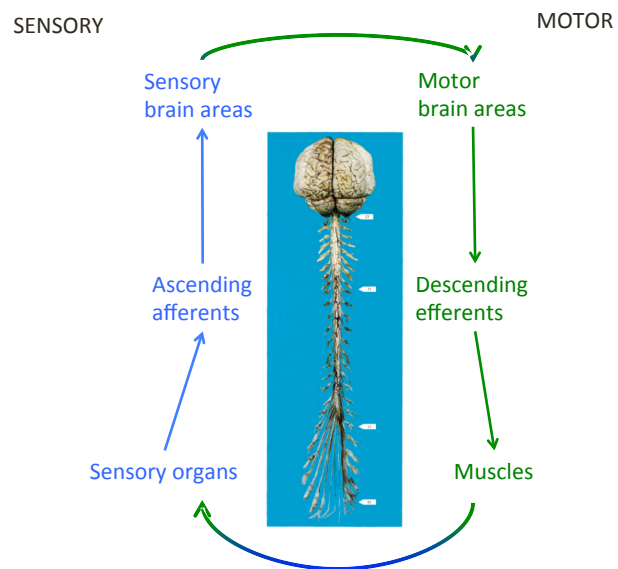
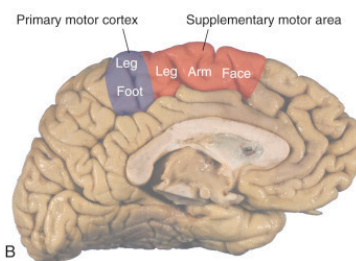
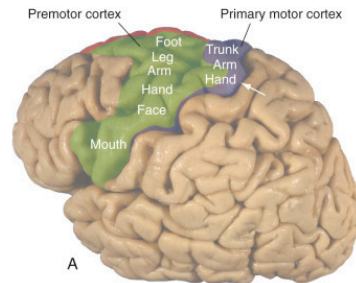


# Motor systems

## Sensation and movement



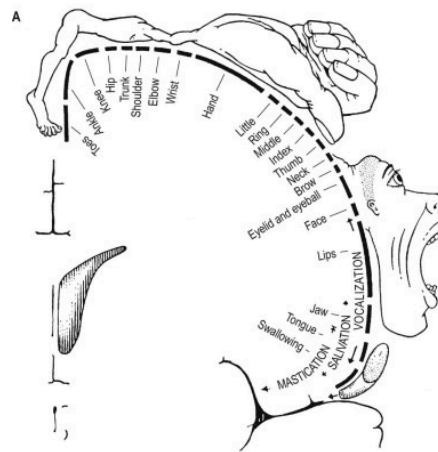
## Motor cortical regions



Vanderah

[ 3 ]

## Motor homunculus

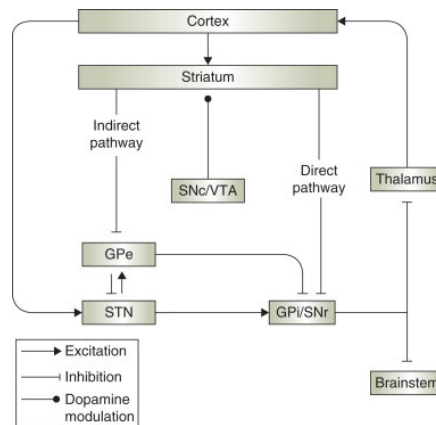
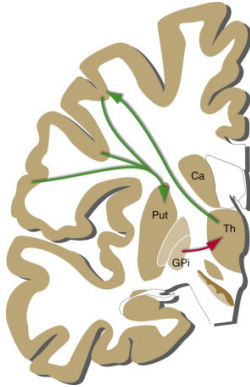


Mancall

[ 4 ]

# Basal ganglia

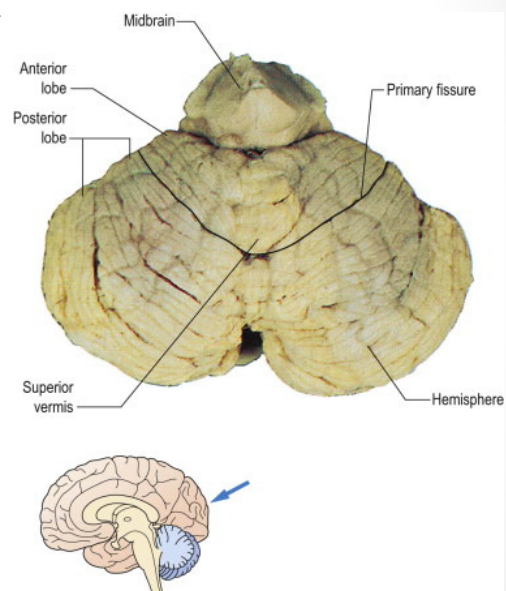
Not just for movement!



Jones, Squire

[ 5 ]

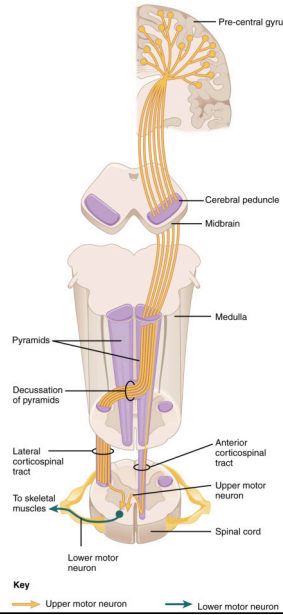
# Cerebellum



Crossman

[ 6 ]

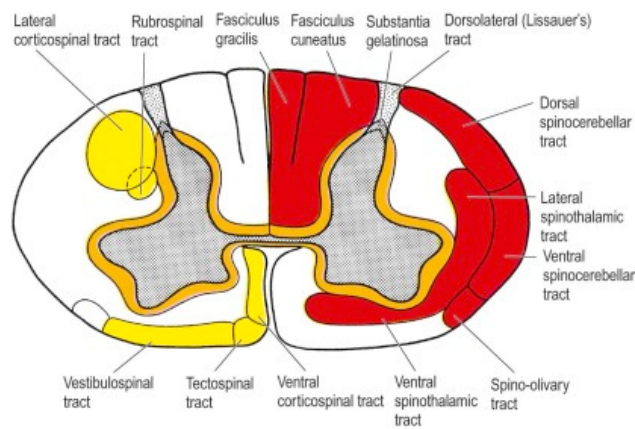
## Upper and lower motor neurons



OpenStax

[ 7 ]

## Spinal cord

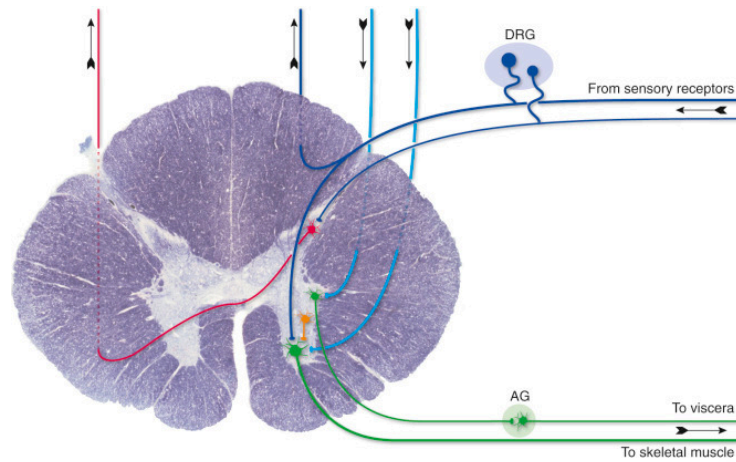


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Red: sensory  
Yellow: motor

[ 8 ]

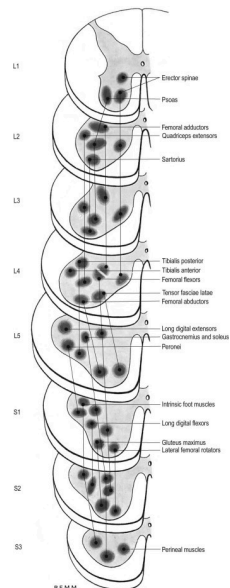
## Spinal cord



Vanderah

[ 9 ]

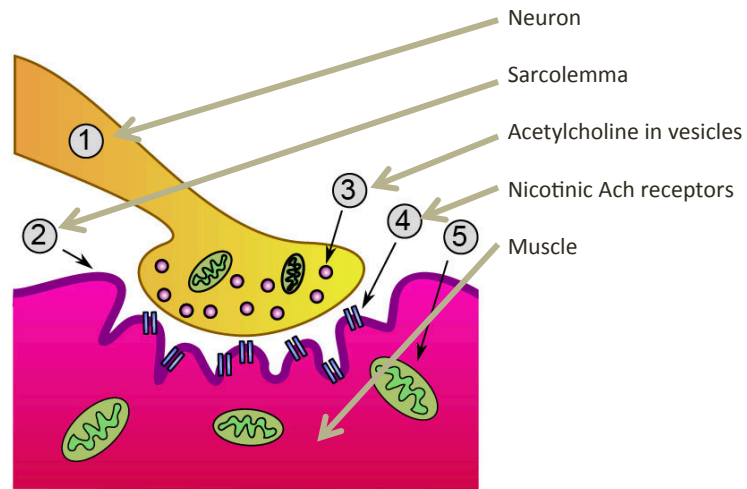
## Muscles vs. spinal cord



Mancall

[ 10 ]

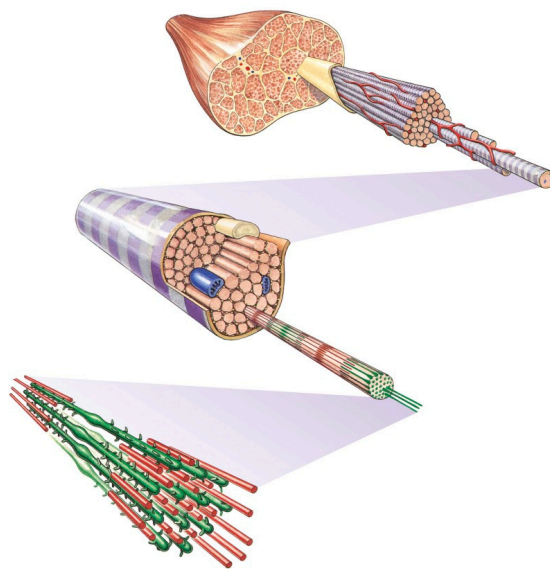
## Neuromuscular junction



wikimedia

[ 11 ]

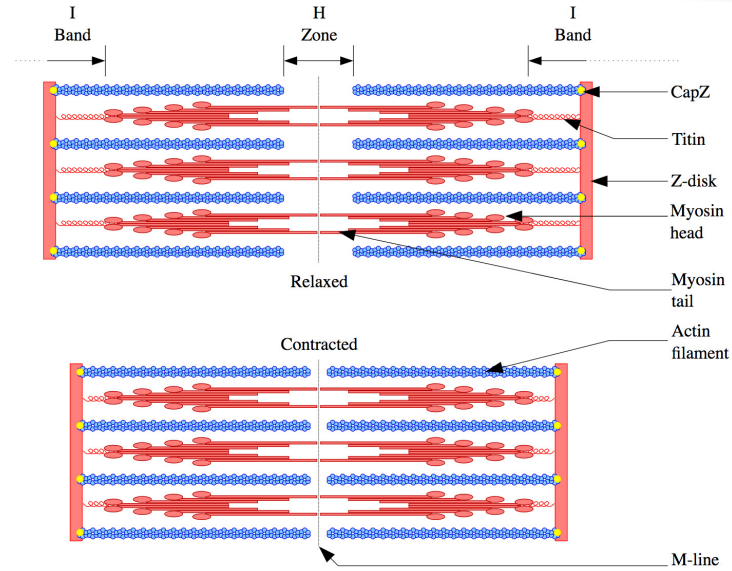
## Muscles



Mancall

[ 12 ]

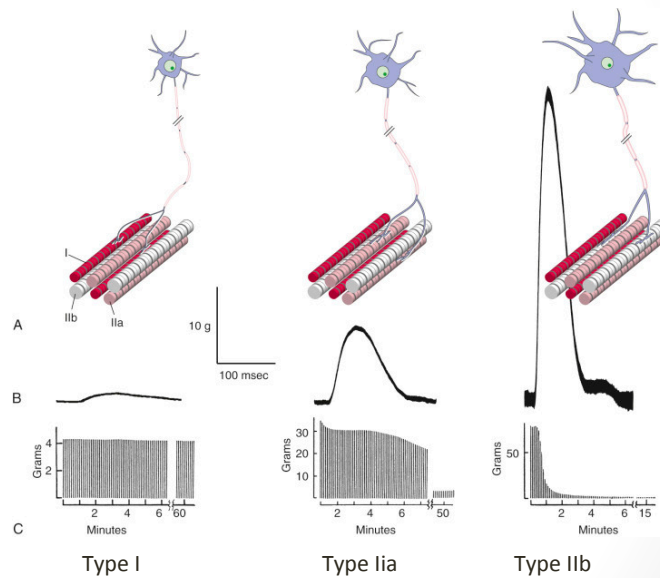
## Myosin and actin



Richfield

( 13 )

## Muscle fiber types



Vanderah

( 14 )

## Opposing muscle groups



[ 15 ]

Niwadare

## Muscle synergies

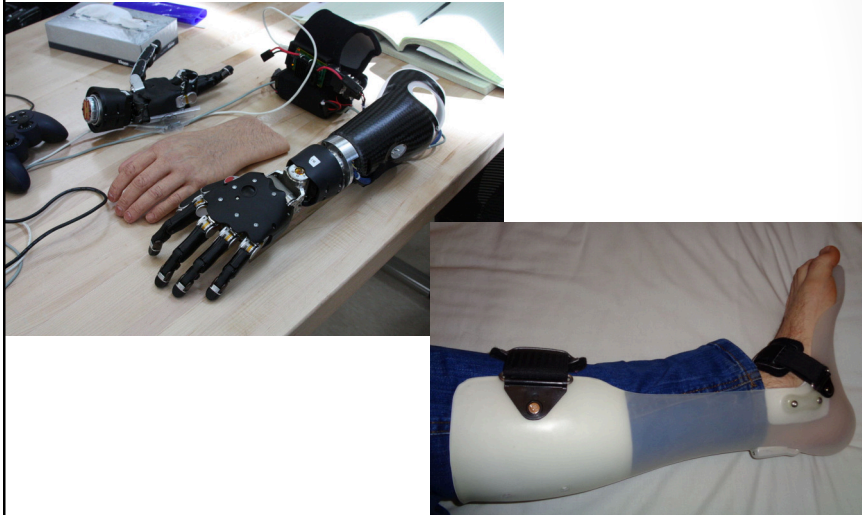


Hand movement:  
Bone Structure

[ 16 ]

Niwadare

## Prosthetic vs orthotic



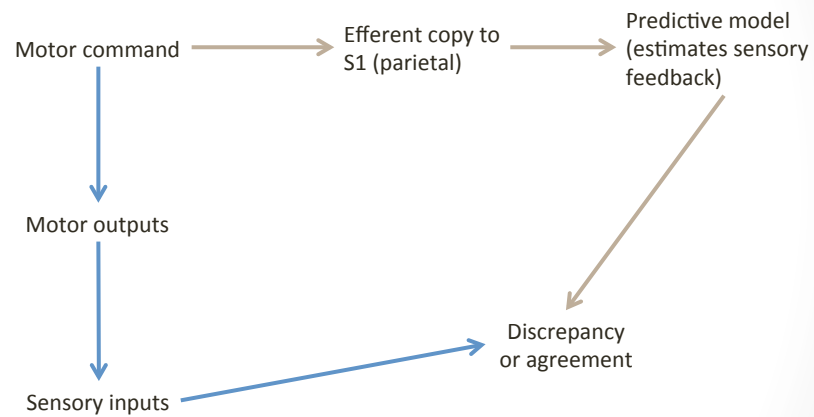
Fortney, wikimedia

[ 17 ]

## COGNITIVE ASPECTS OF MOVEMENT

[ 18 ]

## Efferent copy



( 19 )

## Efferent copy in action



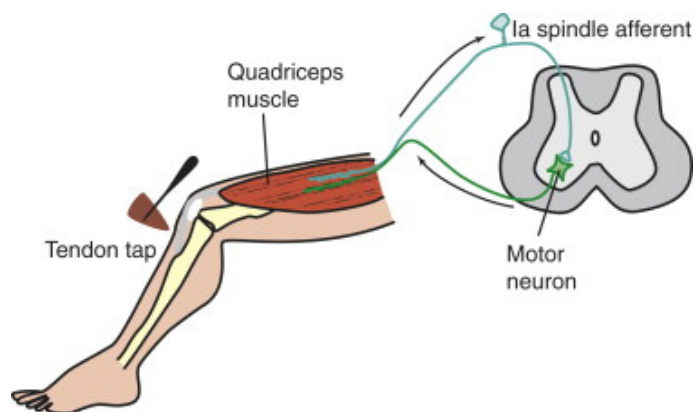
( 20 )

Wikimedia

## REFLEXES

( 21 )

## Spinal reflexes



( 22 )

Squire

## Spinal reflexes - normal



[ 23 ]

## Spinal reflexes - abnormal



[ 24 ]