Components of Connective Tissue
Fibroblasts
Muscle-Tendon Junction
Fibroblasts vs Smooth Muscle Cells
What are these?
Macrophages
Mast Cell
Macrophages vs. Mast Cells
What are these?
Adipocytes
Collagen I & II: Intervertebral Disc

- fibrocartilage
- bundles of type I collagen
- hyaline cartilage
Collagen I & II: Intervertebral Disc
Collagen II
Collagen III (Reticular)
Collagen IV
Elastic Fibers (H&E)
Elastic Fibers (Orecin)
Ground Substance
TYPES OF CONNECTIVE TISSUE PROPER
Loose (Areolar) CT - General

- Under Epithelium
  - e.g. the lamina propria of GI tract
- MANY CELLS
  - Macrophages
  - Lymphocytes
  - Mast
- Vascularized

Lab 4. Slide 1
Loose (Areolar) CT - General

Lab 18. Slide 6

Lab 18. Slide 9
Loose CT - Adipose

Brown
  - Kidneys, aorta, neck, mediastinum
  - **Multilocular**
  - Eccentric nucleus, not flattened
  - Many *mitochondria*

Lab 4. Slide 12
Loose CT - Adipose

White
- Fat is GONE on slide
- Unilocular
- Little cytoplasm, nucleus pushed aside.

Lab 4. Slide 9
Loose CT - Reticular

- Stains **BLACK** w/silver
- **type III collagen**, glycopolypeptides & proteoglycans
- stroma of lymph nodes, spleen, liver, bone marrow
- (Note the brown **type 1 collagen**)

Lab 4. Slide 7
Dense Connective Tissue

- Irregularly arranged

- Regularly arranged
  - collagenous tissue
  - elastic tissue
DCT - Irregularly Arranged

- **few cells** (mostly fibroblasts)
- bundles of collagen, without definite orientation
- in dermis, prostate, mammary glands, outer capsule of many organs

Lab 4. Slide 16
DCT - Irregularly Arranged

DCT
- Weakly pink

Lab 4. Slide 16
H&E

Smooth muscle
-Very pink
DCT - Irregularly Arranged

DCT
- Blue

Lab 4. Slide 18
Mallory Trichrome

Smooth muscle
- Brown
- Red Nuclei
DCT - Regularly arranged

- collagenous
  - found in tendons
  - Type 1 collagen
DCT - Regularly arranged

DRACT

Fibroblast nuclei
• Flatter
• Between fibers

Muscle Nuclei
• Round
• pushed to edge
DCT - Regularly Arranged

- Elastic
  - in elastic ligaments of vertebral column, true vocal cords & large arteries

Lab 4. Slide 26
Embryonic CT (mesenchyme)

- Many cells
- Few fibers
- Around developing notochord
- Can differentiate into all kinds of connective tissue

Lab 4. Slide 30
What type of Collagen?

Lab 4. Slide 25
What type of Collagen?

I- bone

I- DRACT

Lab 4. Slide 25
What type of Collagen?
What type of Collagen?

I - fibrocartilage
II – hyaline cartilage

Lab 4. Slide 27
1.
3.
4.