

# The Nutrients You Need

## ■ Chapter 2

# The Six Main Nutrients

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





# Carbohydrates

- The body's main source of energy.
- You may know them as STARCHES and SUGARS
- If you don't eat enough carbs, the body will use other energy-producing nutrients for energy. Which causes those nutrients from doing their specialized jobs.

Depending on their source,  
carbs fall into one of two  
categories...

# Complex and Simple

# Complex Carbohydrates

## Starches and Dietary Fiber

### Starches

- Foods high in starch are usually good sources of proteins, vitamins, minerals, and dietary fiber.

# Dietary Fiber

## Insoluble Fiber

- Does not dissolve in water, it absorbs water.
- Promotes regular bowel movements
- Prevents constipation
- Sources: Fruit and Vegetable Skins, Whole-wheat, wheat bran products.

## Soluble Fiber

- Dissolves in Water
- May reduce blood cholesterol level
- Sources: Fruits, Vegetables, Dry Beans, Peas, Lentils, and Oat Products.



# Simple Carbohydrates

Simple Carbs, or sugars are known as:

- FRUCTOSE - found in fruits
- MALTOSE - found in grain products
- LACTOSE - found in dairy products.

# Proteins

- Proteins are used mainly to help the body grow and repair worn-out or damaged parts.
- Your hair, eyes, skin, muscles and bones are made of proteins. By eating protein, you keep them in good condition.
- Proteins are made of chains of chemical building blocks called amino acids

# Proteins

## ■ Complete Proteins

Proteins that supply all nine essential amino acids.

Such as: Meat, Poultry, Fish, Eggs, Dairy Products, and Soy Products.

## ■ Incomplete Proteins

Are proteins that are lacking one or more essential amino acid.



GLASBERGEN

**“Today I ate two bowls of dog food, a sandwich crust,  
some spaghetti that fell on the floor, half of your cat food,  
a wet tea bag, three bugs and the inside of a sneaker.  
How many grams of fat is that?”**

# Fats

- Fat is found mainly in vegetable oils
- Fats promote healthy skin, normal cell growth and carry vitamins, A, D, E, and K to wherever they are needed.
- Provide a reserve supply of **energy**.
- Act as cushion to protect your heart, liver and other vital organs.
- Add flavor to food

# So what's wrong with fat?

Americans eat way too much!

Too much increases the risk of illness such as heart disease and cancer.

Fats have twice as many calories per gram as carbohydrates or proteins.

# Cholesterol

- Cholesterol is not fat. Rather it is a fat-like substance present in all body cells that is needed for many essential body processes.
- Contributes to the digestion of fat and the skin's production of Vitamin D.

# 2 Kinds of Lipoproteins

## ■ LDL

“bad cholesterol”

If too much LDL cholesterol is circulating, it builds up and increases the risk of heart disease or stroke.

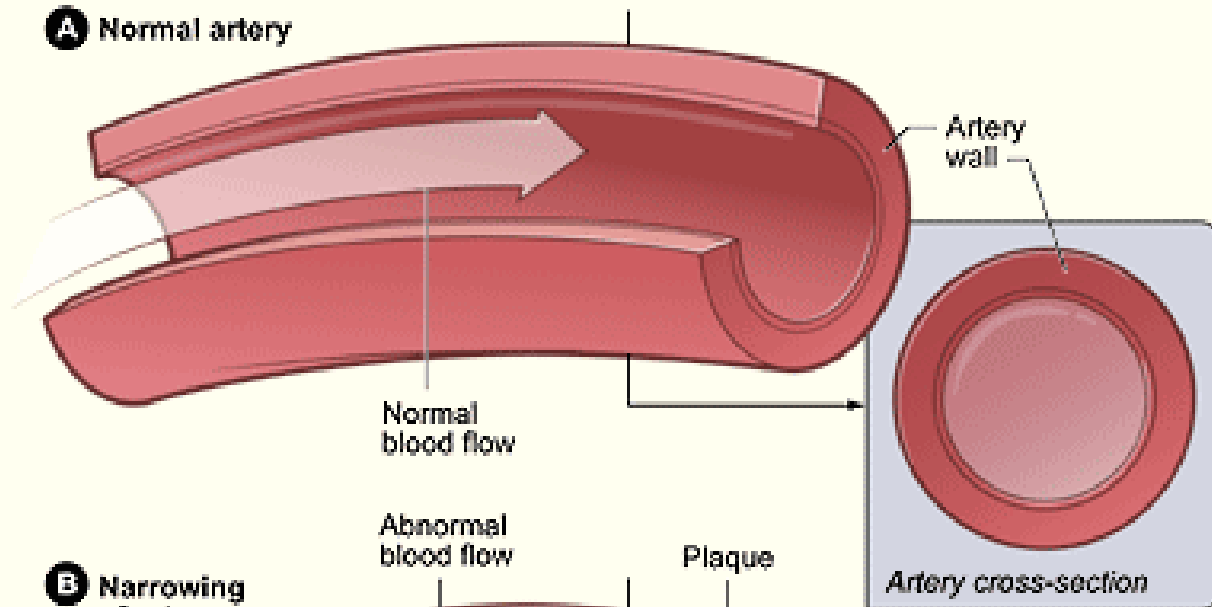
## ■ HDL

“good cholesterol”

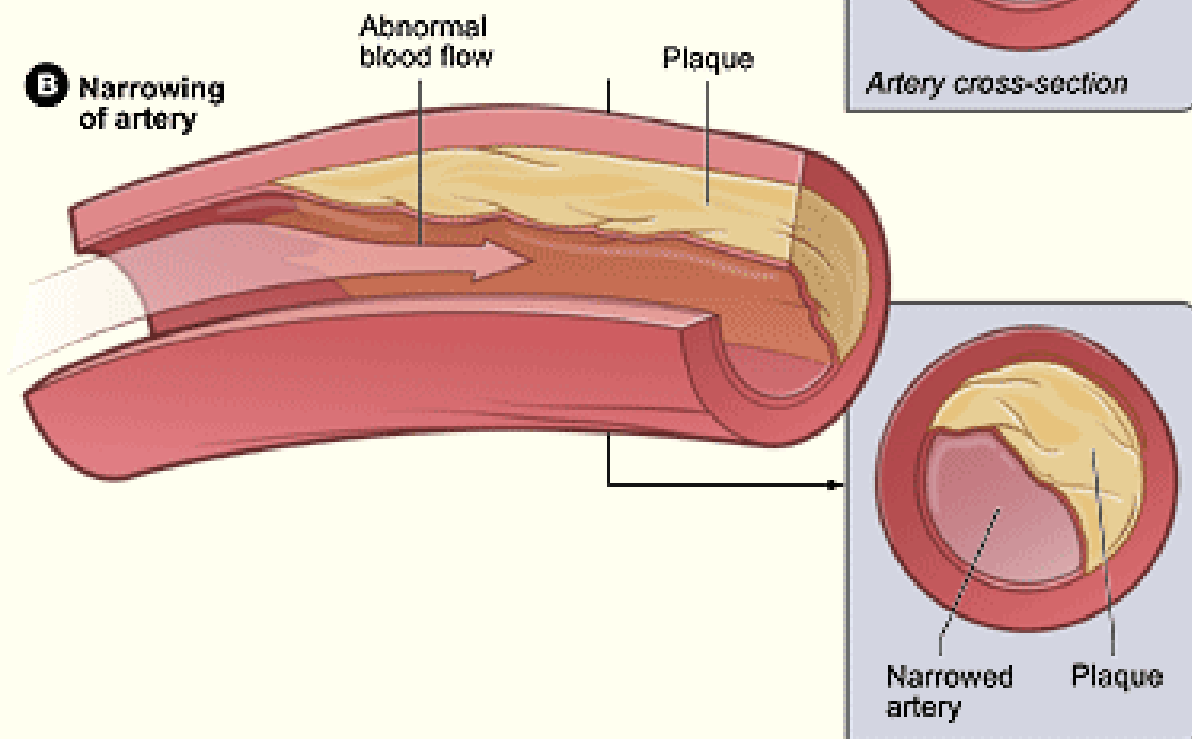
Picks up excess cholesterol and takes it to liver.



**A** Normal artery



**B** Narrowing of artery



# Saturated fatty acids

- Raise level of LDL cholesterol
- Foods high in saturated fatty acids:
  - Meat
  - Poultry skin
  - Whole-milk
  - Dairy products



# Polyunsaturated fatty acids

- Lower cholesterol levels

- Sources

  - Vegetable Oils

    - Corn Oil

    - Soybean Oil

# Monounsaturated fatty acids

- Lower LDL cholesterol
- Raise HDL cholesterol
- Foods:
  - Olives
  - Olive Oil
  - Avocados
  - Peanuts

# Trans Fat

- Produced when food processors turn liquid fats into solids to lengthen a product's shelf life.
- Increase cholesterol production



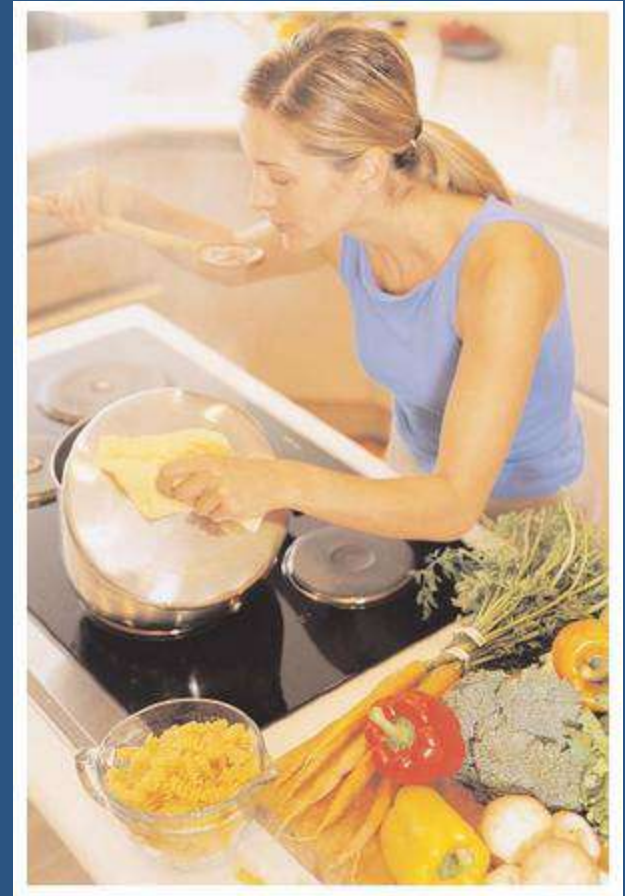
# Vitamins

Keep your body's tissues healthy and its many systems working properly



# Where do we get Vitamins?

- Fruits and Veggies
- Milk
- Whole-grain products



# VITAMINS

## ■ Water Soluble

Dissolve in water and pass easily thru bloodstream in the process of digestion

Vitamin C and the  
8 B Vitamins

## ■ Fat-Soluble

Absorbed and transported by fat.

Vitamins A, D, E, K



# Minerals

Major Minerals- Needed in large amounts  
calcium, phosphorus, magnesium

Electrolytes- Maintain body's fluid balance  
potassium, sodium, chloride

Trace Minerals- Needed in small amounts  
iron, copper, zinc

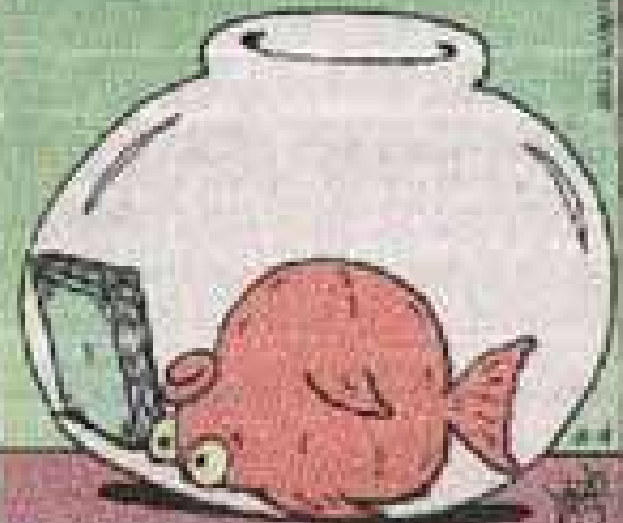
# Water

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TO MAINTAIN A HEALTHY  
BODY, YOU MUST DRINK  
AT LEAST 8-10 GLASSES  
OF WATER PER DAY.



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# Water



- 50-60% of your body is water!
- Your body uses 2 to 3 quarts of water a day... make sure you replace it!
- Experts say you need at least 8 glass water a day!