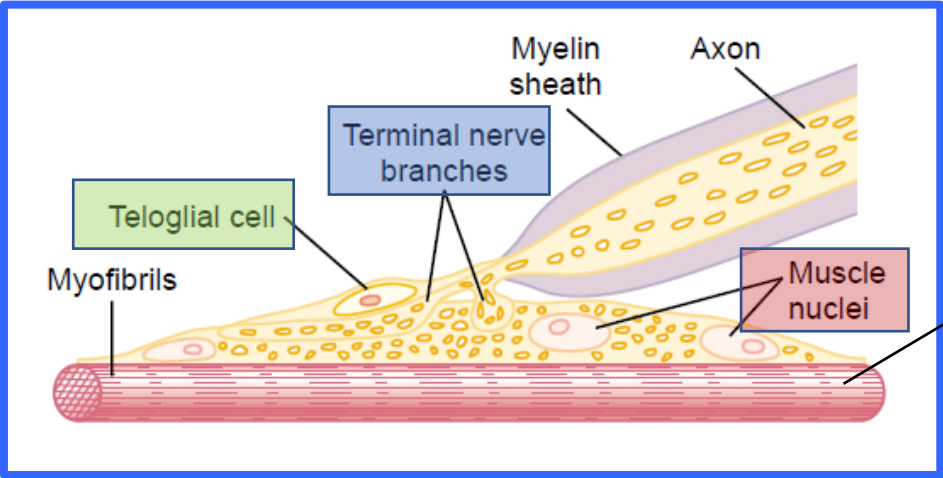


Neuro-Cognitive Input:

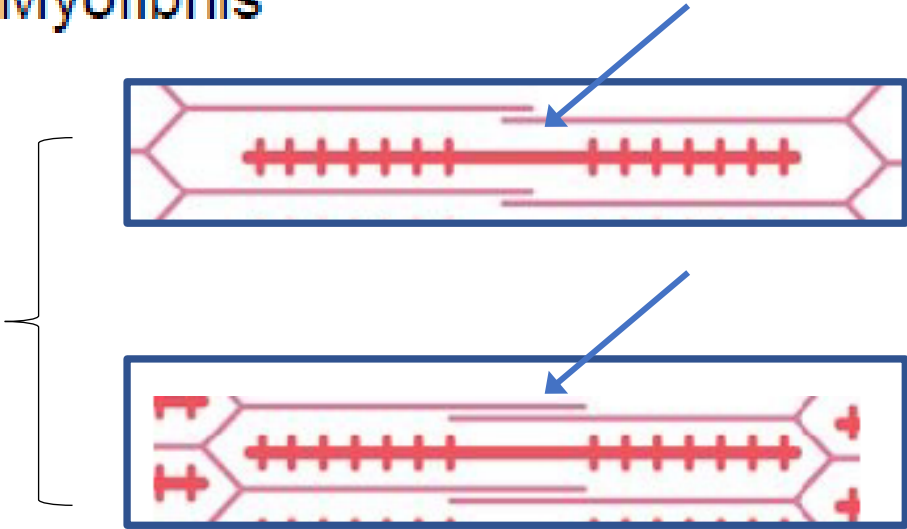
Sensory Systems

Recap:

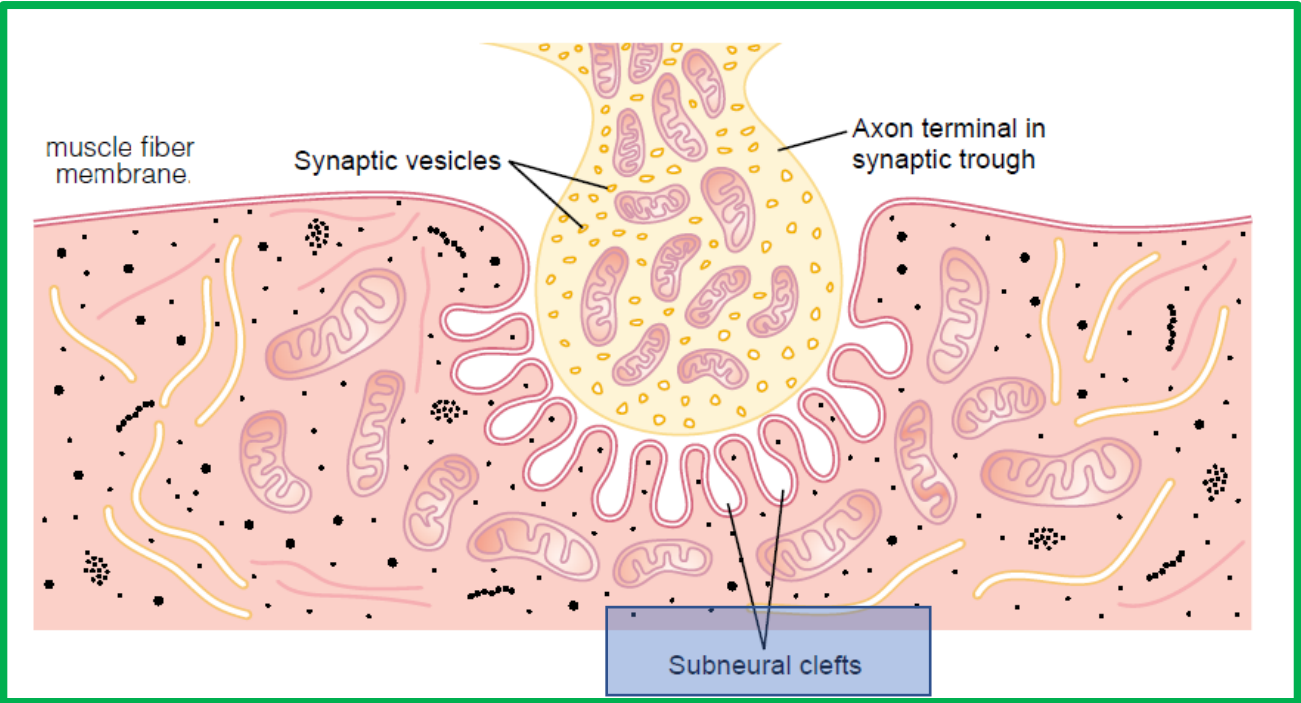
Motor End Plate



Myofibrils



contact point between a single axon terminal and the muscle



Recap:

“Excitation – Contraction” Coupling → Neuron - Muscle Coupling

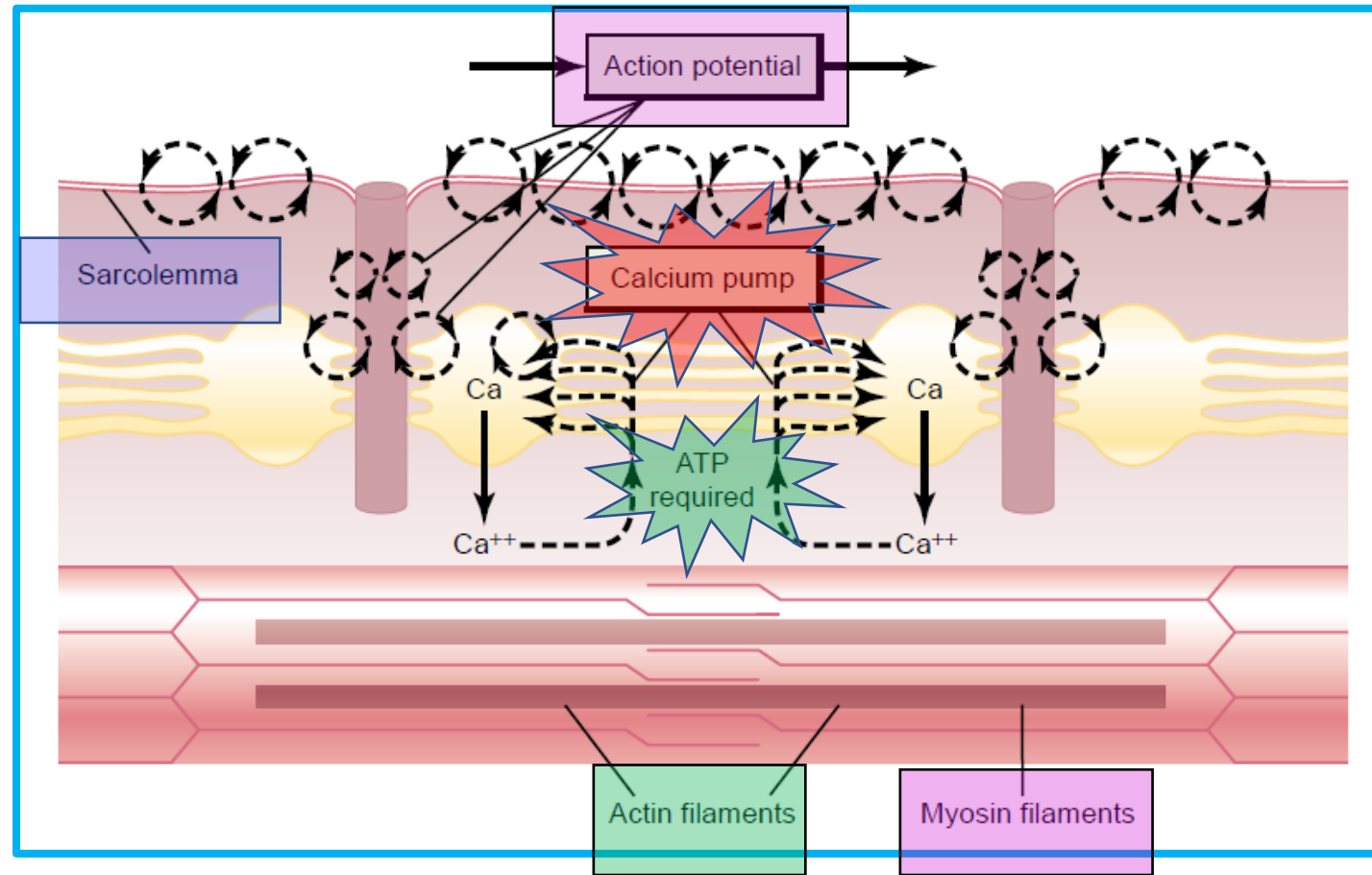
Action Potential in Sarcolemma membrane lining outside



Ca^{++} Release in Sarcoplasmic Reticulum Network inside

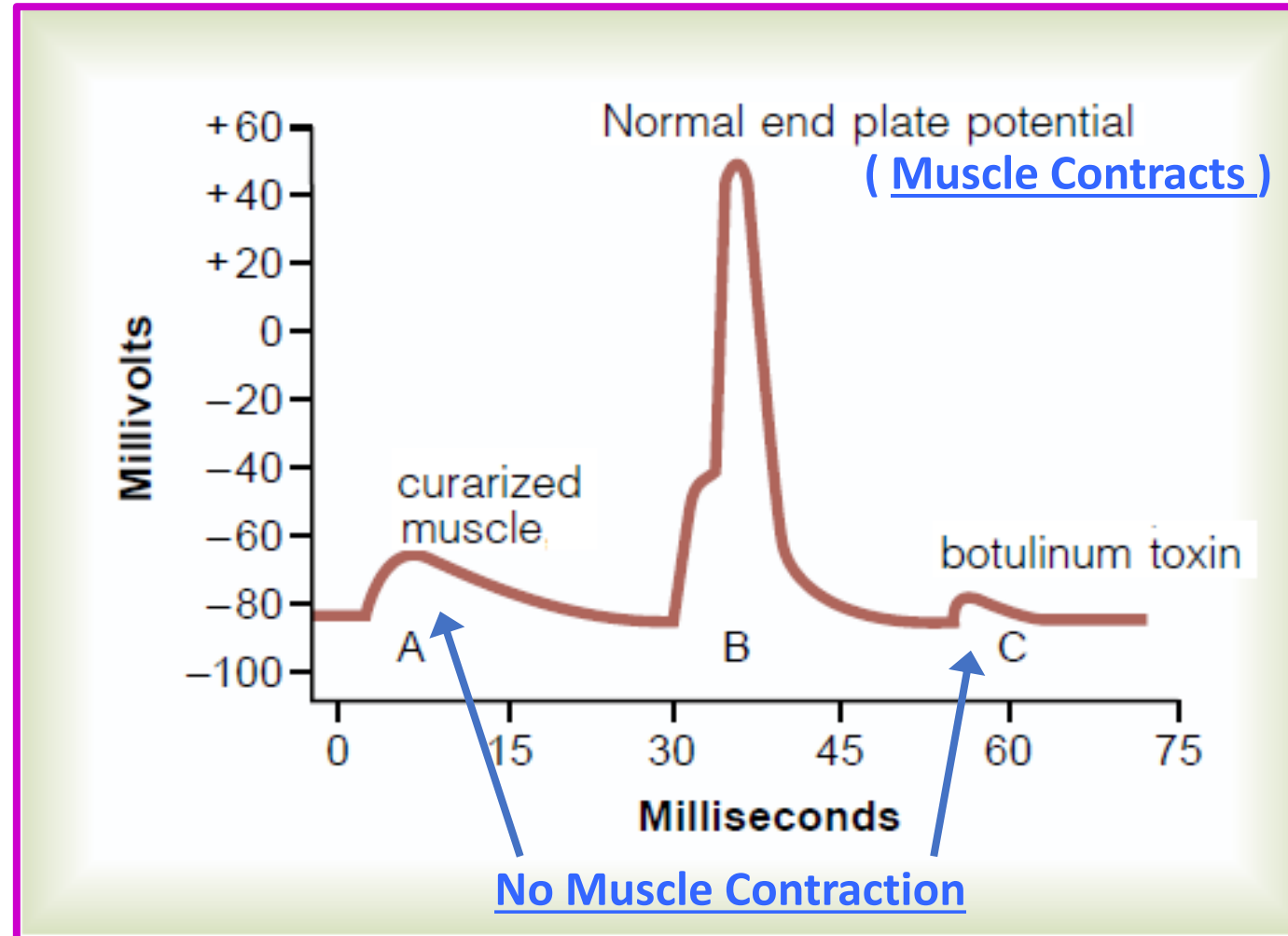


Ca^{++} Pump: Re-uptake & Recycling of ions



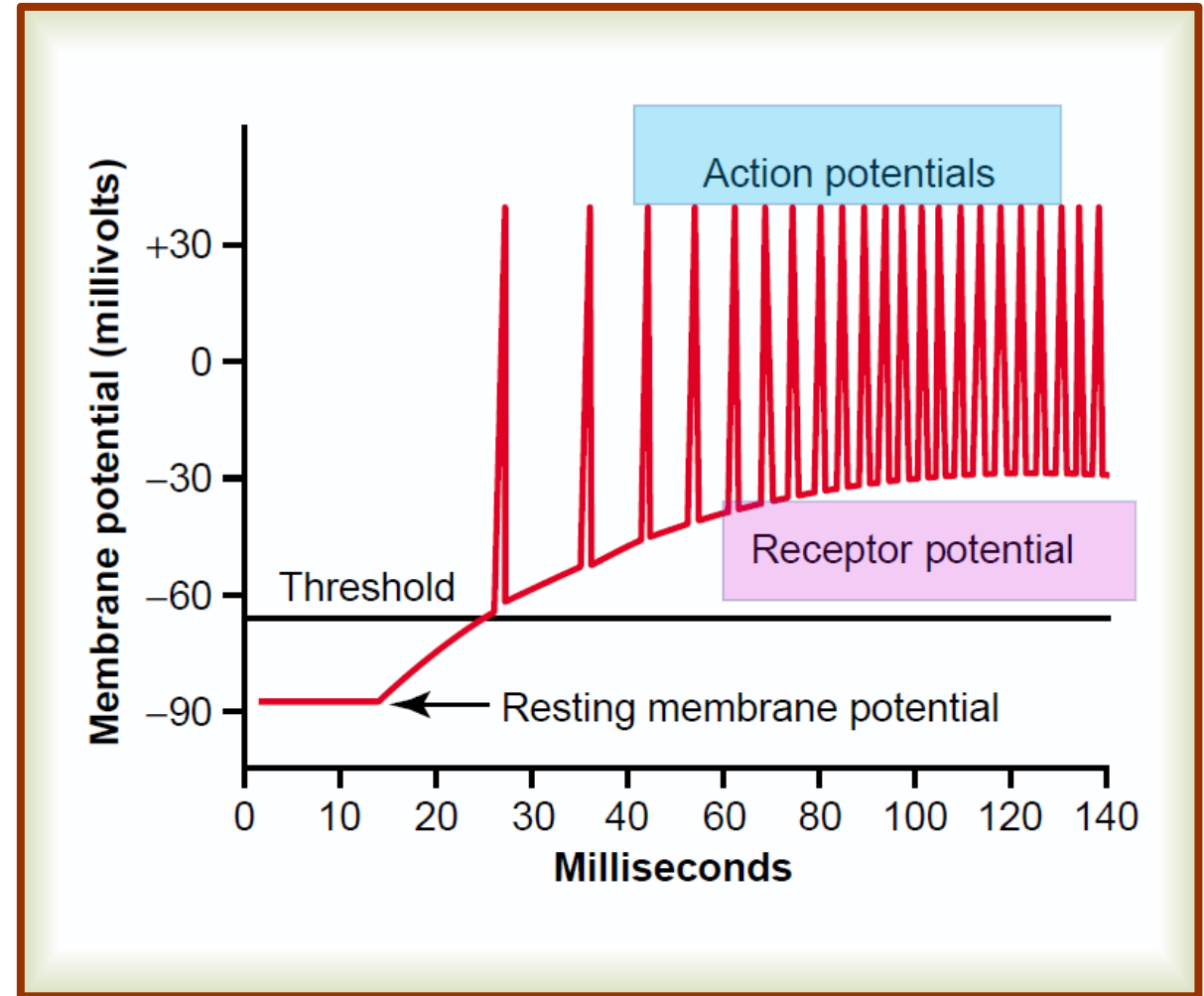
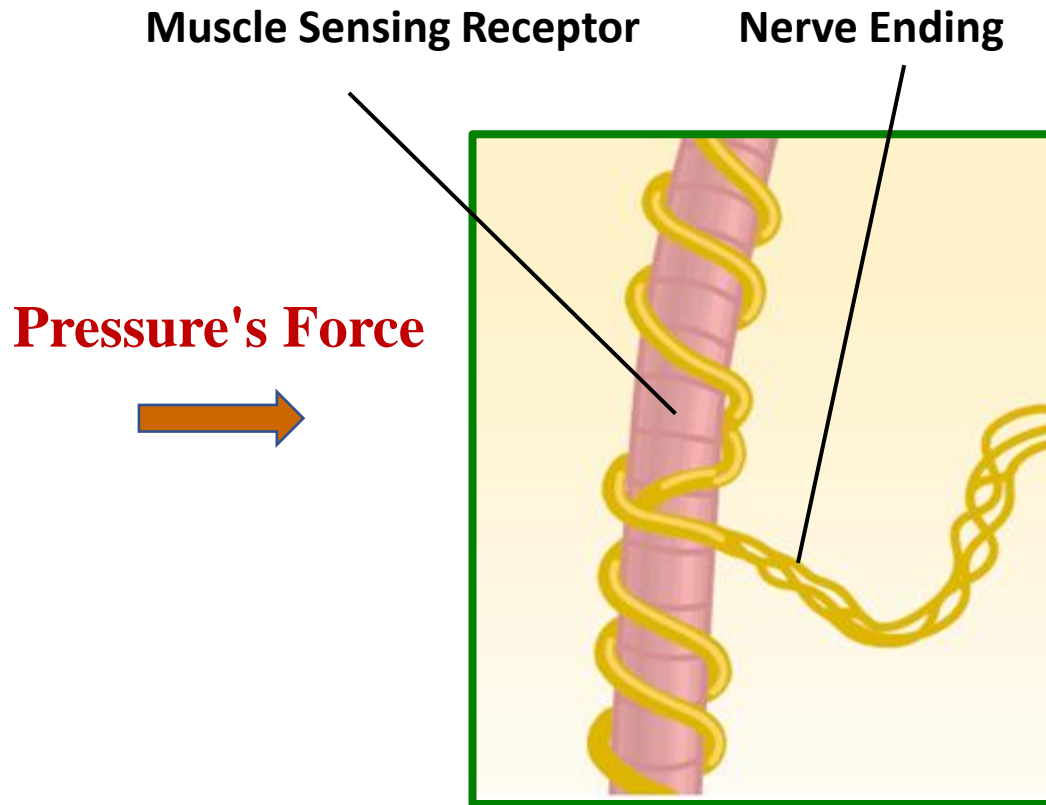
Recap:

Only End-plate Potential having normal amplitude (+60 mV) contracts a Muscle



Sensory Organ's "Receptor" Potential → Neuron's "Action" Potential

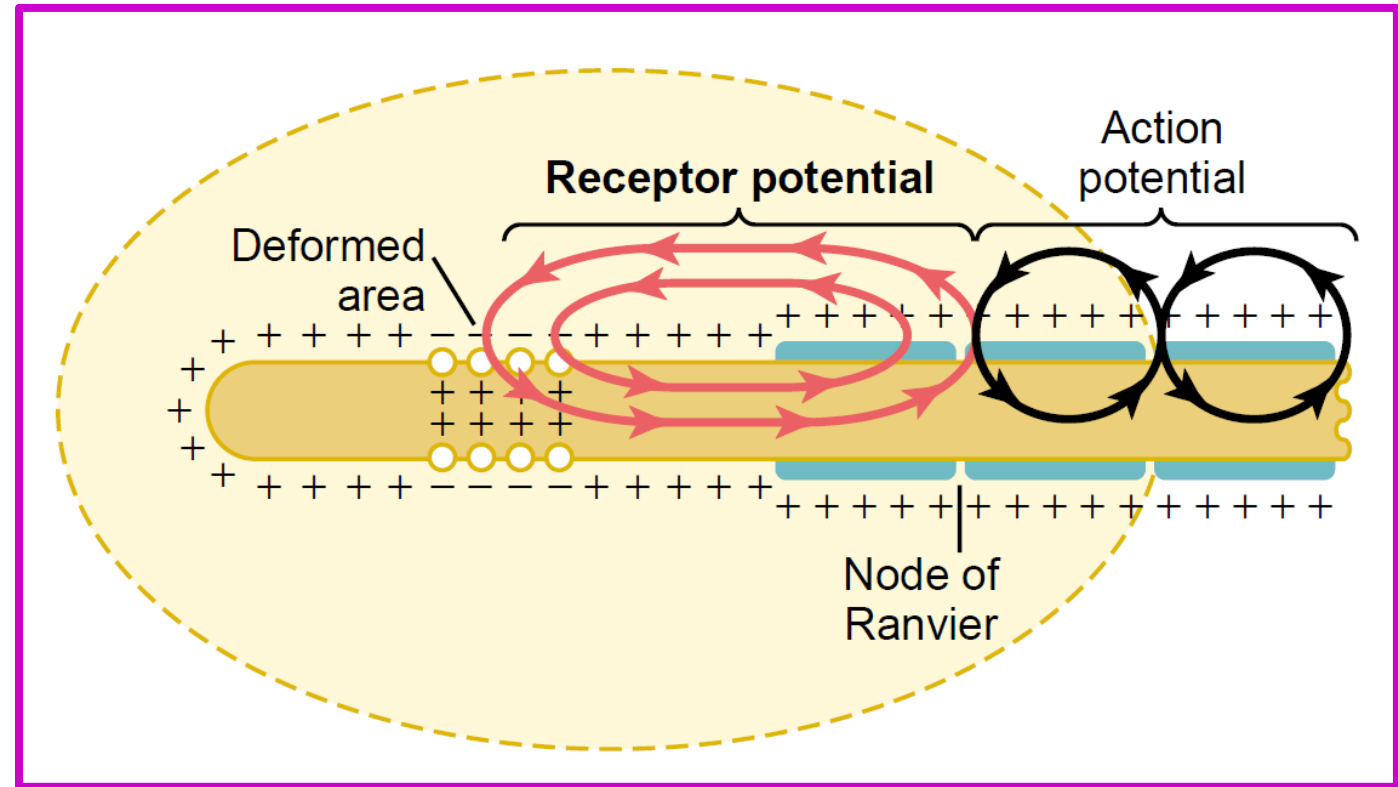
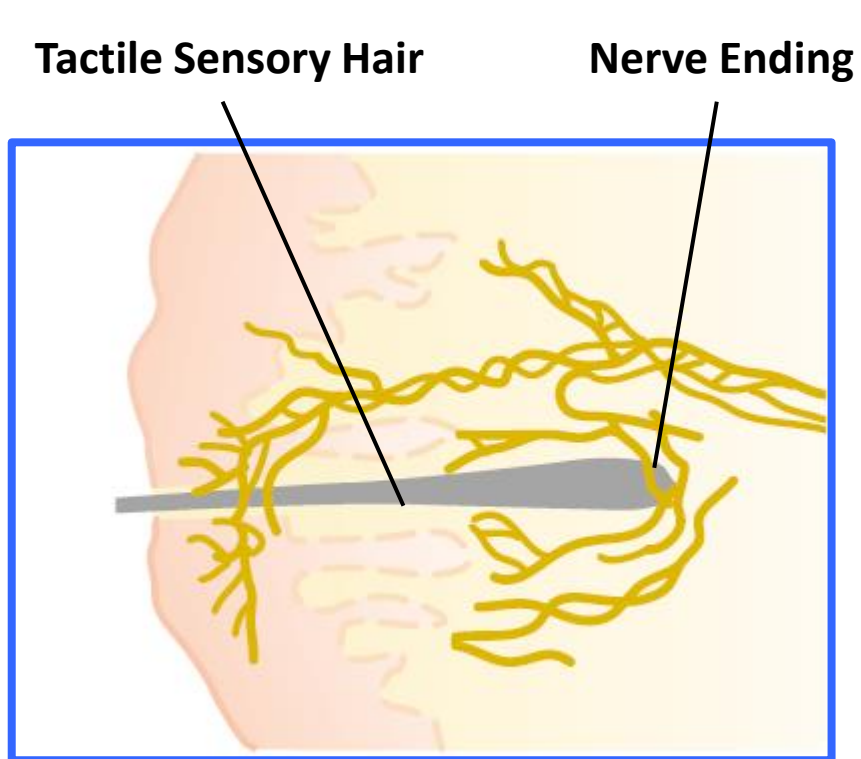
Sensory Muscle Spindle



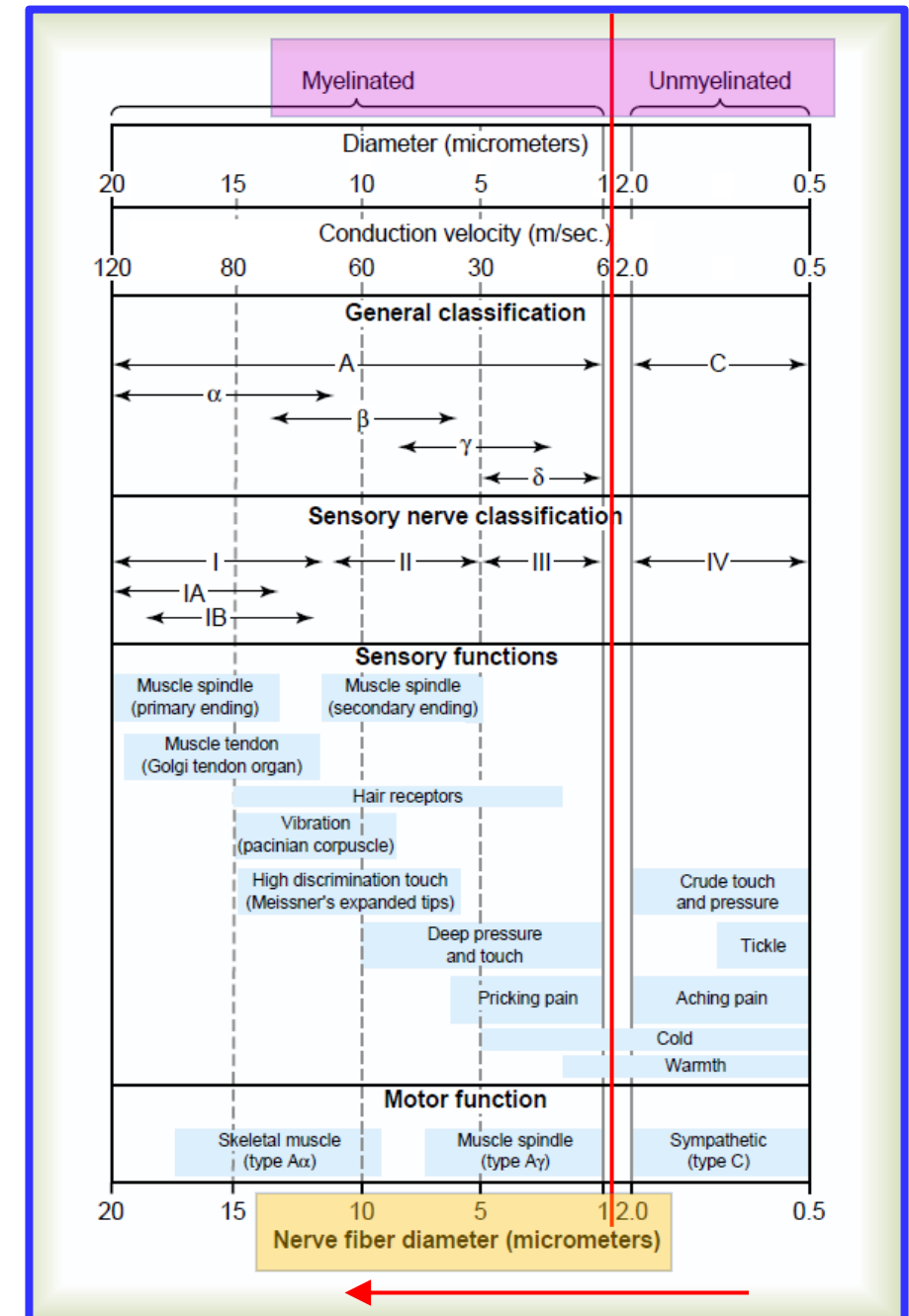
Peizo (Electro-Mechanical): Ionic Countercurrents

Basis of Receptor Potential & Action Potential

Sensory Hair with Root Muscle

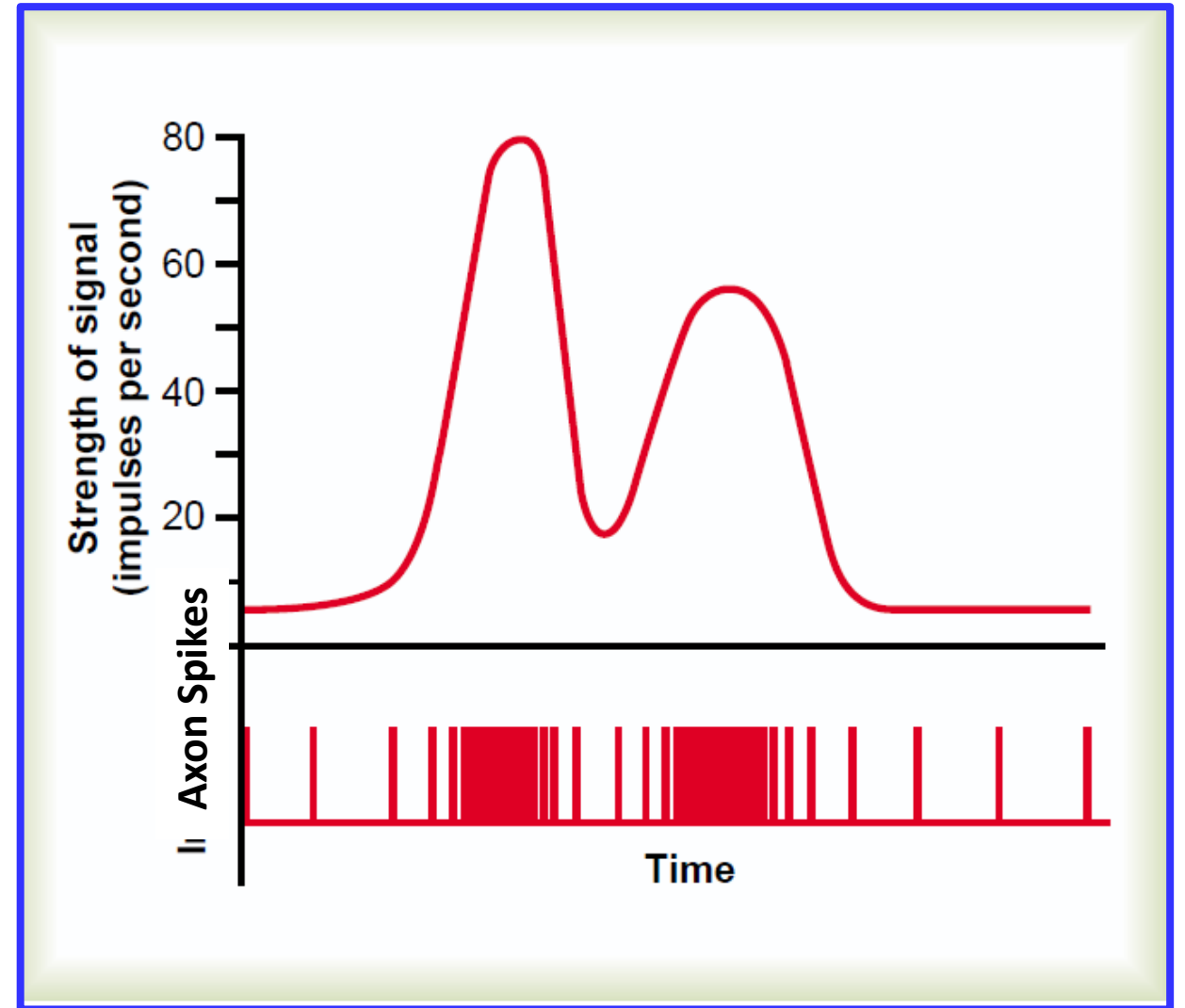
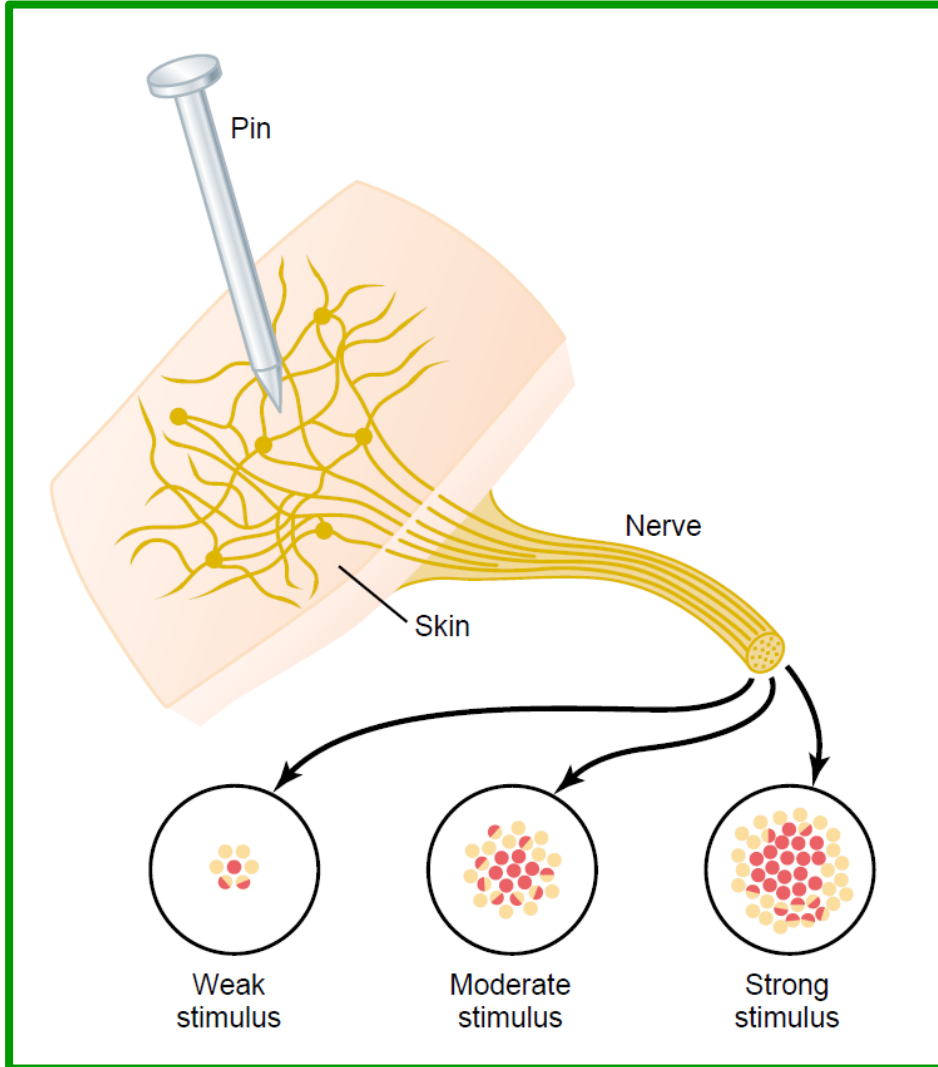


Characteristics & Clarification: Nerve Fibres



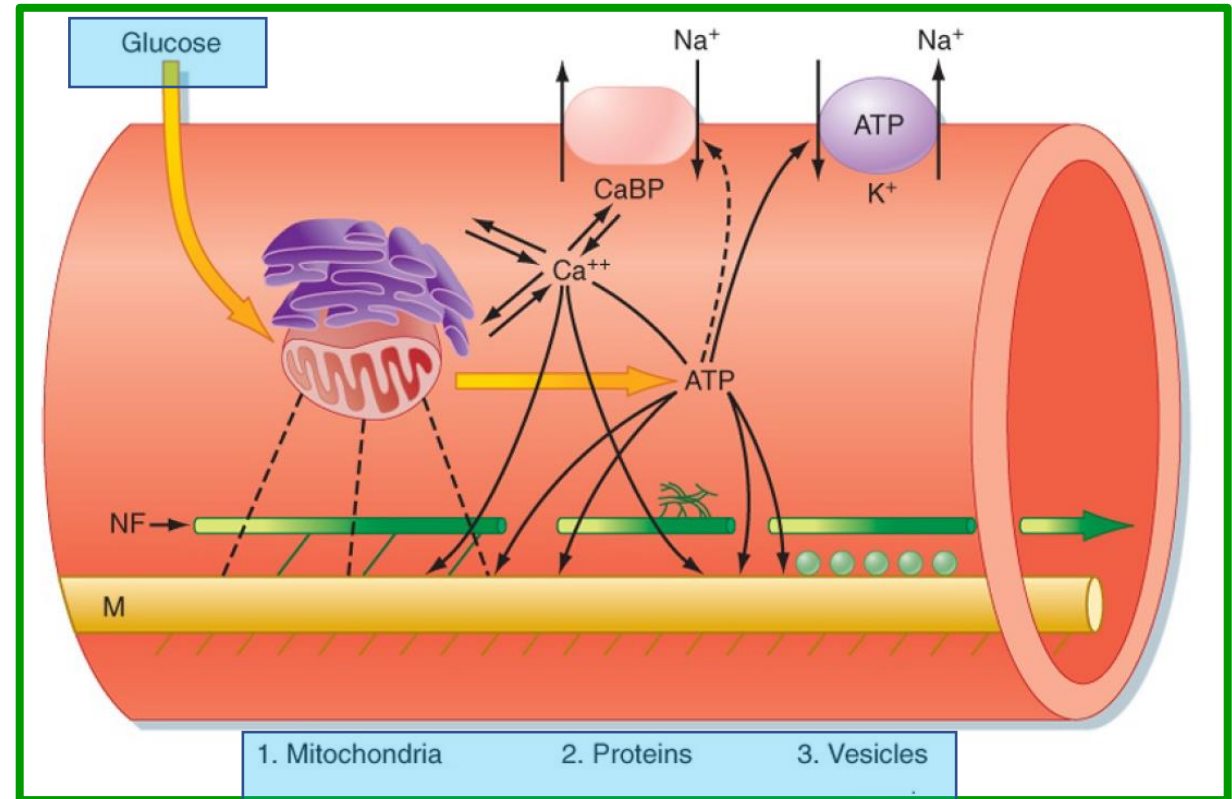
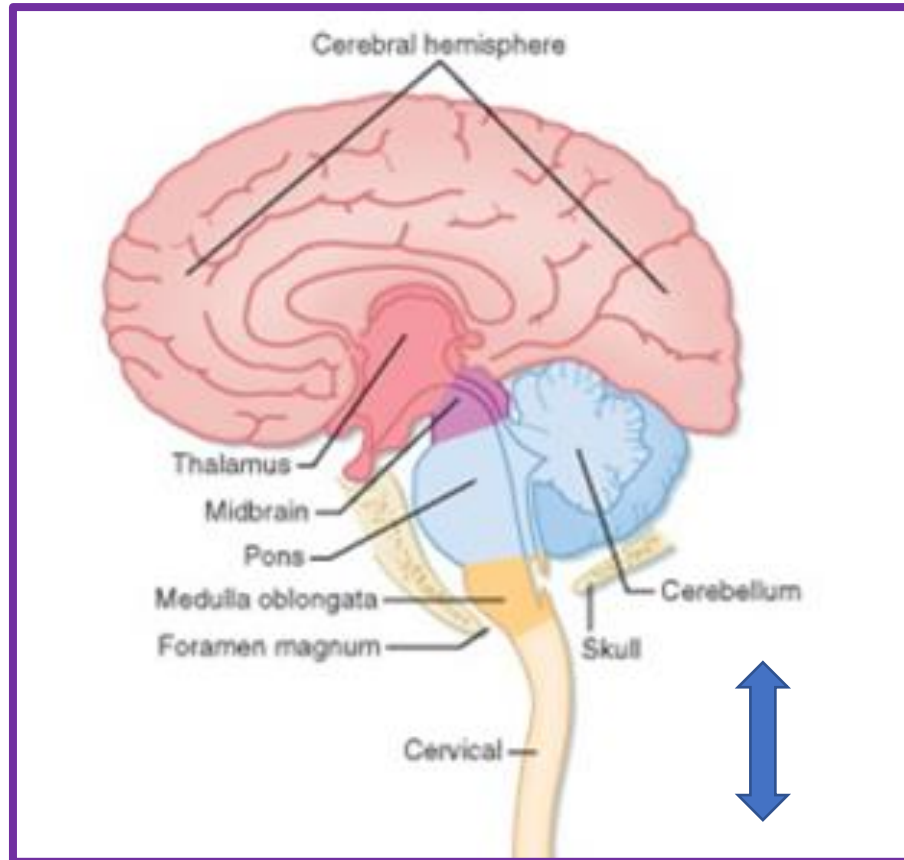
Neural Information Transmission

Frequency Modulation-based transmission :
“Rate Encoding” in Neuron’s Electrical Spikes



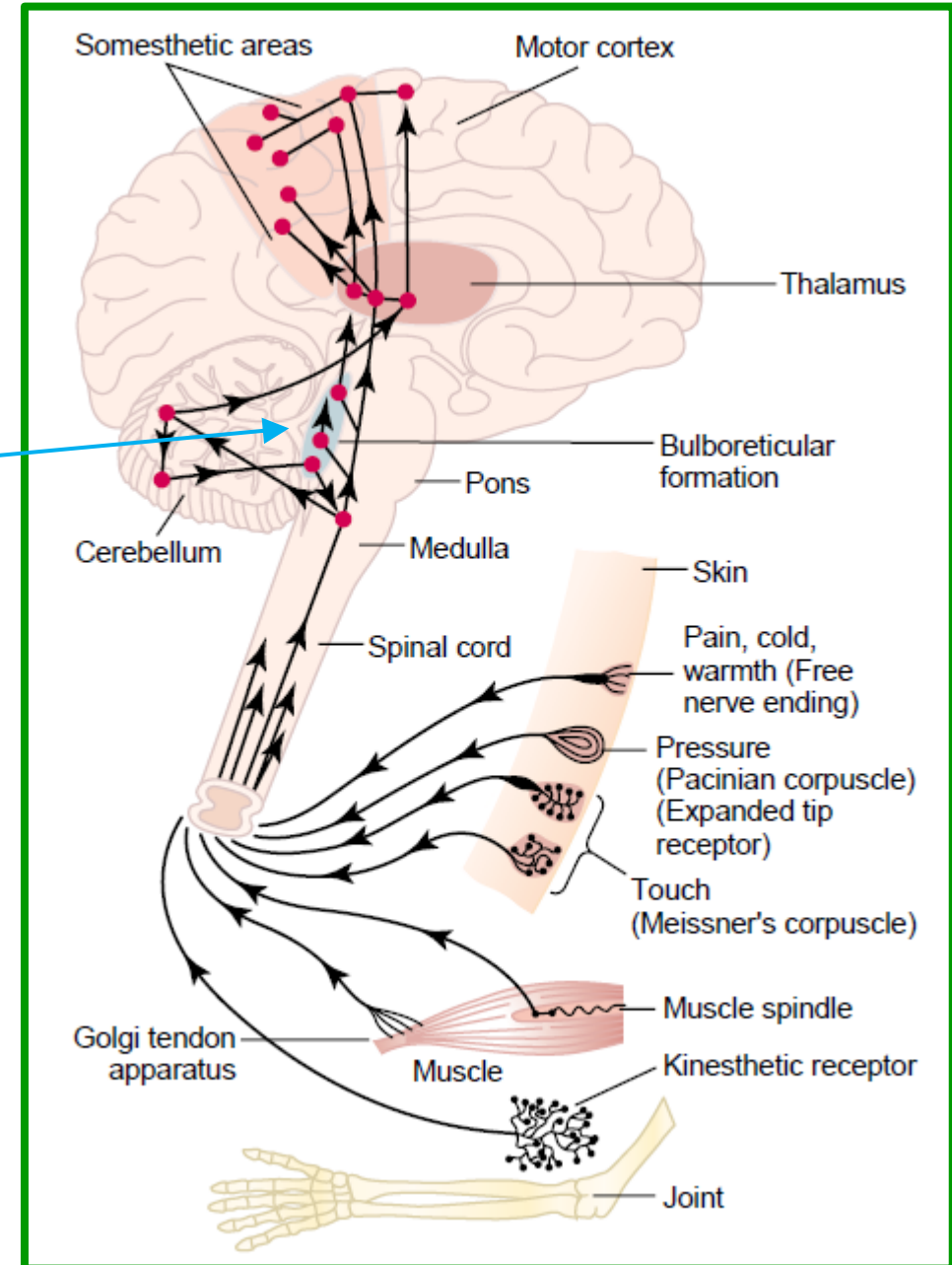
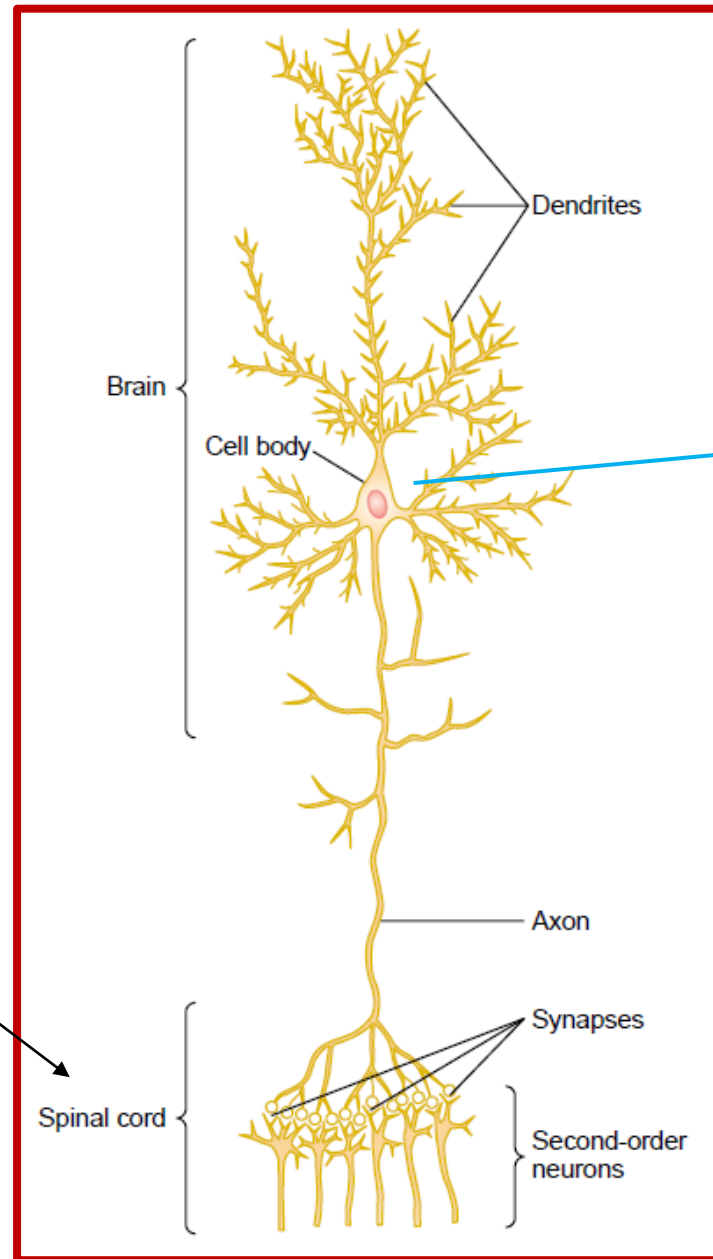
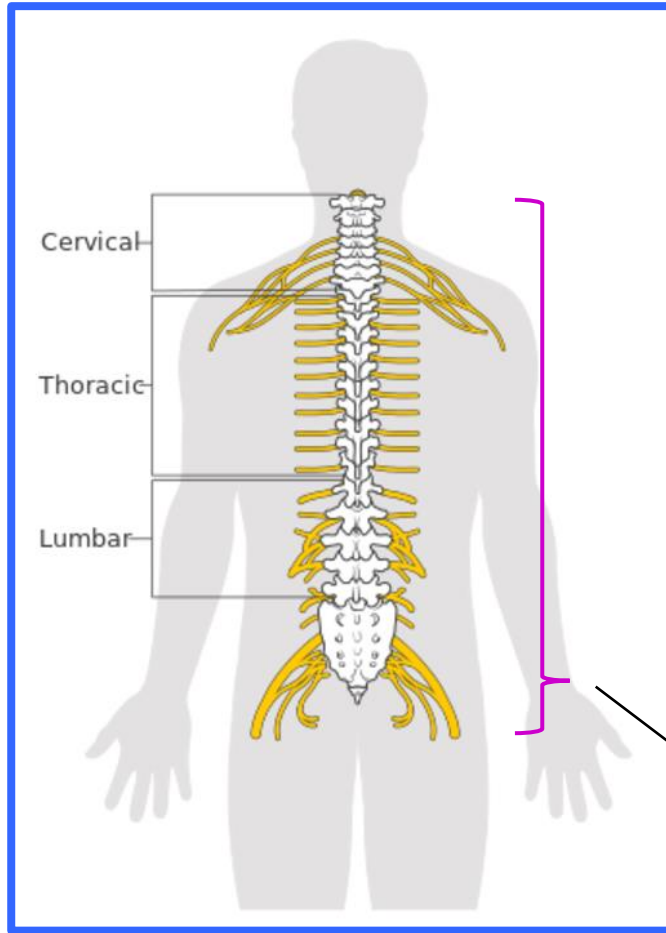
Recap: **Neuronal Transmission**

M: Micro-tubules
NF: Neuro-filaments

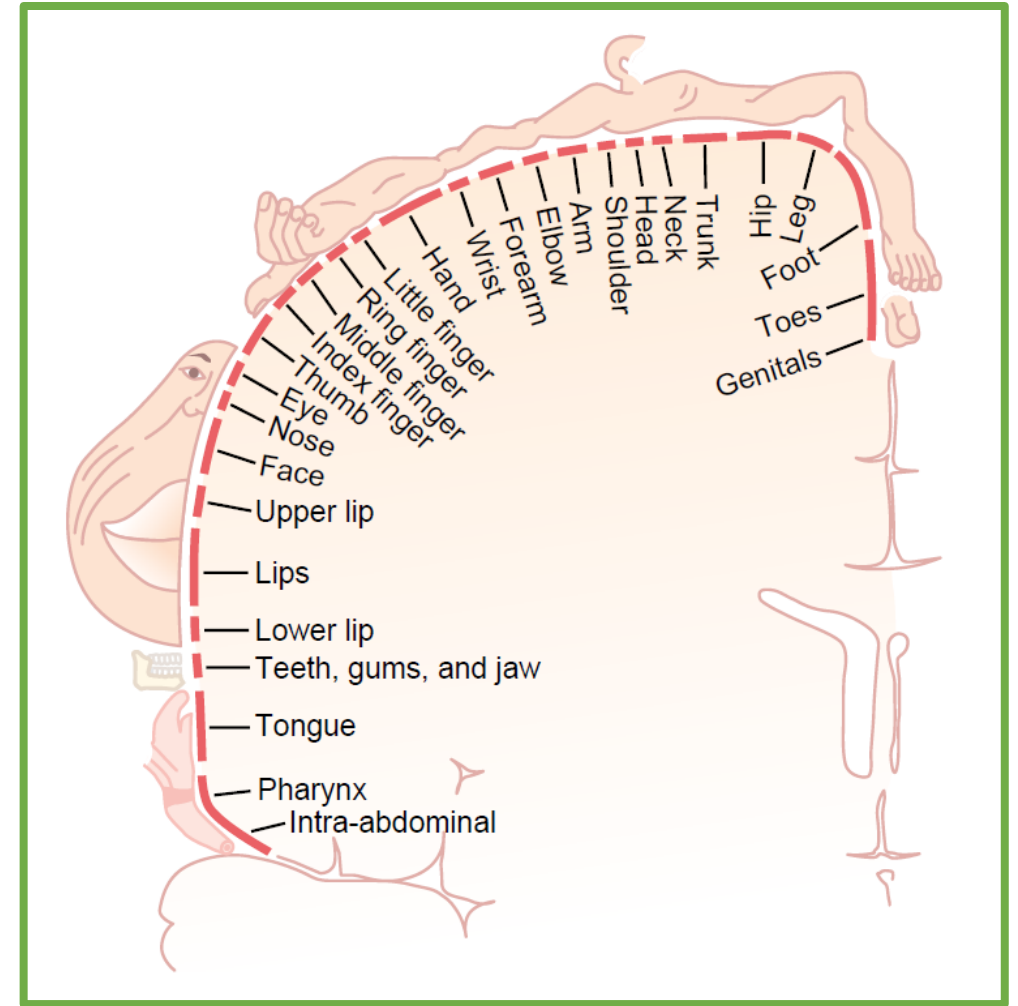
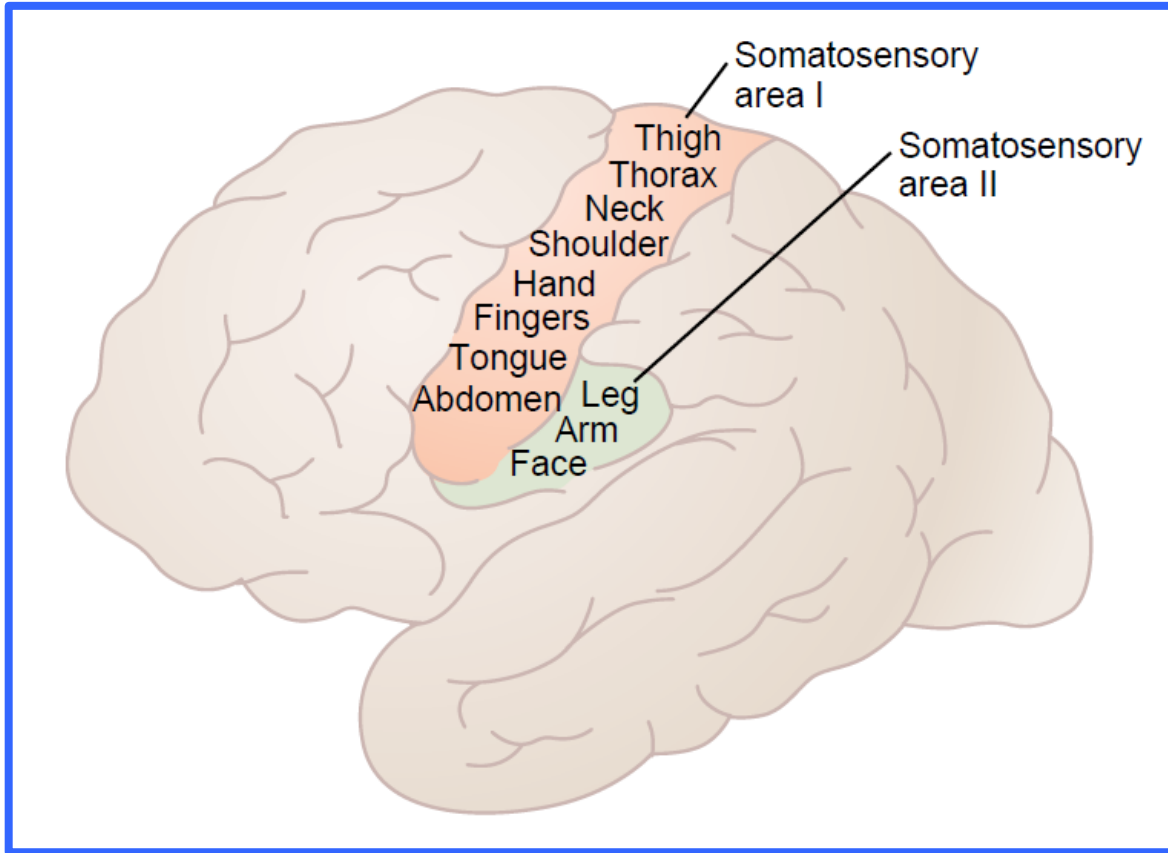


Body's Sensory system:

Somato Sensory system (below face)

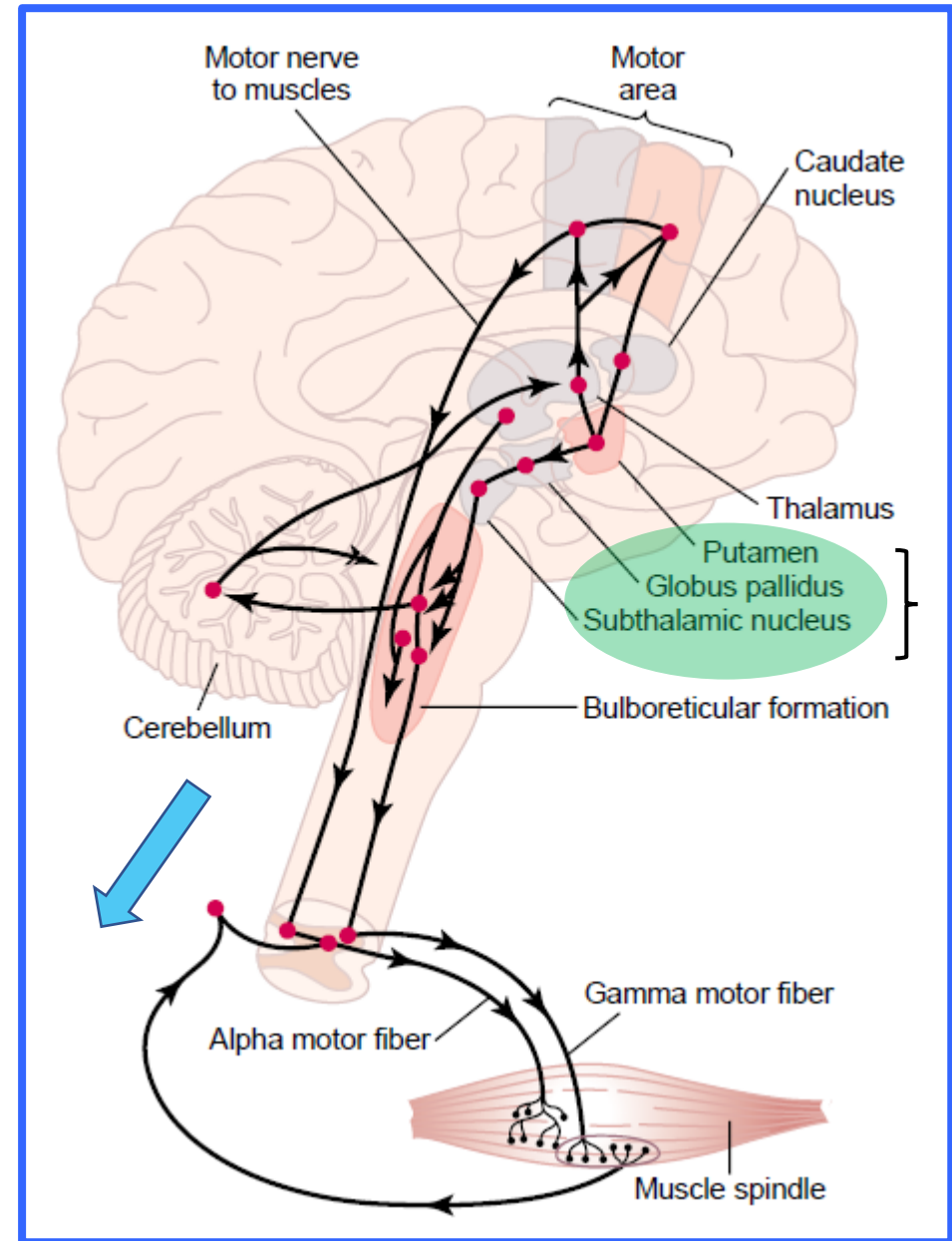
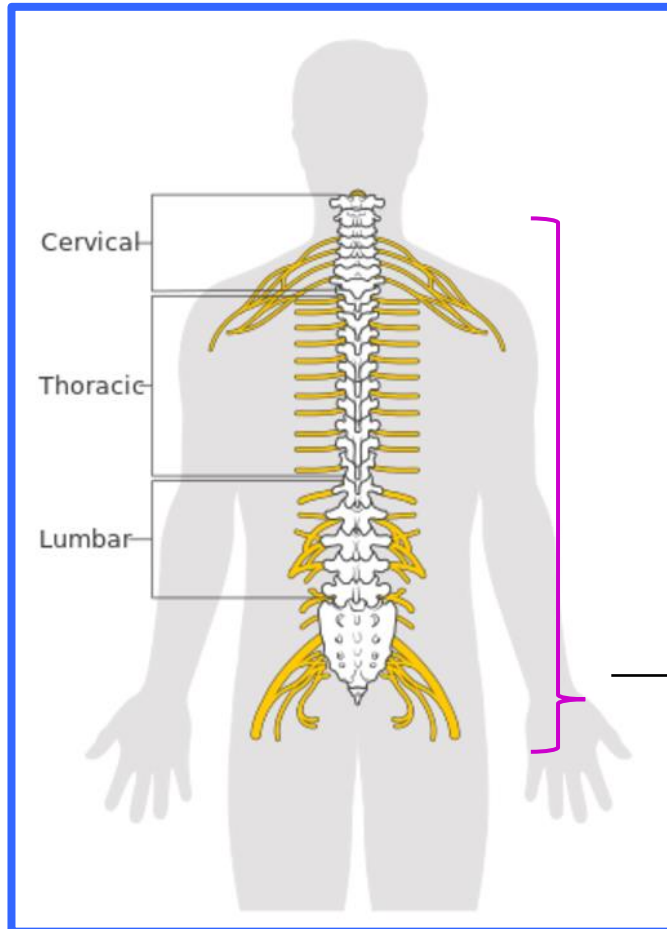


Sensory Homunculus



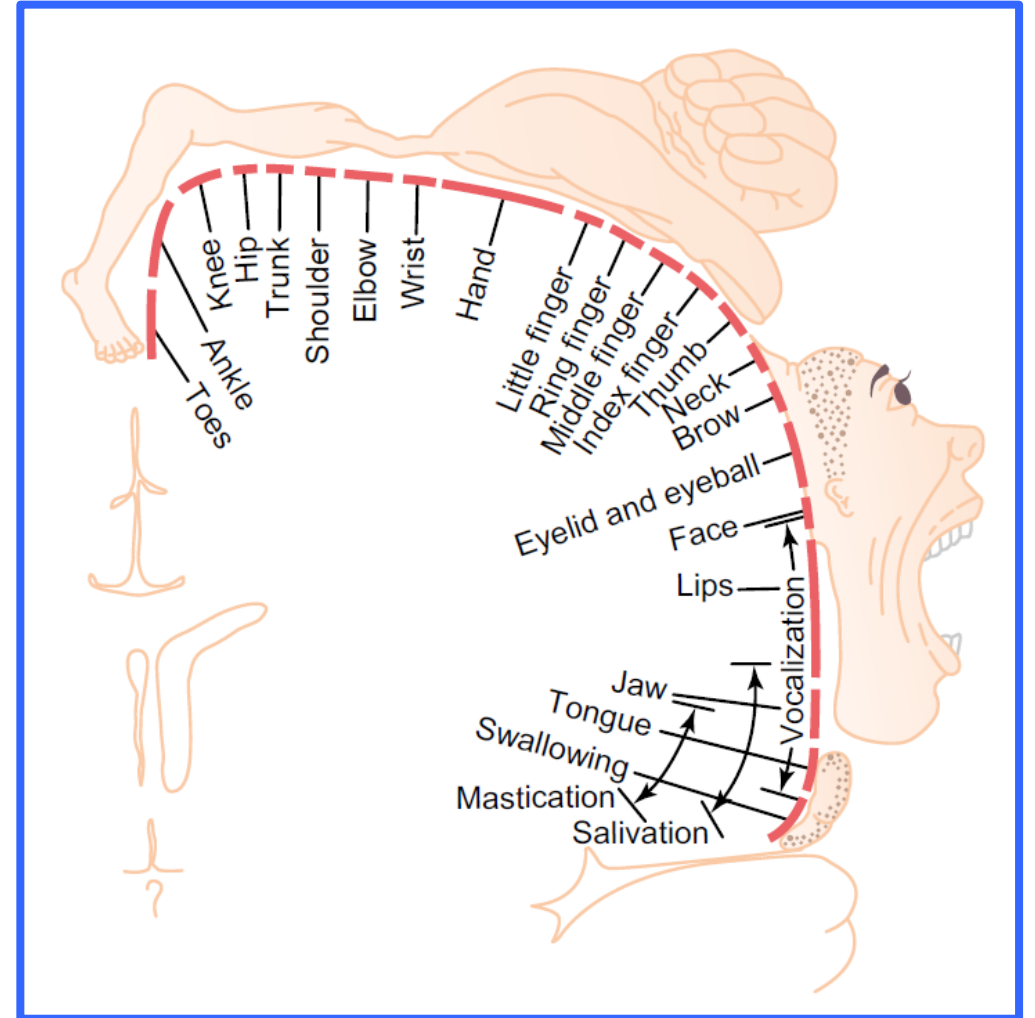
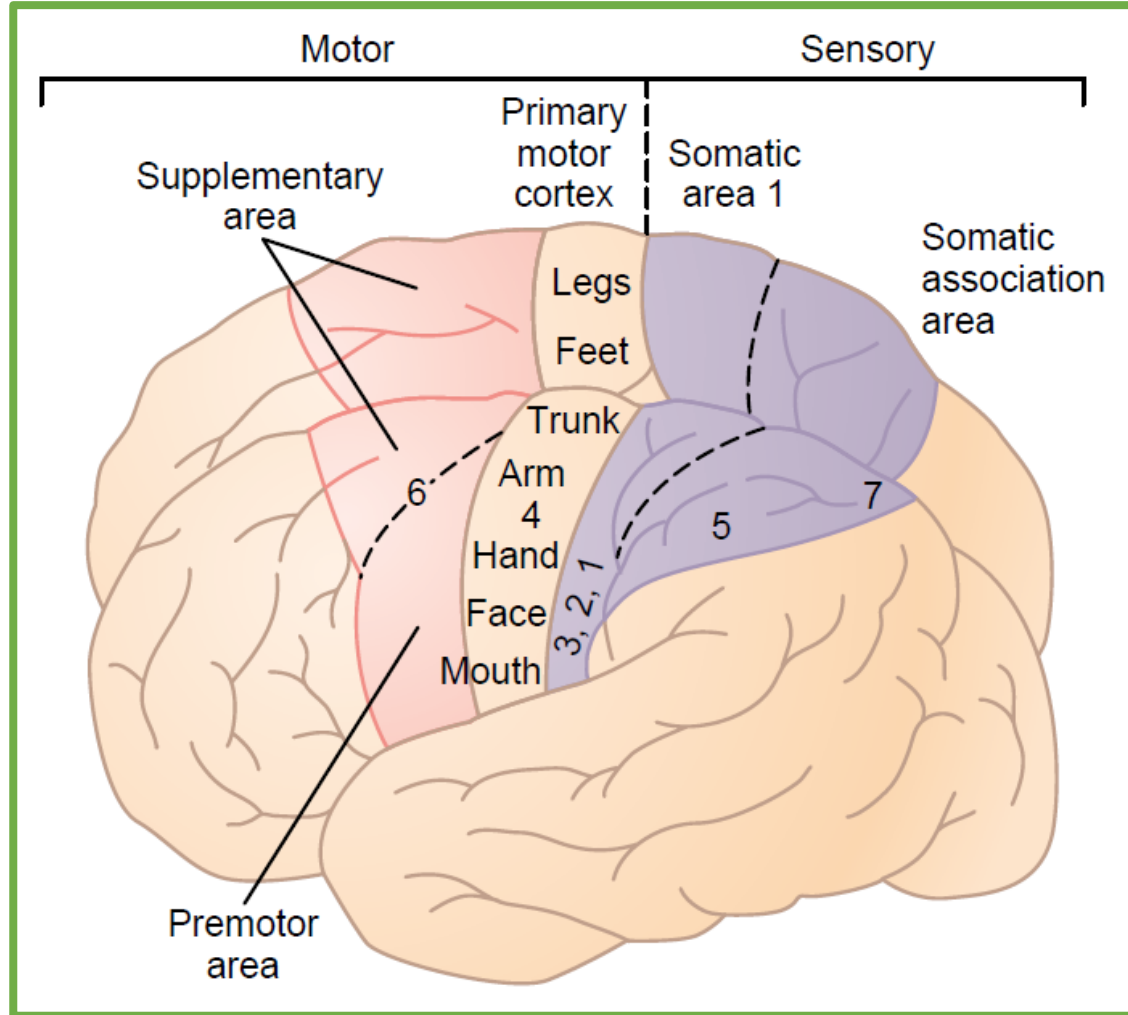
Body's “Motor” system:

Skeletal Sensory system (below face)



Basal
Ganglia

Motor Homunculus



Sensory Nerve Endings: (Mechano-ceptors)



Pacinian corpuscle



Meissner's corpuscle



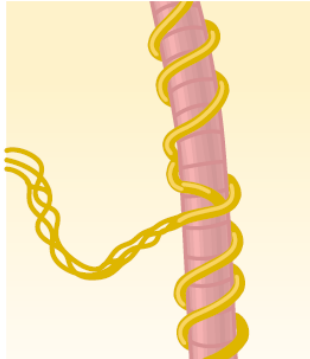
Krause's corpuscle



Ruffini's end-organ



Golgi tendon apparatus



Muscle spindle

Skin tactile sensibilities

Free nerve endings
Expanded tip endings
Merkel's discs
Plus several other variants
Spray endings
Ruffini's endings
Encapsulated endings
Meissner's corpuscles
Krause's corpuscles
Hair end-organs

Deep tissue sensibilities

Free nerve endings
Expanded tip endings
Spray endings
Ruffini's endings
Encapsulated endings
Pacinian corpuscles
Plus a few other variants
Muscle endings
Muscle spindles
Golgi tendon receptors