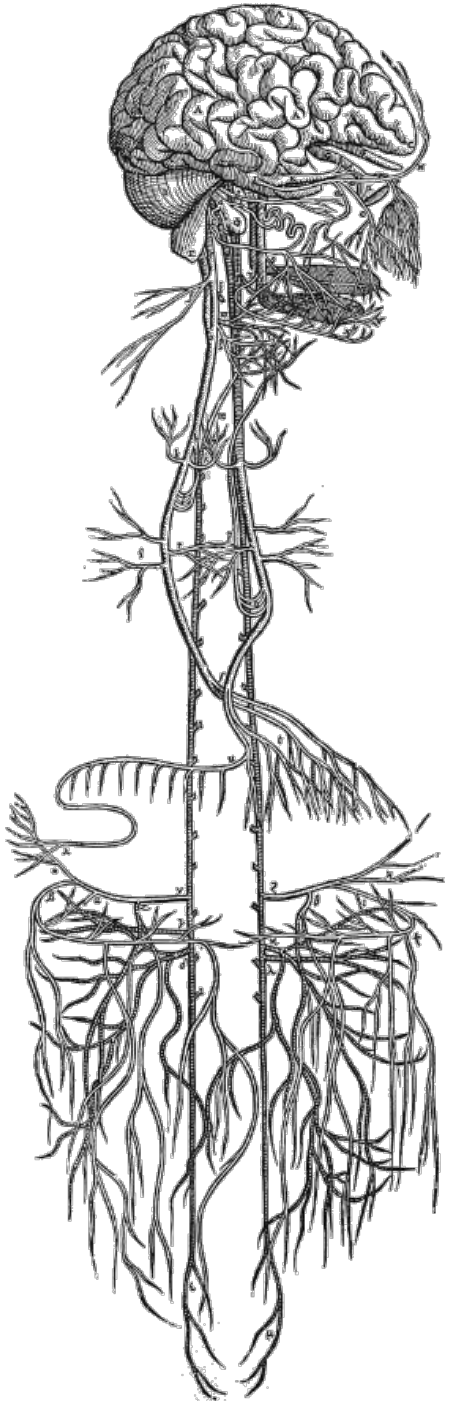
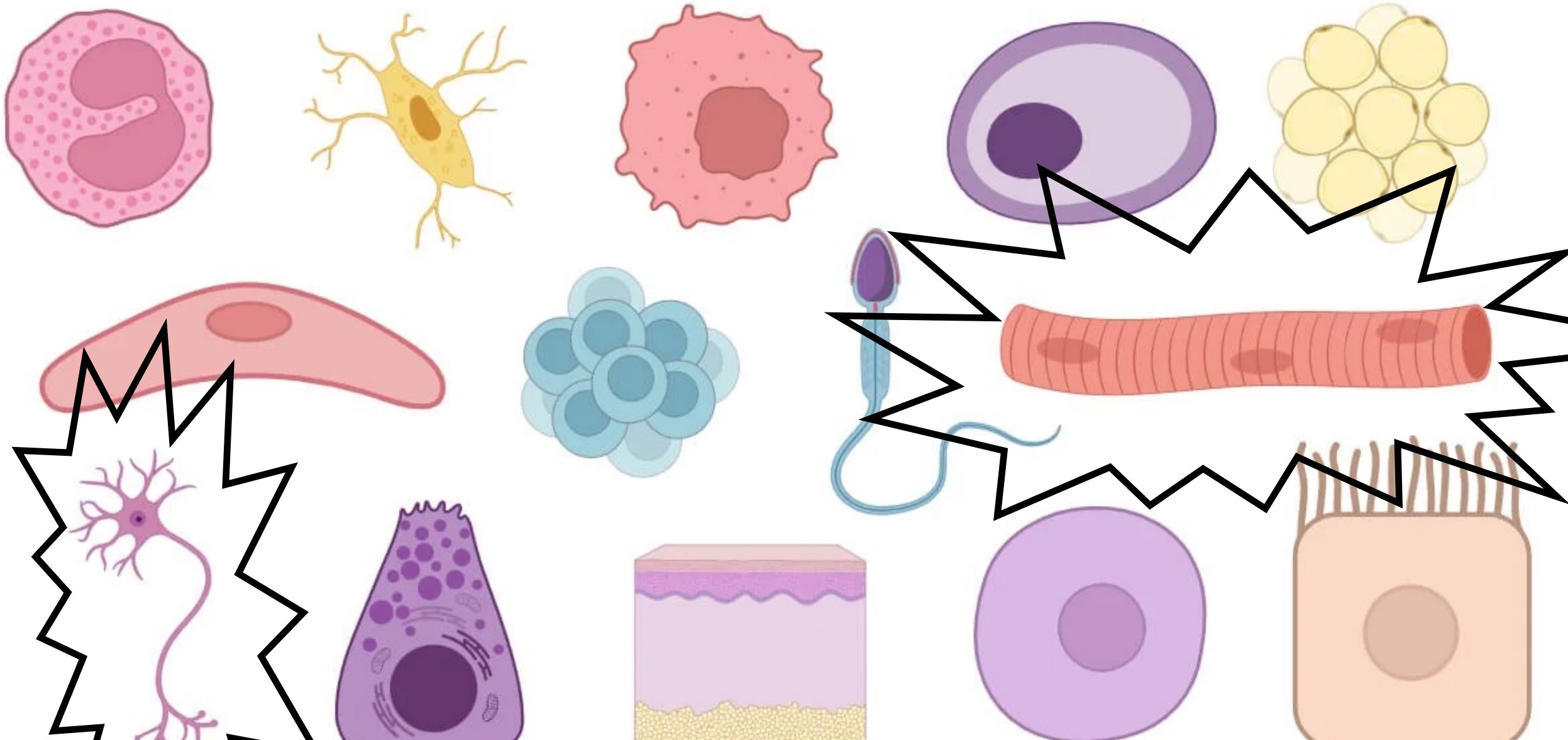


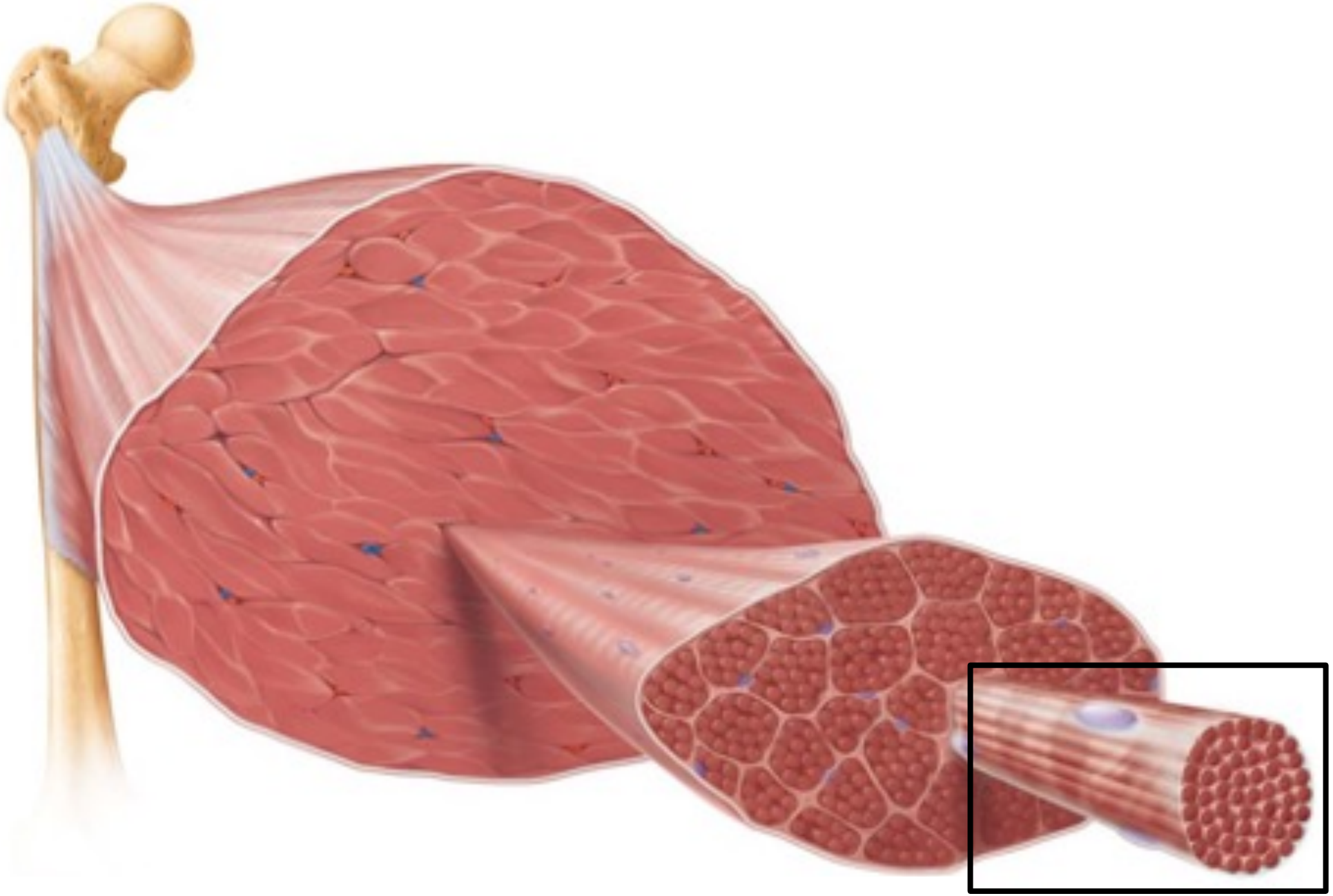
How the Brain Makes the Body Move

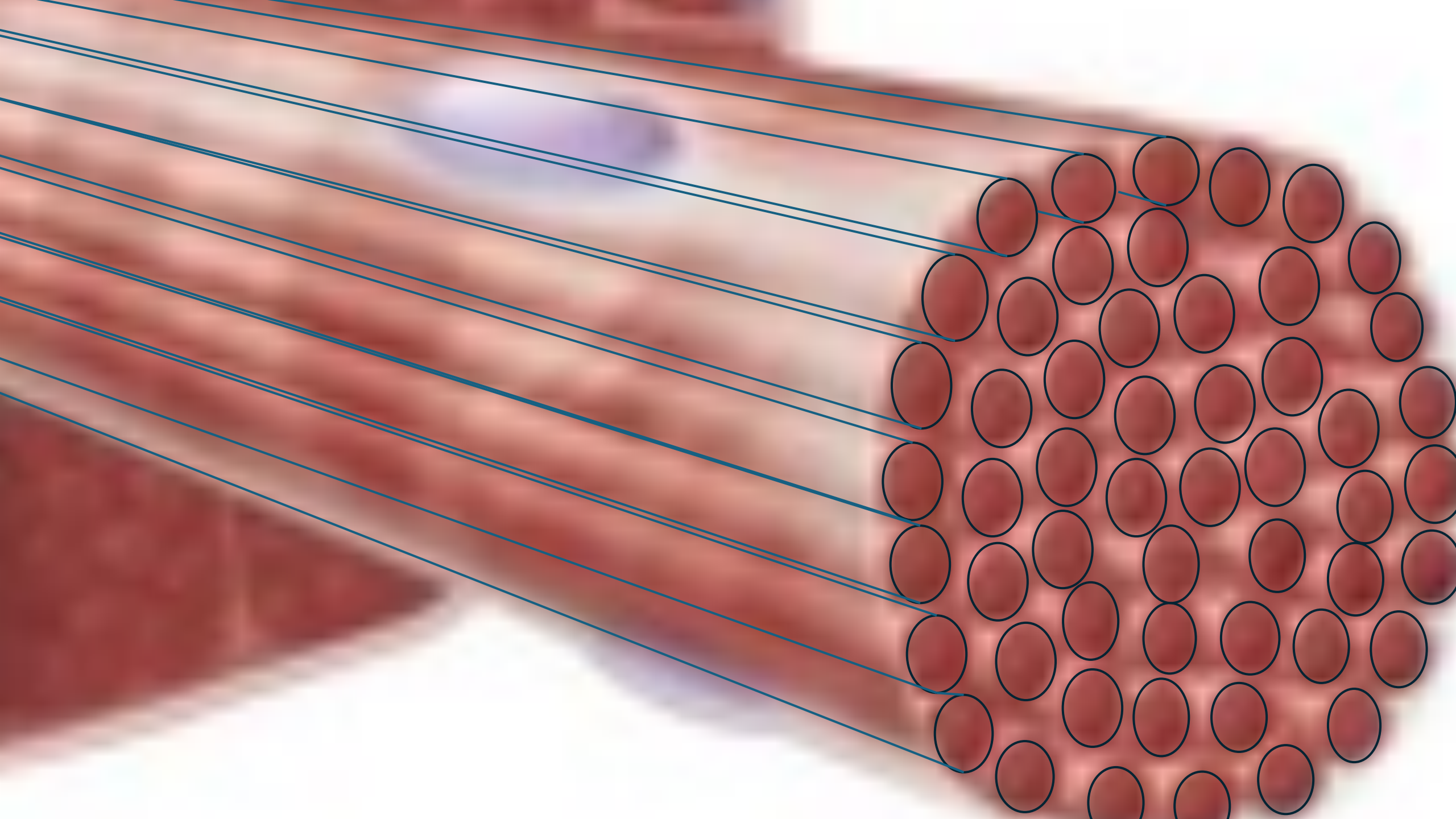
Physics Literacy for Kids
June 12th, 2024

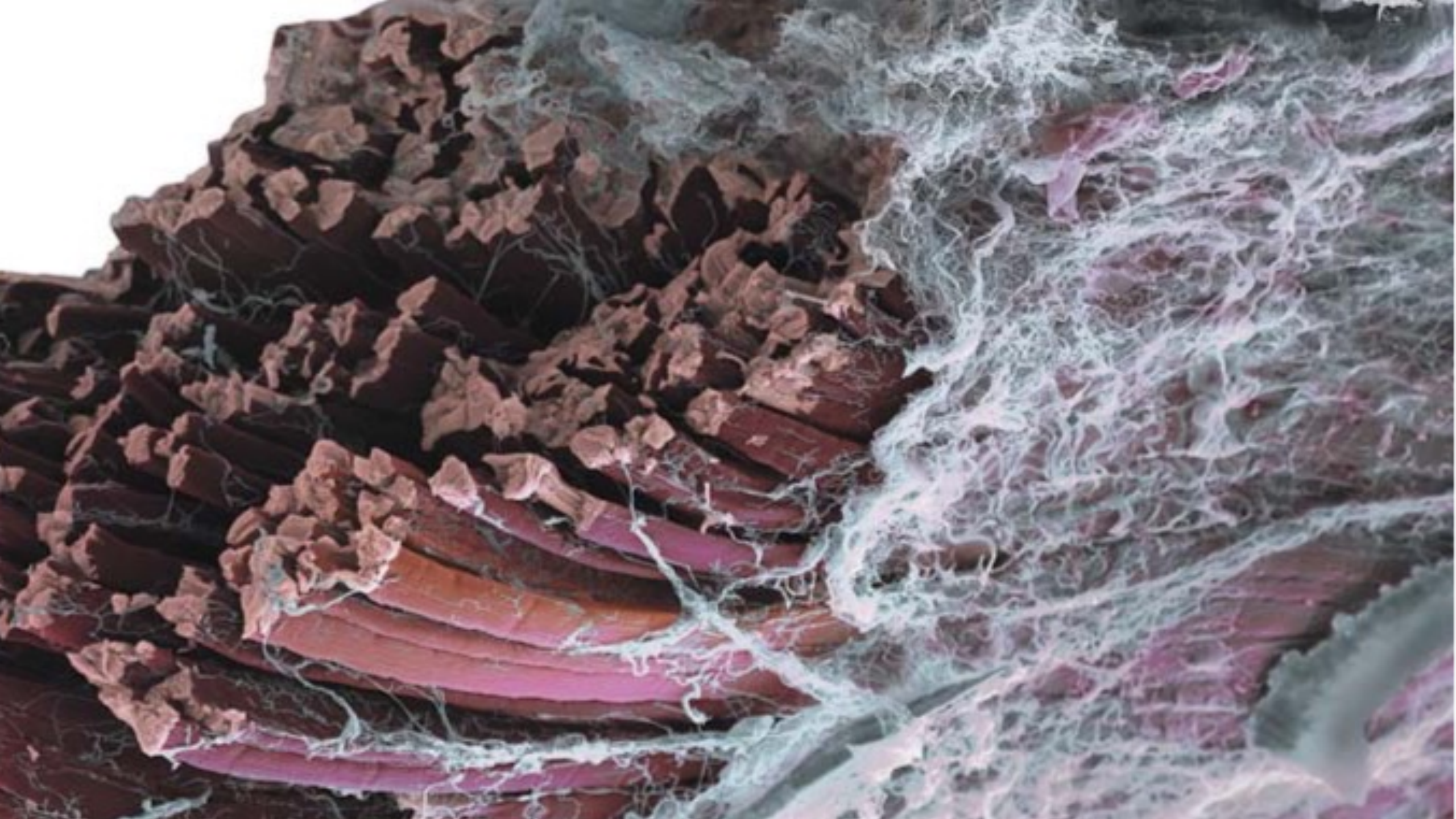
Guest Speaker:
Professor James

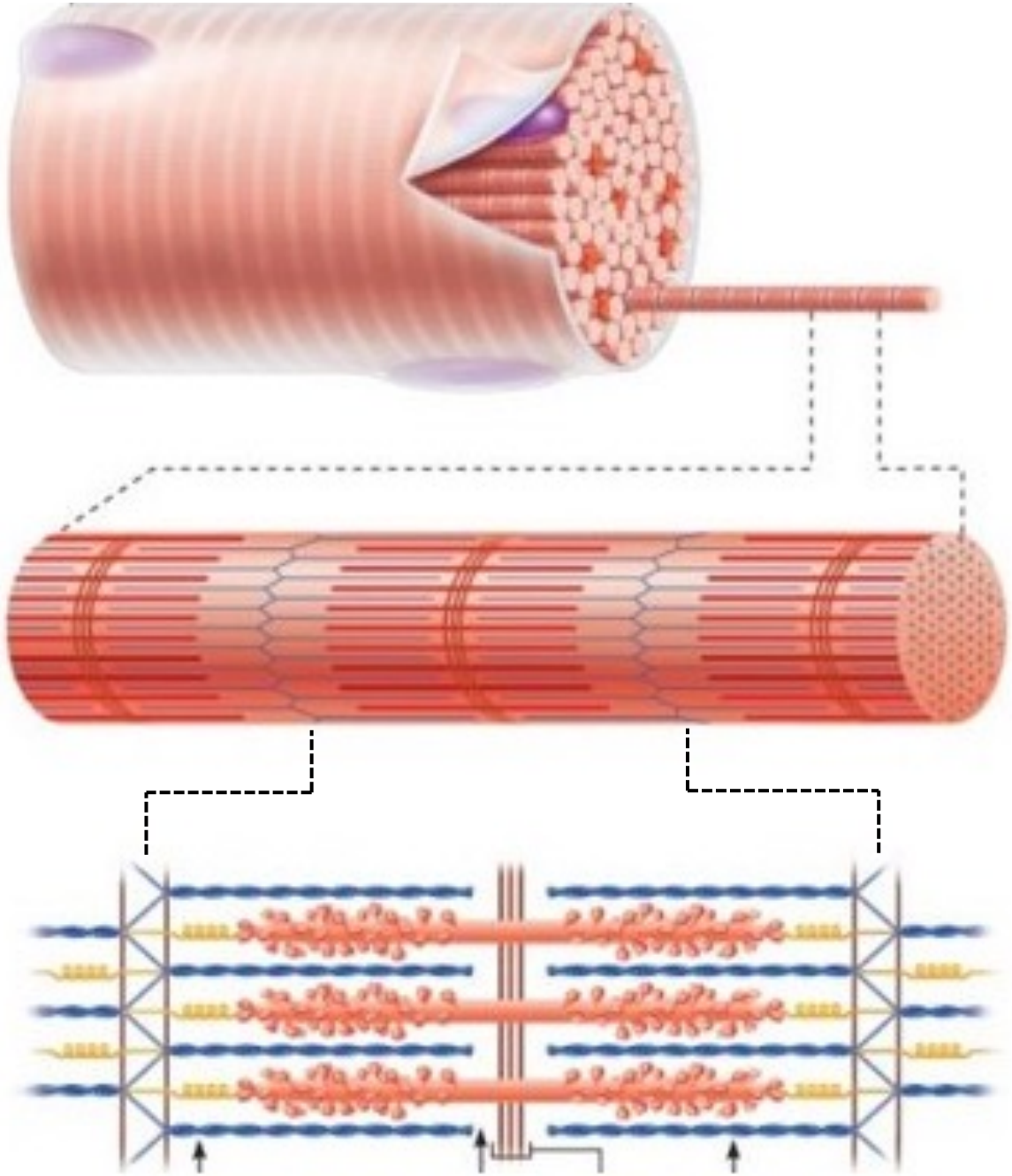
Many Types of Cells







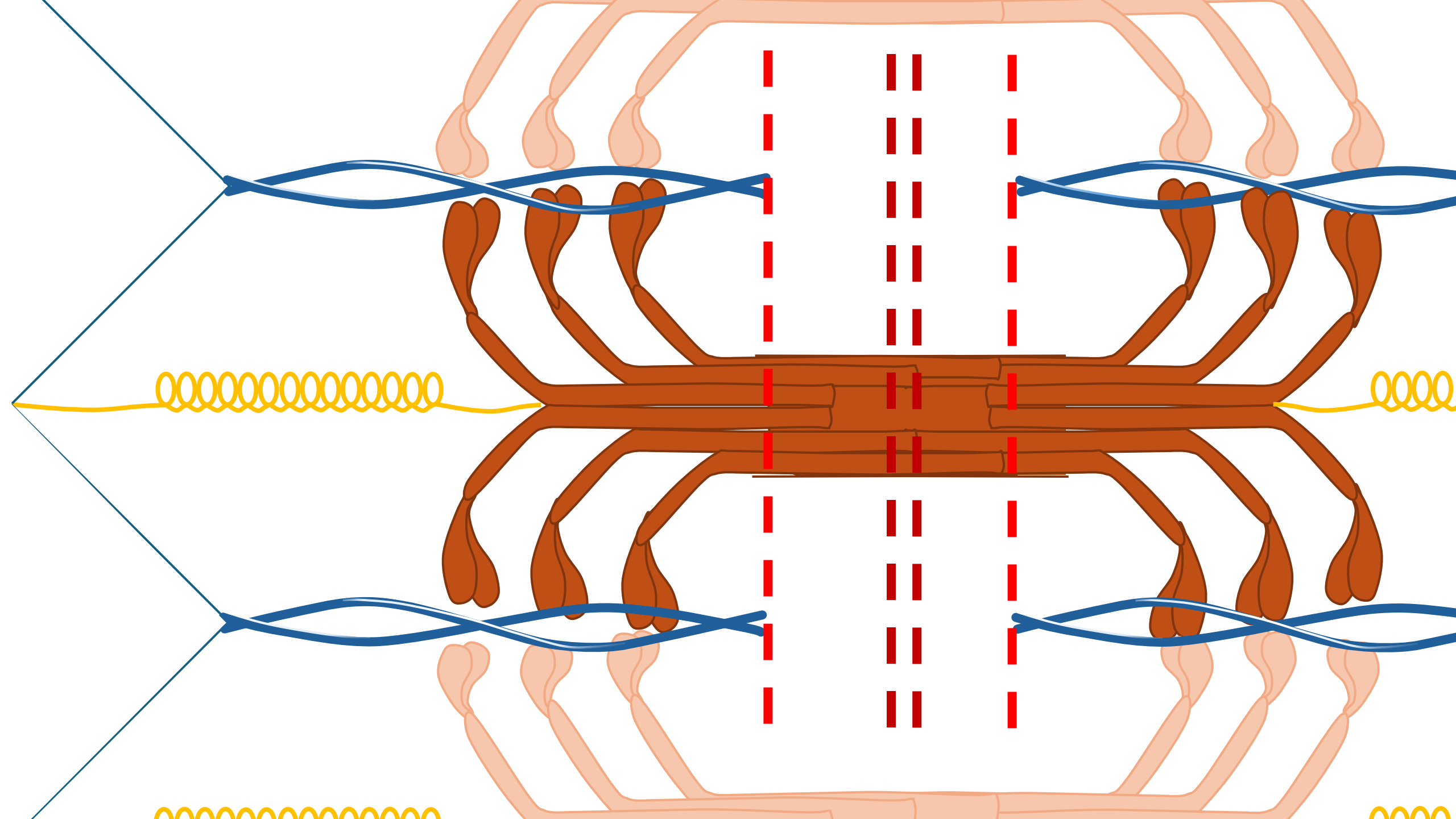


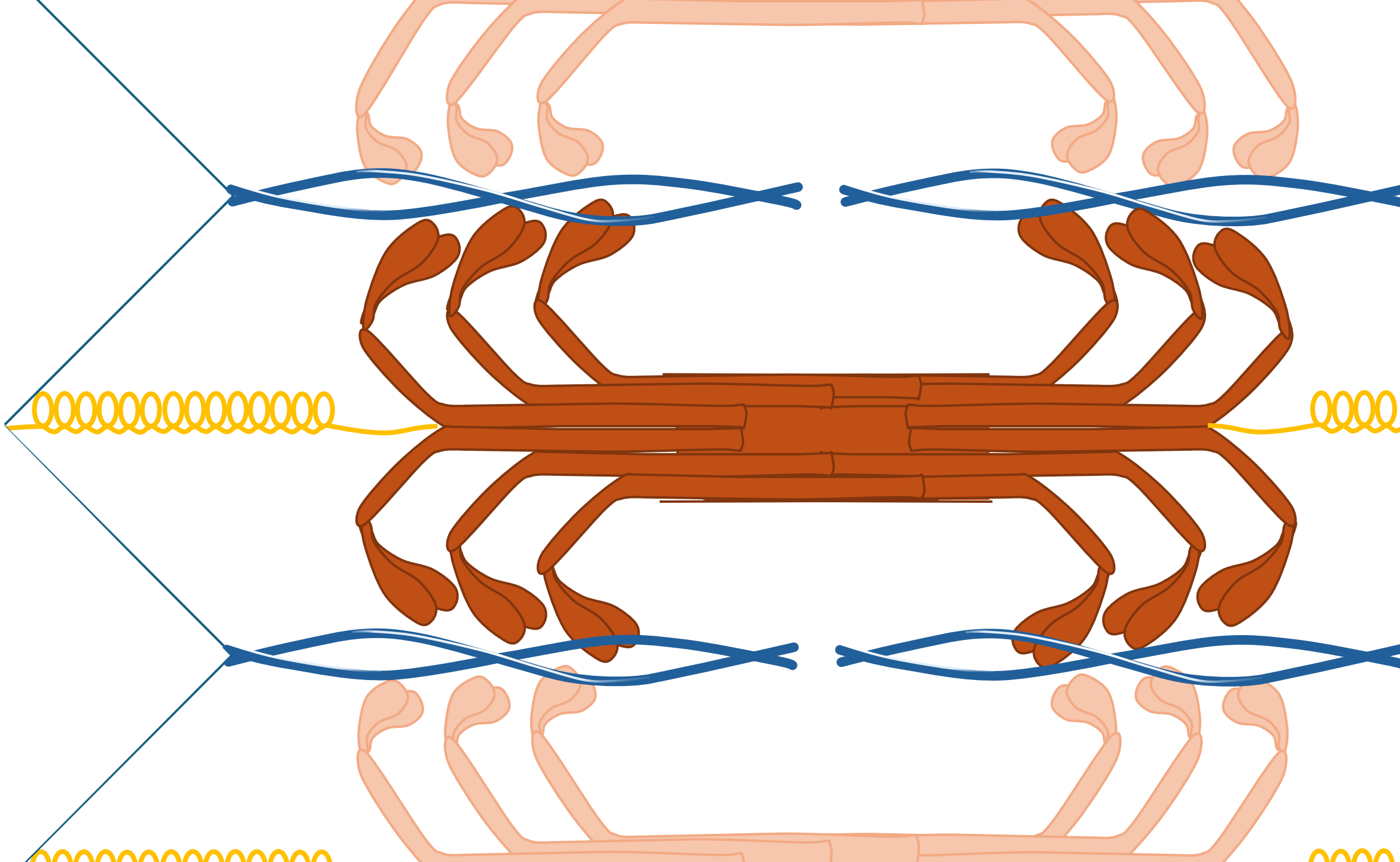


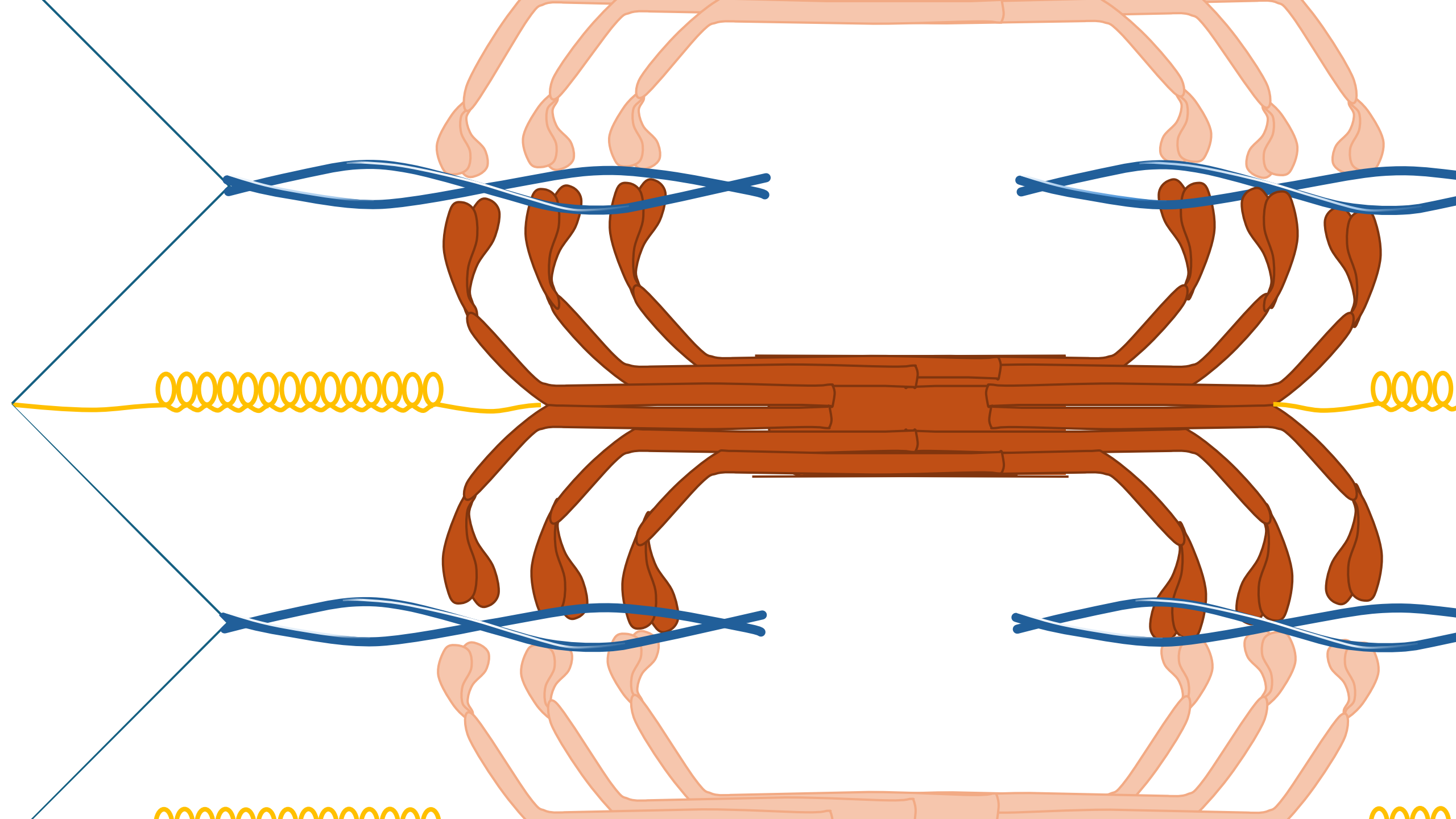
X100
magnification

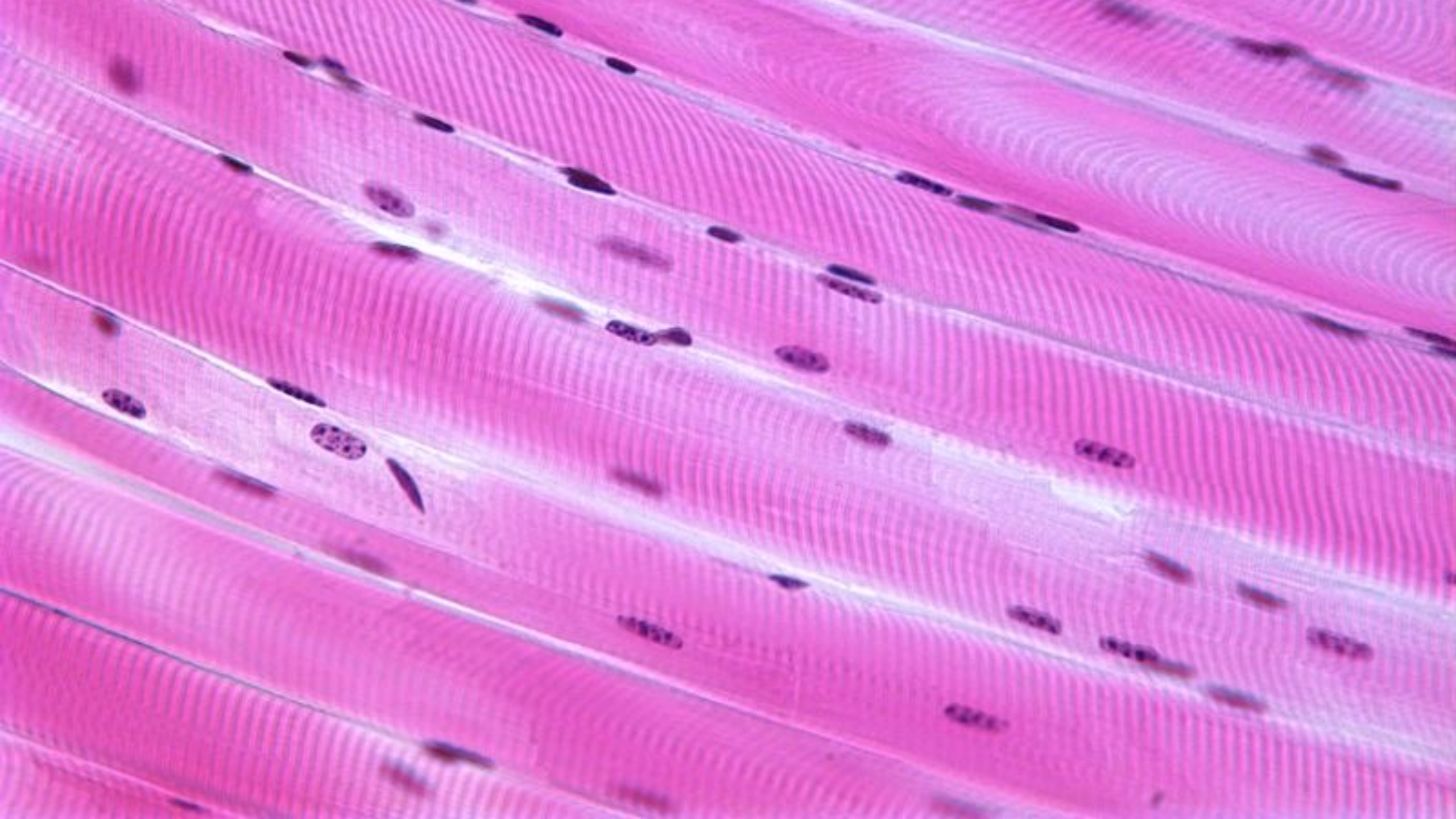
X10,000
magnification

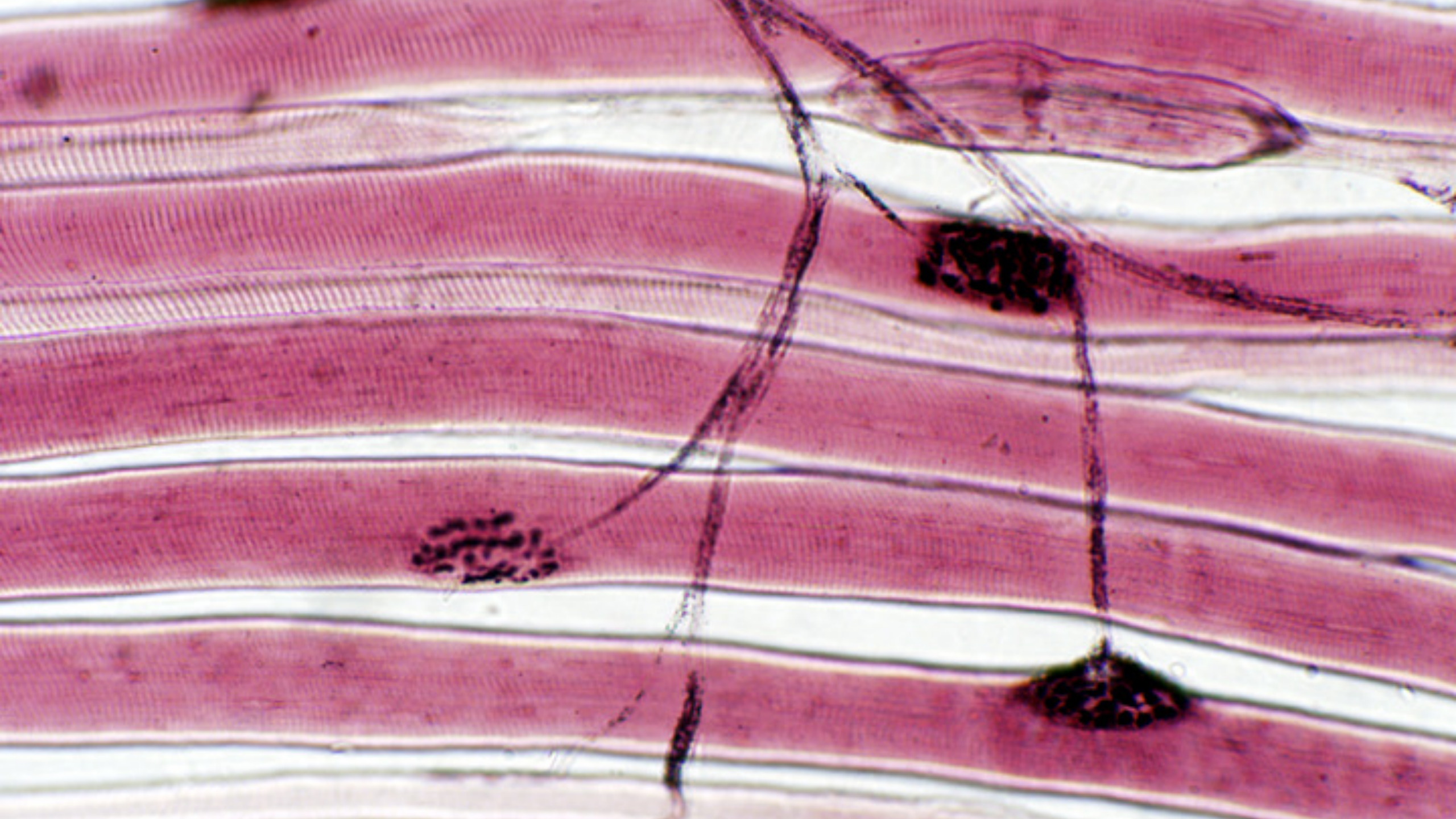
X100,000
magnification

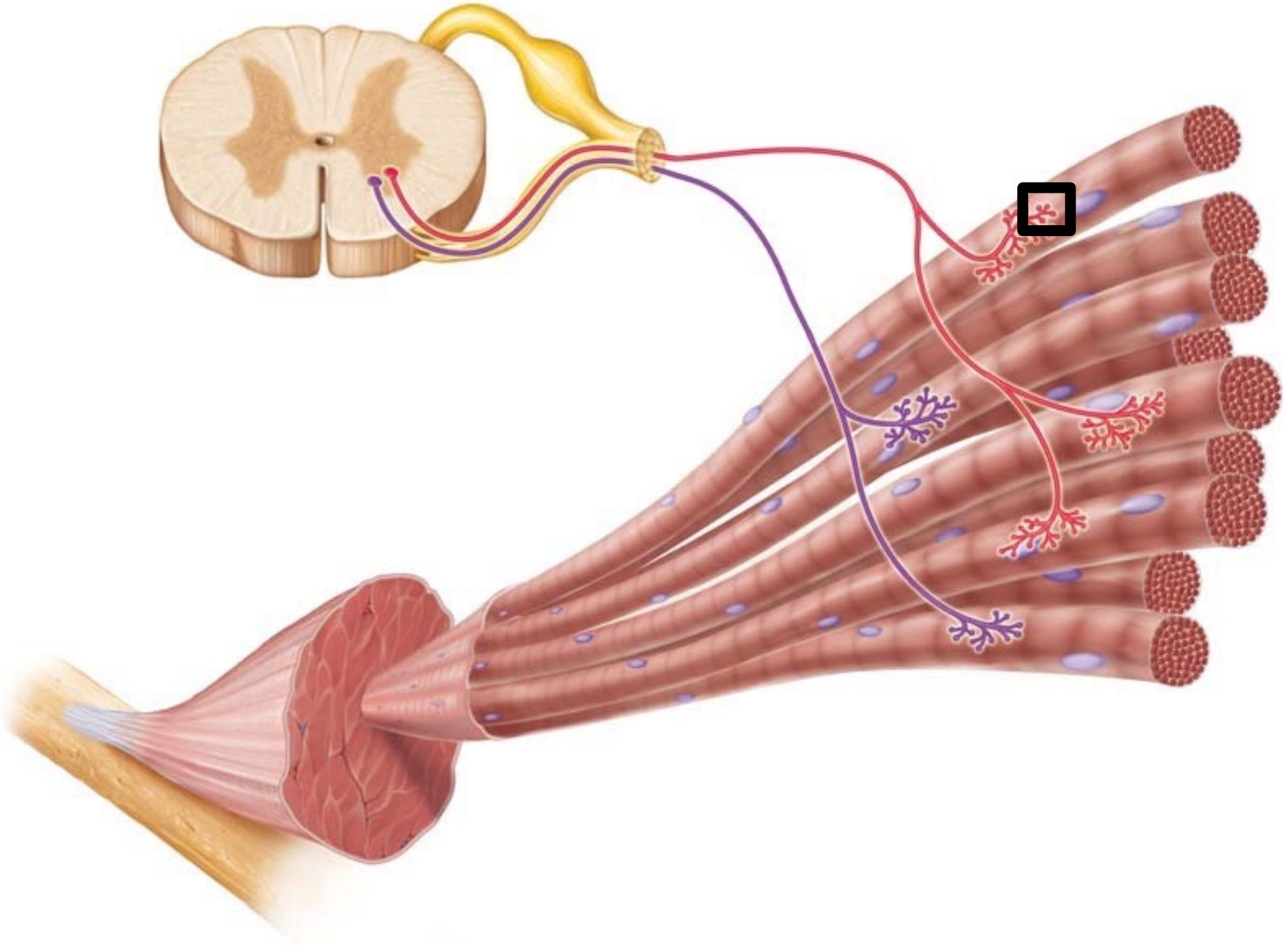


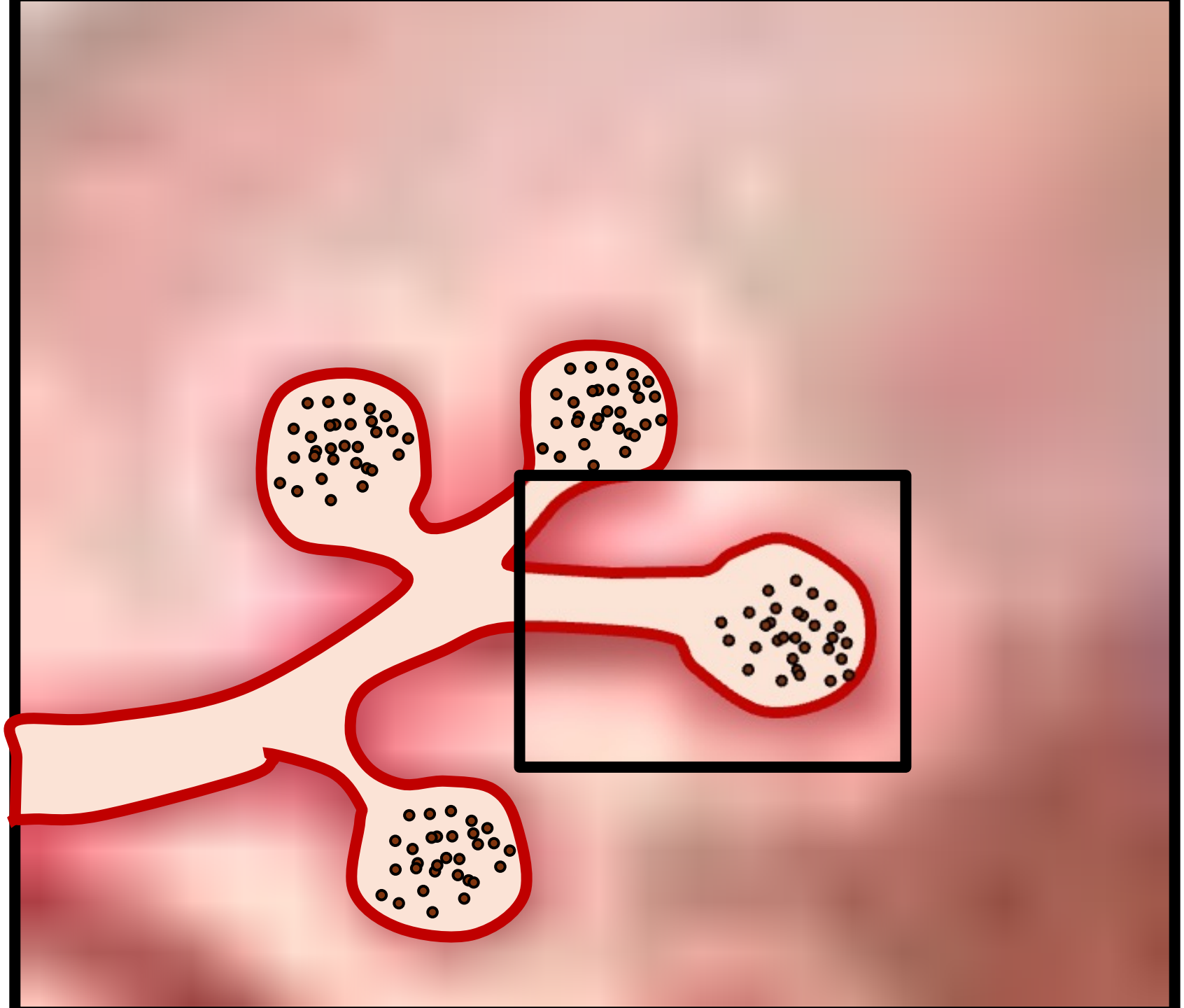


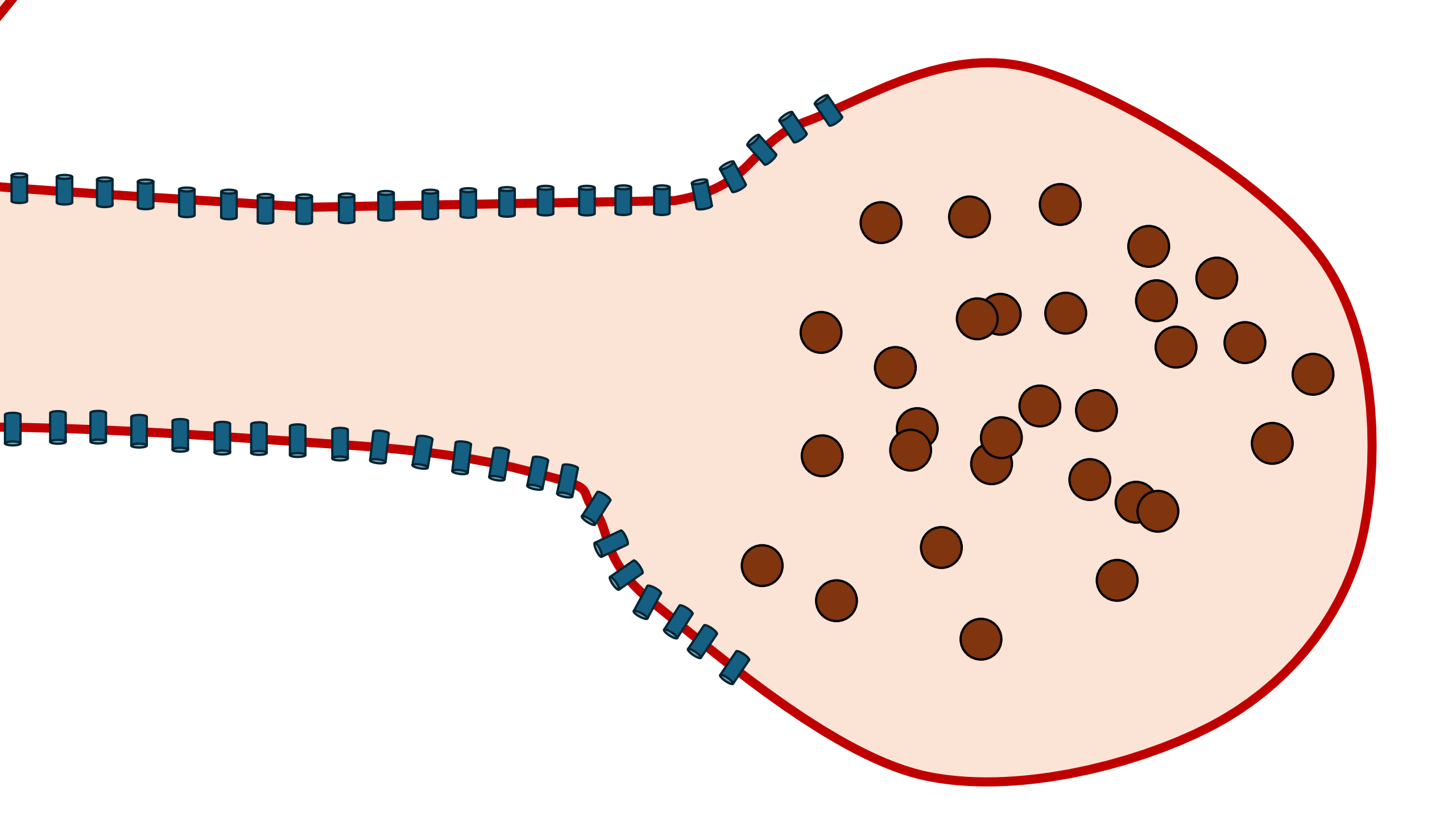


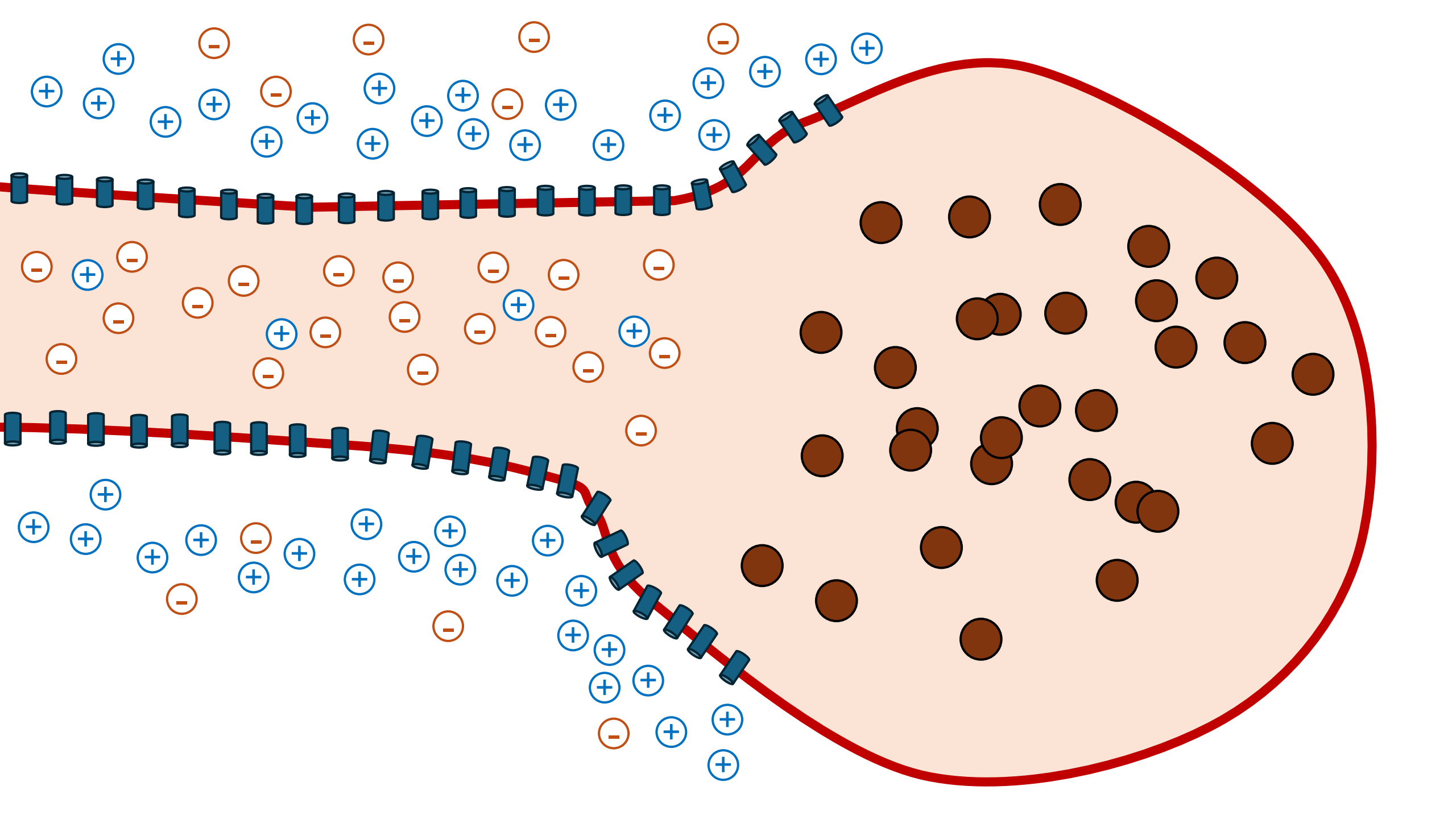


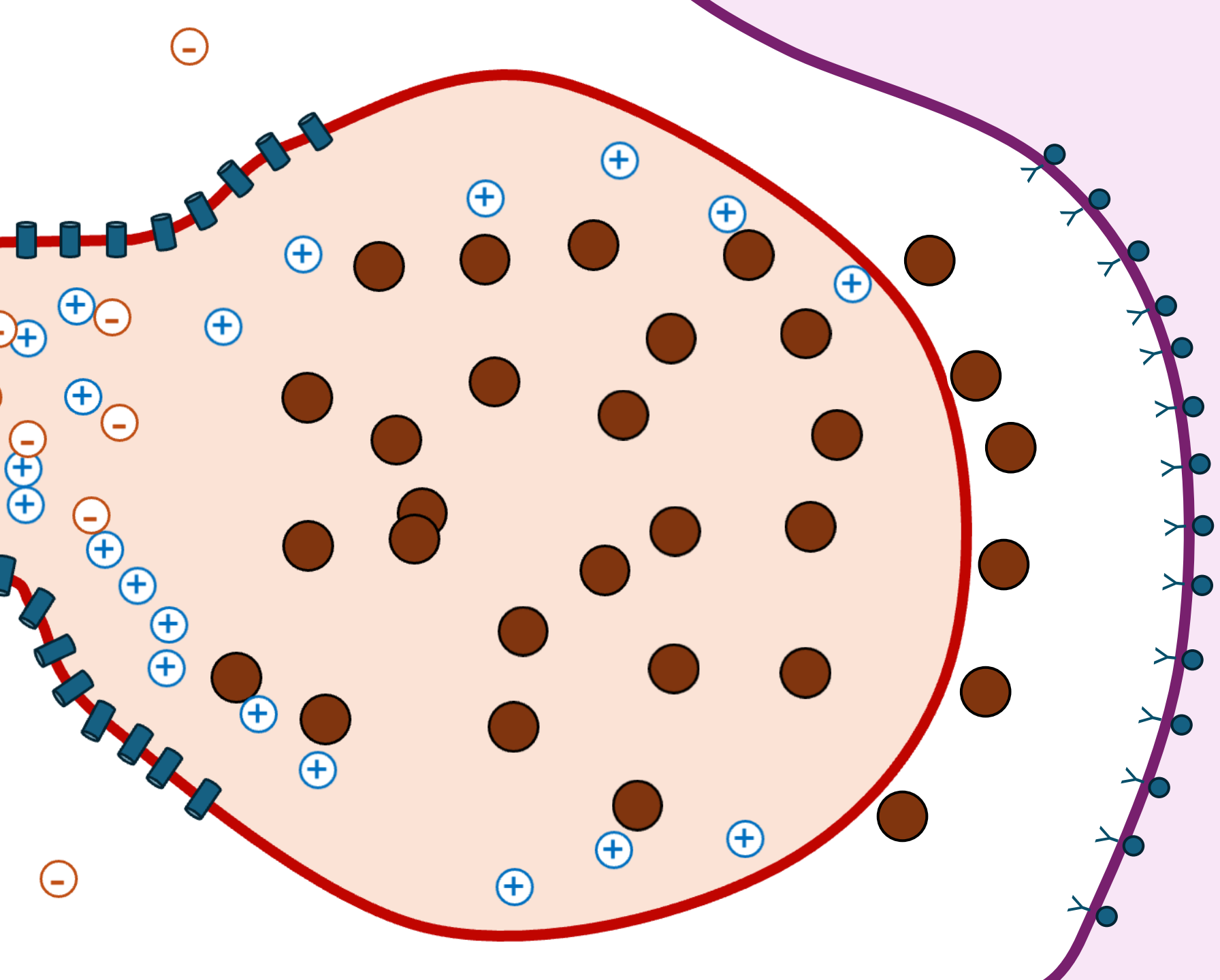


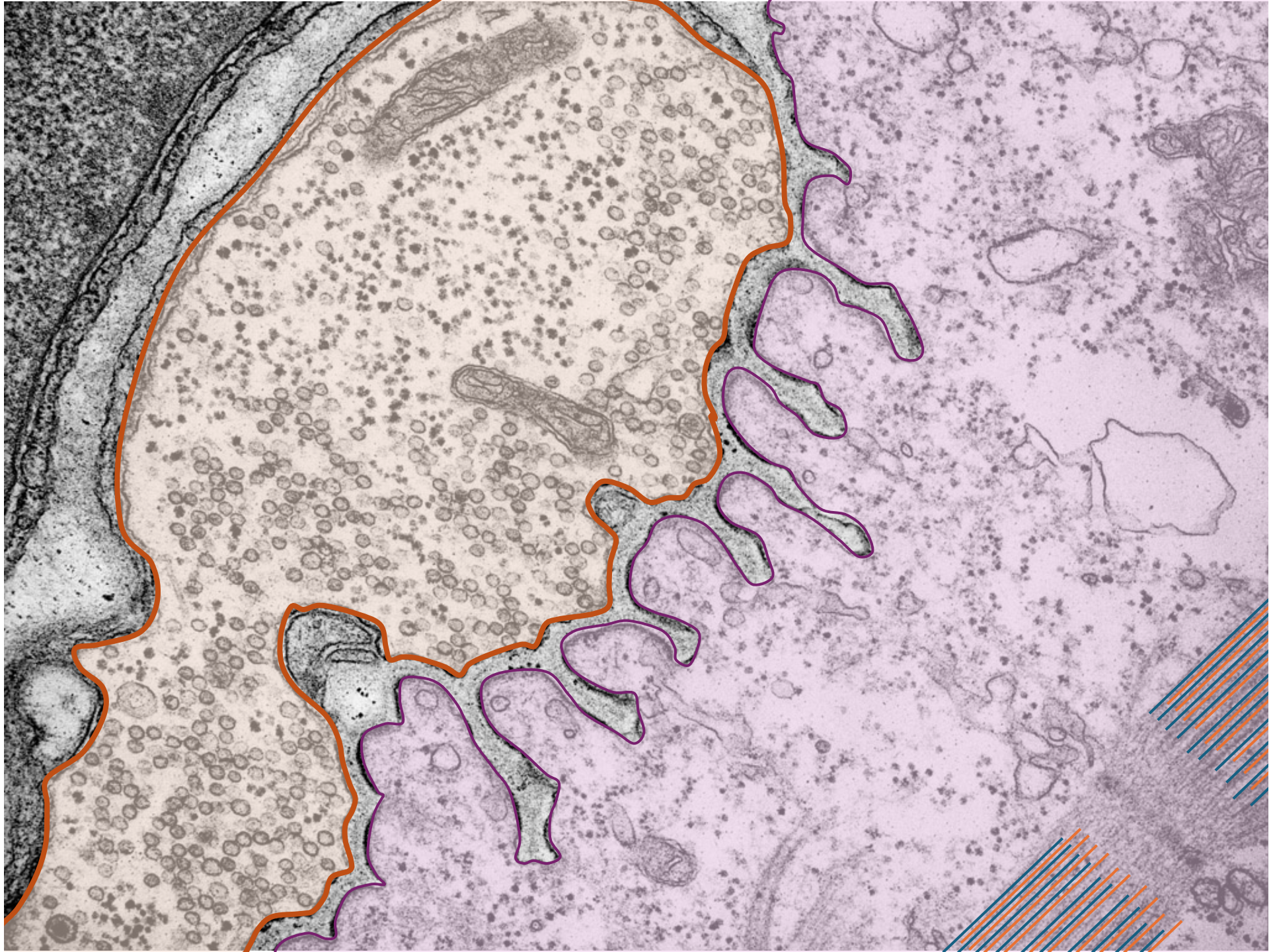


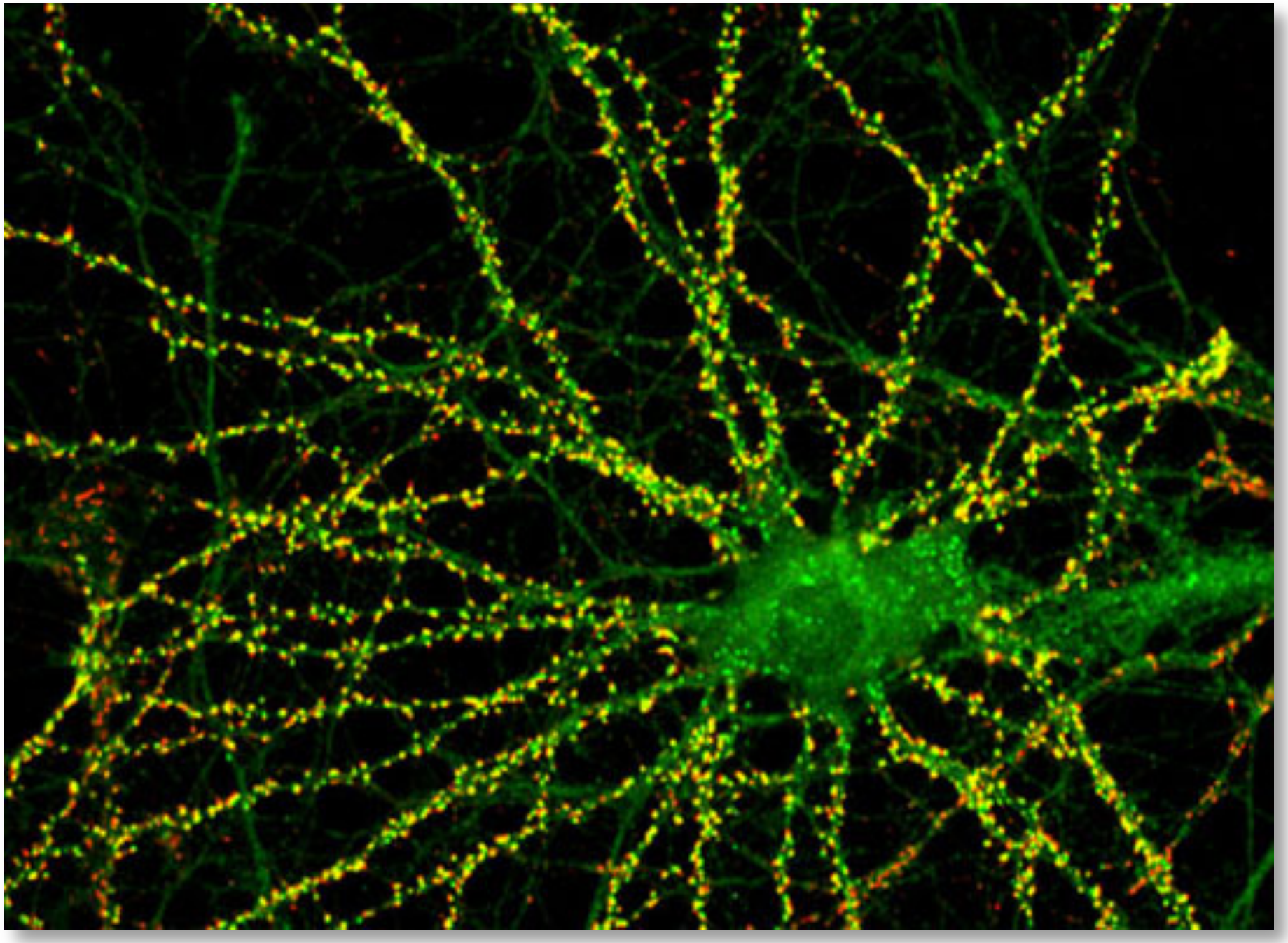






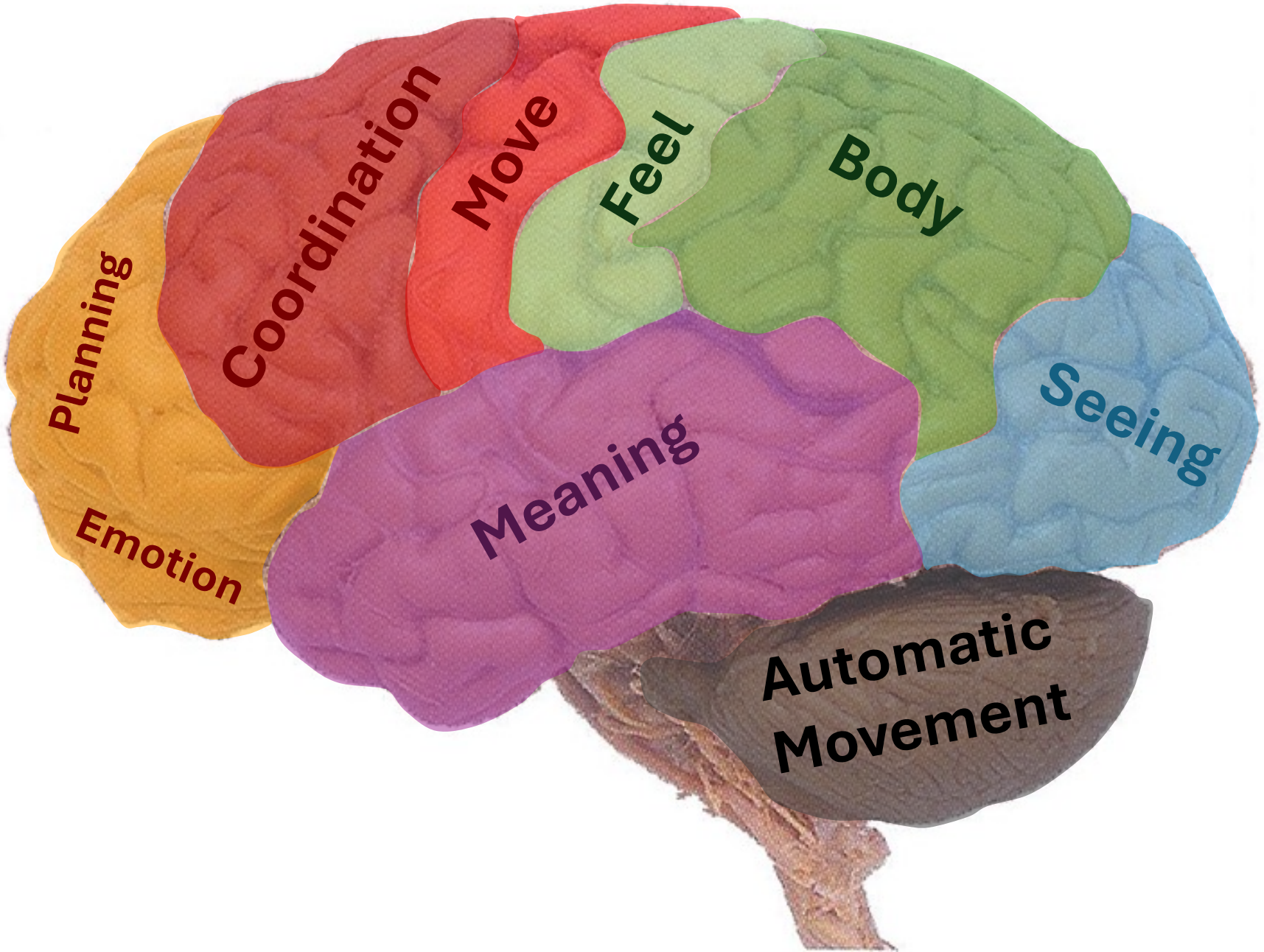






20 PFLOPS
20 Watts

1100 PFLOPS
500,000,000
Watts


Planning
Emotion
Coordination
Move
Feel
Body
Meaning
Seeing
Automatic
Movement

What Happens in the Brain?

Seeing the world: Vision

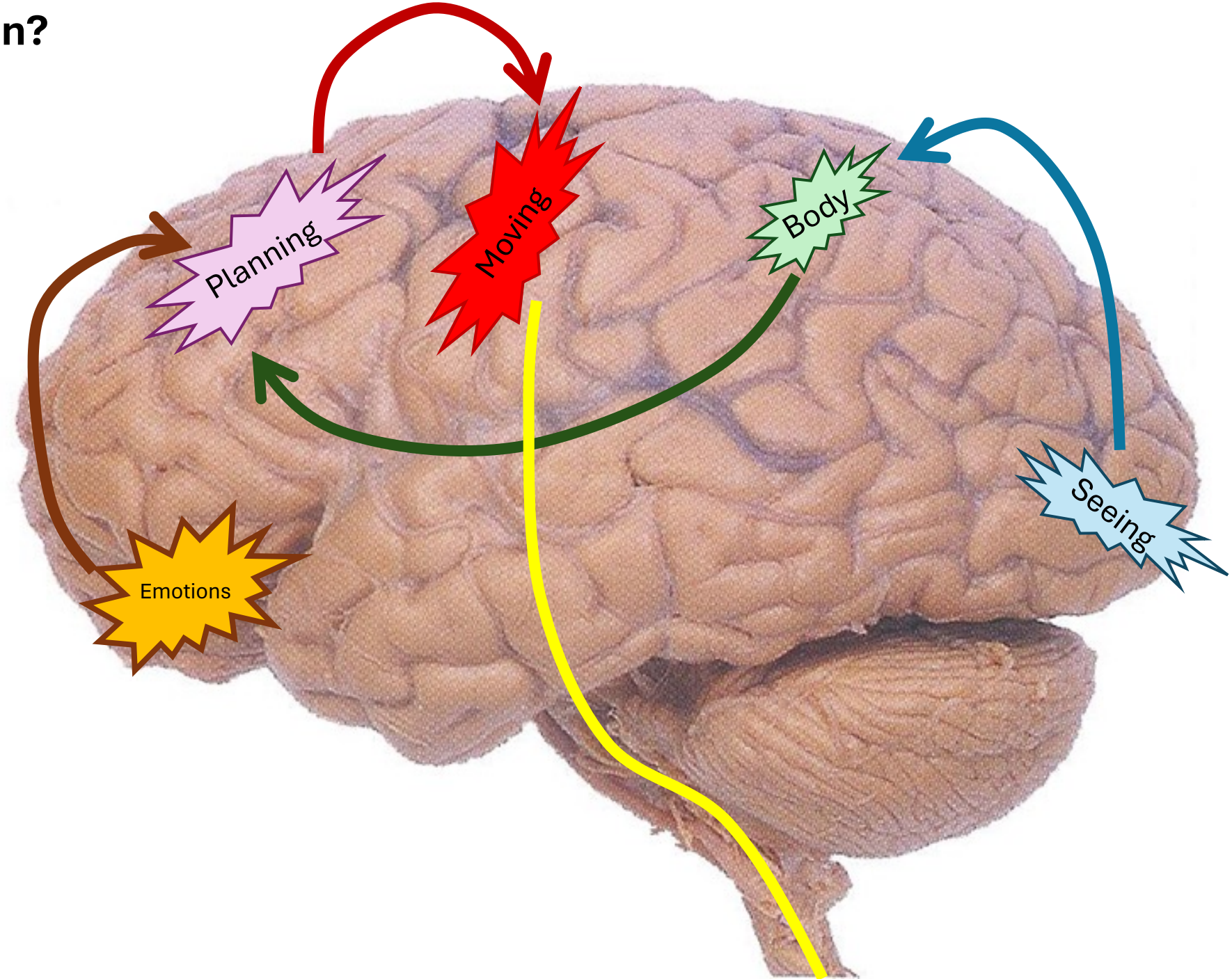
Position of your body: Spatial

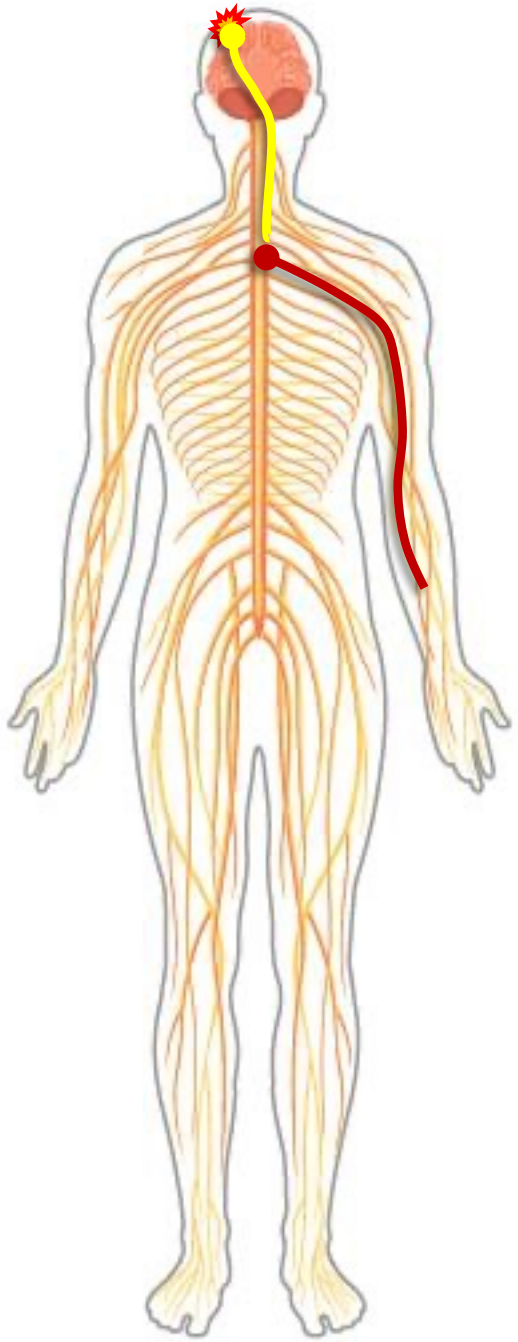
Motivation to move: Emotions

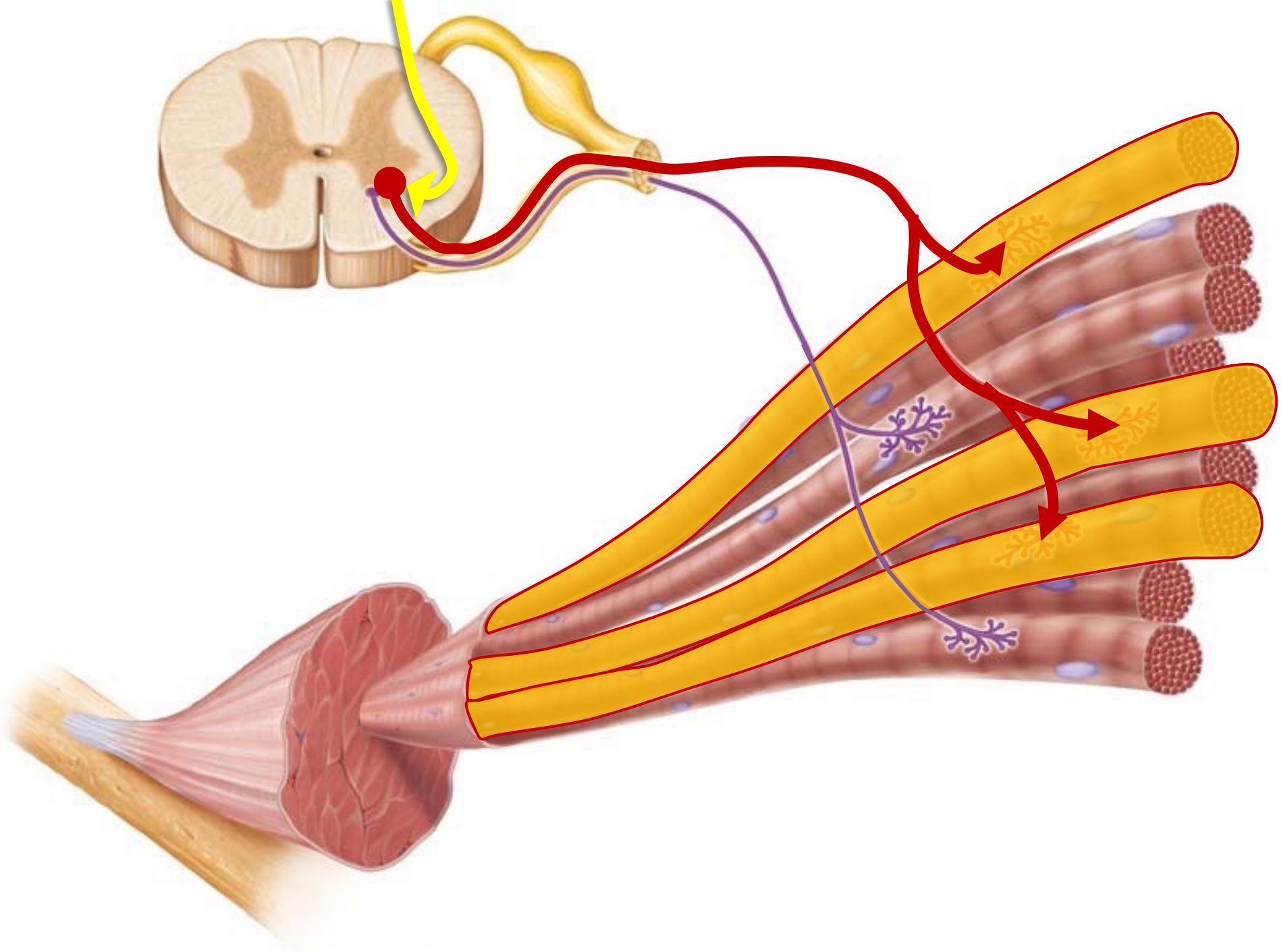
Planning movements: Planning

Triggering Movement: Motor

Send the Signal to the Body!







How does the brain make the body move?

Mixed (Yarn on Canvas). Laura Bundesen, *Summertime*, 2020.

1. Information from our senses and emotions
2. Neuron in the brain
3. Neuron in the spine
4. Muscle fiber in the muscle

Important Words

- Muscle Cell (Muscle Fiber or Myocyte)
  - Contraction
  - Sarcomere
  - Thin and Thick Filaments
    - Actin and Myosin
- Nerve Cell (Neuron)
  - Dendrites
  - Axon
  - Synapse
  - Neurotransmitter
  - Ion Channels
  - Neuromuscular Junction
- Cerebrum
  - Sulcus and Gyrus (Sulci and Gyri)
  - Cortex (Cortices)
    - Parietal
    - Occipital
    - Frontal
    - Temporal
- Cerebellum
- Spinal Cord