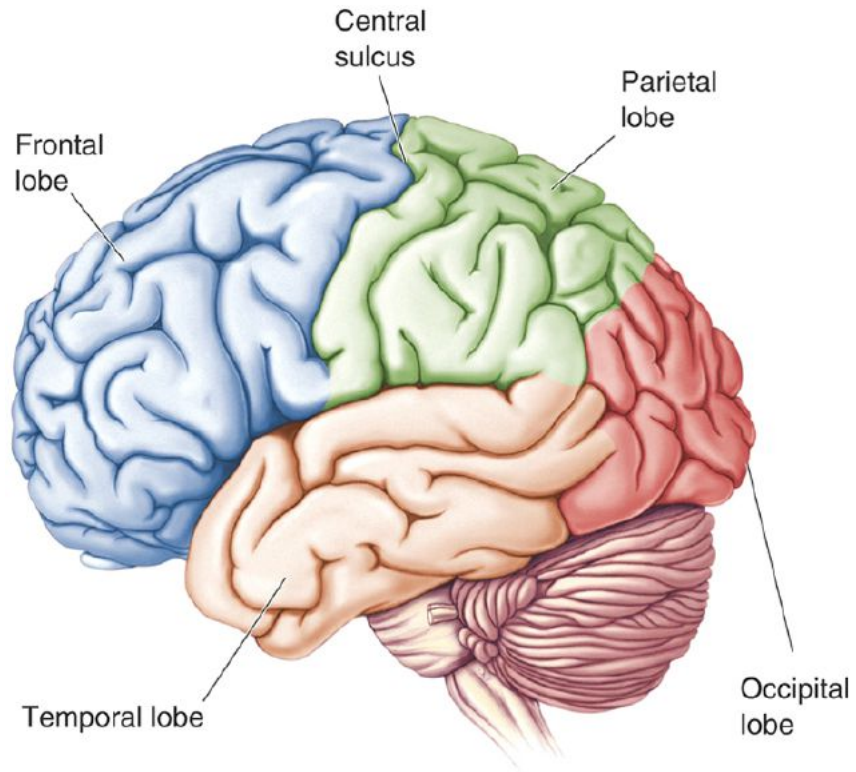


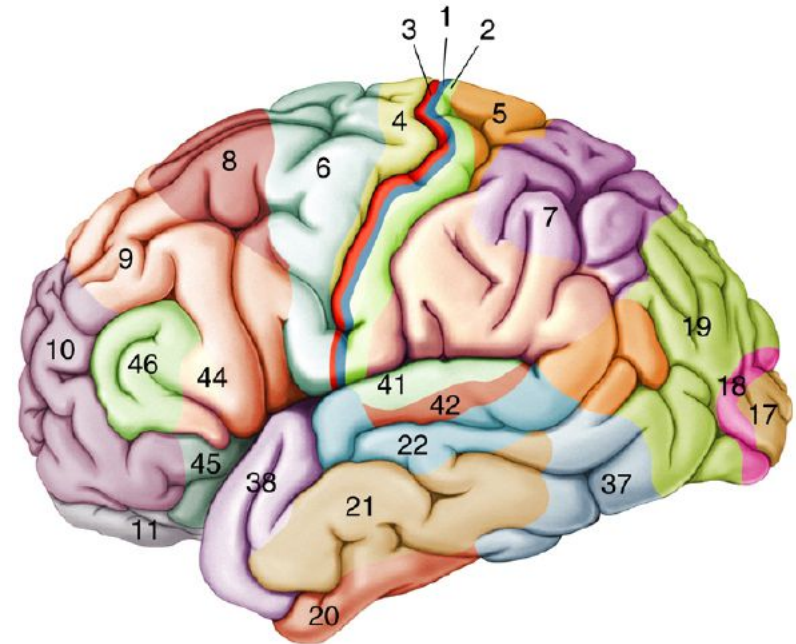
Curs 8

Controlul nervos al miscarii

Cortexul somato-senzitiv primar

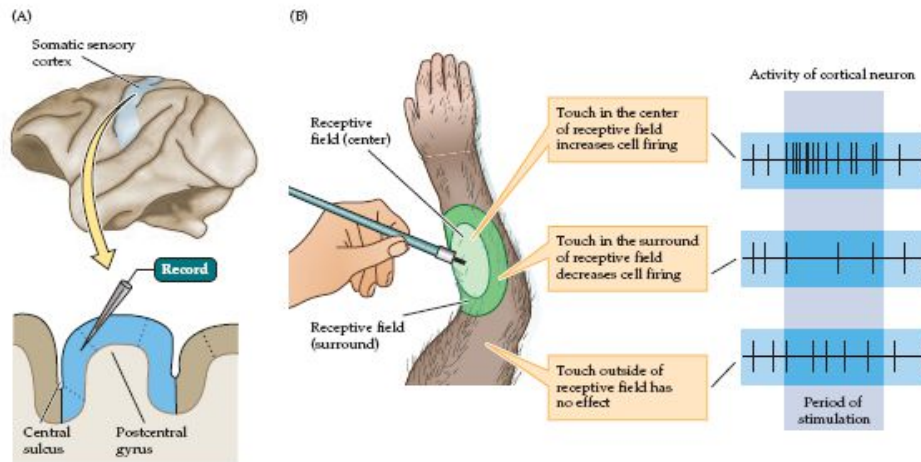
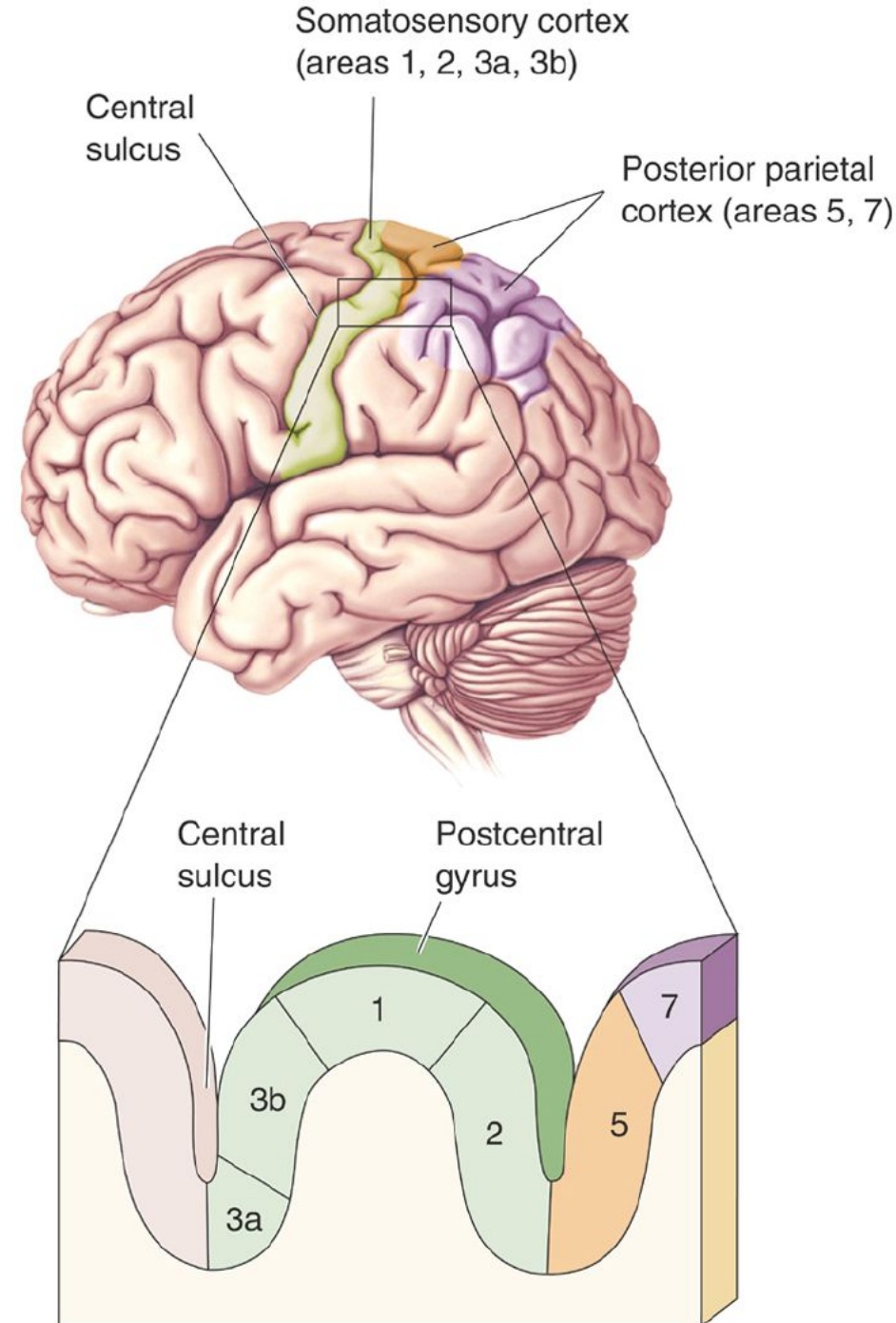


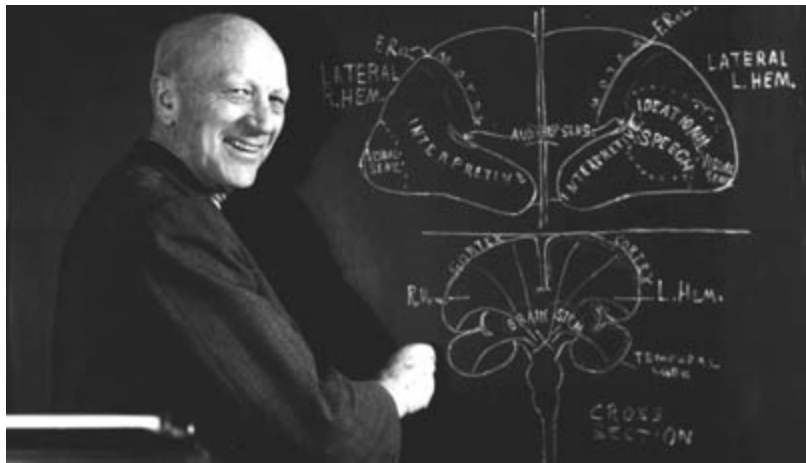
Neuroscience: Exploring the Brain, 3rd Ed., Bear, Connors, and Paradiso Copyright © 2007 Lippincott Williams & Wilkins



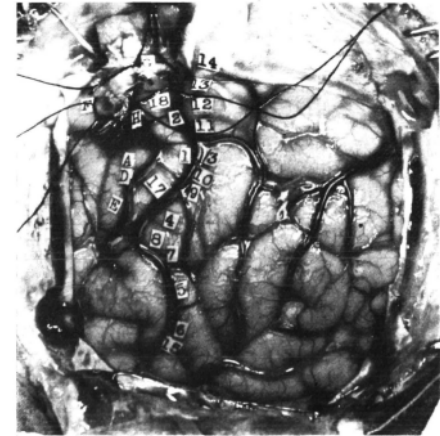
Neuroscience: Exploring the Brain, 3rd Ed., Bear, Connors, and Paradiso Copyright © 2007 Lippincott Williams & Wilkins

Cortexul somatosenzitiv primar

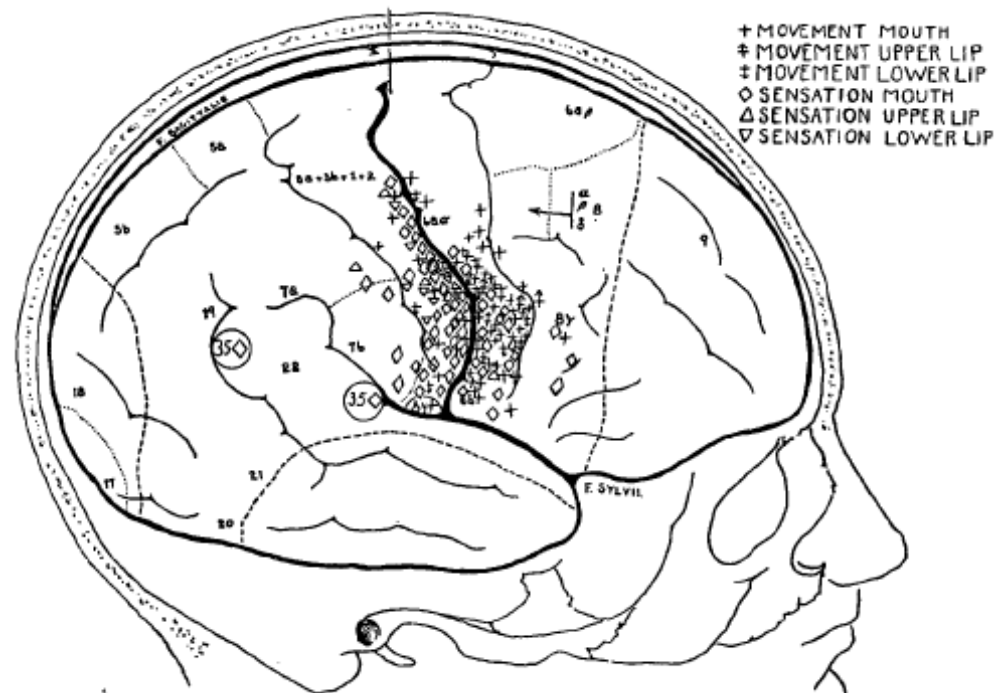




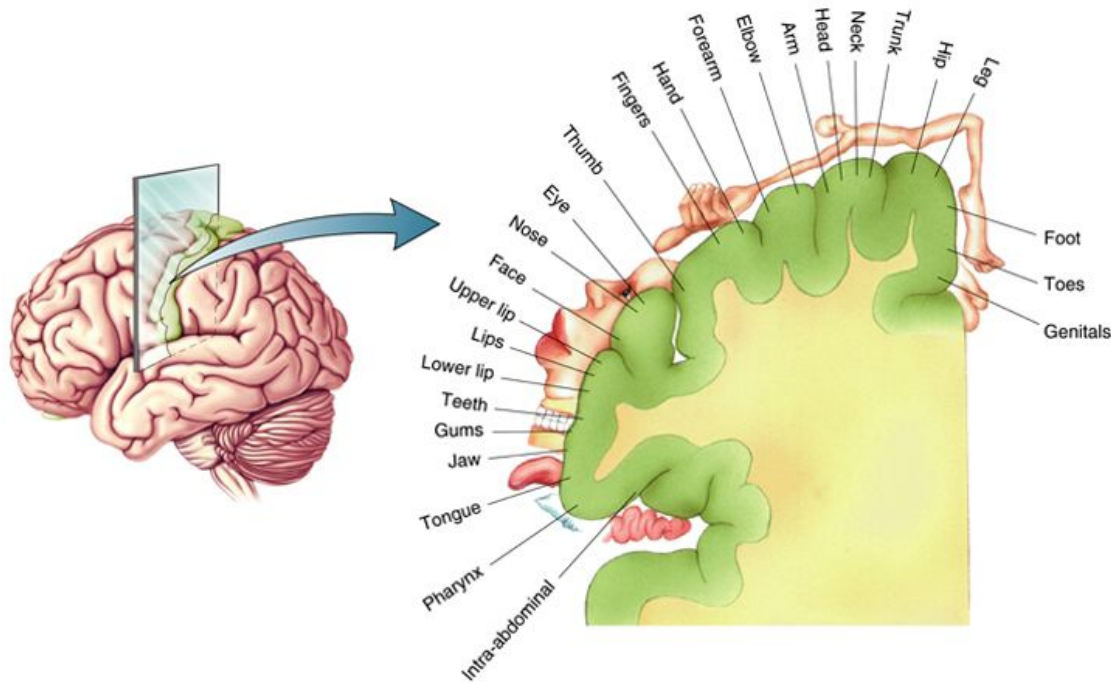
Wilder Penfield (1891-1976)



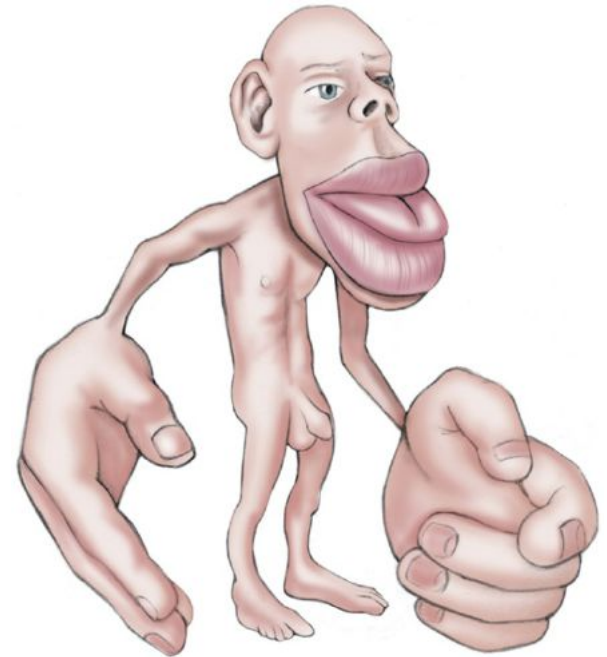
"Whoa! *That* was a good one! Try it, Hobbs — just poke his brain right where my finger is."



Cortexul somatosenzitiv primar

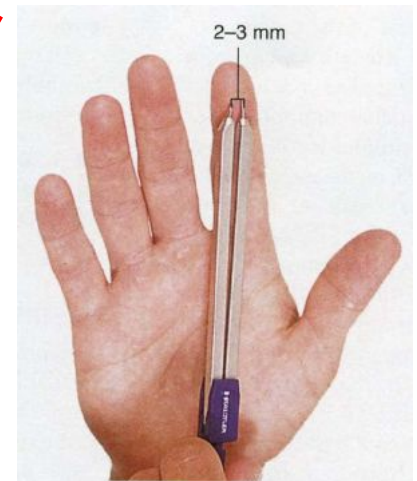
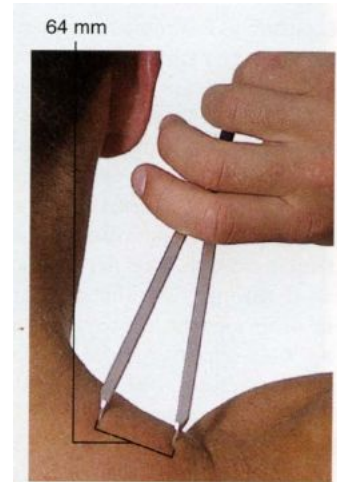
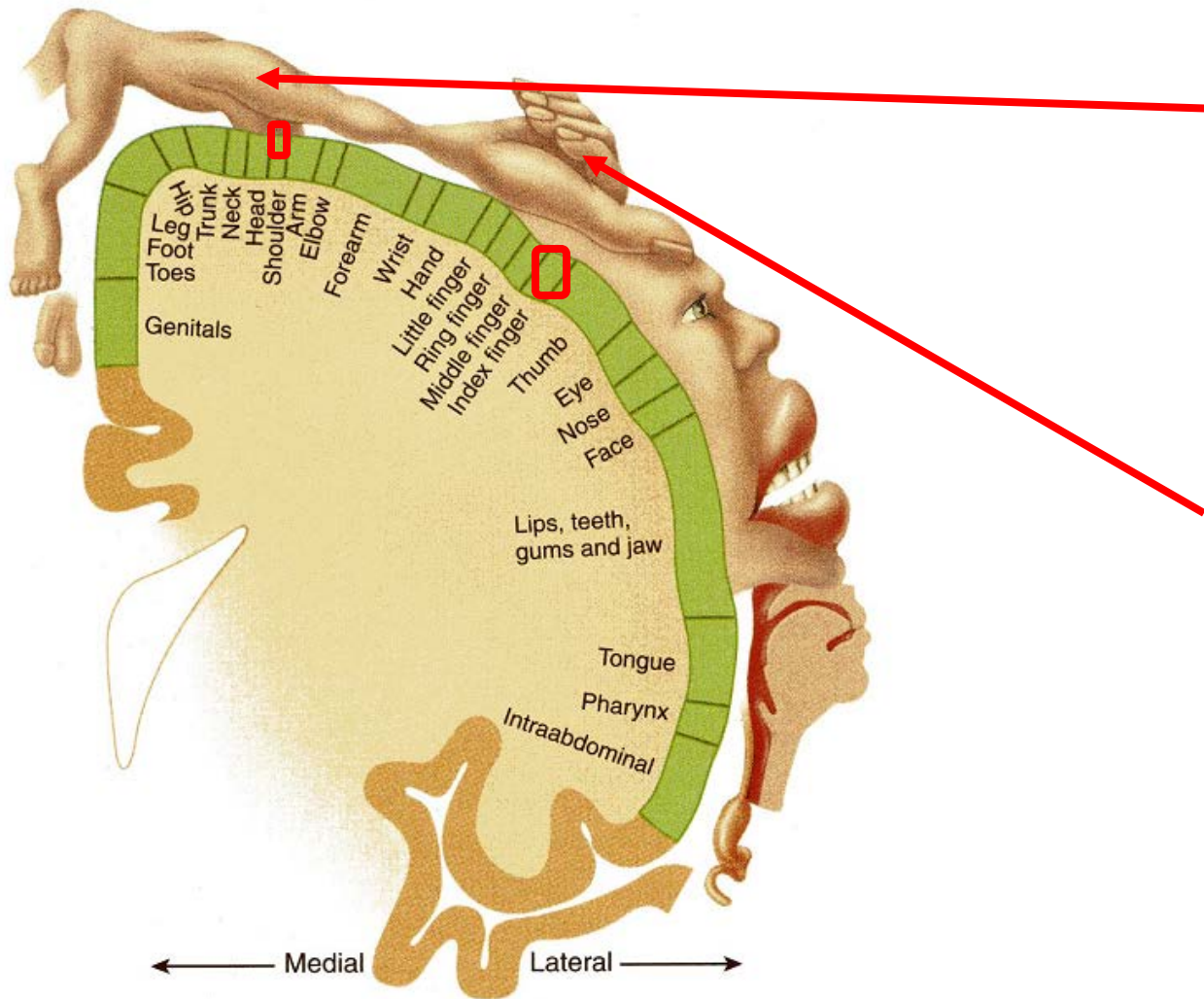


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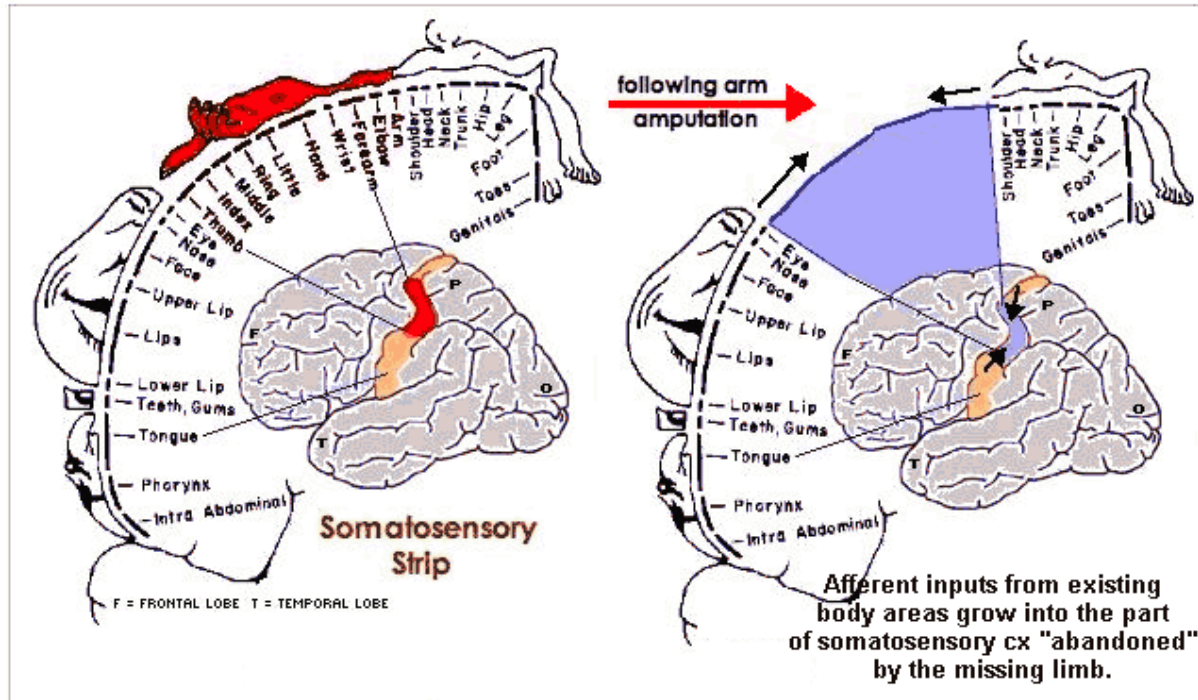
Cortexul somato-senzitiv primar



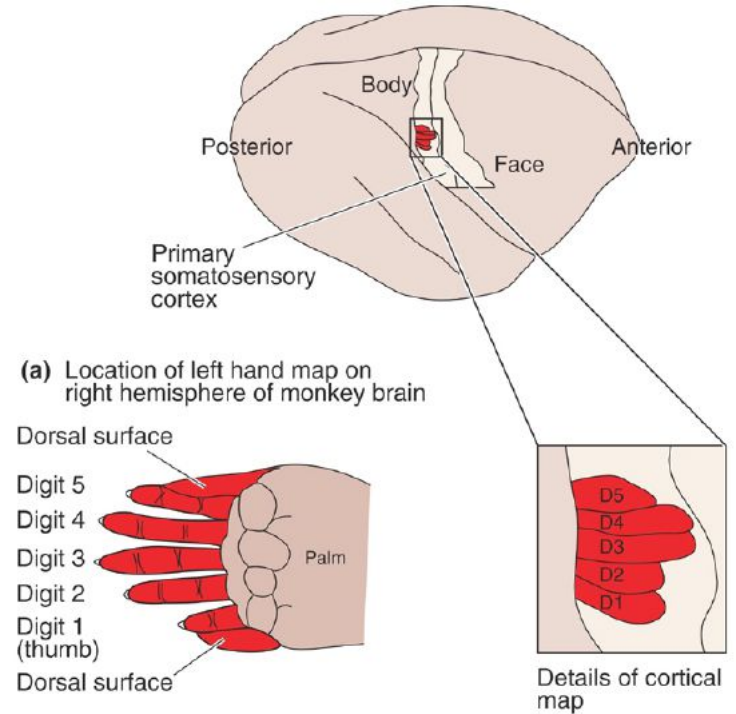
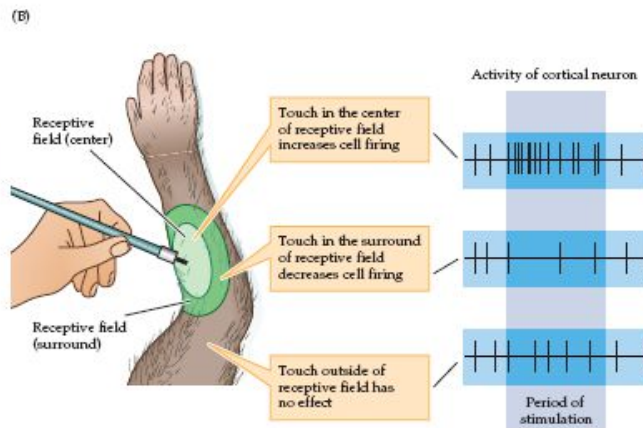
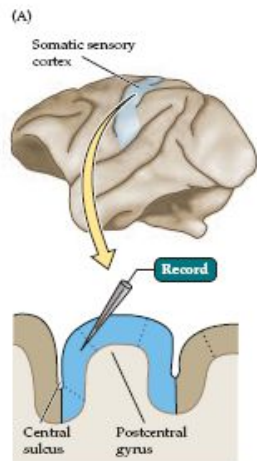
Aria corticala asociata fiecărei parti a suprafeței corpului este proporțională cu densitatea de inervare

Membrul fantoma

Understanding Phantom Limbs



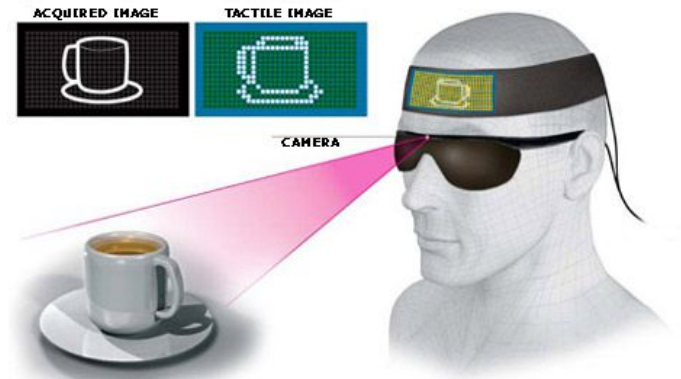
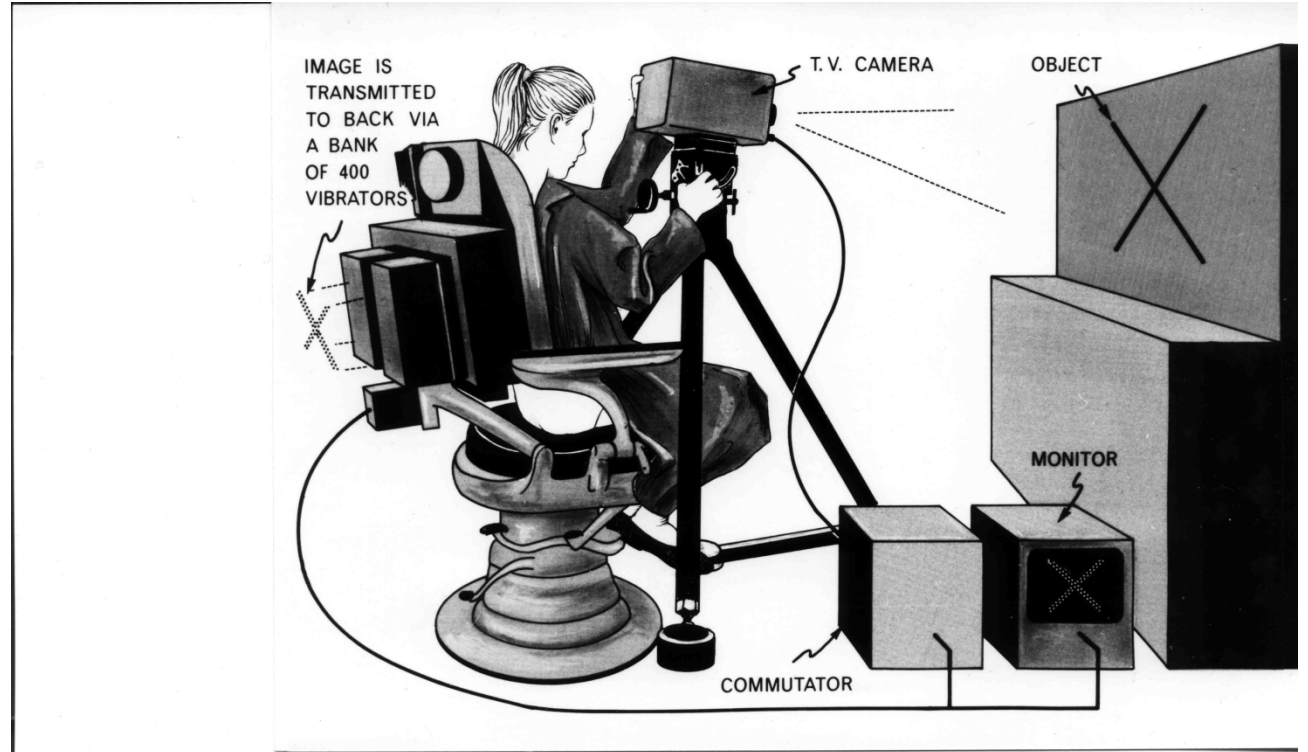
Plasticitate neuronală la organismul adult



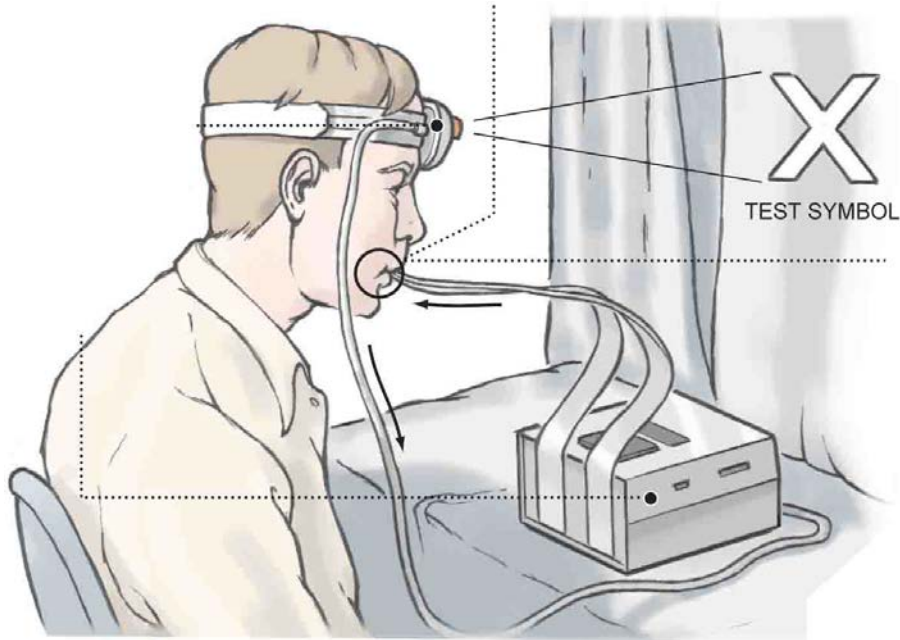
Substitutie senzitiva



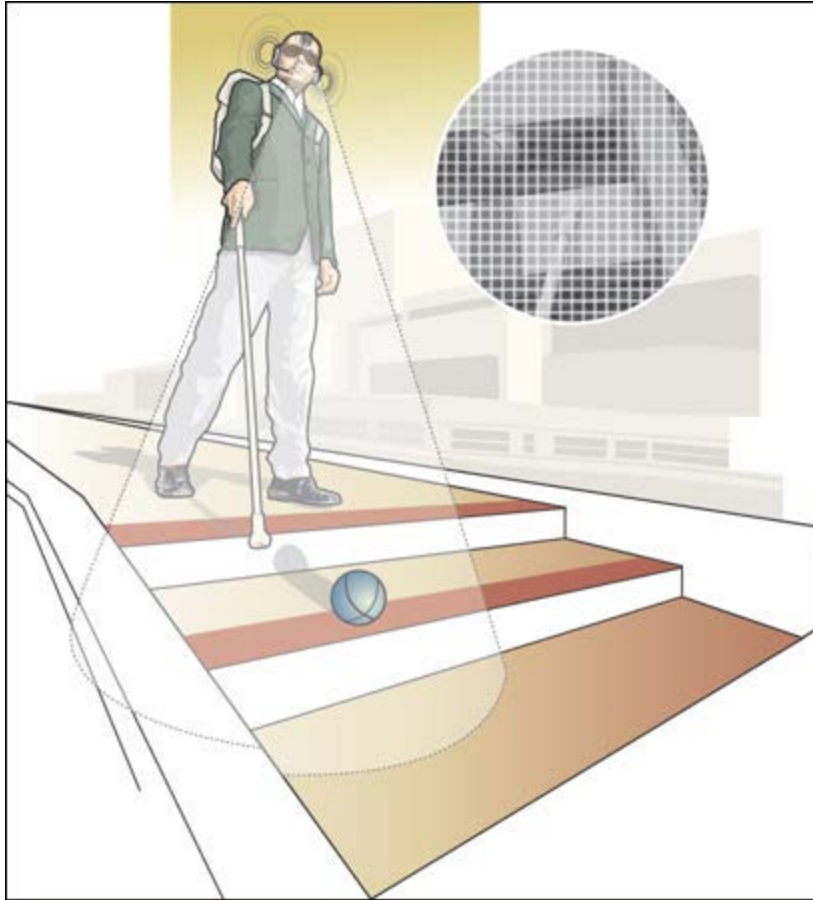
Paul Bach y Rita
(1934-2006)



Cum sa vezi cu simtul tactil!?

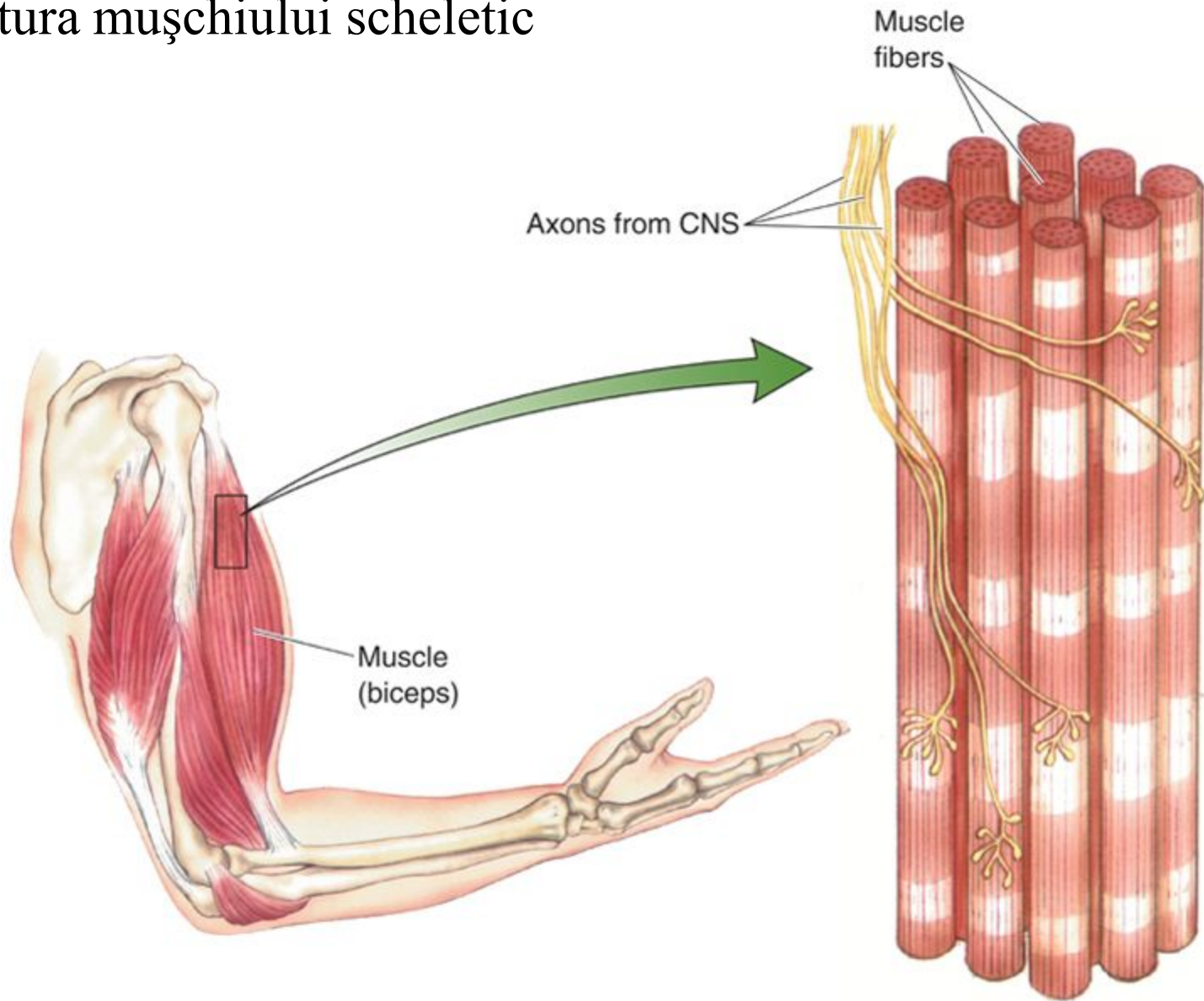


The vOICe – cum sa vezi cu urechile!?

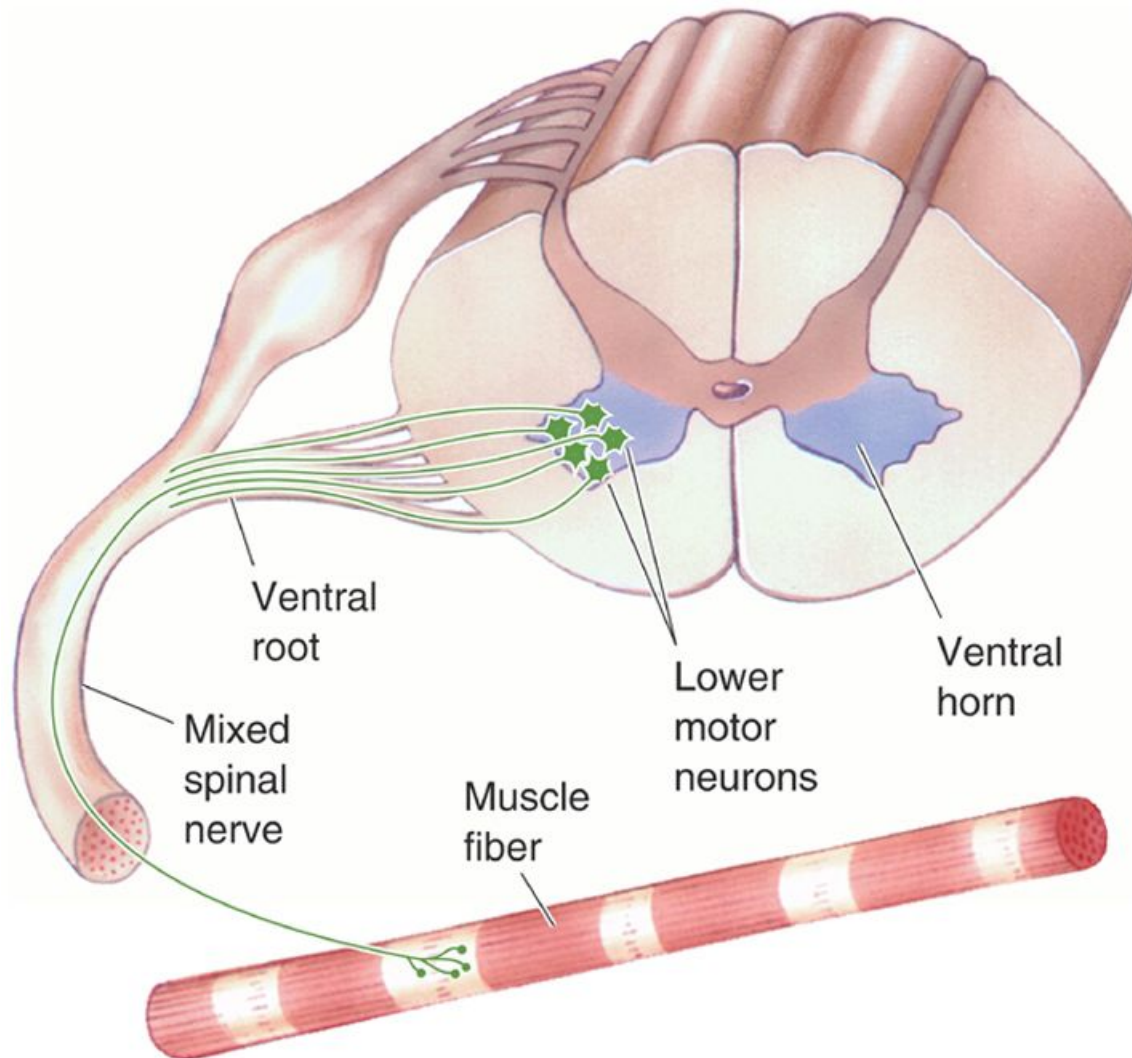


Controlul nervos al mișcării

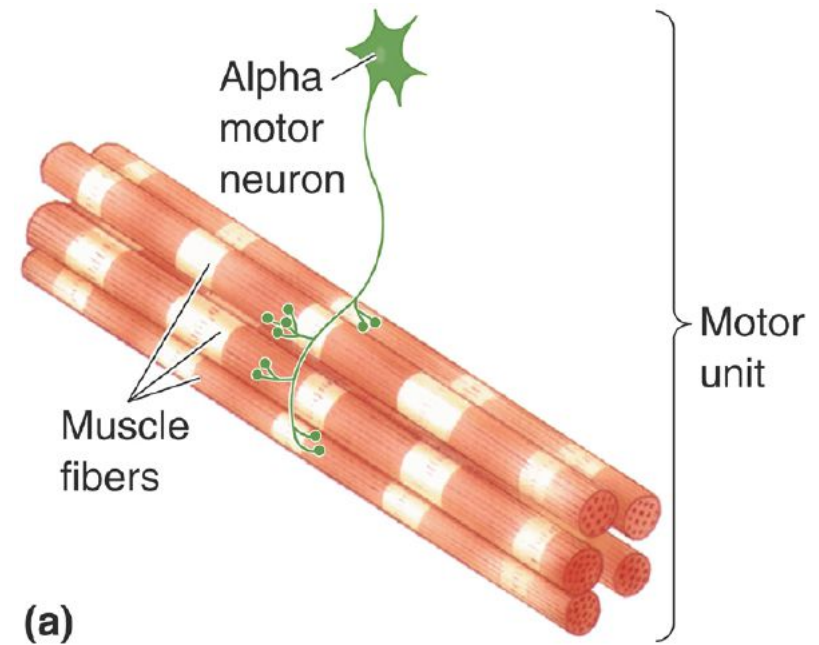
Structura mușchiului scheletic



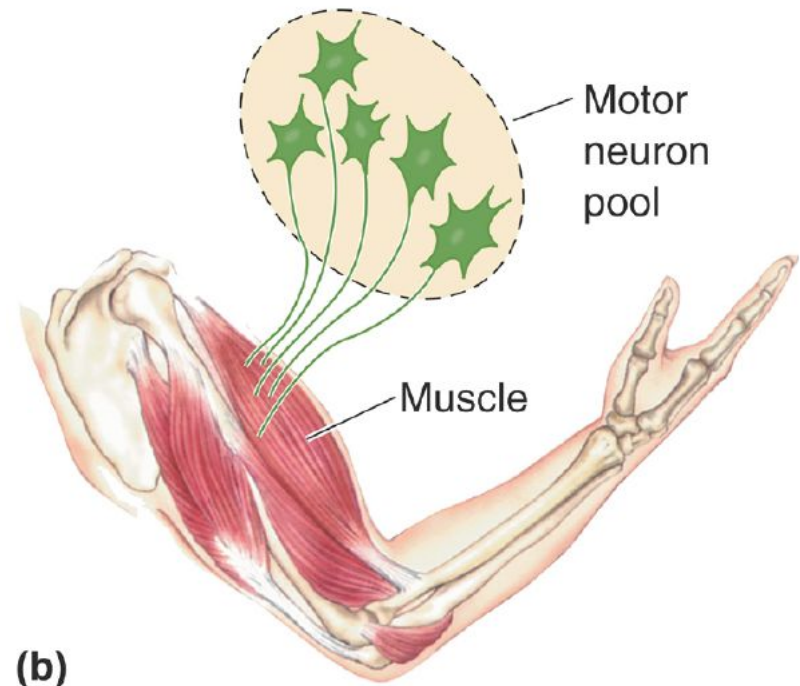
Motoneuronii inferiori (din coarnele ventrale ale maduvei)
controlează activitatea fibrelor musculare scheletice



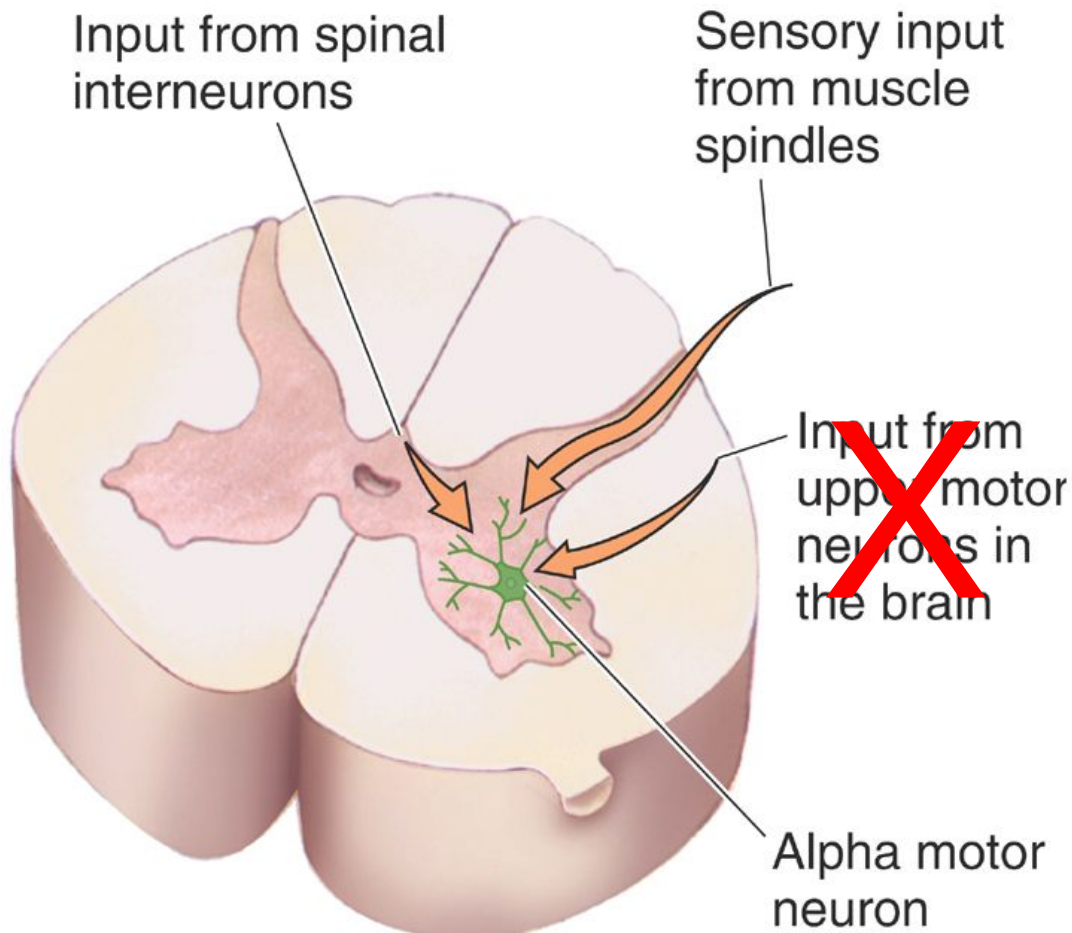
Unitatea motorie – un motoneuron și totalitatea fibrelor musculare pe care le inervează



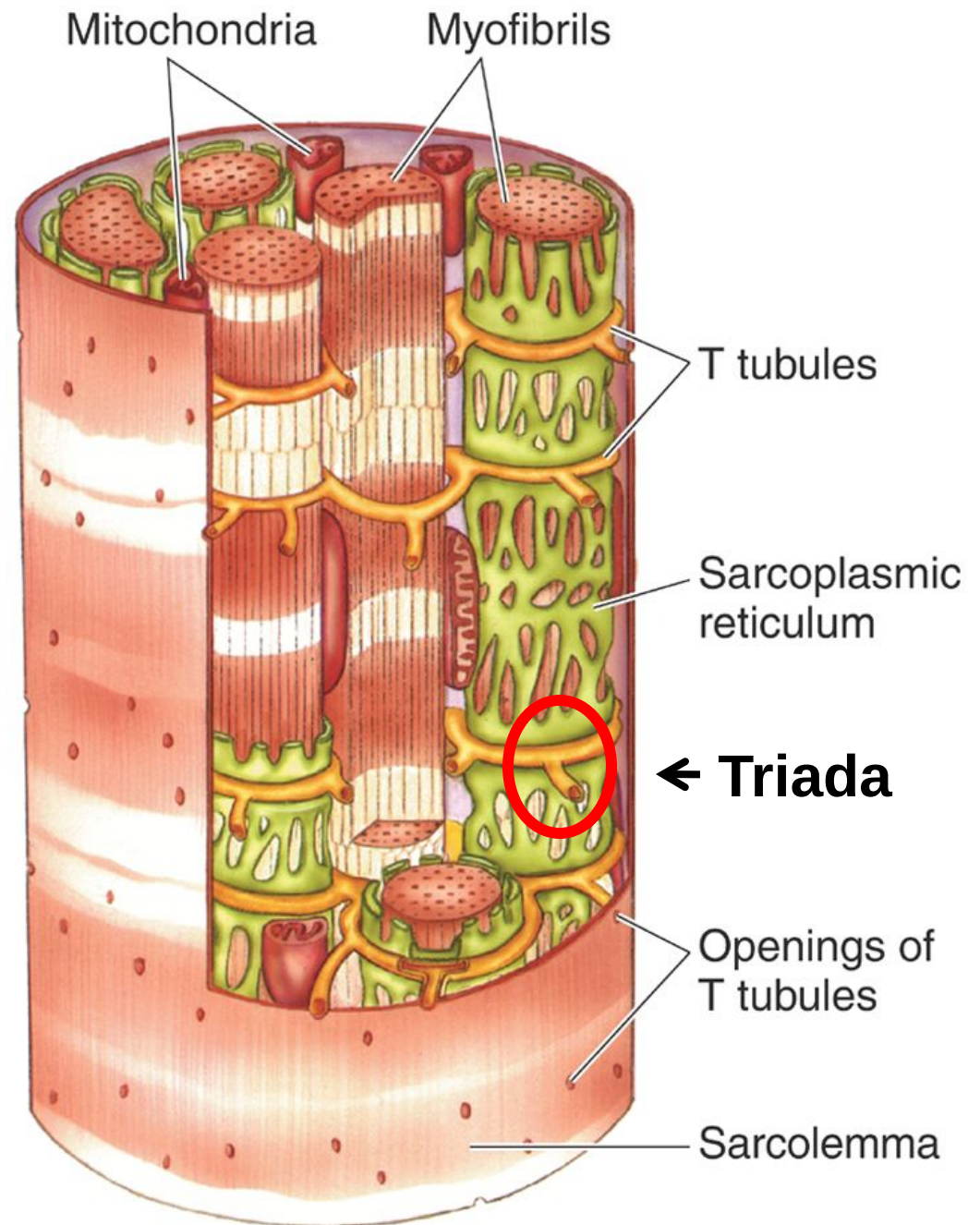
Grup motor –totalitatea motoneuronilor care inervează același mușchi

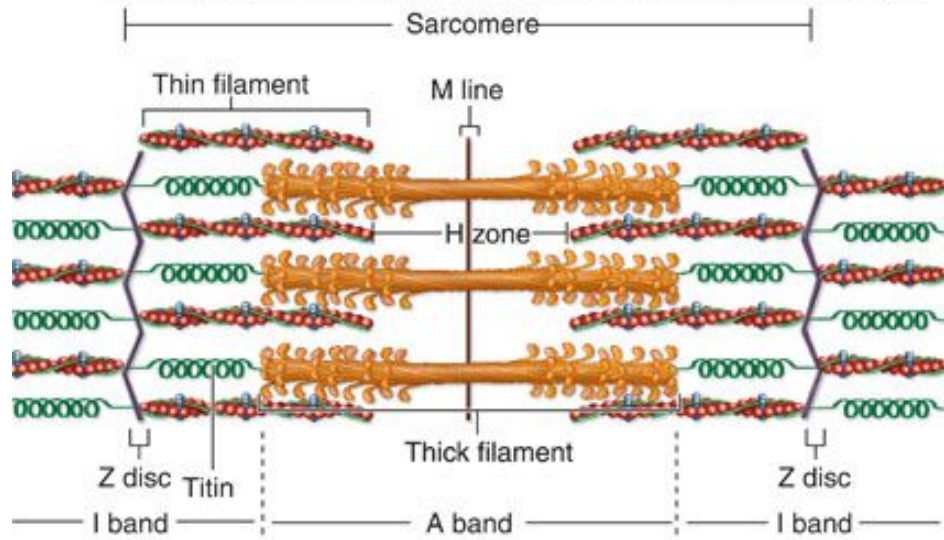


Sursele de input pentru motoneuronii α din coarnele ventrale ale măduvei

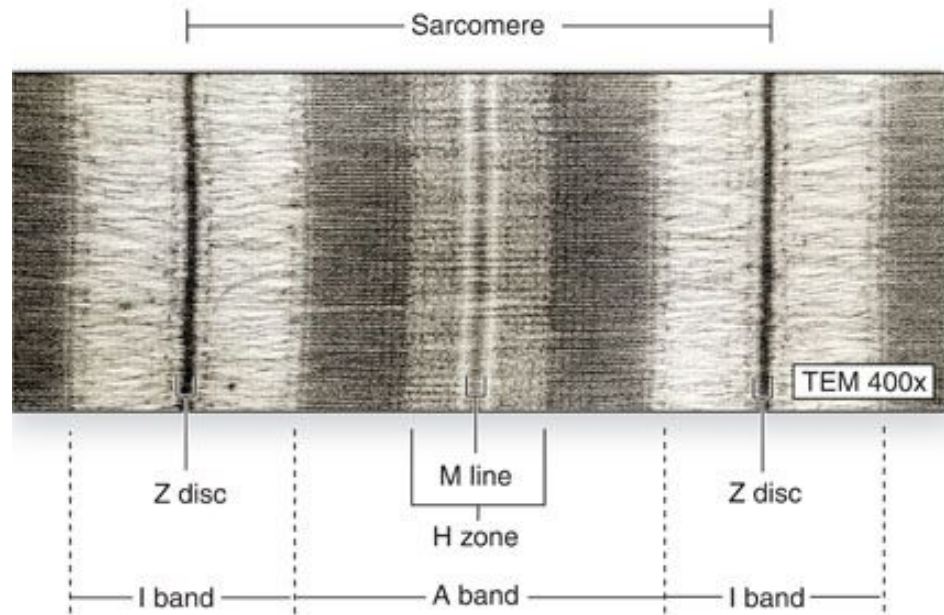


Structura fibrei musculare scheletice



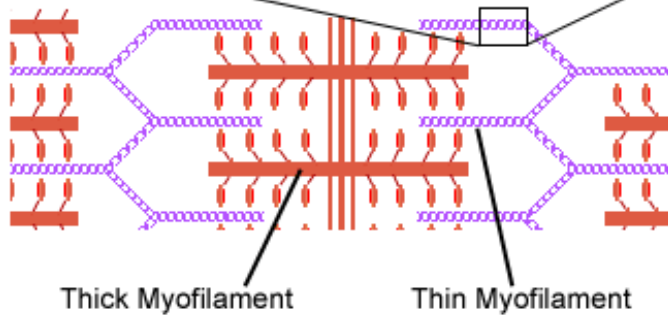
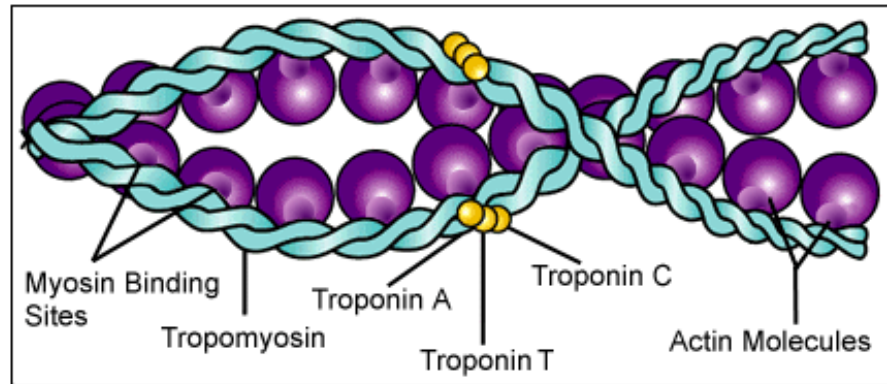


b)

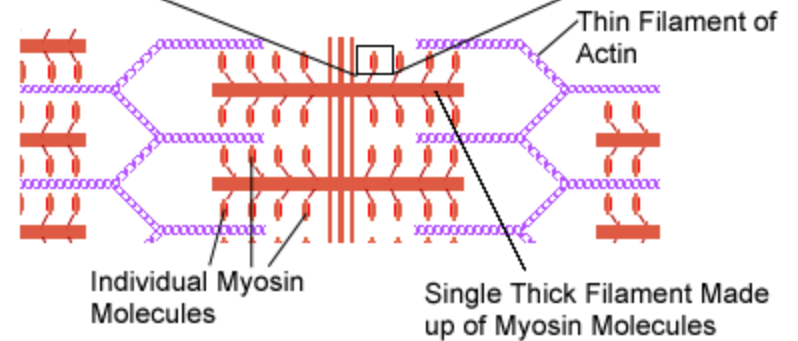
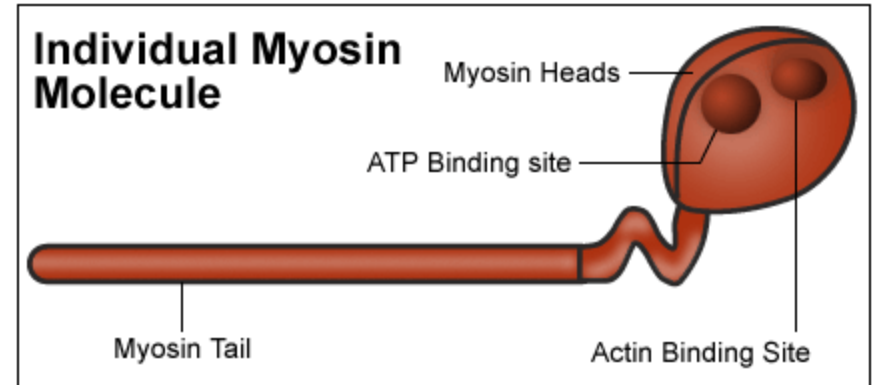


c)

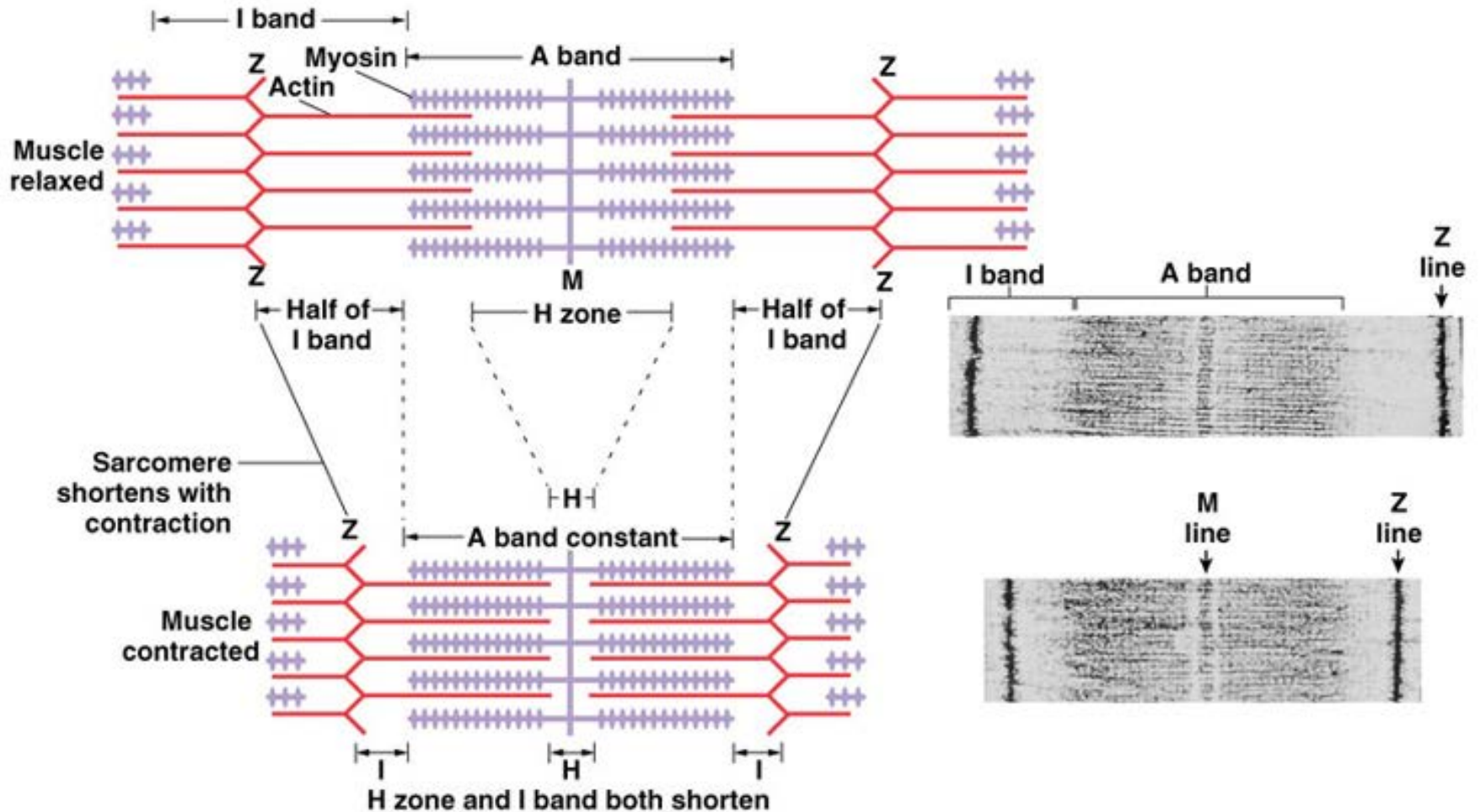
Filamentul subtire de actina



Filamentul gros de miozina



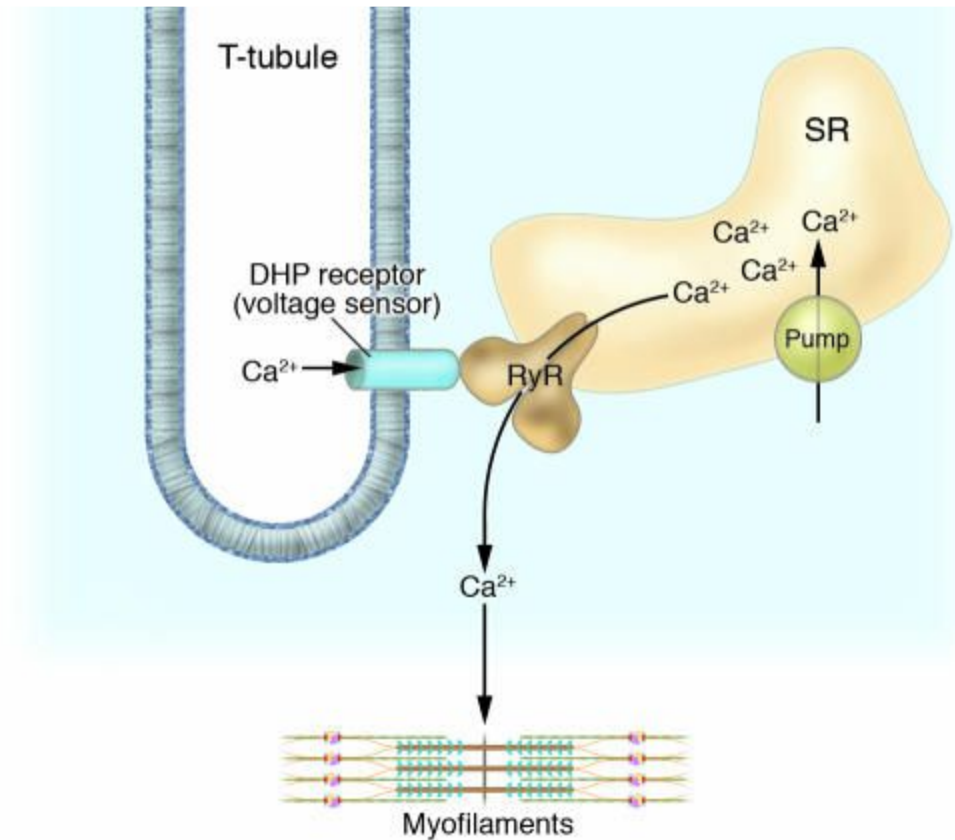
Contractia musculara – scurtarea sarcomerei



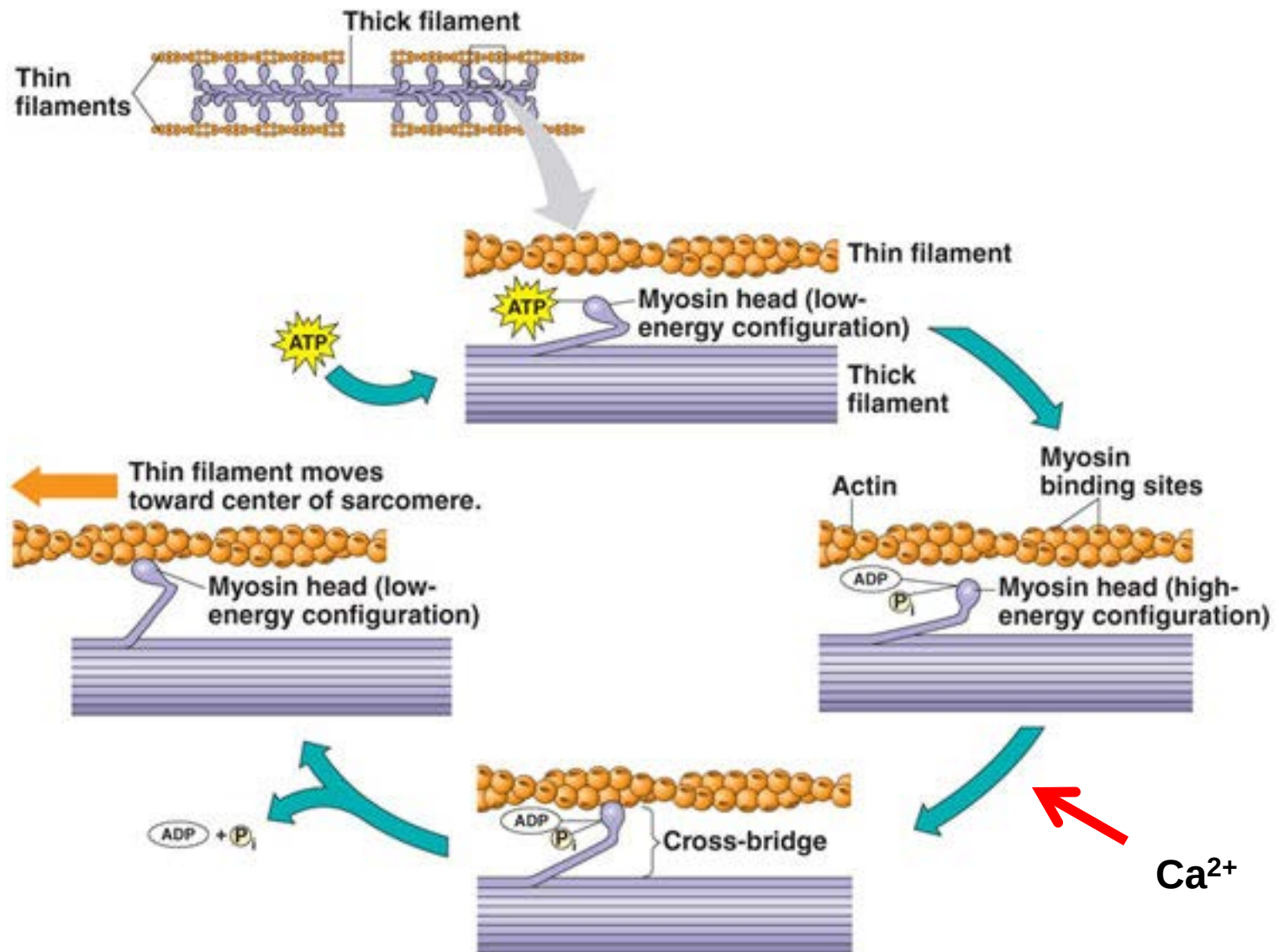
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Fig. 12-8

Cuplarea excitație-contrație în mușchiul scheletic

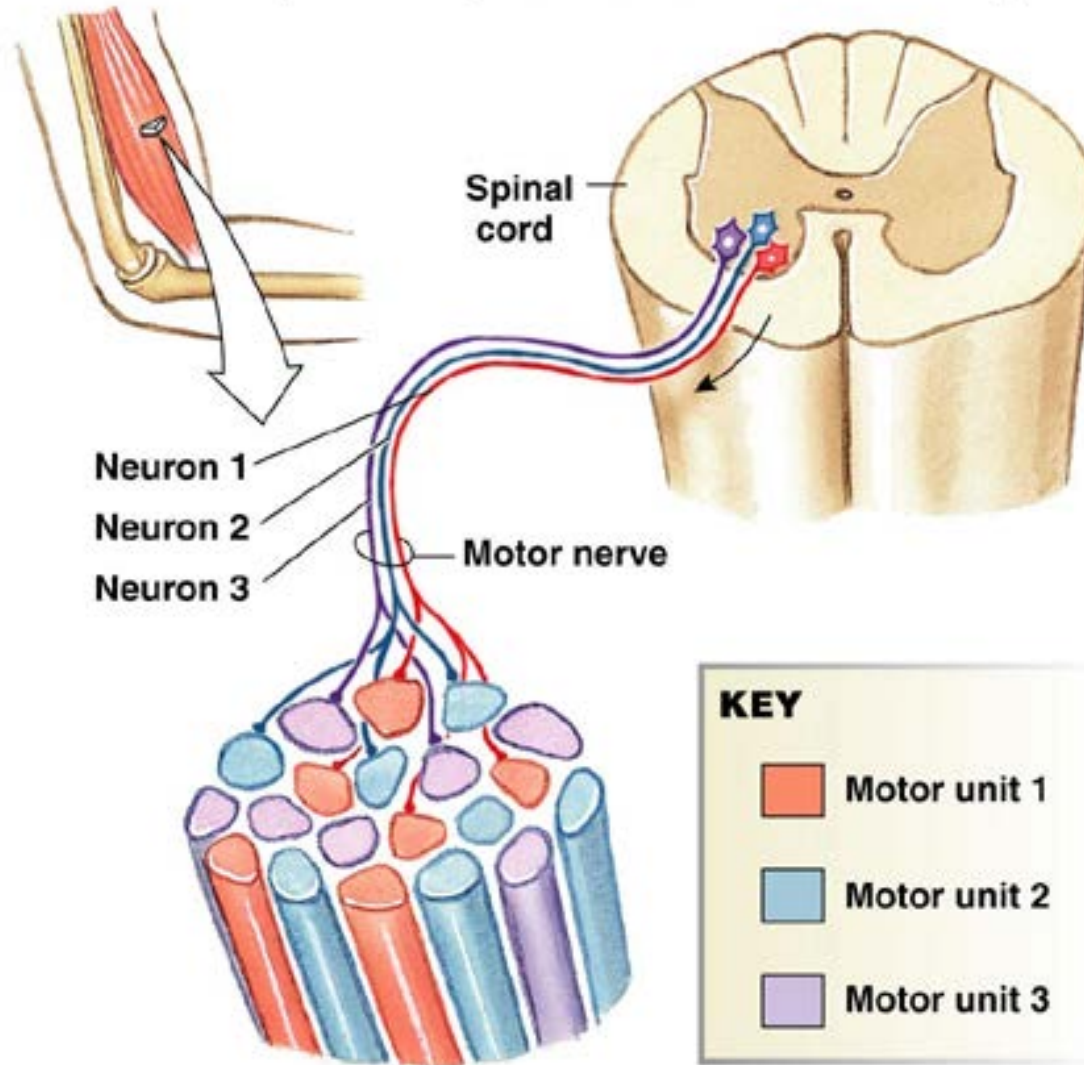


Teoria alunecării filamentelor

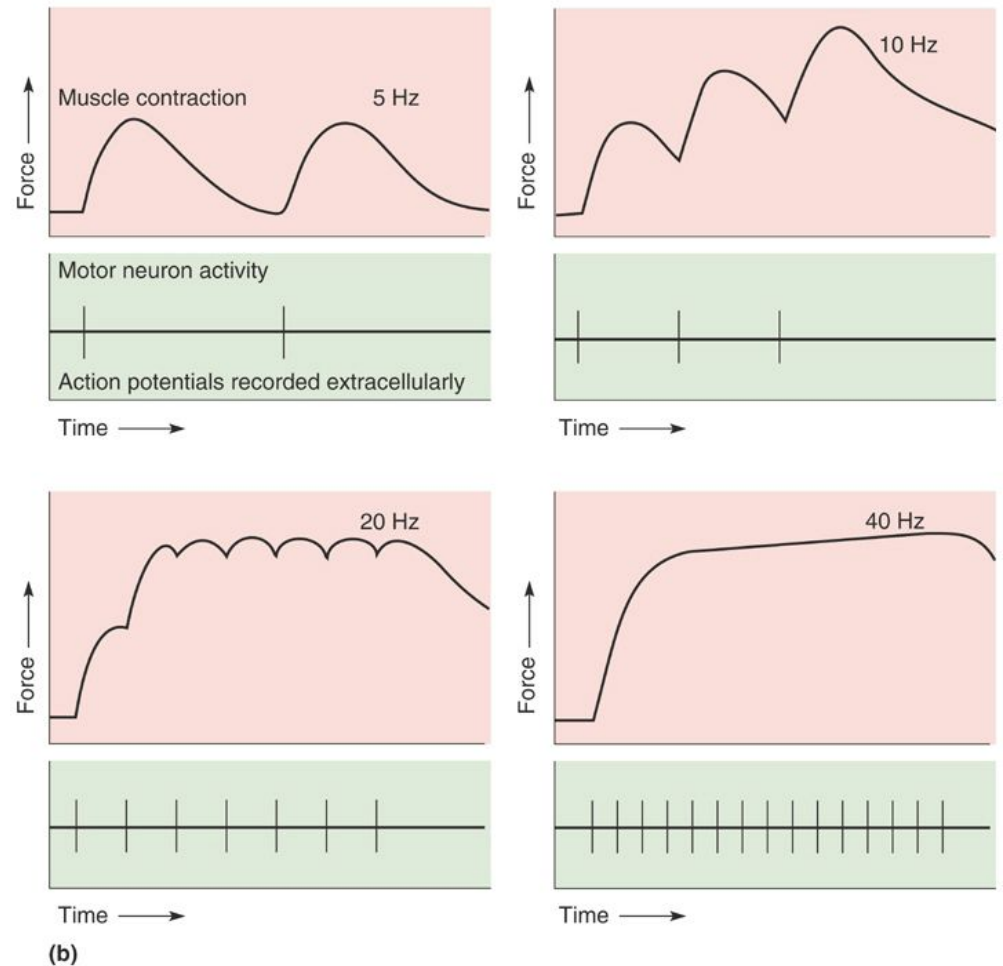
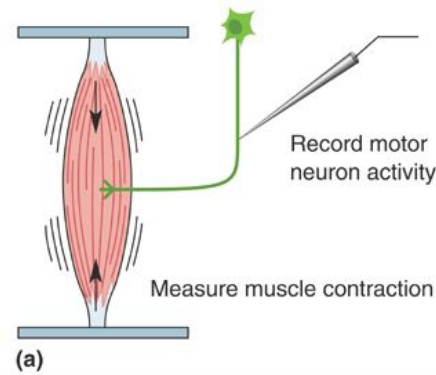


Reglarea fortei de contractie – sumarea unitatilor motorii

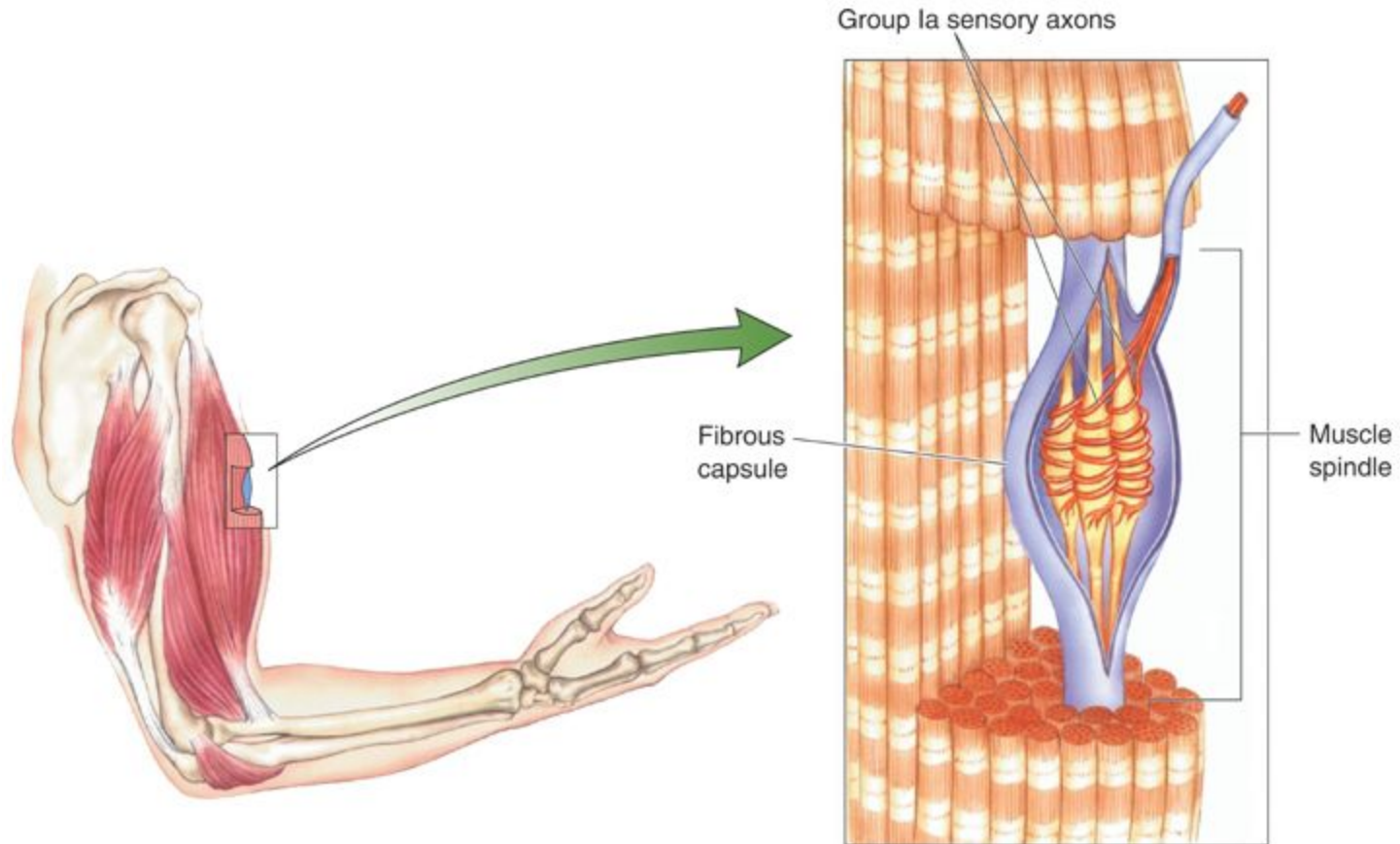
One muscle may have many motor units of different fiber types.



Secusă – sumare –
tetanus incomplet –
tetanus complet



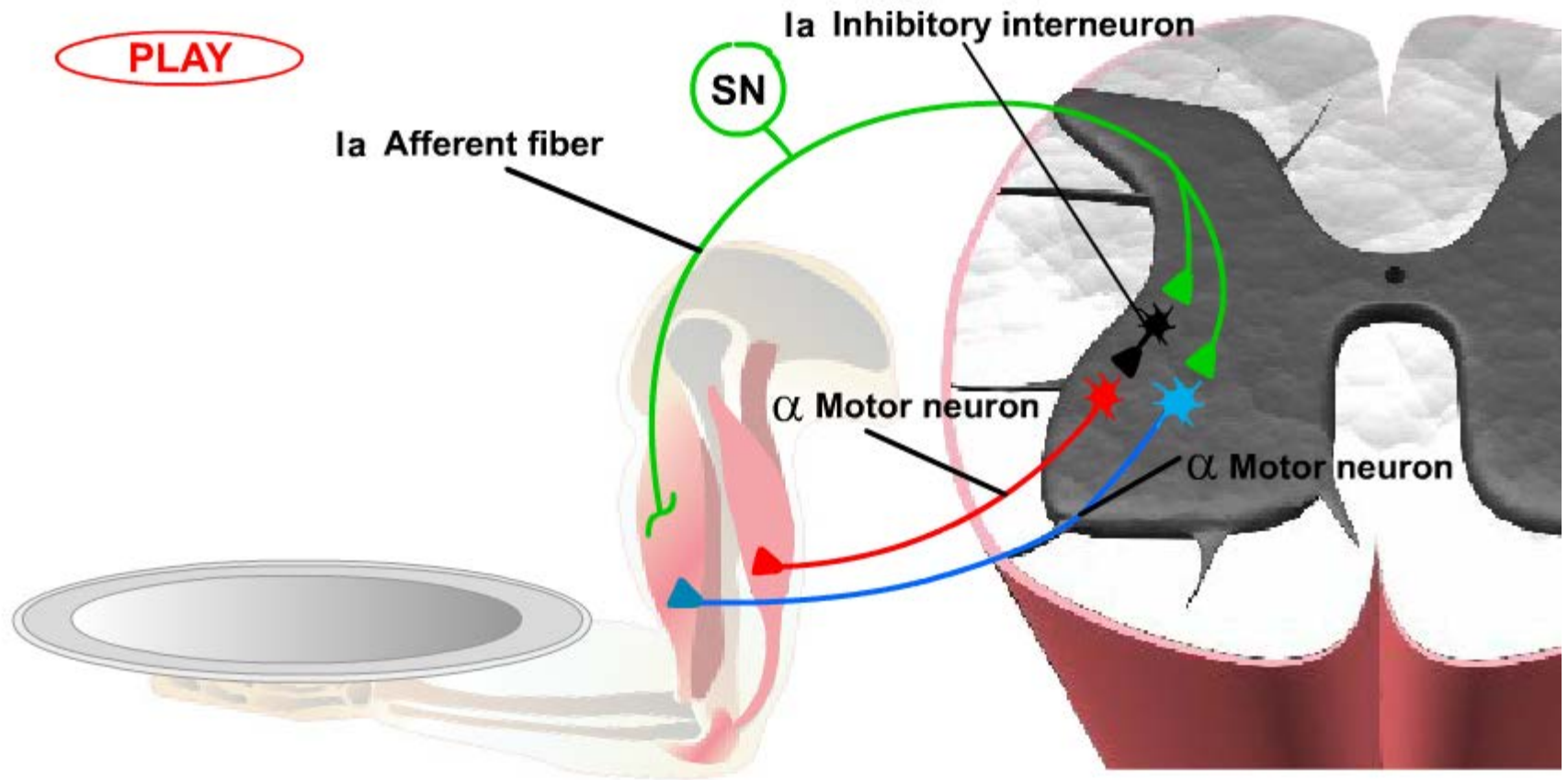
Propriocepția - receptorii fusului muscular



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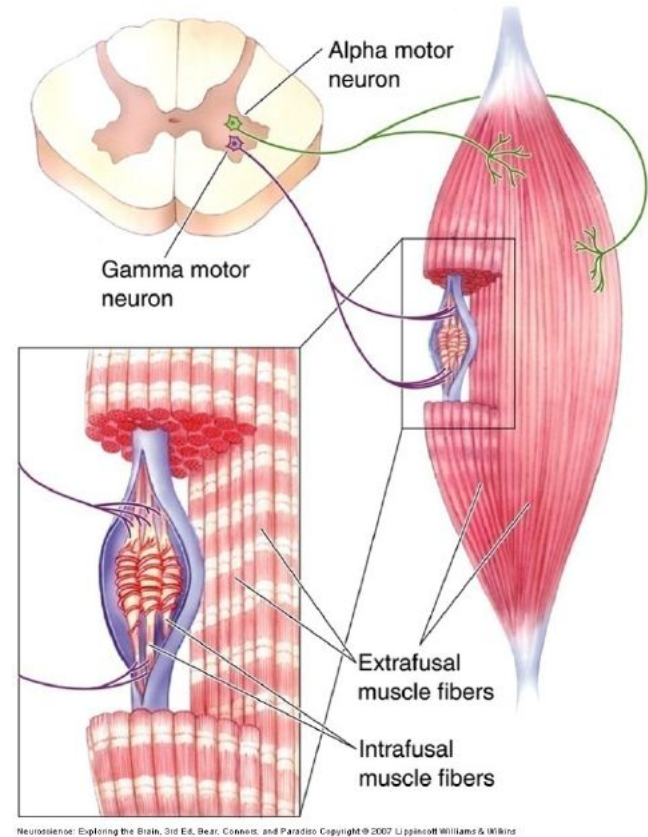
-receptorii fusului muscular – axoni de tip $A\alpha$ - mielinizați, cu diametru mare

Reflexul de întindere

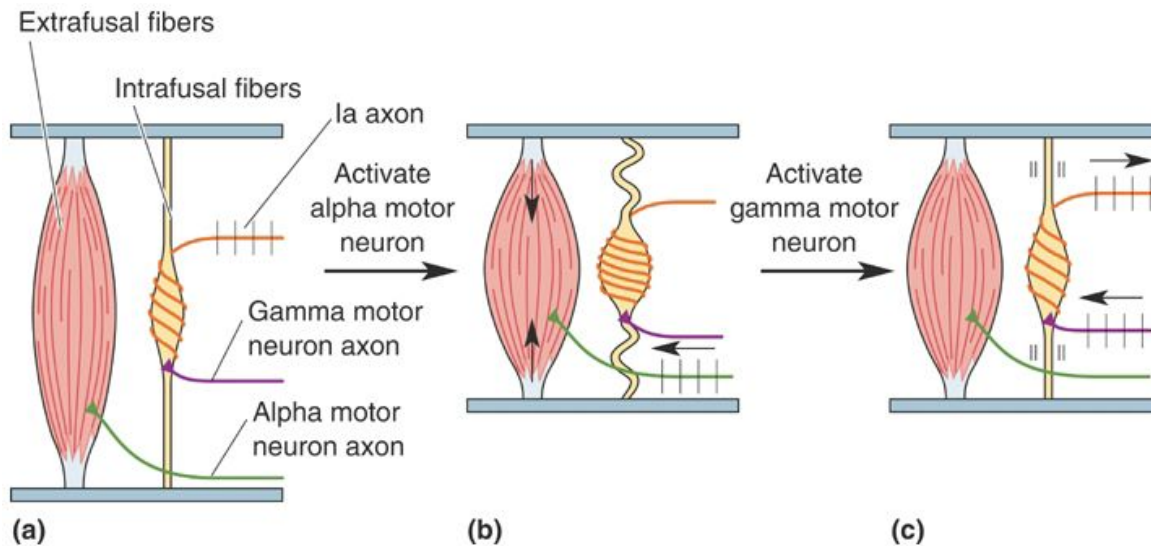


Motoneuronii γ

-inervează fibrele musculare ale fusului muscular



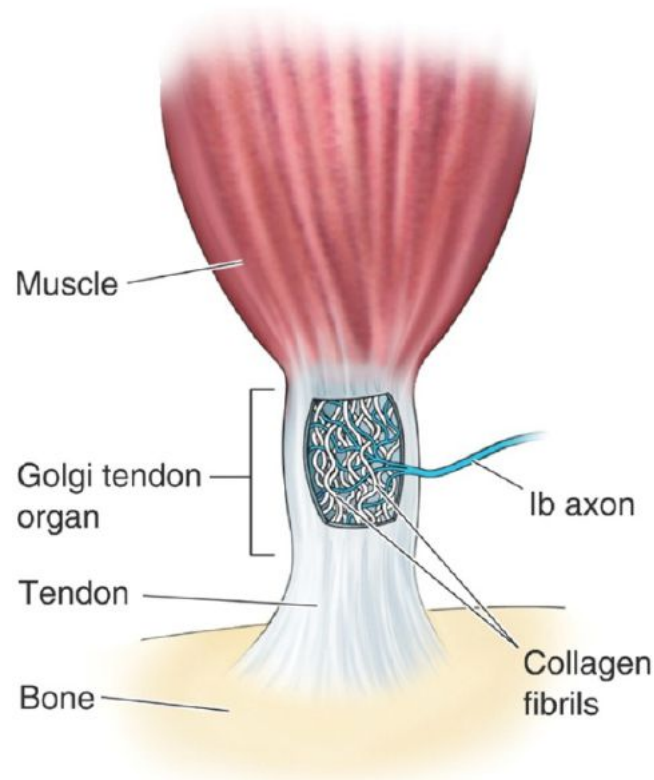
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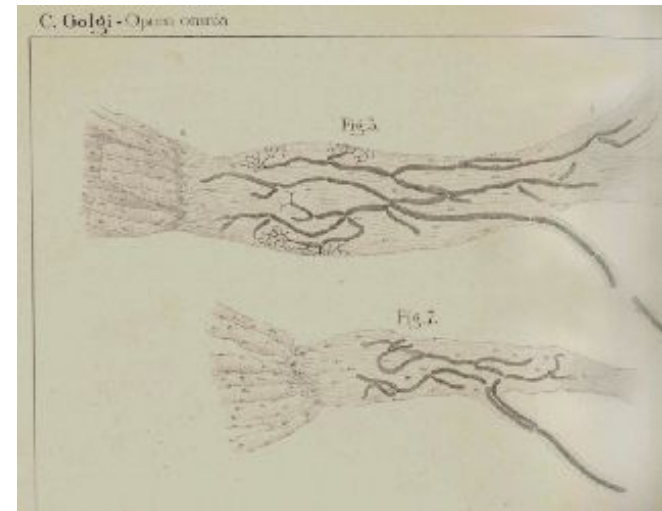
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Corpusculul Golgi al tendonului

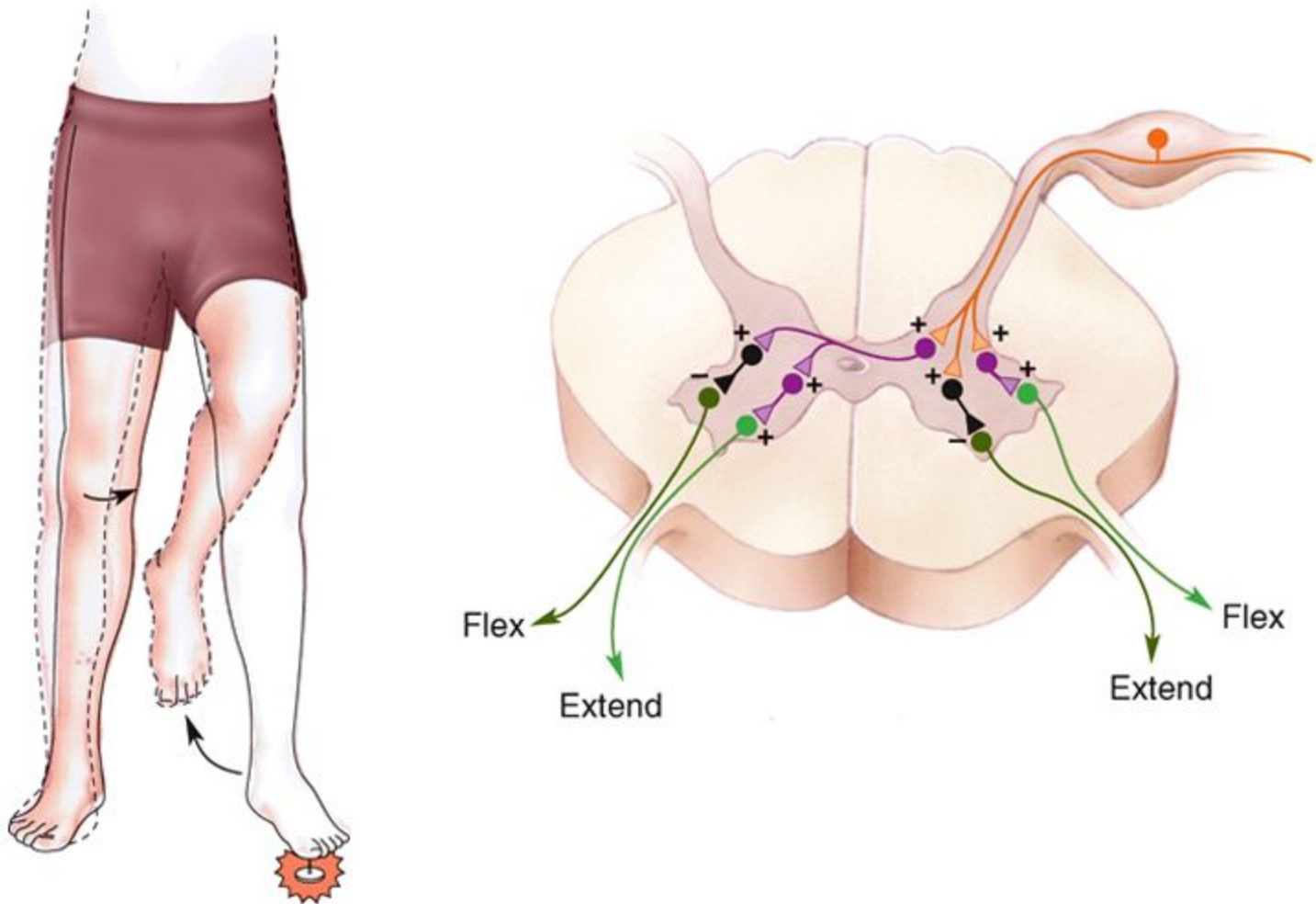
-spre deosebire de receptorii fusurilor musculare, care monitorizează lungimea mușchiului, receptorii Golgi ai tendoanelor măsoară forța dezvoltată de mușchi



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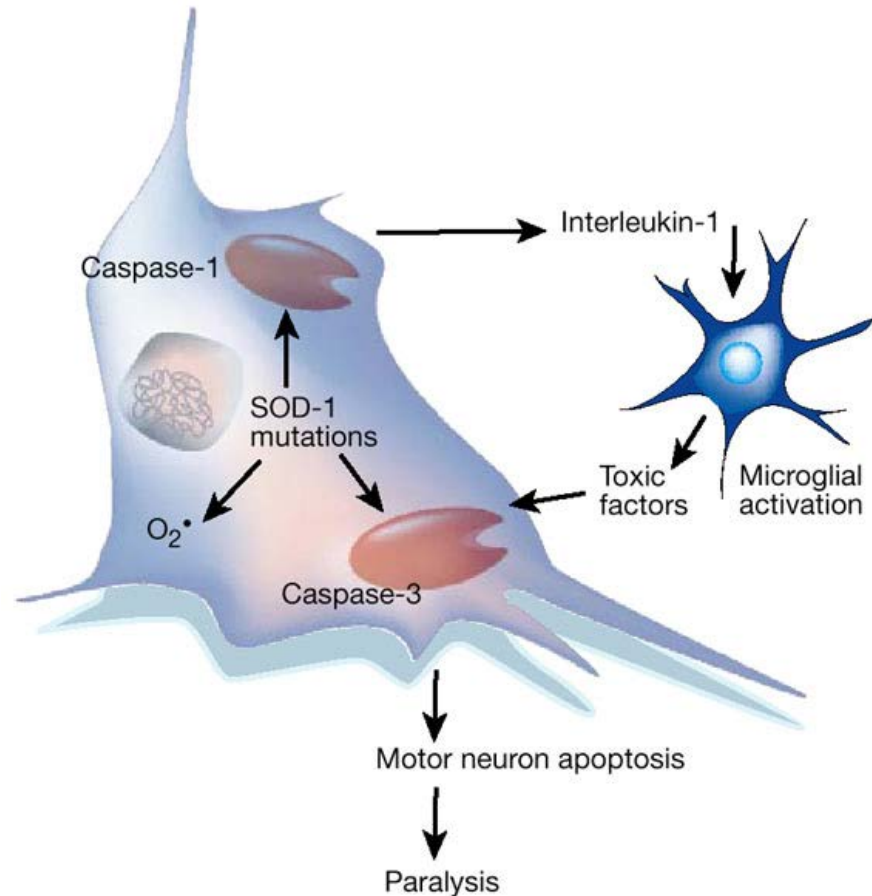


Reflexul de retragere (withdrawal)



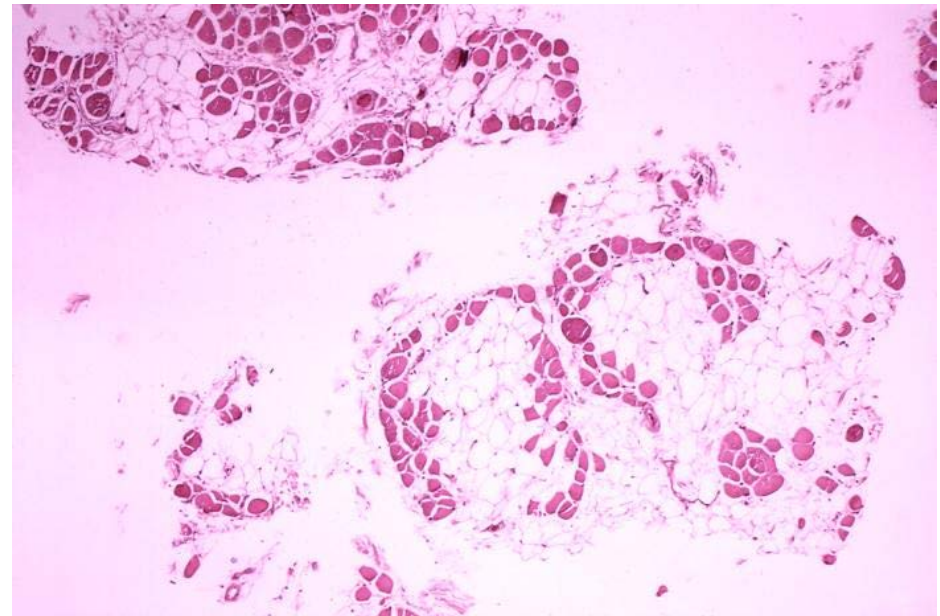
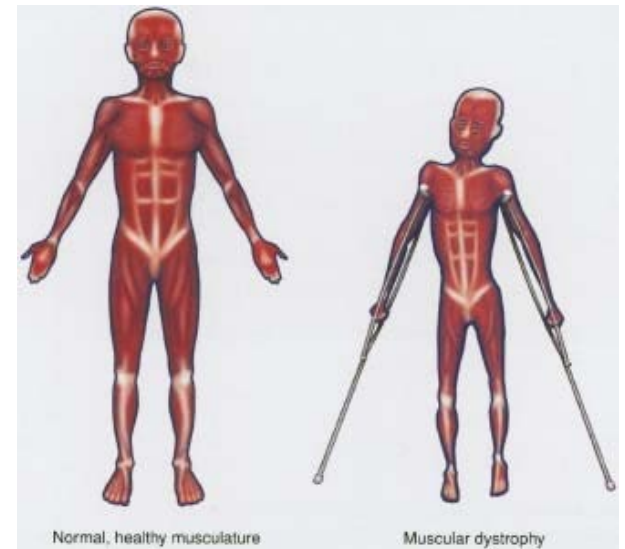
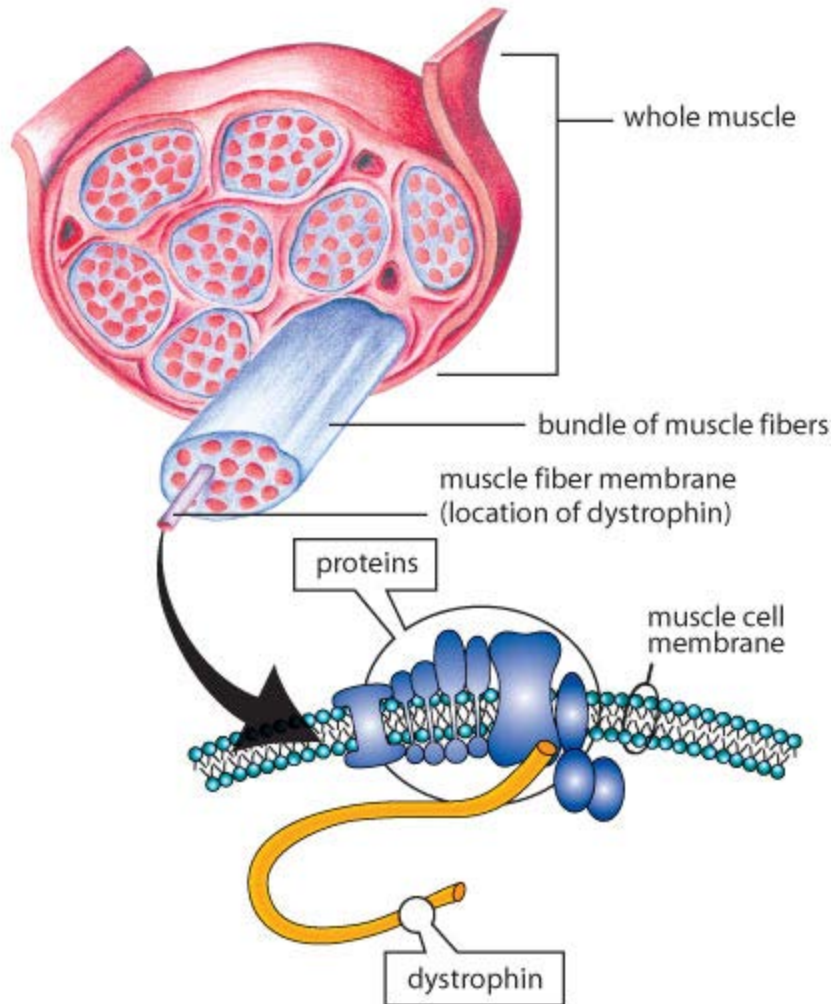
Boli neurodegenerative

Scleroza laterală amiotrofică – maladia Lou Gehrig



Degenerarea motoneuronilor din SNC – neuronii răspunzători de generarea mișcării voluntare; În lipsa semnalelor nervoase, mușchii se atrofiază; 10% din cazuri – mutații ale SOD – superoxid dismutaza; 90% - sporadice (infecții, traume, agenți toxici)

Distrofia musculară Duchenne

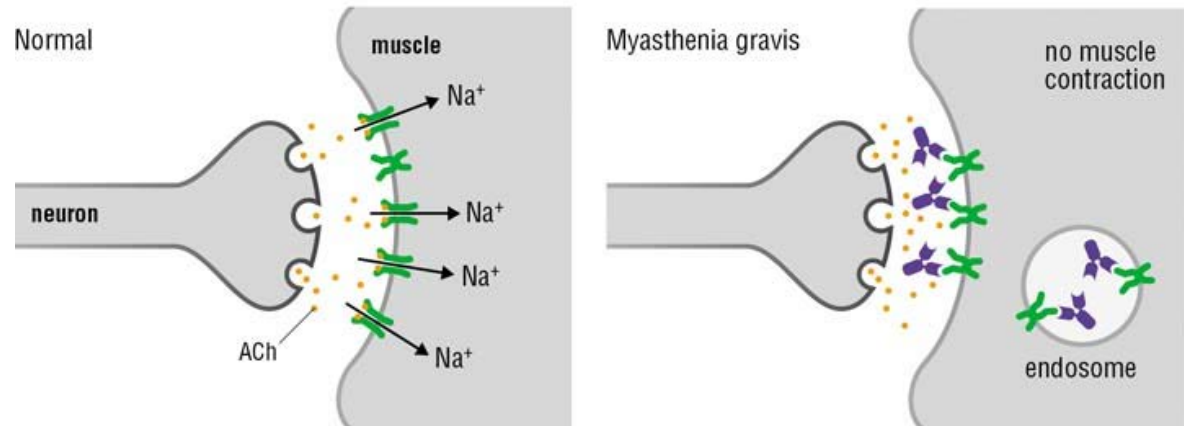
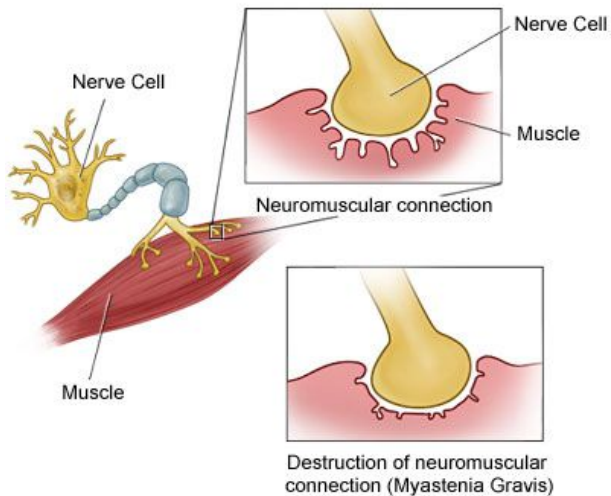


Myasthenia gravis



From **Immunity: The Immune Response in Infectious and Inflammatory Disease**
by DeFranco, Locksley and Robertson

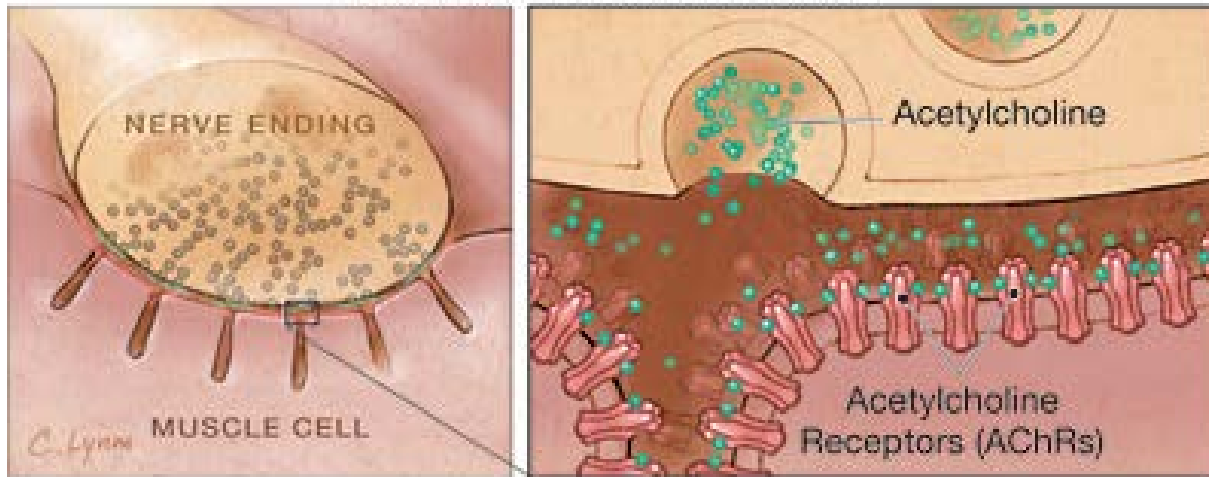
Myasthenia Gravis



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Myasthenia gravis

Normal Neuromuscular Junction



Myasthenia Gravis

