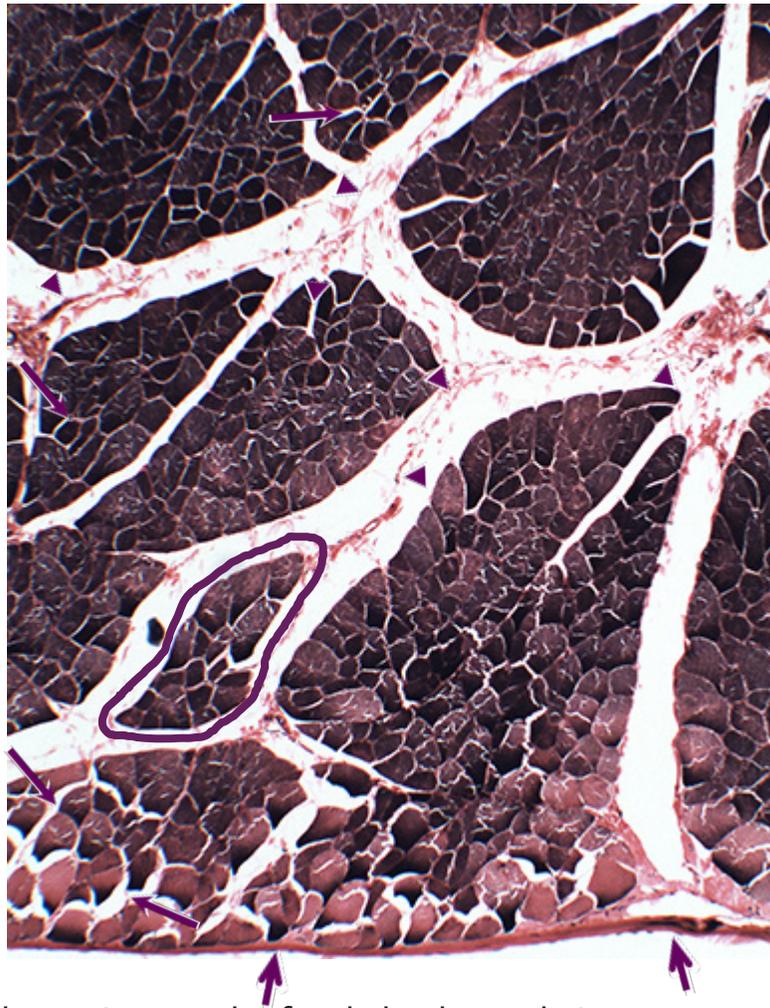


## PST-musc-3: Skeletal Muscle and Fascia Visual Microscopy Kit



This photomicrograph of a skeletal muscle in cross section was taken at 100x to show all three levels of fascia invested in skeletal muscle. The skeletal muscle fibers (or cells) are all reddish black and somewhat circular. The fascia wraps around and through the muscle. The three layers of fascia are:

- ➔ Epimysium (dense irregular CT) that wraps around the entire muscle and runs into tendons
- ▶ Perimysium (areolar CT) that runs between bundles of muscle fibers (called fascicles), making the fascicles more visible. One fascicle has been outlined.
- ➔ Endomysium (areolar CT) that lays upon every muscle fiber, but is difficult to see at this low magnification.

The epimysium encapsulates the entire muscle and blood vessels and nerves travel to the muscle through it. The perimysium provides space and support for blood vessels and nerves to approach every fascicle. The endomysium provides space and support for blood vessels and nerves to reach every muscle fiber (cell).

## For all Cell Zone®, Inc. posters

### General Instructions:

- Move from room to room or maintain in one location
- Hang on any permanent or removable hook by the grommet
- Use a dry erase marker on the frame; erase the same day to ensure clarity
- Store multiple posters by stacking so that the grommet cannot scratch the front of a neighboring poster

### Advantages with using posters:

- Hanging real cell micrographs makes your classroom or lab space look like a place where real science is done
- The posters can be hung as art or for learning
- The posters can be paired with microscopy or used separately
- You will always have a good example of what you want your students to see

### Lessons for this specific poster

1. Have your students identify the type of tissue this is (epithelial, connective, muscle, nervous). Then have them identify the specific type of muscle tissue visible (skeletal, cardiac, smooth). Then ask them to explain where this type of muscle tissue is found.
2. Hand your students a dry erase marker and have them label
  - the outer edge of the entire muscle and the epimysium.
  - the outline of one muscle fascicle and the perimysium.
  - the outline of one muscle fiber and where the endomysium would be found.
  - regions where striations are clearly visible.
3. When pairing the use of the poster with microscopy, you can do each of the following:
  - Set up numbered microscopes with pointers on specific fascia, muscle cells, or muscle fascicles and have them match the number to the entire poster or to specific items in the poster. Microscopes could show low power or high power views, cross or longitudinal sections. Have students put the microscope numbers onto the poster with a dry erase marker, with numbered arrows to specific items in the poster.
  - Use a dry erase marker on the frame to indicate a layer of fascia or portion of muscle. Have your students, each working on their own microscopes or in pairs, put their pointer on a similar structure in their microscope fields. You can check their choices, or have them check on each other.
4. Ask your students about the layers of fascia and the organization of skeletal muscle:
  - Which type of fascia is on the outside of the muscle? Which is closest to the sarcolemma of muscle? Which types are composed of areolar connective tissue?
  - What are the skeletal muscle specific terms for a single muscle cell and a bundle of muscle cells?
  - Are these cells striated? Why aren't striations visible in cross sections?

