

If the *left* side of your brain controls the right side of your body, and the *right* side of your brain controls the left side of your body, then left-handed people must be the only ones in their right minds.

--W.C. Fields

Nervous System

Conducting system—

Receives (sensory) receptors

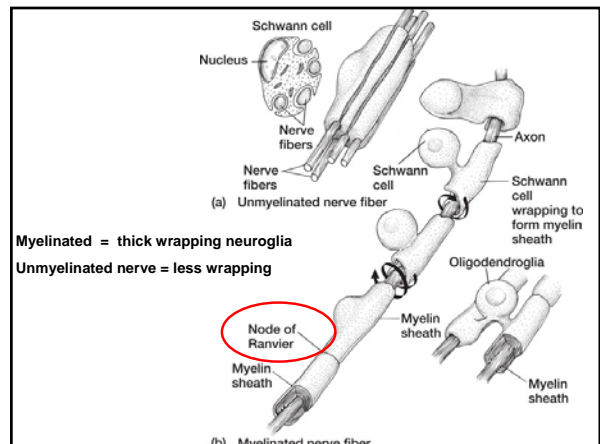
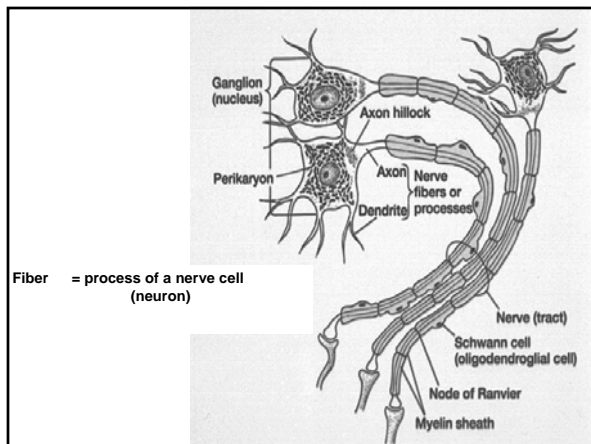
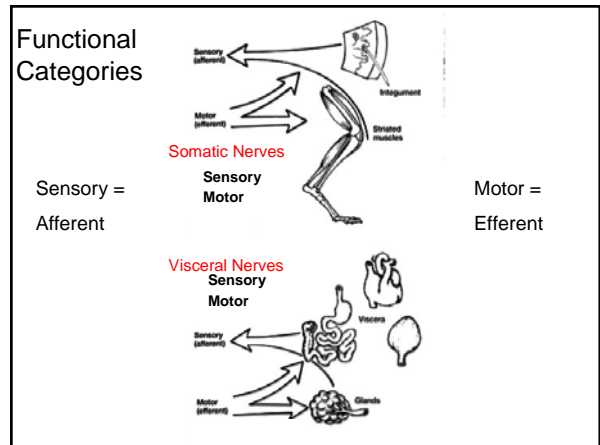
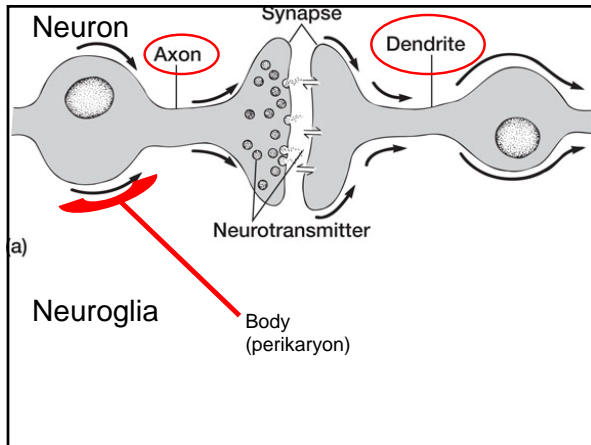
Transmits (motor)

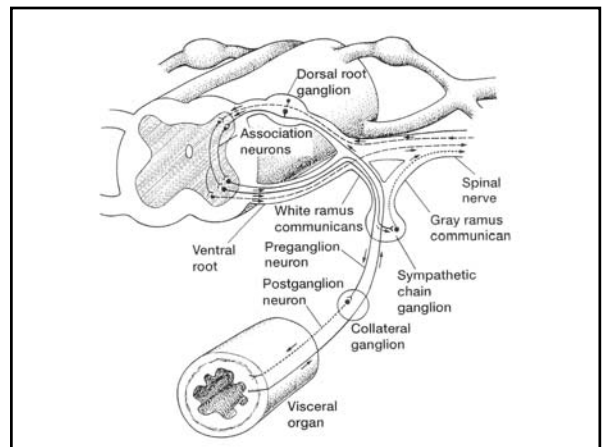
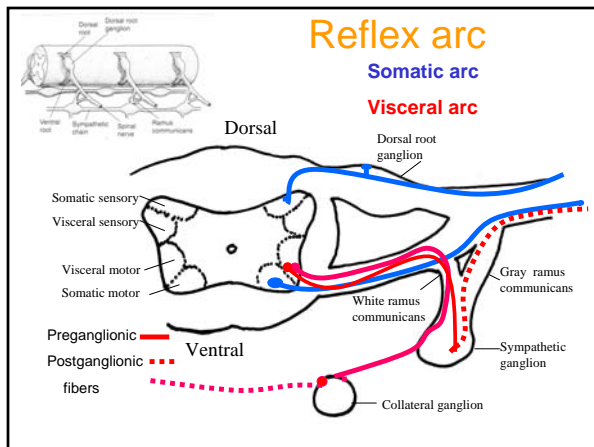
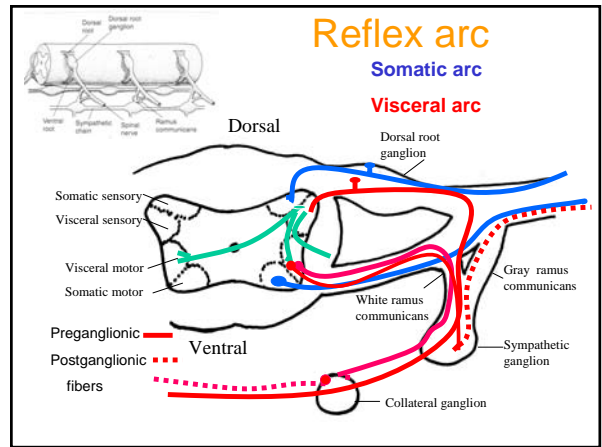
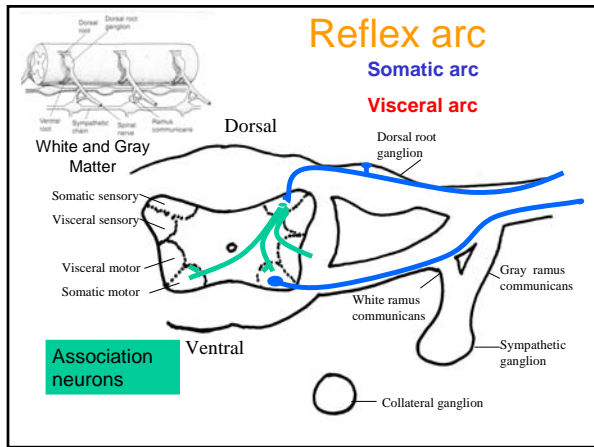
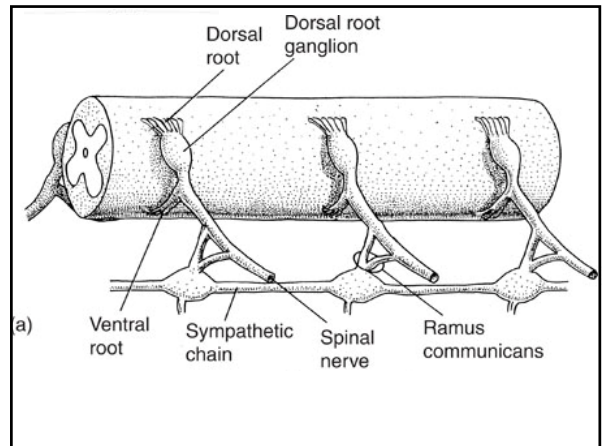
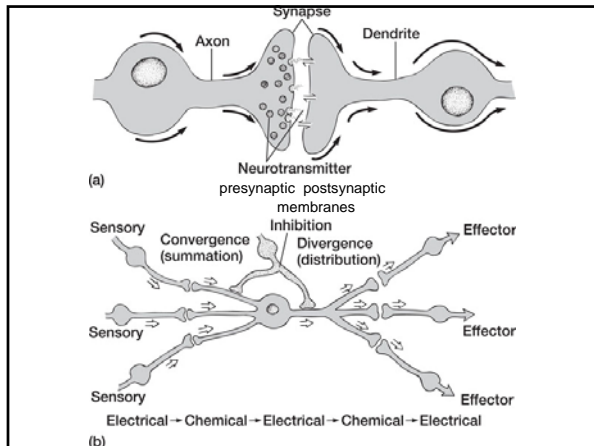
effectors (chemical, mechanical)

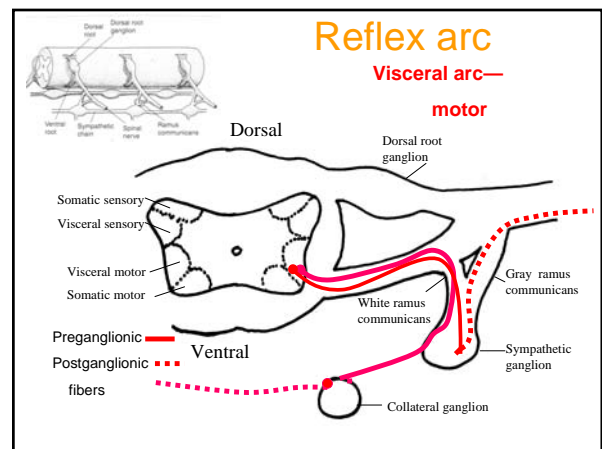
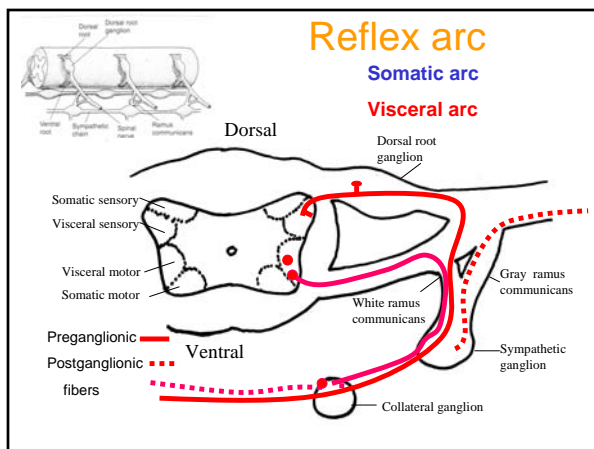
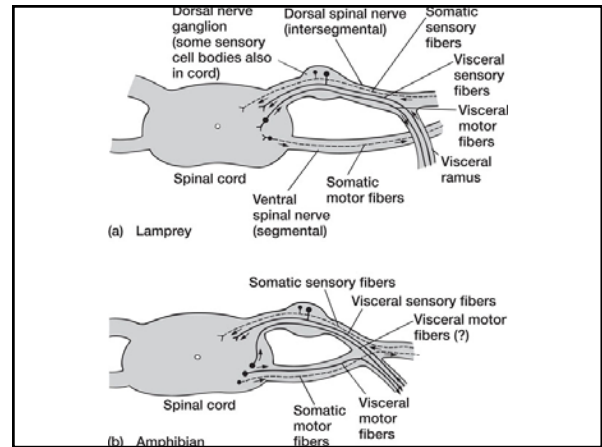
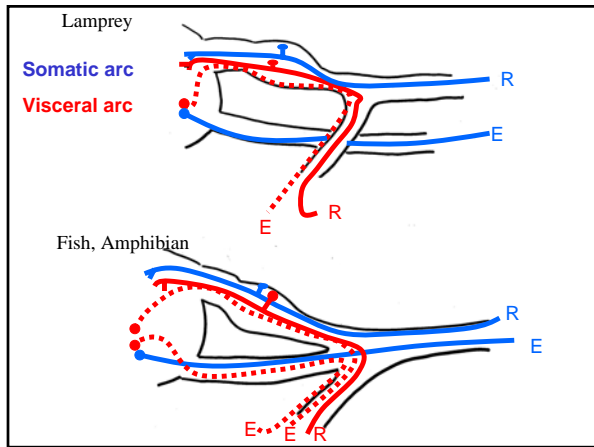
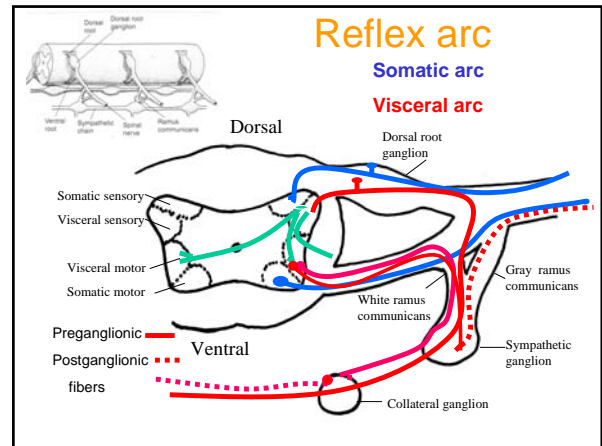
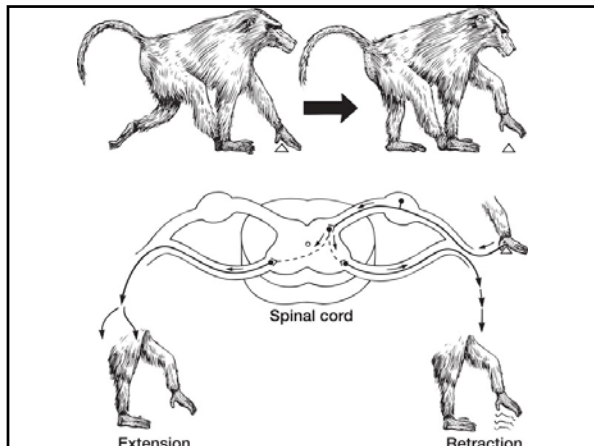
Components—

Central Nervous System (CNS)

Peripheral Nervous System (PNS)

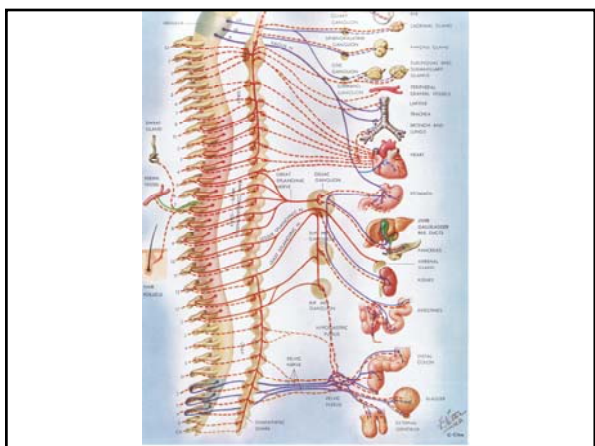
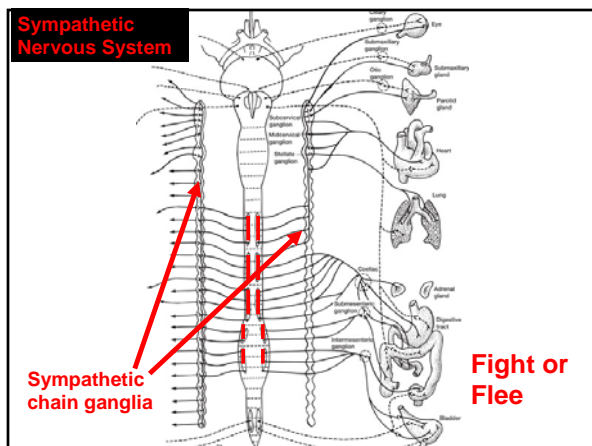
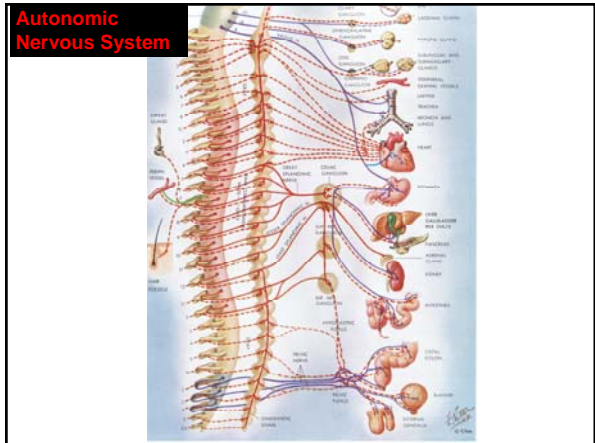
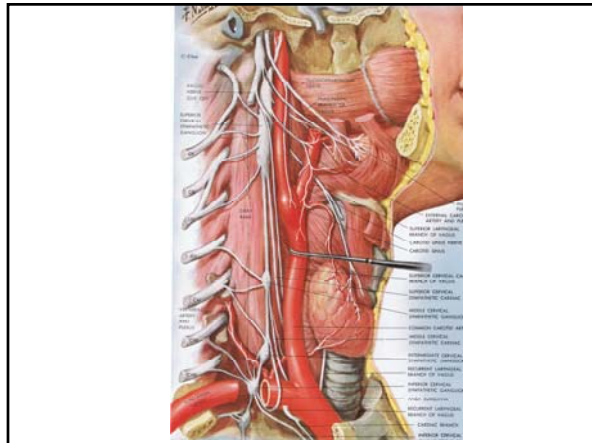
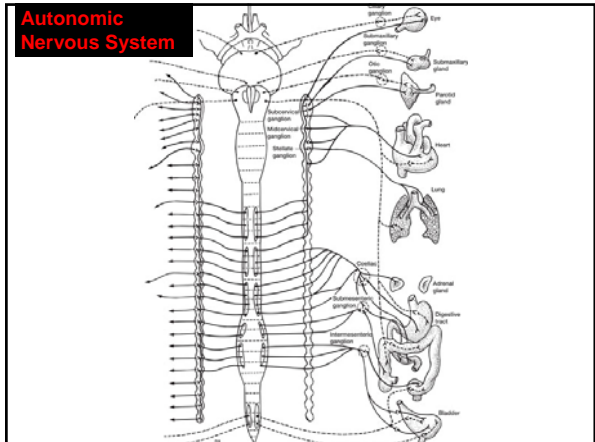


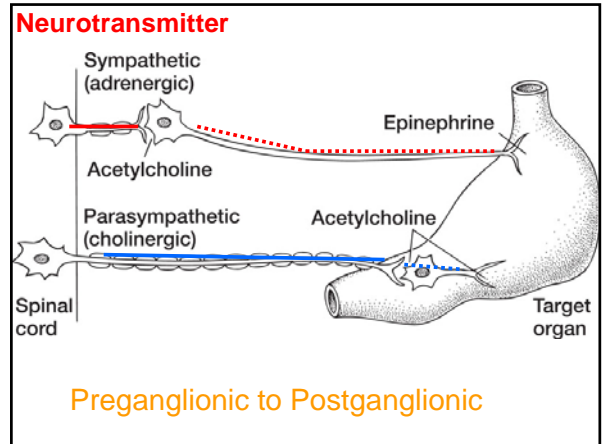
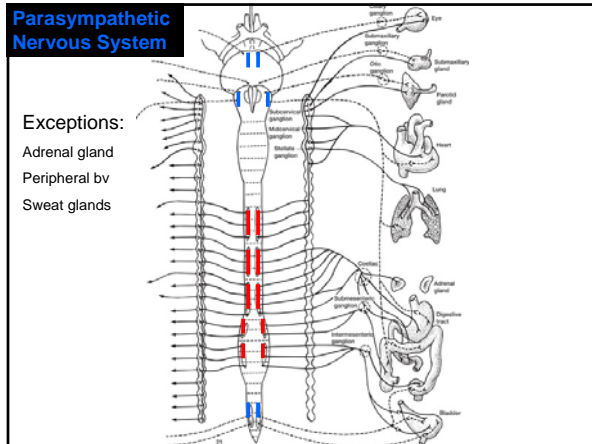




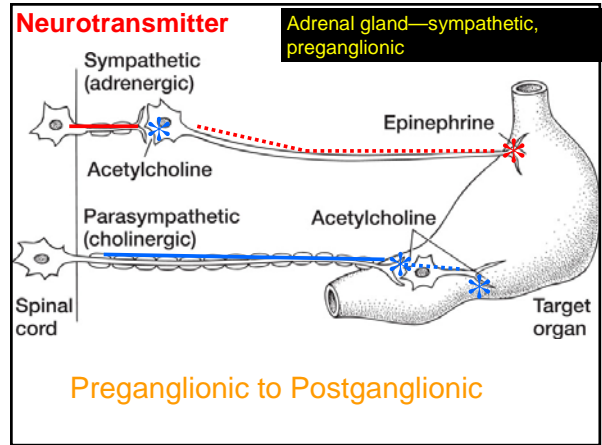
Autonomic Nervous System

Define—visceral motor neurons
ventral root
pre- and post-ganglionic
Two contrasting systems
sympathetic
parasympathetic

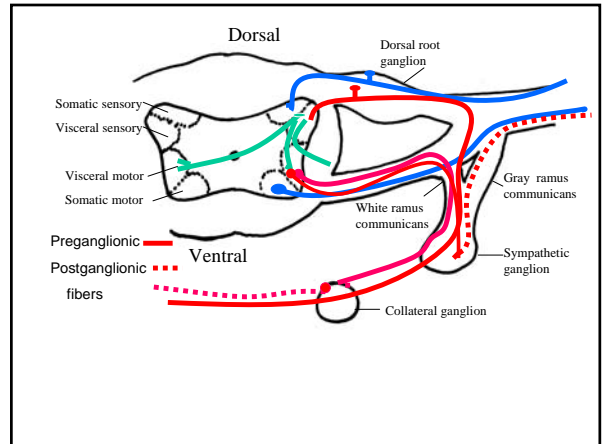




Otto Loewi
• 1873—1961

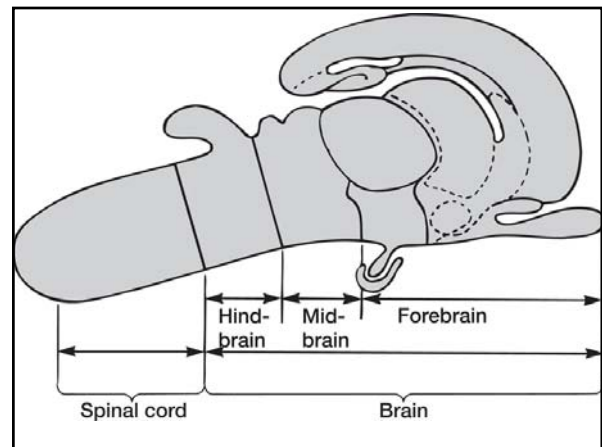
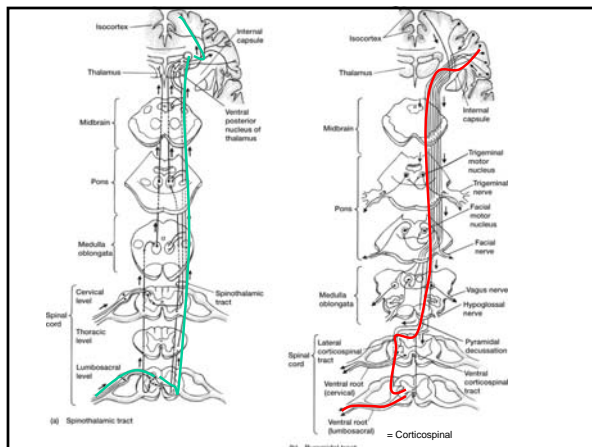
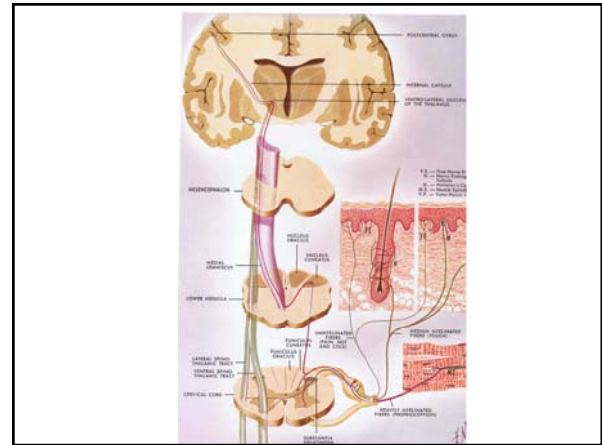
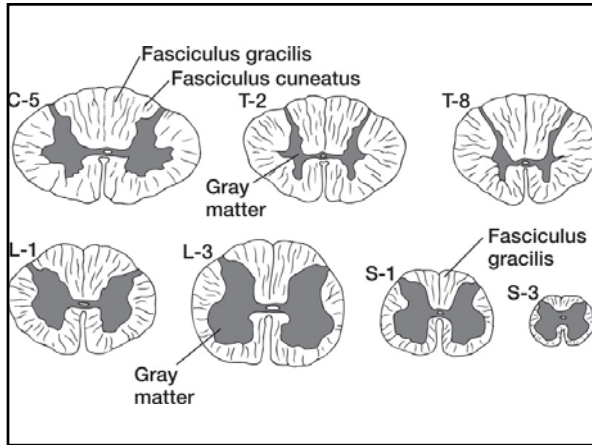
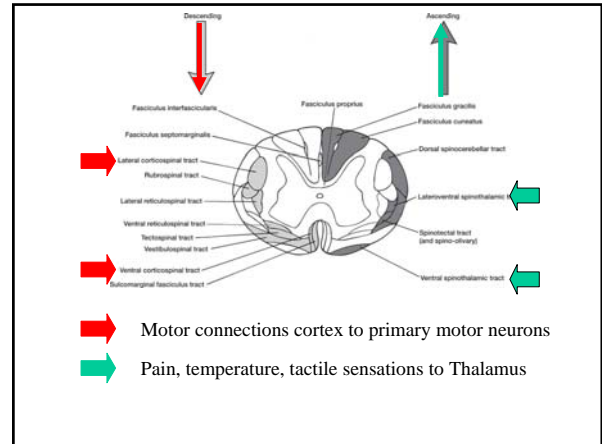



Medical Implications
Raynaud's Disease



Types of Sensory Receptors

- Exteroceptors -- outside**
- Interoceptors -- inside**
- Proprioceptors -- special interoceptors**





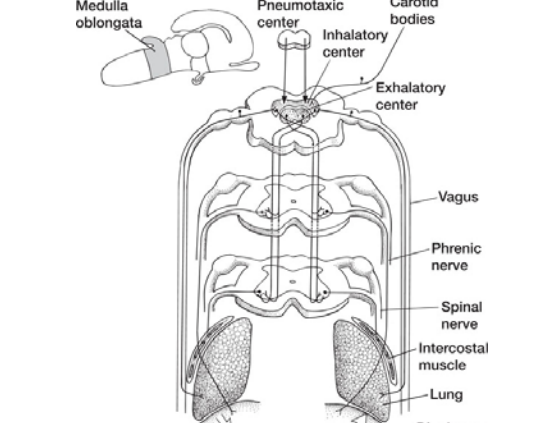
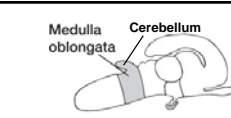
Medulla oblongata

Functions

- roots of cranial nerves
- ascending and descending pathways
- centers (visceral, auditory, proprioceptive) (e.g. respiration, heart beat)

Input

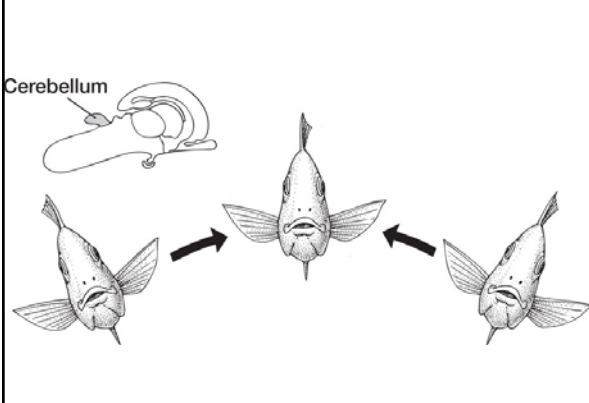
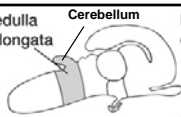
- sensory nerves, hypothalamus

Cerebellum

Functions—monitors & modifies

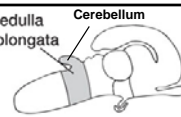
- Equilibrium (touch, vision, hearing, etc)

Cerebellum

Functions—monitors & modifies

- Equilibrium (touch, vision, hearing, etc)
- Refinement of motor action
- Ataxia
- Dysmetria



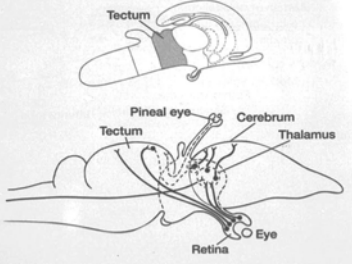
Cerebellum

Functions—monitors & modifies

- Equilibrium (touch, vision, hearing, etc)
- Refinement of motor action

Evolution

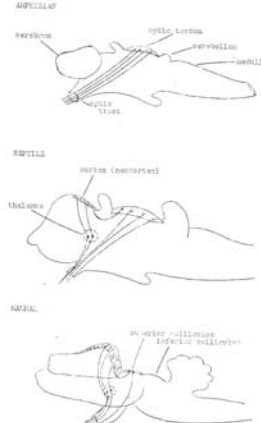
- fishes—acousticolateralis system (lateral line system)
- tetrapods—proprioception from limbs, body



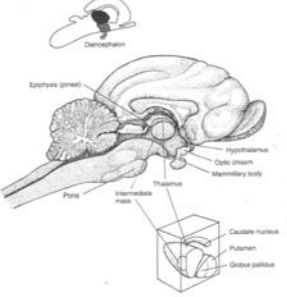
OPTIC LOBES
(mesencephalon)

Anatomy
tectum—roof
sensory
tegmentum—floor
motor

Evolution
transfer forward
Blindsight



Blindsight




THALAMUS

Epithalamus
pineal, habenular nucleus,
post. commissure

Hypothalamus
visceral brain center
(temp., water, appetite,
emotion, other)

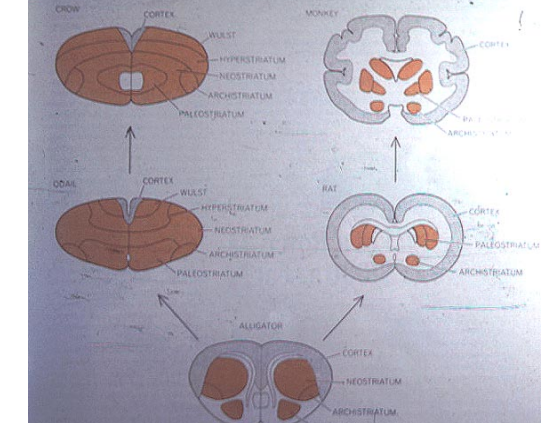
Thalamus proper
relay center

CEREBRUM
Cerebral hemispheres

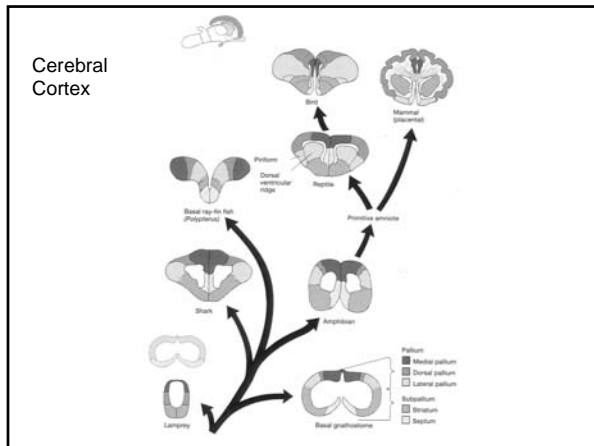


Pallium
medial
dorsal
lateral

Subpallium
Striatum
Septum



Morphological	out dated (tired)	Descriptive (wired)
PALLIUM		
Medial	----- Archipallium	(Hippocampus)
Dorsal	——— Neopallium	(Cerebral cortex)
Lateral	——— Paleopallium	(Piriform cortex)
SUBPALLIUM		
Striatum	——— Corpus striatum	(Basal nuclei)
Septum	——— Septum	(Septal nuclei)
	(limbic system)	



Morphological	out dated (tired)	Descriptive (wired)
PALLIUM		
Medial	----- Archipallium	(Hippocampus)
Dorsal	} Neopallium	(Cerebral cortex)
Lateral		
	} Paleopallium	(Piriform cortex)
SUBPALLIUM		
Striatum	----- Corpus striatum	(Basal nuclei)
Septum	----- Septum	(Septal nuclei)
		(limbic system)

