Basic Medical Science

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Fsc Technician 1

Tissues

- **Basic Tissues**
- Four main types: Epithelial, Connective, Muscle, Nervous
- Each type has subdivisions
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- **Epithelial Tissue**
- Covers body surfaces & lines organs/cavities
- Functions: protection, secretion, absorption, diffusion
- Classified by:
- **Shape**: squamous, cuboidal, columnar
- **Arrangement**: simple, stratified

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- **Connective Tissue**
- Supports, connects & separates tissues/organs
- Types: loose, dense, adipose, cartilage, bone, blood
- Functions: structural support, energy storage, transport, defense
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- **Muscle Tissue**
- Made of contractile muscle fibers
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- **Types**:
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- **Skeletal** → voluntary movements
- **Cardiac** → heart, involuntary contractions
- **Smooth** → hollow organs (intestines, vessels), involuntary

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- **Nervous Tissue**
- Specialized for receiving & transmitting signals
- Main cells: neurons (carry impulses) and neuroglia (support & protect neurons)

Types of Tissues

- **Nervous Tissue**
- Location: brain, spinal cord
- Cells: neurons + neuroglia
- Function: transmit signals, coordinate body activities
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- **Adipose Tissue**
- Type: loose connective tissue
- Cells: adipocytes (fat cells)
- Function: energy storage, insulation, cushioning organs
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- **Cartilage Tissue**
- Location: joints, ears, nose
- Function: support, shape maintenance
- Feature: poorly vascularized, heals slowly

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- **Bone Tissue**
- Also called osseous tissue
- Cells: osteocytes in collagen + calcium salt matrix
- Function: support, protection, blood cell formation, mineral storage
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- **Blood Tissue**
- Specialized connective tissue
- Components: plasma + erythrocytes, leukocytes, thrombocytes
- Function: transport, waste removal, defense

Connective tissues

- **Composition**
- Made of: cells, fibers, extracellular matrix
- Cells: fibroblasts, adipocytes, macrophages, mast cells
- Fibers: collagen, elastic, reticular
- Extracellular matrix: ground substance (fluid/gel/solid)
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- **Types**
- Loose Connective Tissue
- Found under skin, around vessels & organs
- Provides support & elasticity
- Contains collagen + elastic fibers in gel-like ground substance

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- **Dense Connective Tissue**
- Rich in collagen fibers, less cells & ground substance
- Found in tendons, ligaments
- Provides strength against tensile forces
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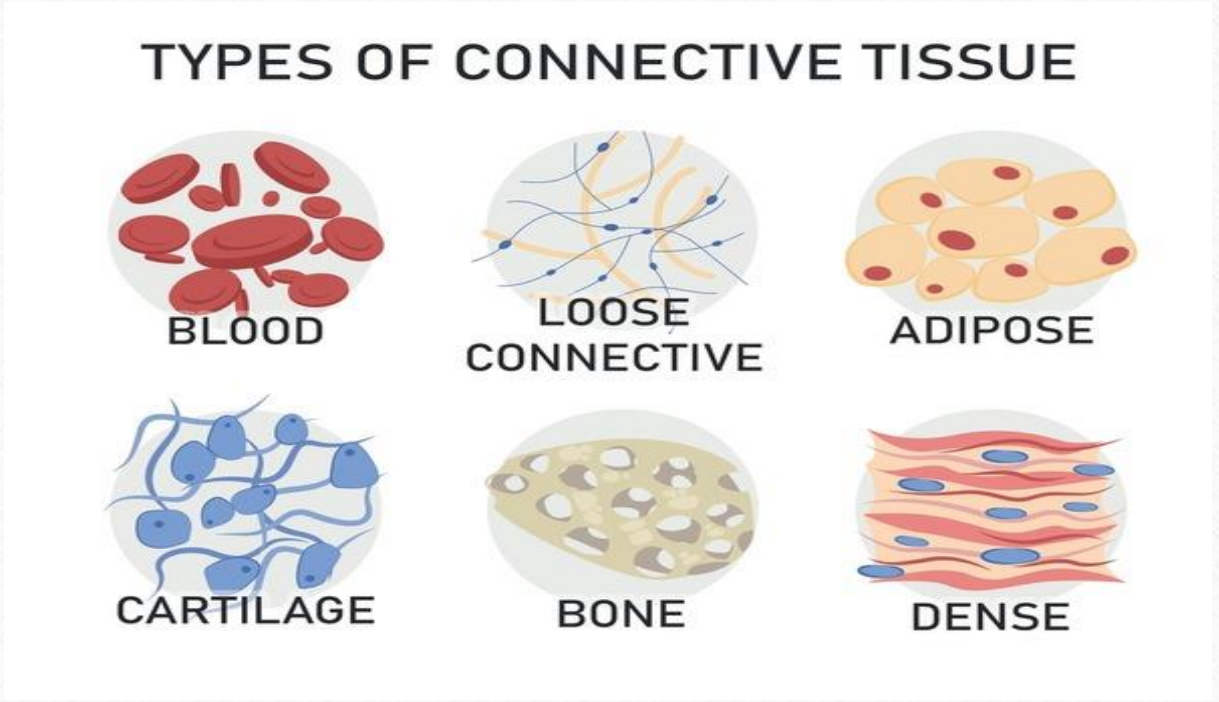
- **Adipose Tissue**
- Mostly adipocytes (fat cells)
- Located under skin, around organs, in bone marrow
- Functions: energy storage, insulation, cushioning

Connective tissues



Any Question


thank you