

## Food and Its Components

### Definition of Food:

Food is a group of nutritive substances that:

- Provides energy to living beings.
- Repairs old tissues and builds new ones.
- Protects the body from infections and diseases.

Comparison: Food in living beings is like fuel in a car.

### Components of Food:

The food we eat consists of seven essential components:

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

### Carbohydrates (Energy-Giving Food):

**Composition:** Made of carbon, hydrogen, and oxygen.

**Function:** Provides energy to the body.

**Need:** Required in large quantities for people doing heavy physical labor.

#### Types of Carbohydrates:

**Sugar** → Simple carbohydrate with a sweet taste.

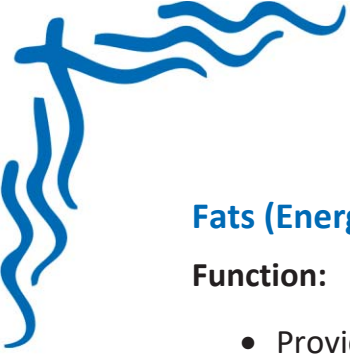
- **Sources:** Fruits (sugarcane, banana, grapes), honey, milk.

**Starch** → Tasteless complex carbohydrate.

- **Sources:** Wheat, rice, potatoes.

**Cellulose** → Complex carbohydrate present in plant cell walls.

- **Sources:** Cotton, plant fibers.



## Fats (Energy Bank):

### Function:

- Provides stored energy when the body needs it.
- Helps in the absorption of vitamins A, D, E, and K.
- Prevents heat loss from the body.

### Sources:

- **Animal sources:** Butter, ghee, milk, egg yolk.
- **Plant sources:** Nuts, cooking oils.

### Health Tip:

- **Excess fat consumption** → obesity, heart ailments, high blood pressure, diabetes.

## Proteins (Body-Building Food):

### Function:

- Helps in growth and repair of tissues.
- Builds muscles.

### Sources:

- Plant-based: Pulses, soybeans, grams, nuts.
- Animal-based: Meat, fish, eggs, milk.

## Vitamins (Protective Nutrients):

### Function:

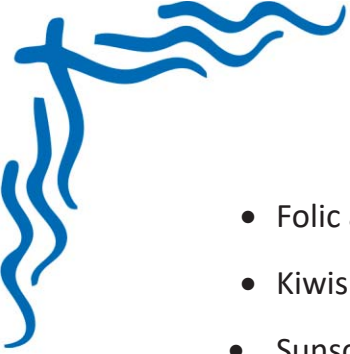
- Helps the body fight diseases.
- Essential for body functions.

### Sources:

- **Vegetables:** Carrots, green leafy vegetables.
- **Animal sources:** Fish, eggs.
- **Fruits:** Oranges, kiwis, strawberries.

### Key Facts:

- Vitamin A was discovered in 1913.



- Folic acid was discovered in 1941.
- Kiwis and strawberries contain almost twice as much vitamin C as oranges.
- Sunscreen reduces vitamin D production by 95%, increasing the risk of deficiency.

### Minerals (Body Regulators):

#### Function:

- Help in growth, development, and body health.
- Perform functions like building strong bones and transmitting nerve impulses.
- Used in hormone production and maintaining normal heartbeat.

#### Sources:

- **Calcium:** Milk.
- **Iron:** Green vegetables.
- **Potassium:** Oranges.

### Roughage (Dietary Fiber):

**Definition:** Fibers present in fruits, vegetables, and grains.

#### Function:

- Helps in cleaning the intestinal tract → "nature's broom."
- Adds bulk to food, preventing constipation.

#### Sources:

- Whole grains.
- Green vegetables.
- Corn kernels, cauliflower.

#### Tips for More Fiber:

- Have fiber-rich cereal breakfast.
- Add seeds, beans, and veggies to meals.
- Eat whole fruits instead of juice.
- Snack on nuts and dried fruits.
- Drink lots of water to soften bowels.



## Water (Vital for Life):

### Body Composition:

- About 70% of the human body is water.

### Function:

- Transports substances inside the body.
- Regulates body temperature.
- Absorbs nutrients from food.
- Removes toxins and waste (through sweat and urine).
- Needed for chemical reactions (digestion, excretion, respiration).

### Dehydration:

- **Excess water loss:** dehydration.
- **Treatment:** Oral Rehydration Solution (ORS):
- Mix 6 level teaspoons of sugar +  $\frac{1}{2}$  teaspoon of salt in 1 liter of clean water.