Department of Dentistry Second Class

General Histology

Lec: 2

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Connective Tissue:

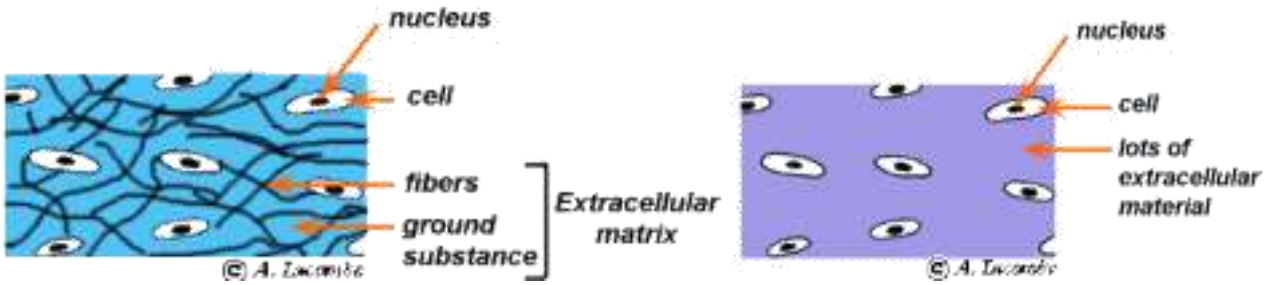
Connective tissue: serves a connecting function. It supports and binds other tissues in the

body.

General Features of Connective Tissue

2 basic parts:

- Cells and Matrix
- Matrix – material between widely spaced cells
- Consists of protein fibers and ground substance
- Ground substance – material between cells and fibers secreted by the cells and determine the tissue qualities



Connective Tissue Cells

- Fibroblasts
- Macrophages
- Mast Cells
- Adipocytes

Fibers

- **Collagen** – tough; provides high tensile strength
- **Elastic** – long, thin fibers that allow for stretch
- **Reticular –** branched collagenous fibers that form delicate networks

Connective Tissue Matrix – Ground Substance

Ground Substance – component of a connective tissue between the cells and fibers, supports cells, binds them together, and provides a medium through which substances are exchanged. Connective tissue can be broadly classified into **connective tissue proper and special connective tissue**.

Connective tissue proper consists of **loose connective tissue and dense connective tissue** , which is further subdivided into **dense regular** and **dense irregular** connective tissues.

Loose and dense connective tissues are distinguished by the ratio of ground substance to fibrous tissue.

Loose connective tissue has much more ground substance and a relative lack of fibrous tissue, while the reverse is true of dense connective tissue.

Dense regular connective tissue, found in structures such as tendons and ligaments, is characterized by **collagen fibers arranged in an orderly parallel fashion**, giving it tensile strength in one direction.

Dense irregular connective tissue provides strength in multiple directions by its dense bundles of fibers arranged in all directions.

Special connective tissue consists of **reticular connective tissue, adipose tissue, cartilage, bone, and blood.**

