

Concept of tissue & Connective tissue

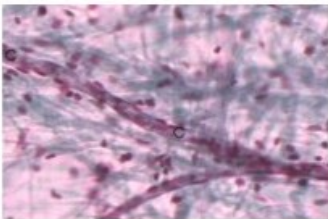
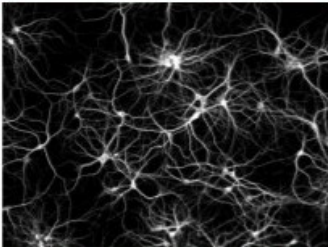
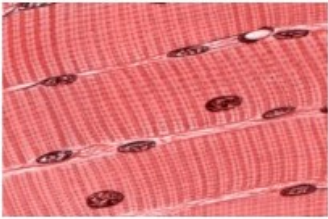
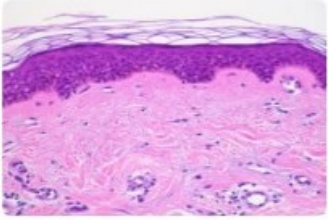


Tissue definition. Connective tissue classification and function. visualization of connective tissues.

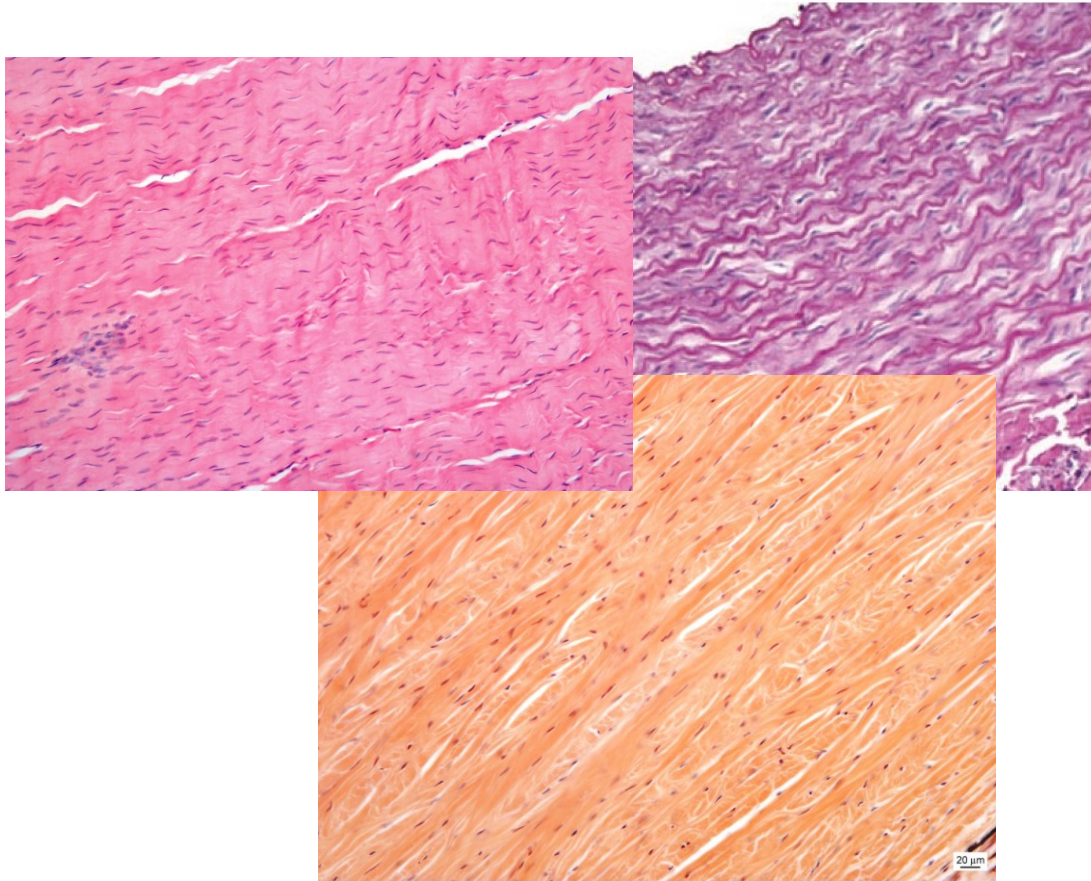
What is a tissue? quick remainder



Functional three-dimensional group of morphologically similar cells and their products.



What is connective tissue and what is its function?



Connective tissue is made of Cells, and ECM. ECM is made of amorphous component and a fibrillar component.

Function of connective tissue:
Structure, defense,
Environment, repair

Classification



Connective tissue

Special

Proper

Elastic

Adipose

Dens

Loose

Mesenchymal

Reticular

Irregular

Regular

Connective tissue proper



Dense – regular

Function: resistance to pull.

Components: collagen I, cell ↓

Found in: tendons, ligaments

Dense – irregular

Function: resistance all directions

Components: collagen I, cells ↓

Found in: sclera, fascia, joint capsule

Collagen mnemonic

1 – one – bone

2 – two – cartilage

3 – three – three-ticular – reticular c.t.

4 – four – under the floor – basement membrane

Loose

Function: house immune cell, structural.

Components: collagen I, III, elastic fiber, cells ↑

Found in: tunica submucosa, adventitia of vessels.

Special types of connective tissues



Elastic

Function: elasticity

Components: elastic fibers

Found in: elastic vessels, lungs

Reticular

Function: 3D network

Components: reticular fibers, cells

Found in: basement membrane

Mesenchymal

Function: differentiation, signaling, structural.

Components: mesenchymal cells, Ground substance.

Found in: Wharton's jelly, chorion.

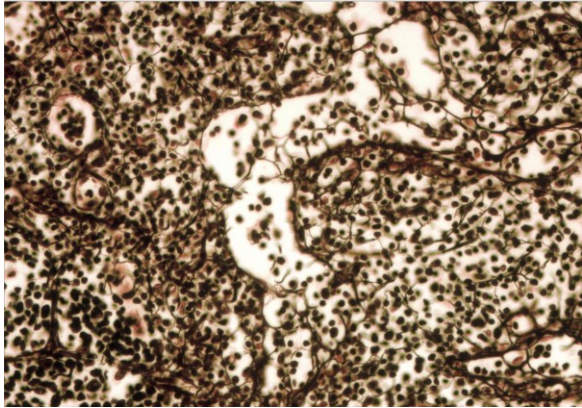
Adipose

Function: energy storage

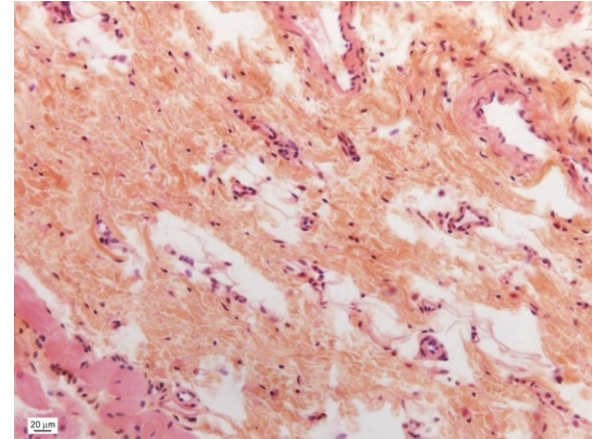
Components: adipocytes, collagen (few)

Found in: subcutaneous, around viscera.

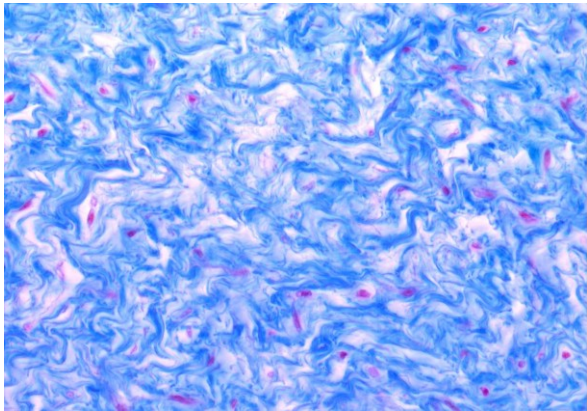
Staining of connective tissue



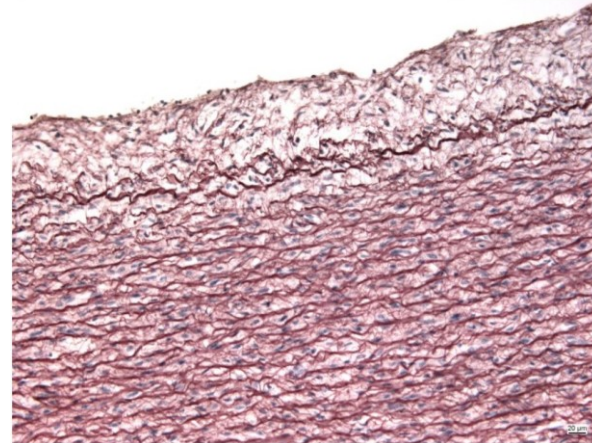
Silver impregnation stain
Used for lymphatic tissue
Reticular fibers stain black to dark brown.
Lymph node, spleen, tonsils



HE & **saffron** stain allows
Visualization of collagen
as yellow and the cells stain
regularly according to
hematoxylin eosin stain.



Azan stain used
Visualize collagen fibers
blue. Nuclei stain pink-red
Can be used for all tissues
having collagen.



Orcein staining allows to
visualize the elastic fibers
as brown.
Typically used in large
arteries, vocal cord.
The nuclei stain blue-black.

Literature



- Junqueira's Basic Histology
- Atlas of Histology FM MU
- Atlas of Cytology and Embryology

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