.
- If too much LDL cholesterol is circulating, the excess amounts of cholesterol can build up in artery walls.
- This buildup increases the risk of heart disease or stroke.
- Thus, LDL cholesterol has come to be known as "bad cholesterol."

High-Density Lipoproteins

- Picks up excess cholesterol and takes it back to the liver, keeping it from causing harm.
- Thus, HDL cholesterol has come to be known as "good cholesterol."

- For most people, the amounts and types of *fats* eaten have a greater effect on blood cholesterol than does the cholesterol itself.

- The fats found in food, such as butter, chicken fat, or corn oil, are made up of different combinations of *fatty acids*.

Types of Fat

- Fatty Acids:
  - Organic acid units that make up fat. There are three types…
    1. Saturated
    2. Polyunsaturated
    3. Monounsaturated

Saturated Fatty Acids

- Appear to raise the level of LDL ("bad") cholesterol in the bloodstream
  - Food sources: meat, poultry skin, whole-milk dairy products, and the tropical oils-coconut oil, palm oil, and palm kernel oil.

Polyunsaturated Fatty Acids

- Fats that seem to lower total cholesterol levels.
  - Food sources: many vegetable oils, such as corn oil, soybean oil and safflower oil.

Monounsaturated Fatty Acids

- Appear to lower LDL ("bad") cholesterol and help raise levels of HDL ("good") cholesterol.
  - Food sources: olives, olive oil, avocados, peanuts, peanut oil and canola oil.

- All fats include all 3 kinds of fatty acids, but in varying amounts.
- Each type of fat has a different effect on cholesterol levels

Other "Essential" Fatty Acids

1. Linolenic Acid
2. Linoleic Acid

- They are called "essential" because the body cannot manufacture them.
- They must be supplied by food a person eats.
- They are both polyunsaturated fatty acids.
- They are found in the natural oils of plants and fish.
- The body needs them for its basic functions, including production of various hormones.

A Good Rule of Thumb…

- Fats that are solid at room temperature are made up mainly of saturated fatty acids.
- Fats that are liquid at room temperature are made up mainly of unsaturated fatty acids.

Hydrogenation

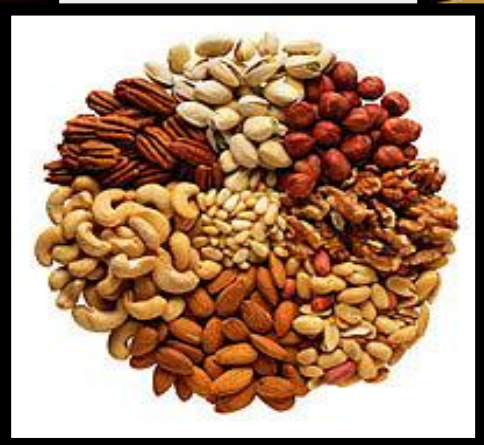
- The process in which missing hydrogen atoms are added to an unsaturated fat to make it firmer in texture.
- This forms a new type of fatty acid called *trans fatty acid.*
- Trans fatty acids have many of the same properties as saturated fats.

Visible Fat

- Fat that is easily seen
- Examples: Butter on a baked potato, layer of fat around a pork

Invisible Fat

- Fat that cannot be detected by the eye
- Examples: whole milk, some cheese, egg yolks, n



Functions of Fat

- Supplies Energy
- Carries Vitamins A, D, E and K through the body
- Provides a reserve store of energy
- Promotes healthy skin
- Promotes normal cell growth
- Acts like a "cushion"and heat regulator to protect your heart, liver and other vital organs
- It helps you feel full longer
- Adds flavor to food

Too Much Fat…

- Americans eat not only too much fat, but the wrong kinds of fat. Doing so can increase the risks for serious health concerns and illnesses.

High fat diets are linked to…

- Heart Disease
- Obesity
- Cardiovascular Related Problems

Lowering Fat and Cholesterol in the Diet

- Exercise
- Replace saturated fats with unsaturated fats in the diet
- Choose lean cuts of meat
- Steam, boil or bake foods instead of cooking them in oil or fat
- (See the last page of your handout for more tips)

THANK YOU