



## Muscles

### What Are Muscles?

The muscular system is an important part of the human body.

It consists of approximately 650 different muscles.

**Muscles can be classified as:**

- **Voluntary:** Controlled by us (e.g., moving arms, legs).
- **Involuntary:** Not under conscious control (e.g., heartbeat, digestion).

### Types of Muscles

#### i. Skeletal Muscles (Voluntary)

Attached to bones (legs, arms, abdomen, chest, neck, face).

Controlled by us (voluntary movement).

Allow us to perform physical activities.

These muscles tire easily and require rest.

#### ii. Smooth Muscles (Involuntary)

Not under conscious control.

Controlled directly by the nervous system.

**Examples:**

- **Walls of the stomach and intestines:** help in digestion.
- **Walls of blood vessels:** regulate blood flow.

#### iii. Cardiac Muscles (Involuntary)

Found only in the heart.

Make up the walls of the heart's chambers.

Involuntary in nature → not under conscious control.

Work nonstop throughout life, pumping blood.

Do not get exhausted easily.



## Taking Care of Bones and Muscles

### Tips for Healthy Bones and Muscles:

#### i. Eat Calcium-Rich Food

Calcium strengthens bones and maintains their density.

##### Sources of Calcium:

- **Dairy products:** milk, cheese, yogurt.
- **Fish with bones:** salmon, sardines.
- **Nuts and seeds:** almonds, figs.
- **Plant-based options:** soya milk, tofu.

#### ii. Include Protein in Your Diet

Protein is essential for growth, repair, and muscle building.

Young children need more protein for development.

##### Sources of Protein:

- **Animal-based:** meat, eggs, fish, milk.
- **Plant-based:** beans, pulses, lentils.

#### iii. Add Vitamin D to Your Diet

Vitamin D helps in the absorption of calcium, strengthening bones.

##### Sources of Vitamin D:

- **Natural source:** Sunlight (but may not be sufficient).
- **Food sources:** Fatty fish, egg yolk.
- **Supplements:** If sunlight exposure is limited.

#### iv. Eat a Balanced Diet Rich in Vitamins and Minerals

Bone health: Calcium + Vitamin D.

Muscle health: Protein + Potassium.

##### Sources:

- **Eggs, dairy products, and lean meat** provide essential nutrients.
- **Sweet potatoes** excellent source of potassium.



## v. Exercise Regularly

Physical activity helps build and maintain bone density and muscle strength.

### **Recommended exercises:**

- **Bone-strengthening:** Running, jogging, aerobics, stair climbing.
- **Muscle-strengthening:** Dancing, tennis, resistance training.

Daily routine: Include at least 30-60 minutes of exercise for optimal bone and muscle health.