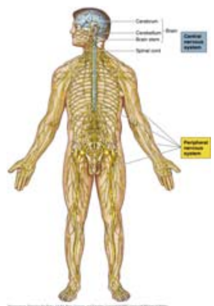
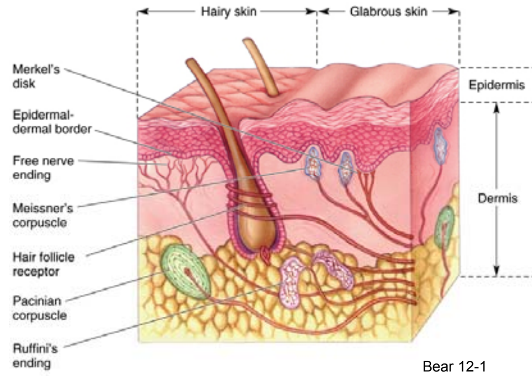
Fall, 2008

Physiology 67

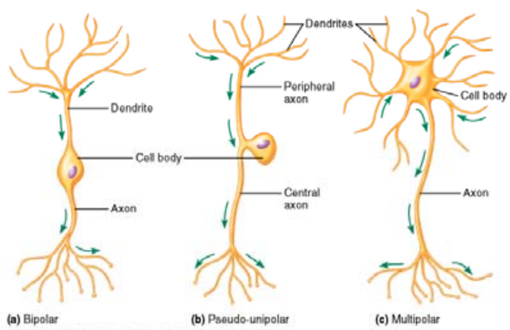
Touch and Pain



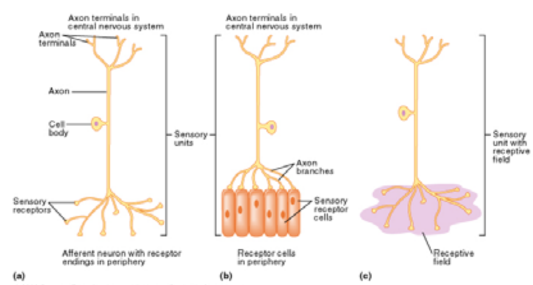


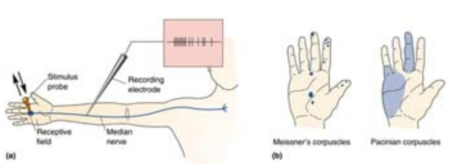
Bear 12-1

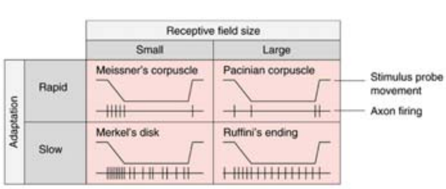
Some structural classes of neurons



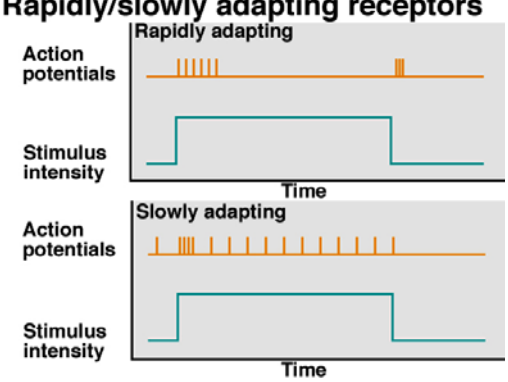
The physical nature of sensory receptors.



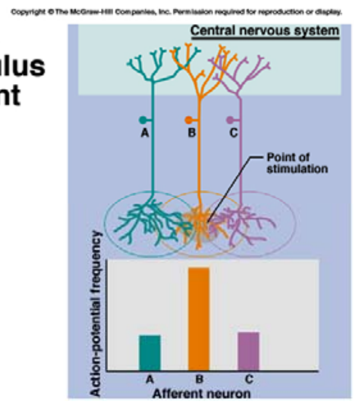




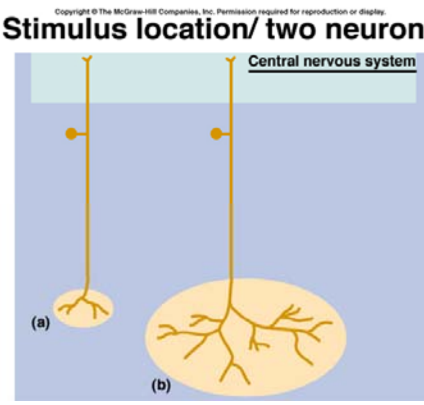
Rapidly/slowly adapting receptors

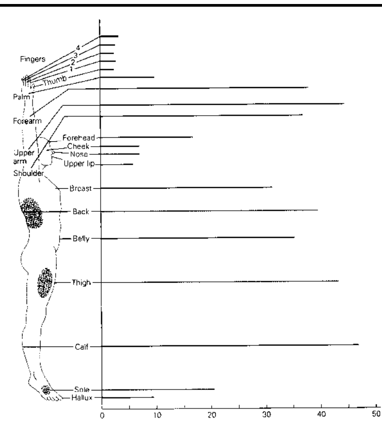


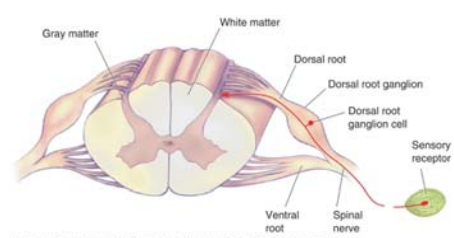
A stimulus point



Stimulus location/ two neurons

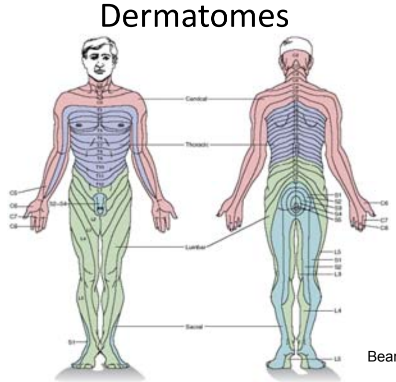




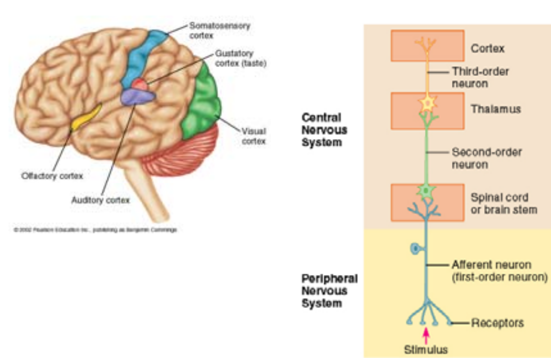


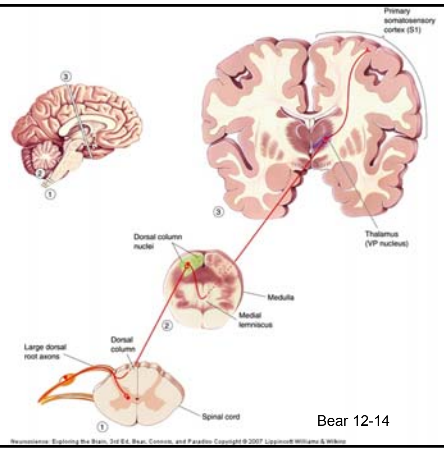
Bear 12-08

Dermatomes



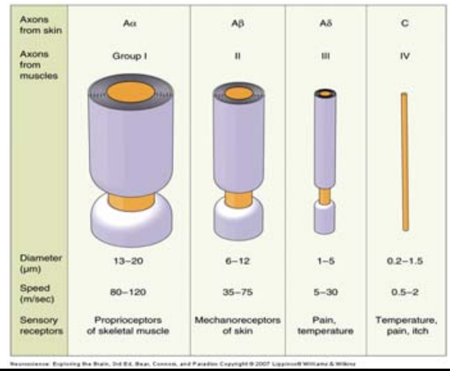
Bear 12-11





Bear 12-14

Categorizing Afferent neurons by size



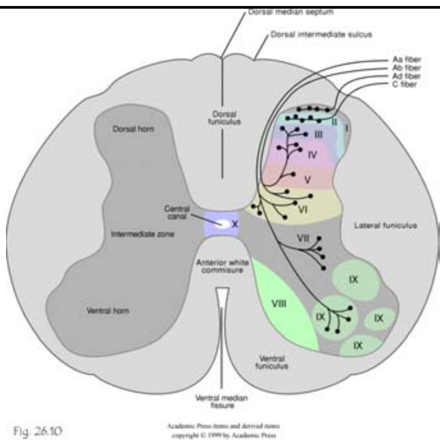
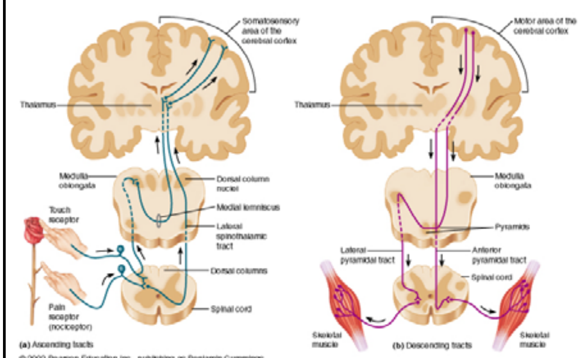
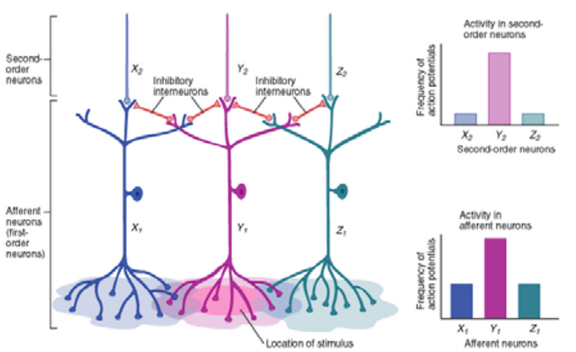


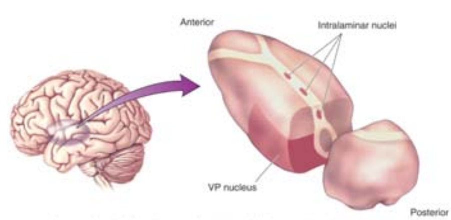
Fig. 26.10

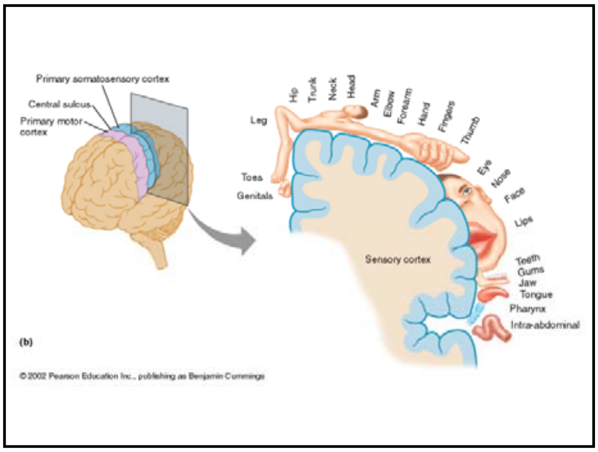


Lateral Inhibition



Thalamus




Primary somatosensory cortex
Central sulcus
Primary motor cortex
Hip
Trunk
Neck
Head
Arm
Elbow
Forearm
Hand
Fingers
Thumb
Leg
Eye
Nose
Face
Lips
Toes
Genitals
Sensory cortex
Teeth
Gums
Jaw
Tongue
Pharynx
Intra-abdominal
(b)
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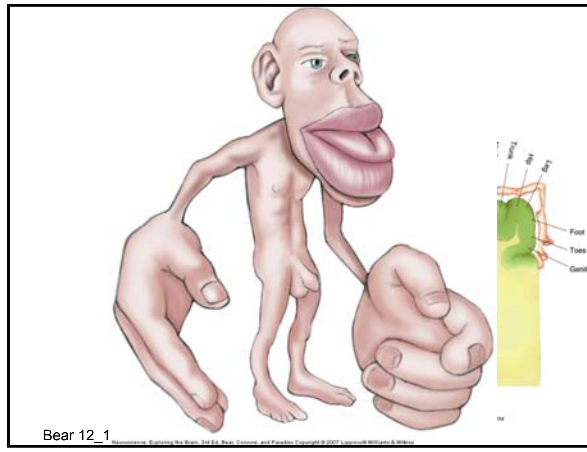
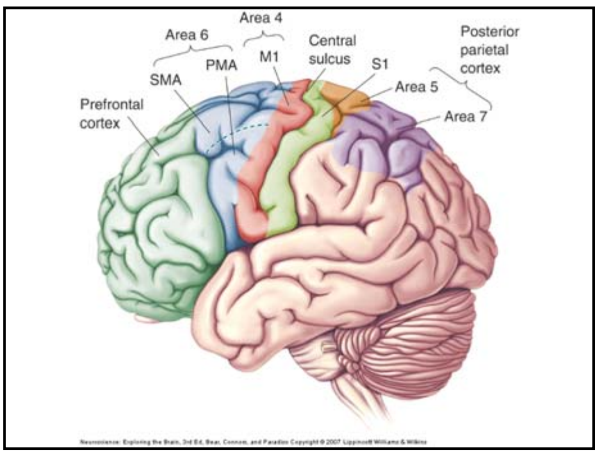
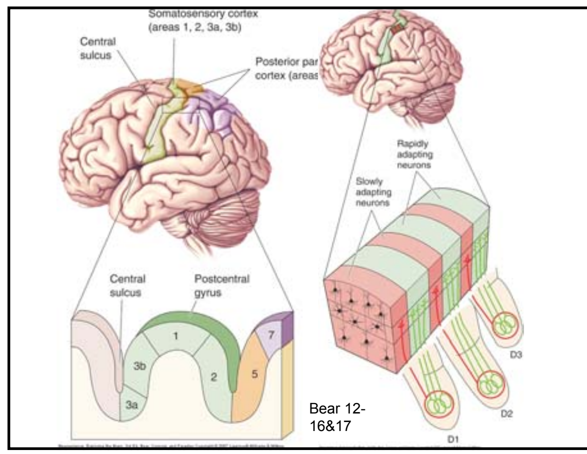
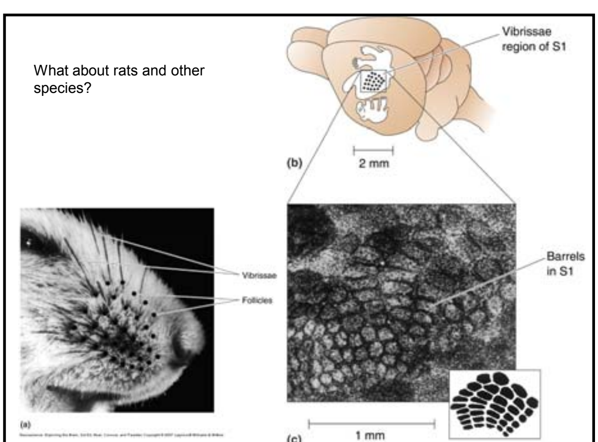
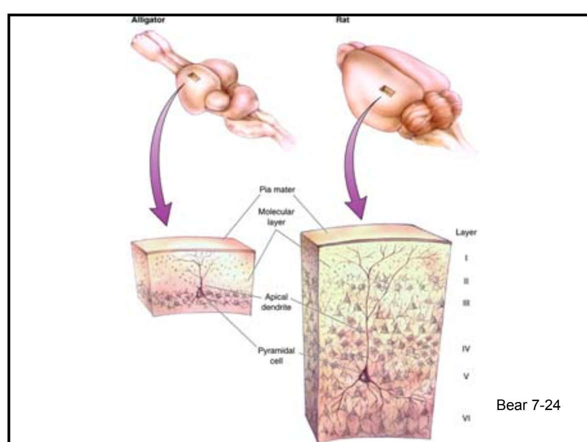

Bear 12_1

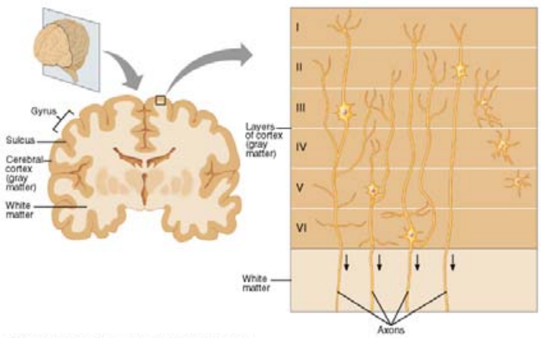

Area 4
Area 6
Central sulcus
Posterior parietal cortex
SMA
PMA
M1
S1
Area 5
Area 7
Prefrontal cortex


Somatosensory cortex (areas 1, 2, 3a, 3b)
Central sulcus
Posterior par cortex (areas
Rapidly adapting neurons
Slowly adapting neurons
Central sulcus
Postcentral gyrus
1
3b
2
7
5
3a
D3
D2
D1
Bear 12-16&17

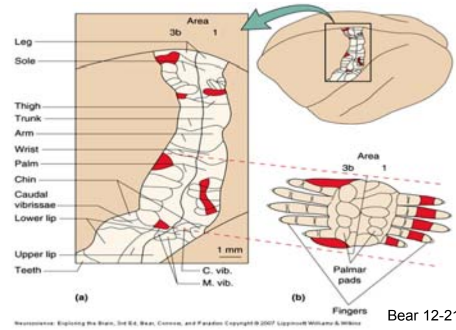

What about rats and other species?
Vibrissae region of S1
(b)
2 mm
Vibrissae
Follicles
Barrels in S1
(a)
(c)
1 mm


Alligator
Rat
Pia mater
Molecular layer
Layer
I
II
III
IV
V
VI
Apical dendrite
Pyramidal cell
Bear 7-24

Organization of the Cerebral Cortex tissue

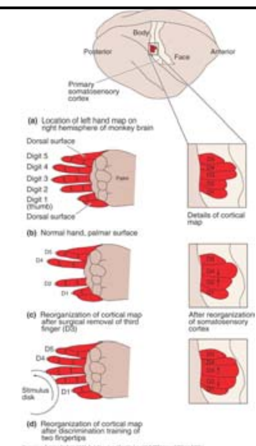


Somatosensory Map in a monkey

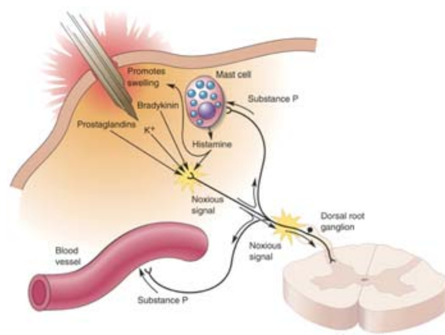


Bear 12-21

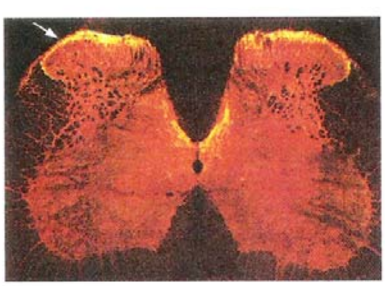
Studies on neuronal plasticity

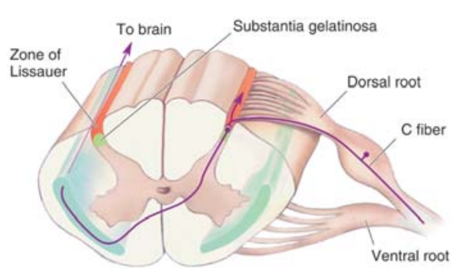


Pain and Nociception

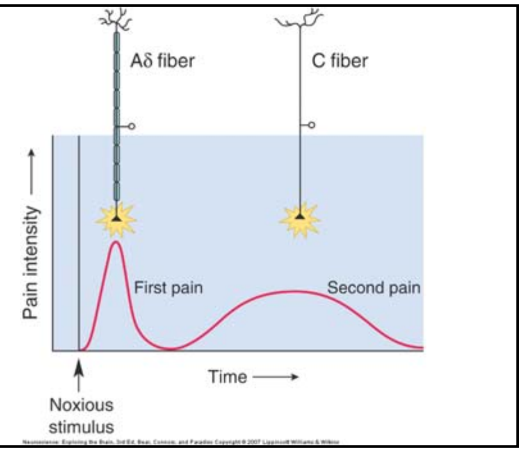


Substance P Immunohistochemistry

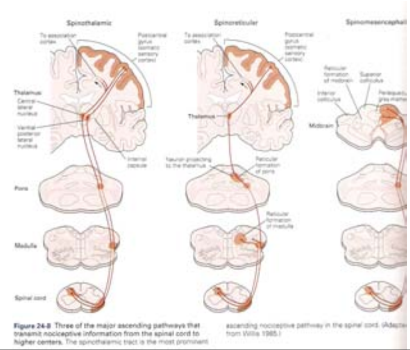




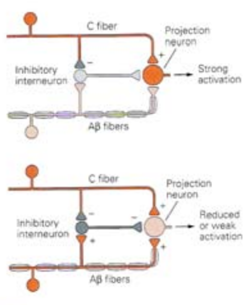
Bear 12-26



Nociceptive Pathways



Gate Theory of Pain



Descending Pain-Control pathways