

CONNECTIVE TISSUE

Connective tissue is the most common type of tissue and is found everywhere in the body. Components include:

1. **Matrix**: noncellular and can be very hard (e.g. bone matrix is made of calcium salts) or more fluid-like (plasma of blood is watery). Matrix is made of **fibers** and **ground substance**.
 - **Fibers are long, thread-like proteins.**
 - Collagen fibers are strong and resist tearing.
 - Elastic fibers are stretchy.
 - **Ground substance refers to glycoproteins that increase osmotic pressure of tissue (this means they “pull” water into the tissue)**
2. **Specialized Cells** secrete fibers and ground substance.

TYPES OF CONNECTIVE TISSUE			
Specific Tissue Type	Functions	Example(s)	Specialized Cells
Osseous	Strength and support	Bone	osteoblasts secrete calcium and collagen; osteocytes provide support
Adipose	Cushion, insulation, energy	Fat	Adipocytes store triglycerides
Hyaline cartilage	Flexible strength	Articular cartilage lines bones at joints; nasal, costal cartilages; tracheal cartilages protect windpipe and form larynx (voicebox)	Chondrocytes secrete collagen and elastic fibers and small glycoproteins
Elastic cartilage	Most stretchy and flexible cartilage	Ear, Epiglottis (flap that covers top of trachea to prevent choking while swallowing)	Chondrocytes secrete elastic fibers and small glycoproteins
Fibrocartilage	Shock absorption	Intervertebral joints; menisci of knee, shoulder and elbows	Chondrocytes secrete collagen fibers and small proteins and sugars
Areolar	Hold fluid in tissues	Lamina propria (underlies mucous membranes)	Fibroblasts secrete collagen and elastic fibers and small glycoproteins
Dense fibrous regular	Tendons connect muscle to bone; ligaments connect bone to bone	Tendons and Ligaments	Fibroblasts secrete collagen and small glycoproteins
Dense fibrous irregular	Resist stretching and tearing	Dermis of skin	Fibroblasts secrete collagen and small glycoproteins
Blood (cells and plasma)	Transportation of substances throughout body	Blood	Erythrocytes and Leukocytes

