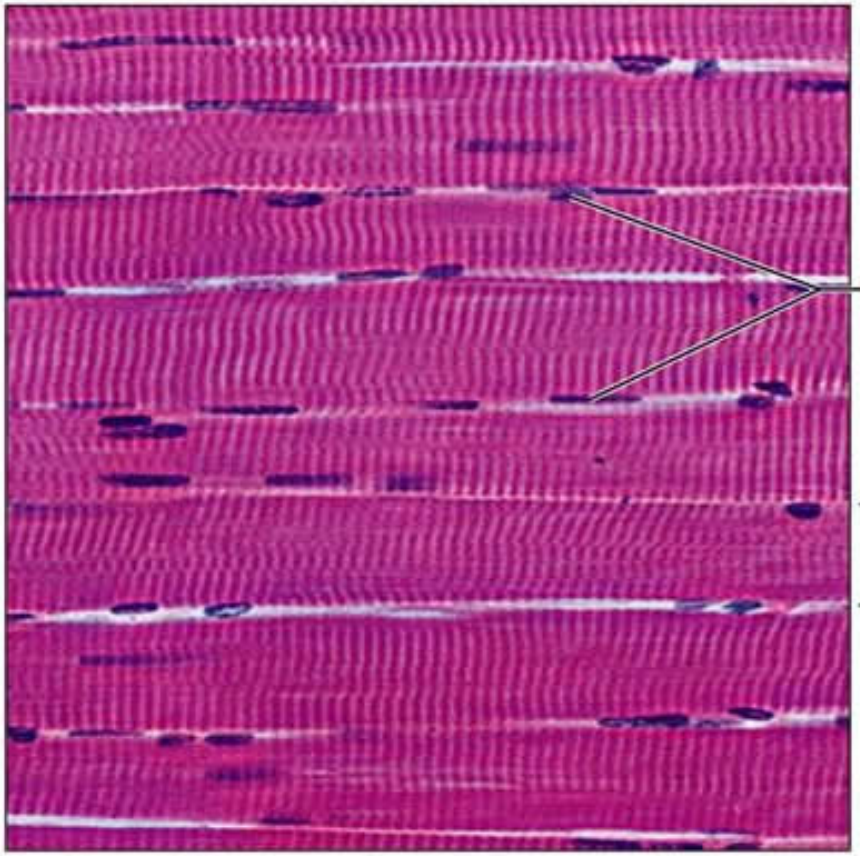
## a) Skeletal muscle

**Description:** Long, cylindrical, multinucleate cells; obvious striations.

**Function:** Voluntary movement; locomotion; manipulation of the environment; facial expression; voluntary control.

**Location:** In skeletal muscles attached to bones or occasionally to skin.




**Photomicrograph:** Skeletal muscle (approx. 300×). Notice the obvious banding pattern and the fact that these large cells are multinucleate.

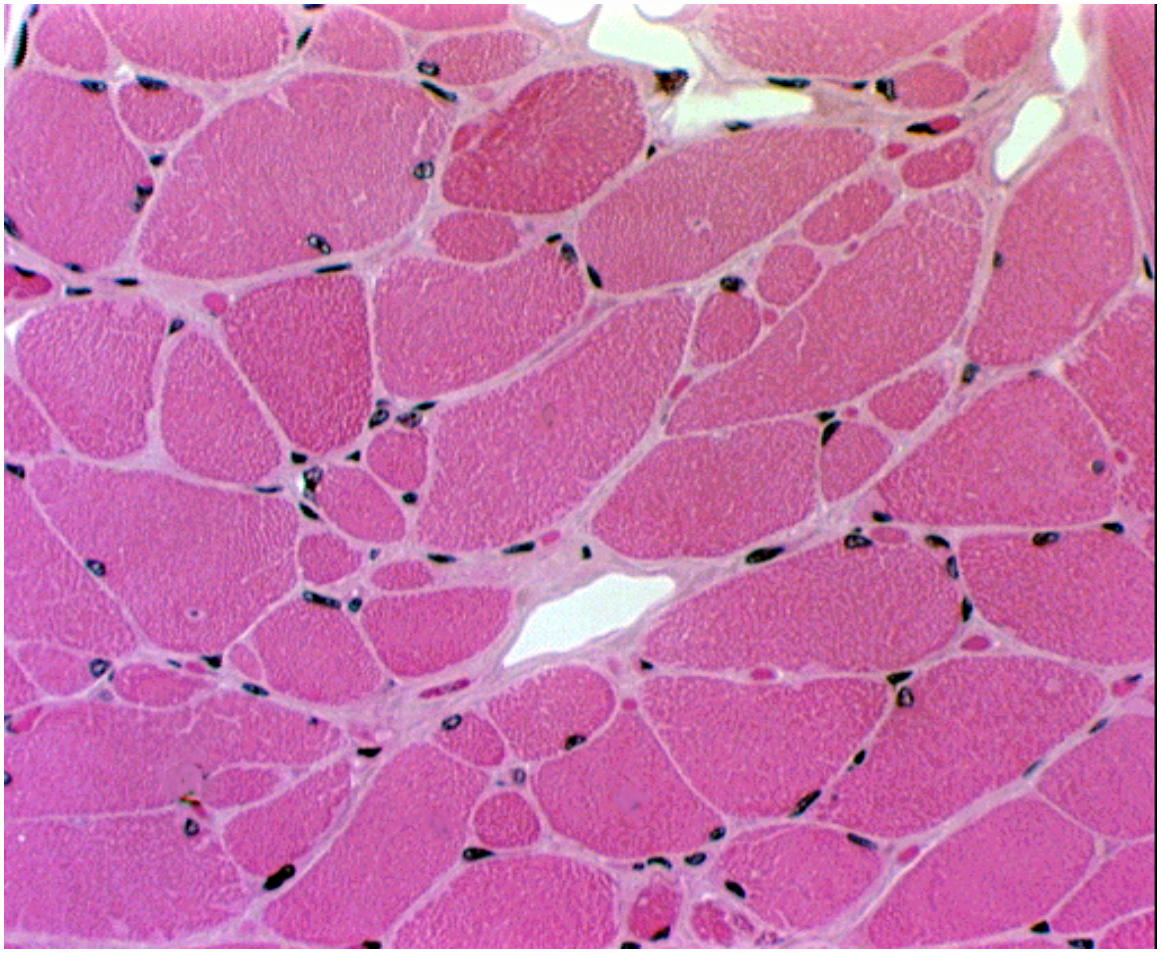
http://classes.midlandstech.edu/carterp/Courses/bio210/chap04/chap04.html

## b) Skeletal muscle: cross-section

**Description: same as above, but the muscle has been cut at a different angle**

**Function:** Voluntary movement; locomotion; manipulation of the environment; facial expression; voluntary control.

**Location:** In skeletal muscles attached to bones or occasionally to skin.



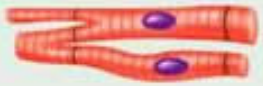
**Photomicrograph:** Skeletal muscle (approx. 300×).

**Cross-section view**

http://classes.midlandstech.edu/carterp/Courses/bio210/chap04/chap04.html
http://www.vetmed.vt.edu/education/curriculum/vm8054/labs/lab10/IMAGES/MUSCLE4.JPG

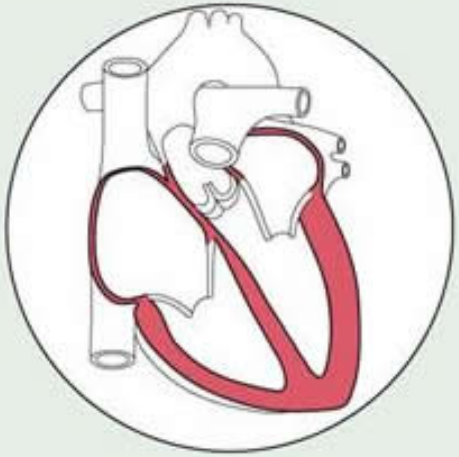
## c) Cardiac muscle

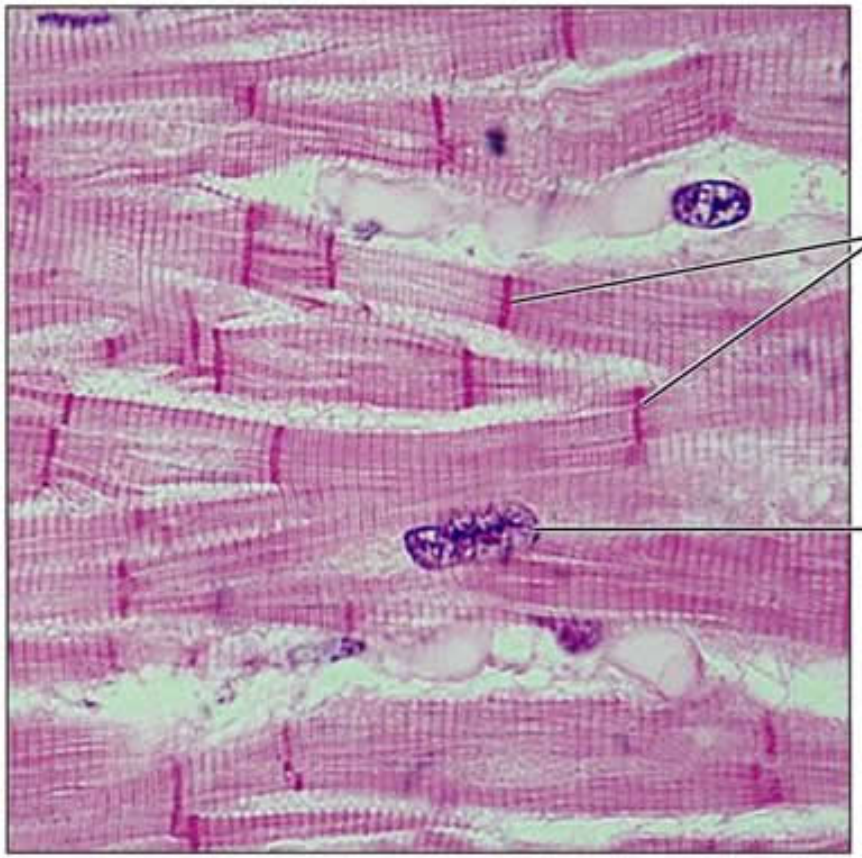
**Description:** Branching, striated, generally uninucleate cells that interdigitate at specialized junctions (intercalated discs).



**Function:** As it contracts, it propels blood into the circulation; involuntary control.

**Location:** The walls of the heart.



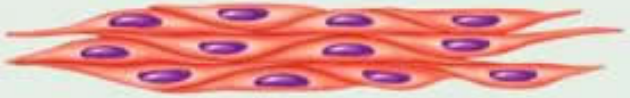



**Photomicrograph:** Cardiac muscle (800×); notice the striations, branching of cells, and the intercalated discs.

http://classes.midlandstech.edu/carterp/Courses/bio210/chap04/chap04.html

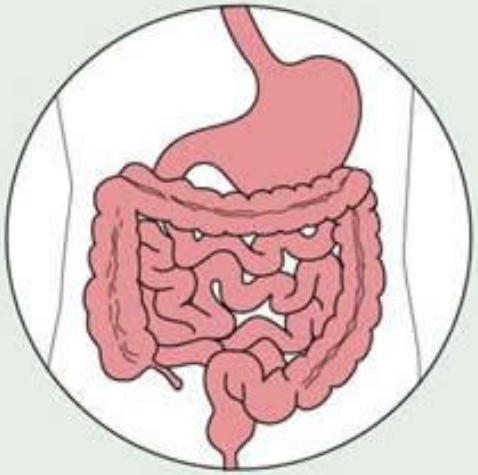
## d) Smooth muscle

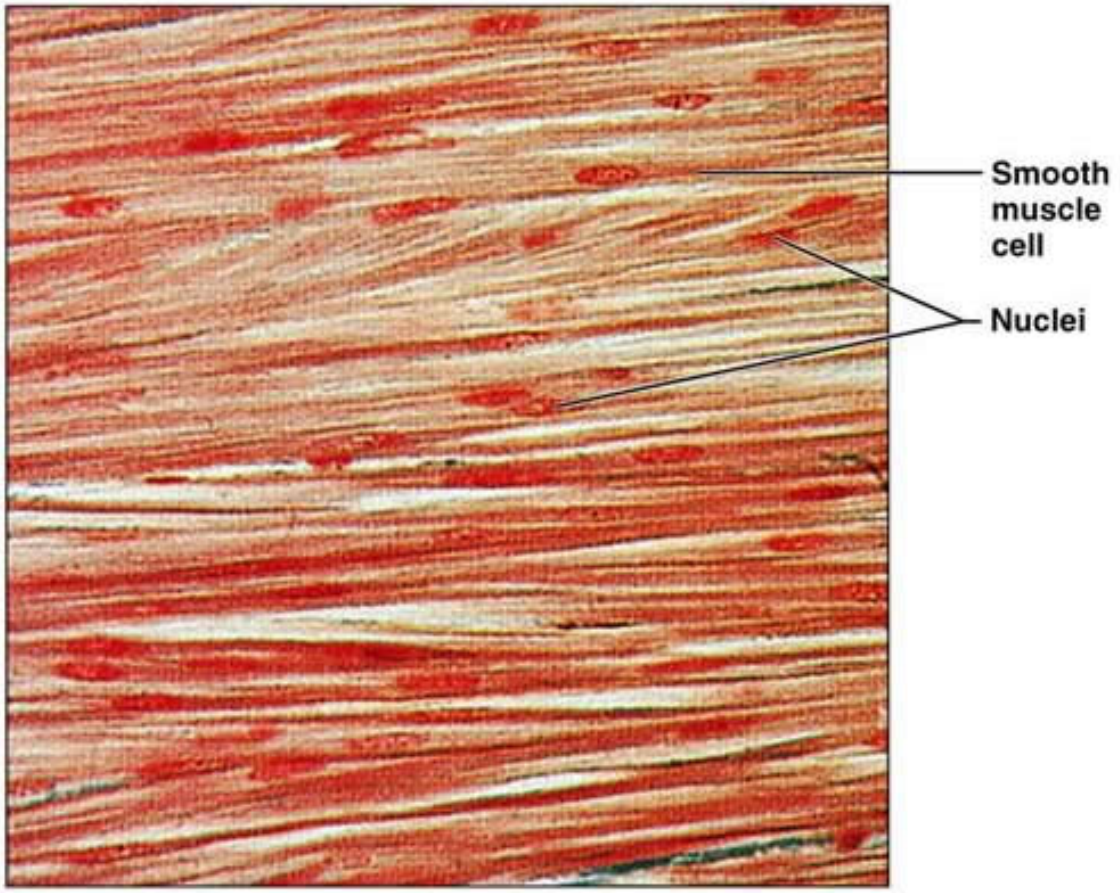
**Description:** Spindle-shaped cells with central nuclei; no striations; cells arranged closely to form sheets.



**Function:** Propels substances or objects (foodstuffs, urine, a baby) along internal passageways; involuntary control.

**Location:** Mostly in the walls of hollow organs.



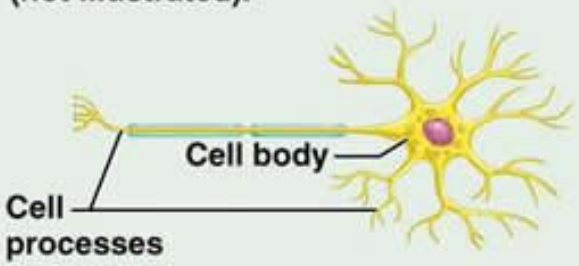



**Photomicrograph:** Sheet of smooth muscle (approx. 600×).

http://classes.midlandstech.edu/carterp/Courses/bio210/chap04/chap04.html

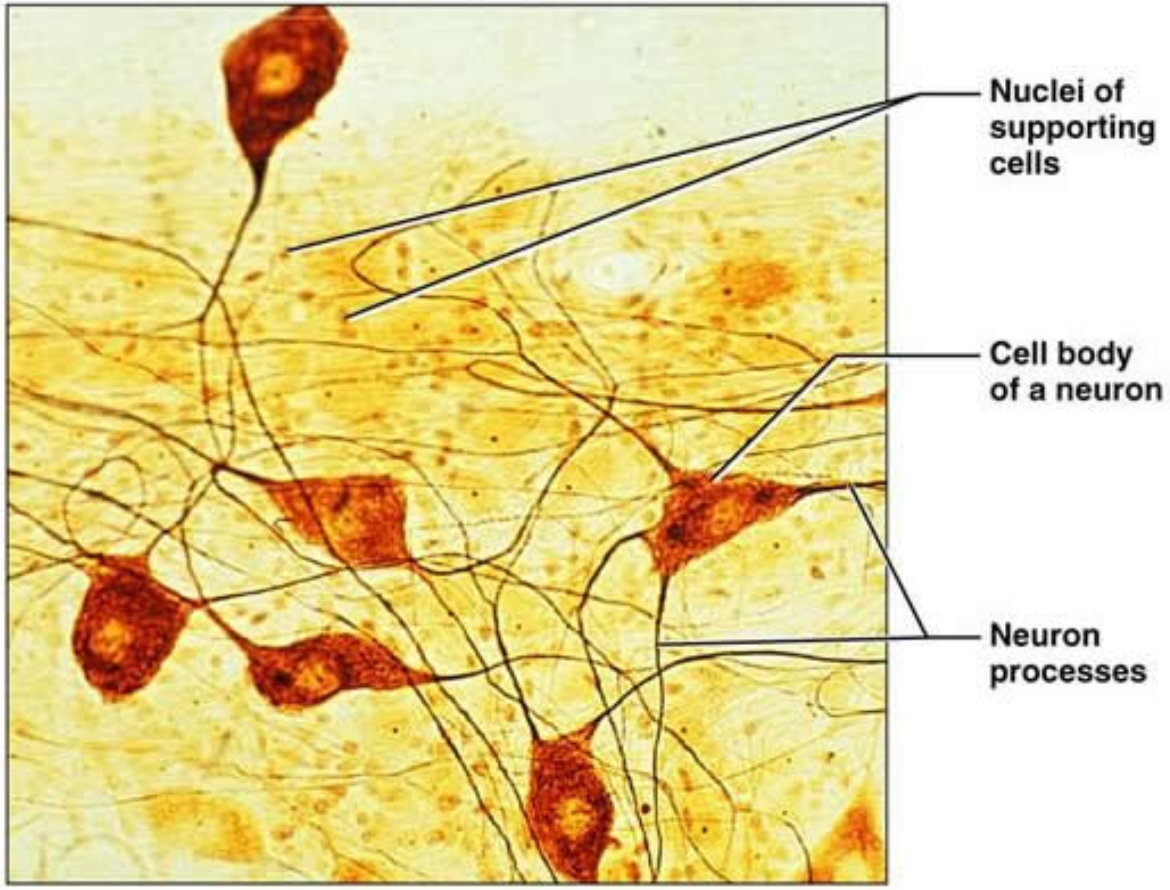
## e) Nervous tissue: neurons

**Description:** Neurons are branching cells; cell processes that may be quite long extend from the nucleus-containing cell body; also contributing to nervous tissue are nonirritable supporting cells (not illustrated).




**Function:** Transmit electrical signals from sensory receptors and to effectors (muscles and glands) which control their activity.

**Location:** Brain, spinal cord, and nerves.




**Photomicrograph:** Neurons (100×)

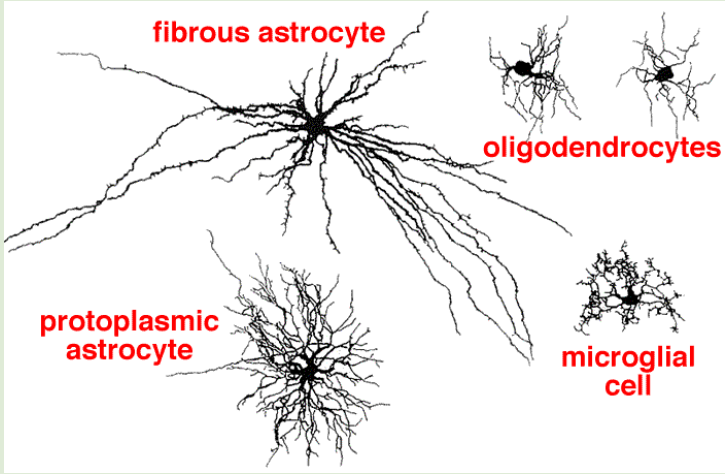
http://classes.midlandstech.edu/carterp/Courses/bio210/chap04/chap04.html

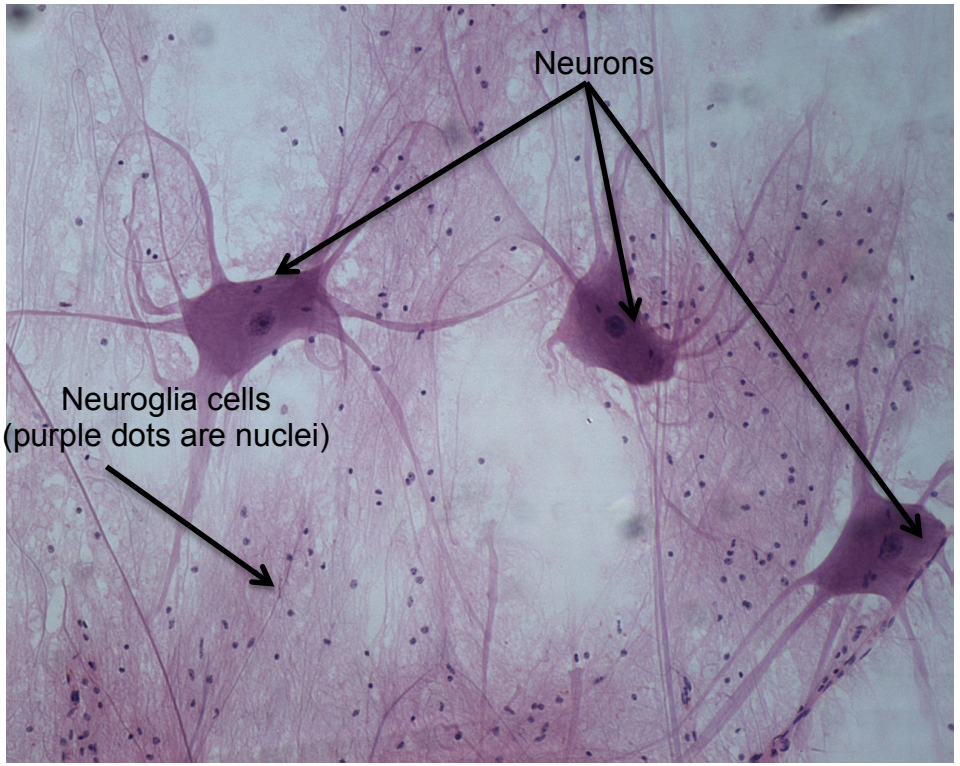
## f) Nervous tissue: neuroglia

**Description: neuroglia support and hold neurons together. Essentially, they are the glue that holds the nervous system together. Different types of neuroglia cells are diagramed below.**

**Function: Support of neurons**

**Location: Nervous system; brain, spinal cord, and nerves**



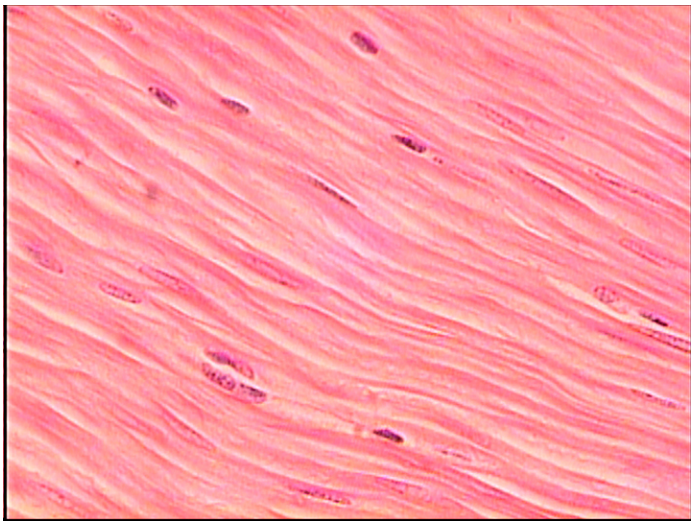

**Photomicrograph: Nervous tissue (400x)**

http://washington.uwc.edu/about/wayne.schaefer/TISSUES/nervous_tissue2.jpg

http://vanat.cvm.umn.edu/neurHistAtls/pages/images/Glia1.gif

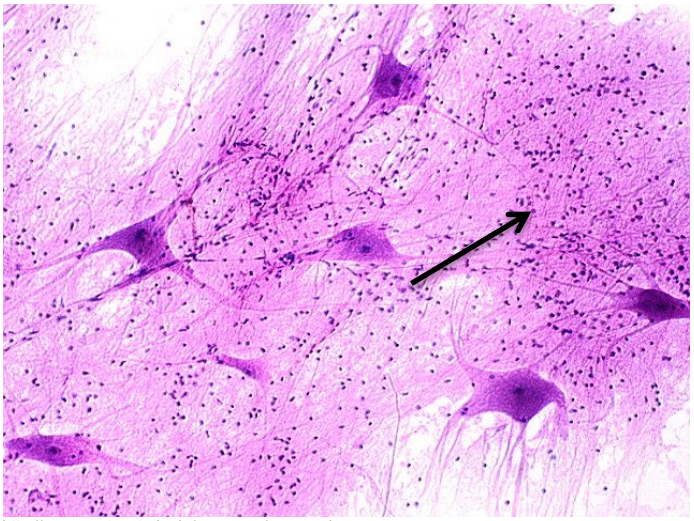
# Lab 4c, Part B: Color Images

A.



http://www.gwc.maricopa.edu/class/bio201/Histology/31SmoothMusc3_400X_rev.jpg

B.

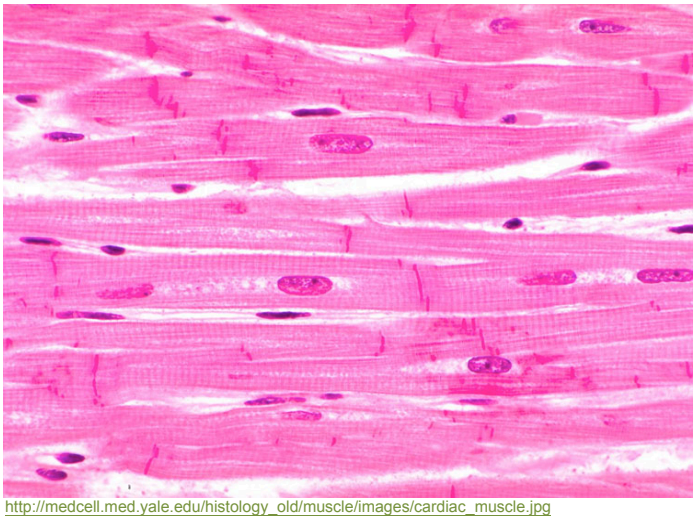


http://www.eastcentral.edu/programs/nervous.jpg

C.

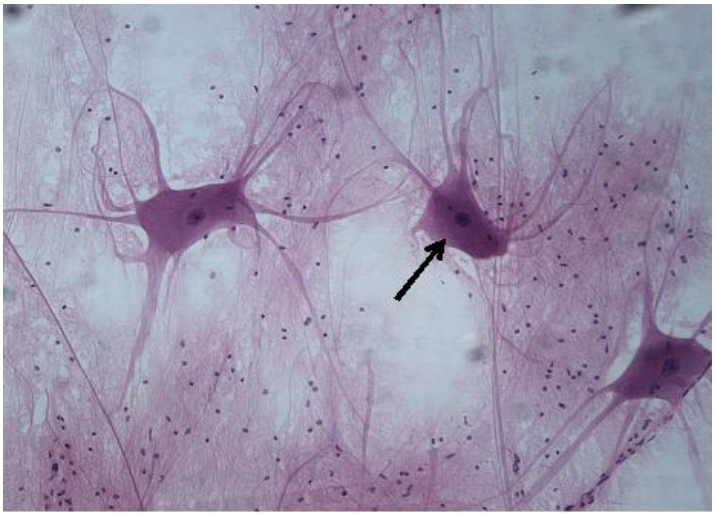
http://www.histology-world.com/photomicrographs/striatedmuscle1.jpg

D.



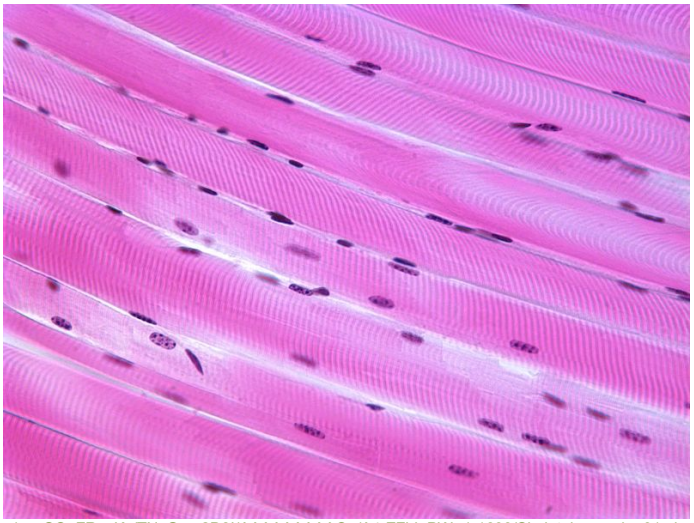
http://medcell.med.yale.edu/histology_old/muscle/images/cardiac_muscle.jpg

E.



http://www.proprofs.com/quiz-school/user_upload/ckeditor/soma.jpg

F.



http://4.bp.blogspot.com/_guSOnFRs_Ks/TNvGn-s2D8I/AAAAAAAAAQo/A4rZFbinPWw/s1600/Skeletal+muscle+01a.jpg