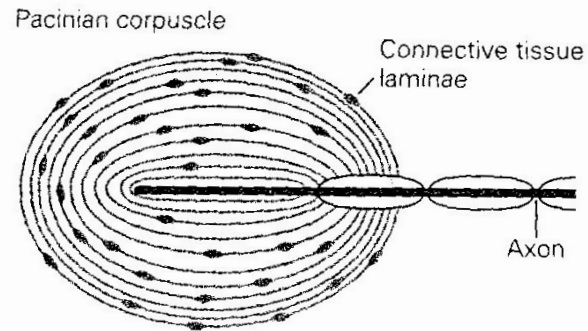
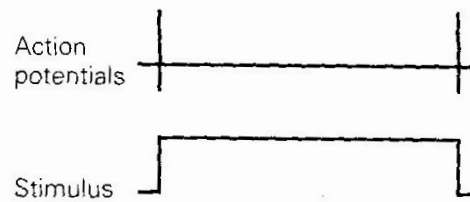


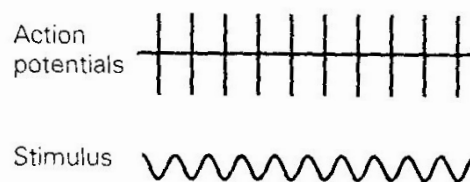
Temporal resolution of touch: receptor morphology



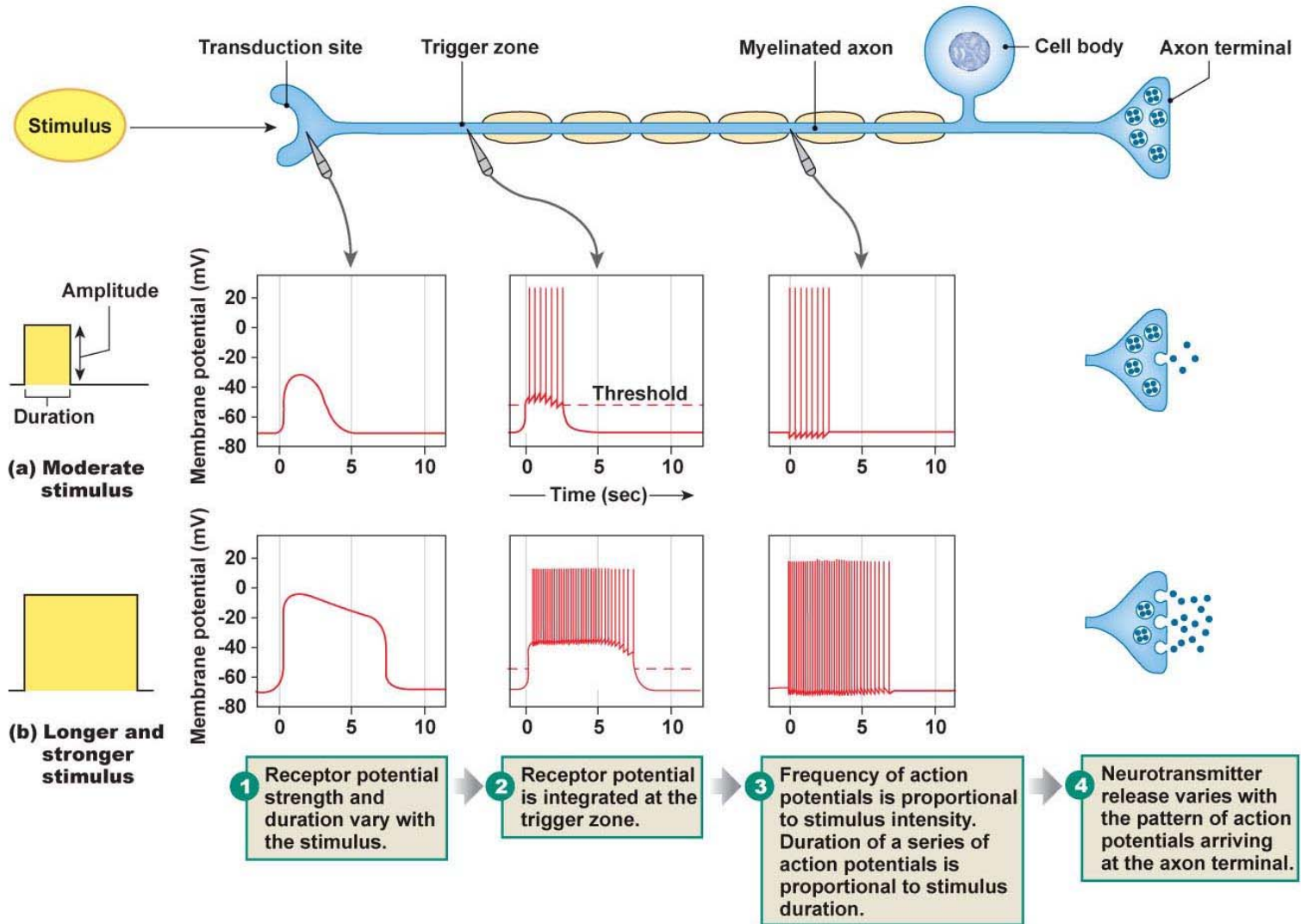
A Steady pressure



B 110 Hz vibration



Touch sensitivity: intensity and duration coding



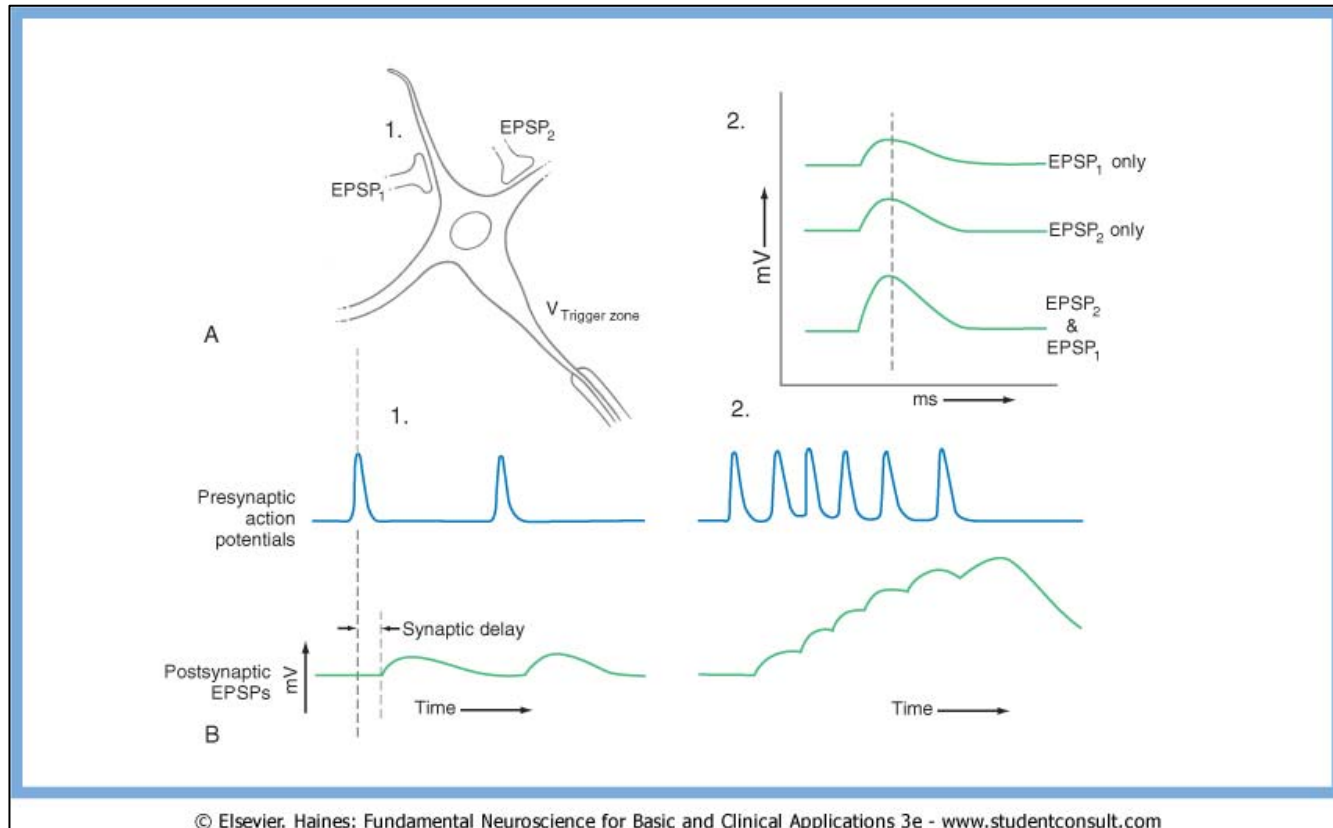
Specialized structures confer **acuity**, **temporal resolution**, and **sensitivity**

Cutaneous Mechanoreceptors and Their Associated Fiber Types and Sensations

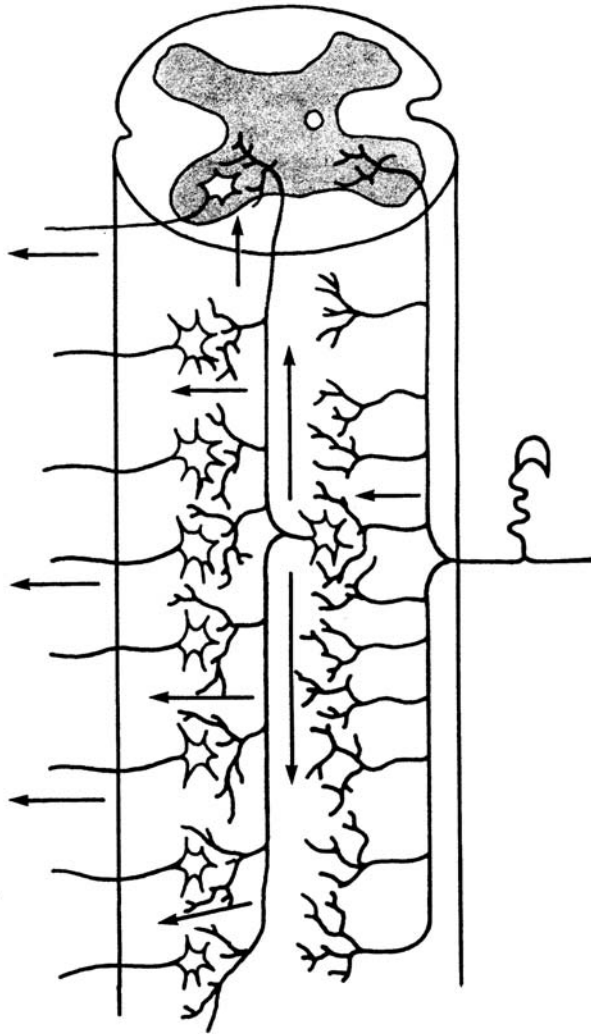
Receptor Type (Adaptation Rate)	Sensation (Microstimulation)	Fiber Type (Group)	Receptive Field Size (Average)	Number per cm ²	
				Fingertip	Palm
Meissner corpuscle (RA)	Tap, flutter 5-40 Hz	II	Small (~50 mm ²)	>100	40
Hair follicles (RA, SA)	Motion, direction	II	N/A	N/A	N/A
Pacinian corpuscle (RA)	Vibration 60-300 Hz	II	Large	20	10
Merkel cell (SA)	Touch-pressure	II	Small (~45 mm ²)	70	30
Ruffini complex (SA)	Unknown	II	Large	50	15

RA, rapidly adapting; SA, slowly adapting.

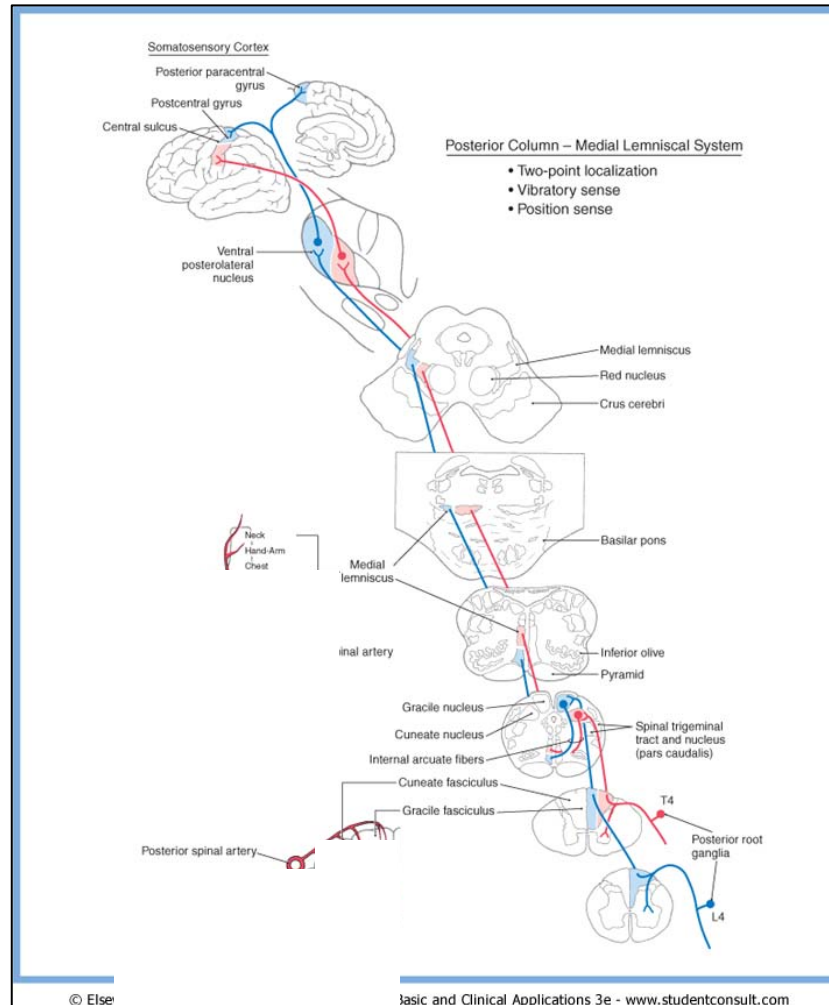
Information is transmitted from the primary sensory afferent to other neurons in the CNS at synapses.



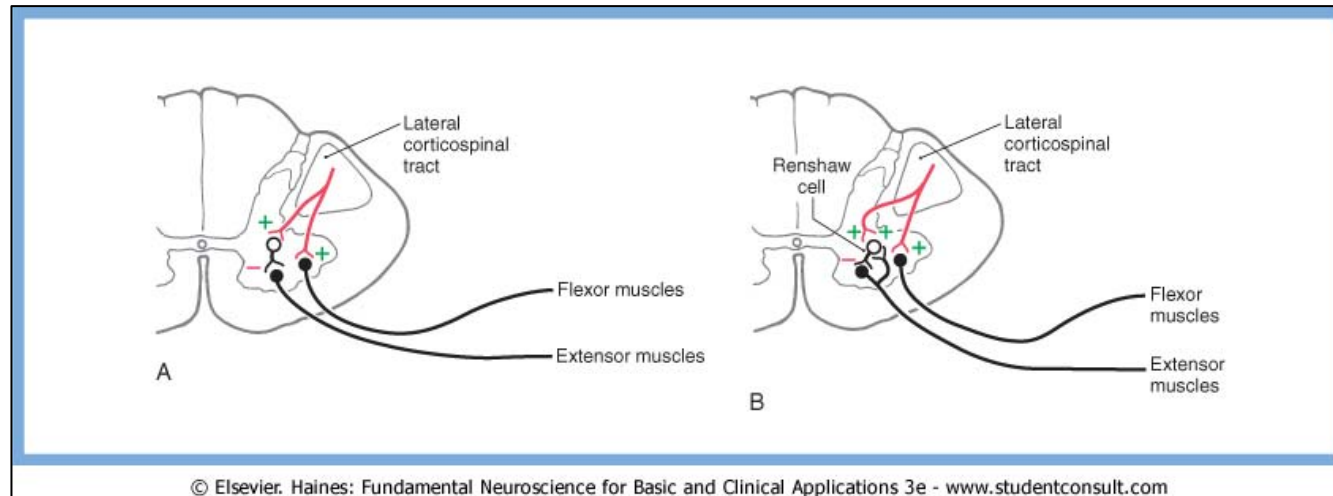
First main target for somatosensory information is other neurons in the spinal cord

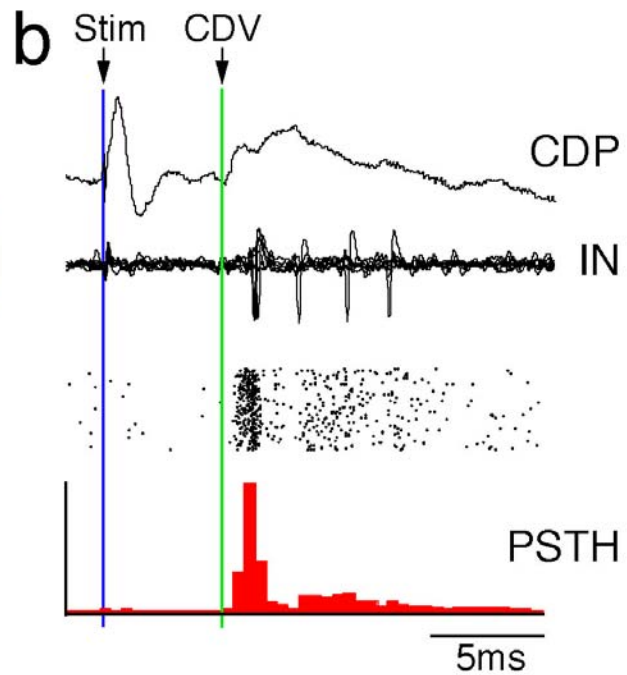
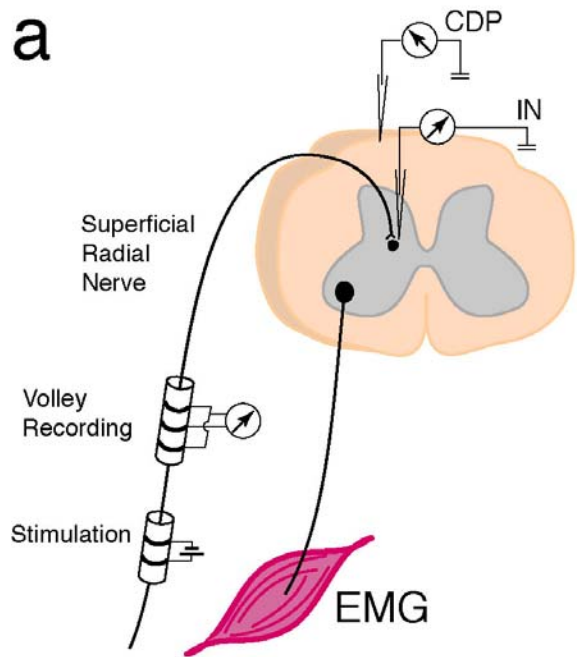


Second main target for somatosensory information is the cerebral cortex



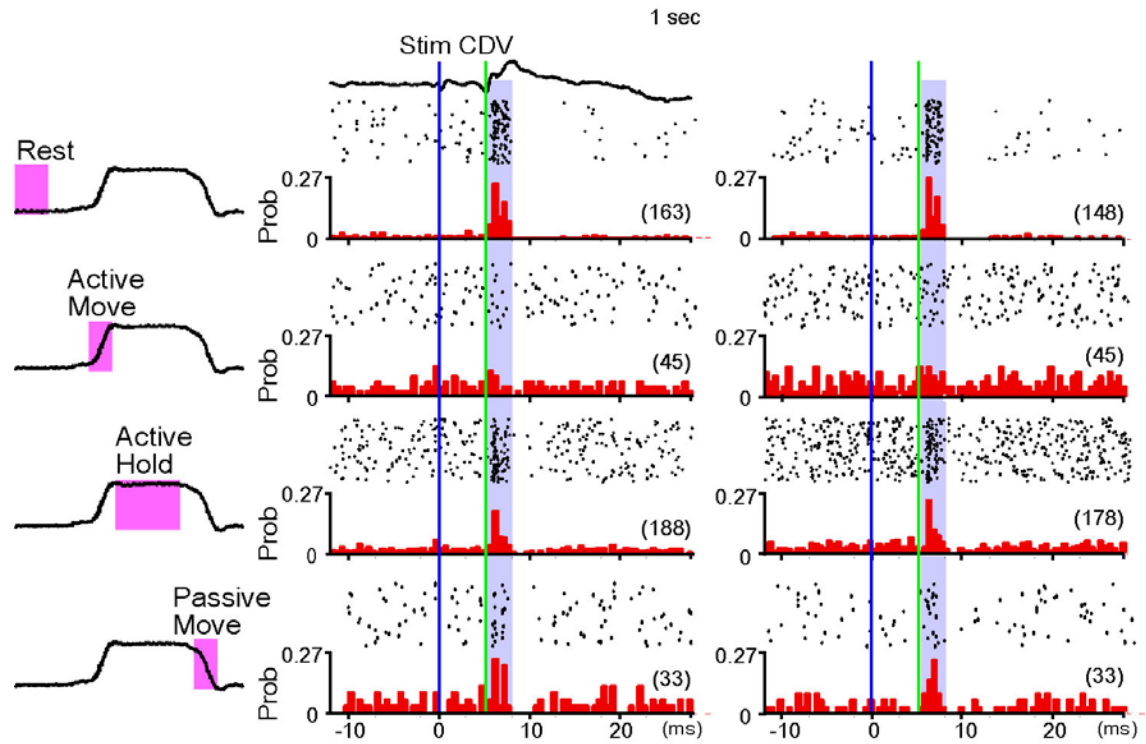
Convergence of information on neurons in ascending pathways

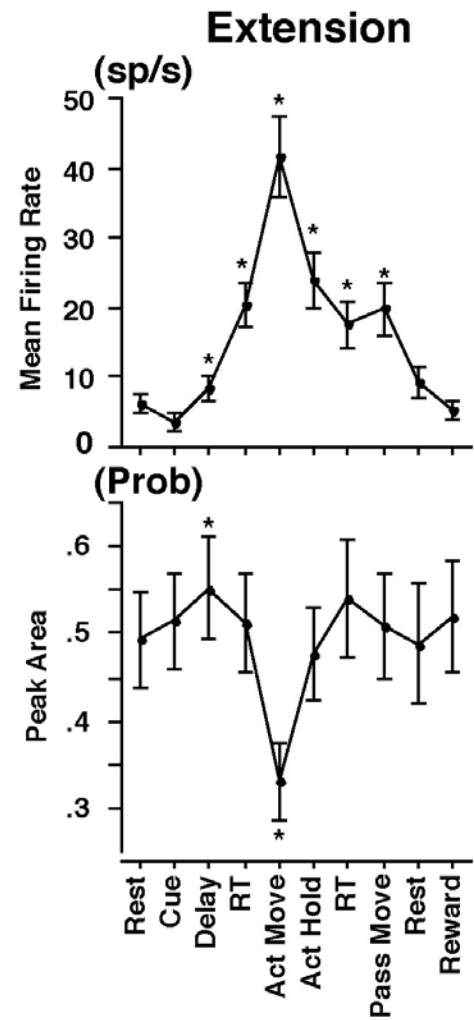
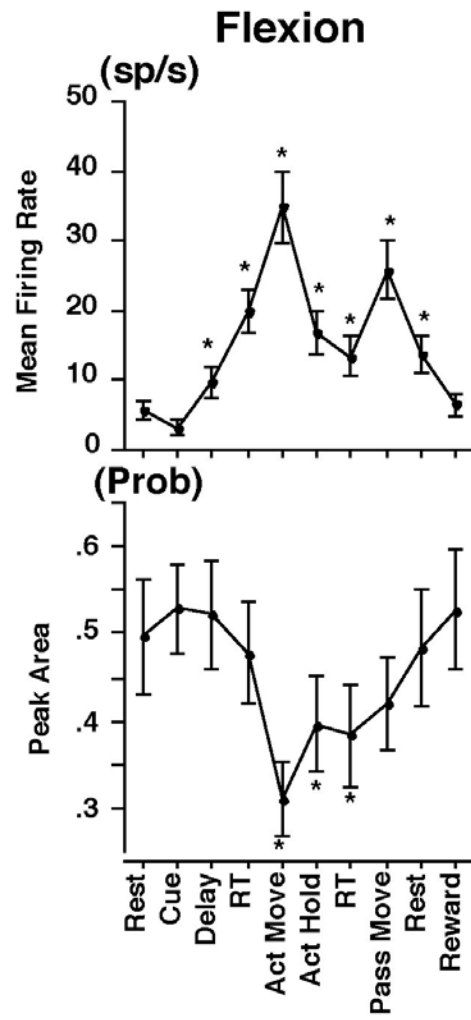




Flexion

Extension





Examples of information processing in "relay" nuclei:
why does rubbing the injured site reduce the pain?

