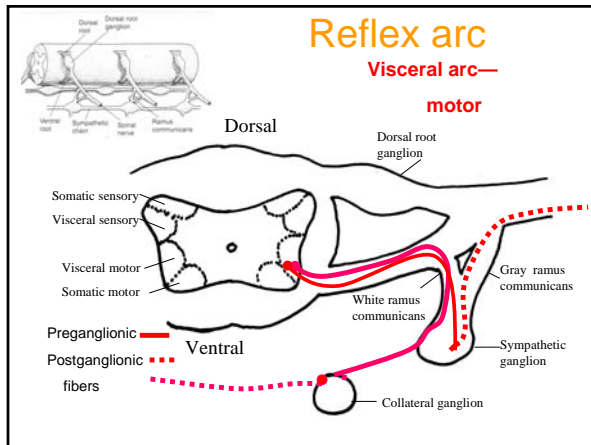
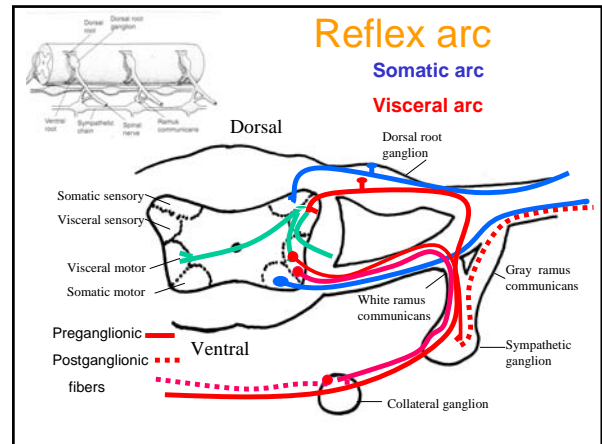


Autonomic Nervous System

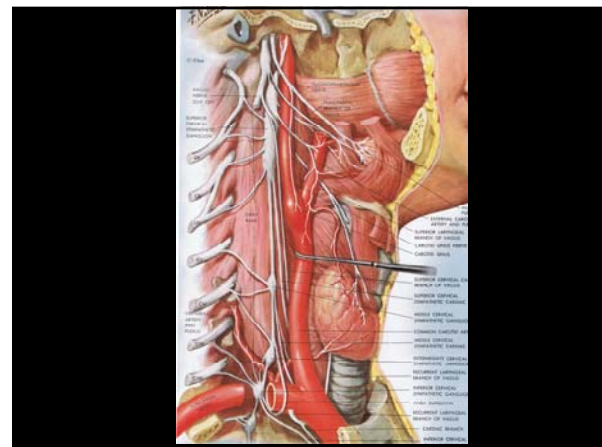
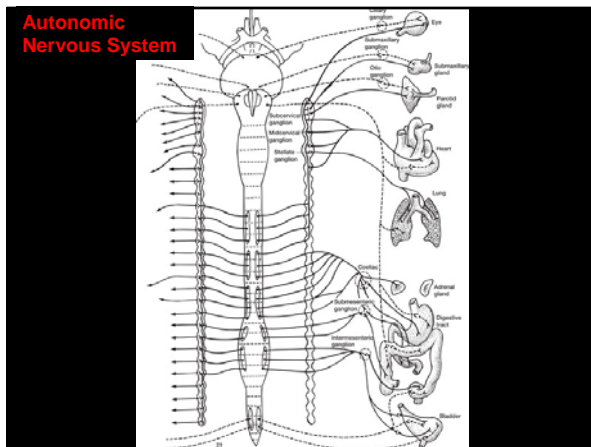
Define—visceral motor neurons
ventral root
pre- and post-ganglionic



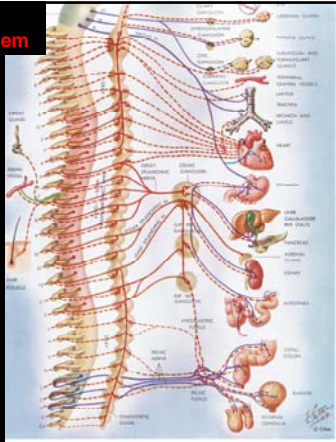
Autonomic Nervous System

Define—visceral motor neurons
ventral root
pre- and post-ganglionic

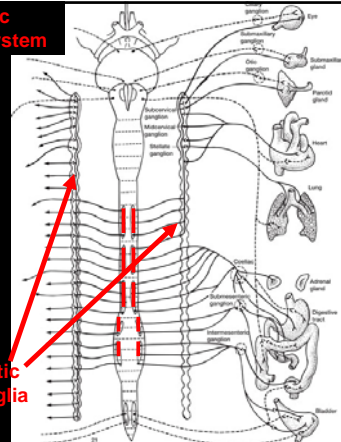
Two contrasting systems
sympathetic
parasympathetic



Autonomic Nervous System

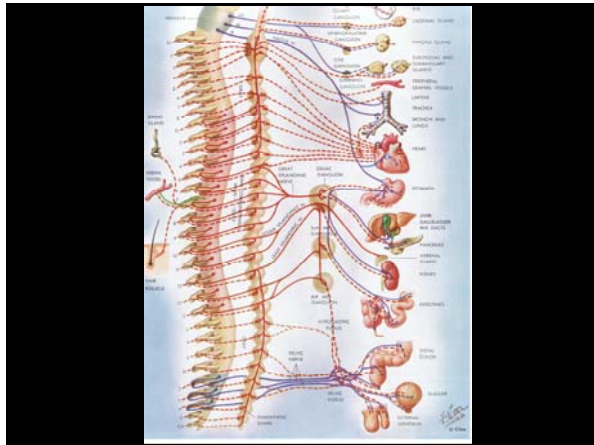


Sympathetic Nervous System

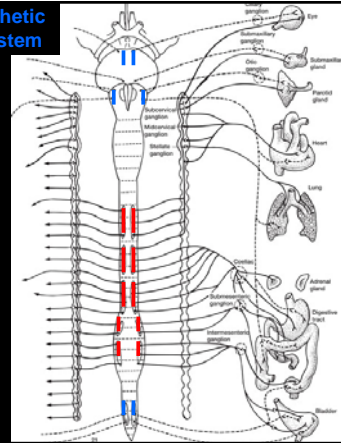


Sympathetic chain ganglia

Fight or Flee

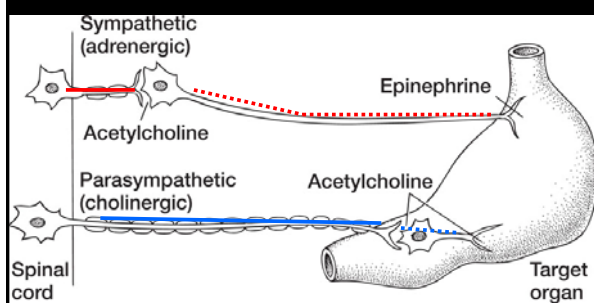


Parasympathetic Nervous System



Exceptions:
Adrenal gland
Peripheral bv
Sweat glands

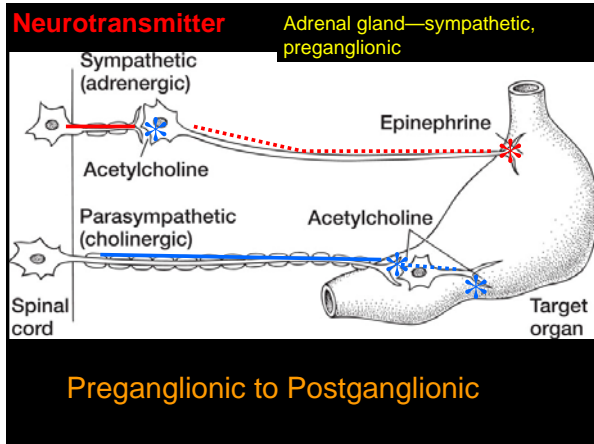
Neurotransmitter



Preganglionic to Postganglionic

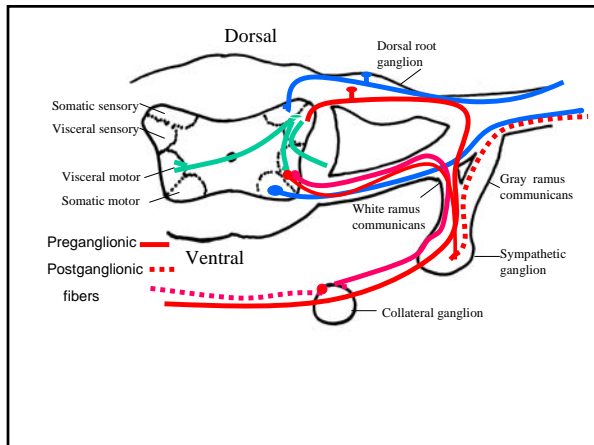
Otto Loewi

• 1873—1961



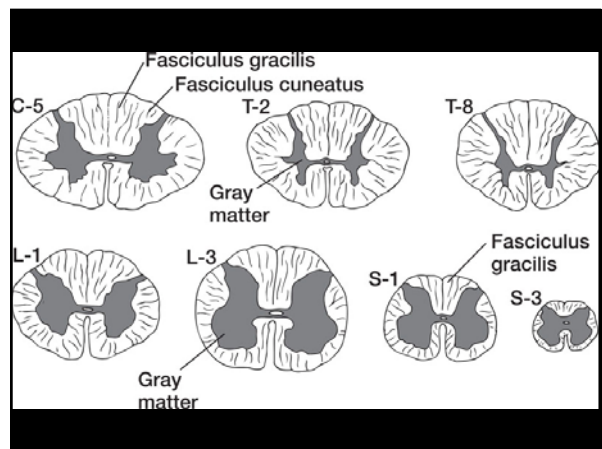
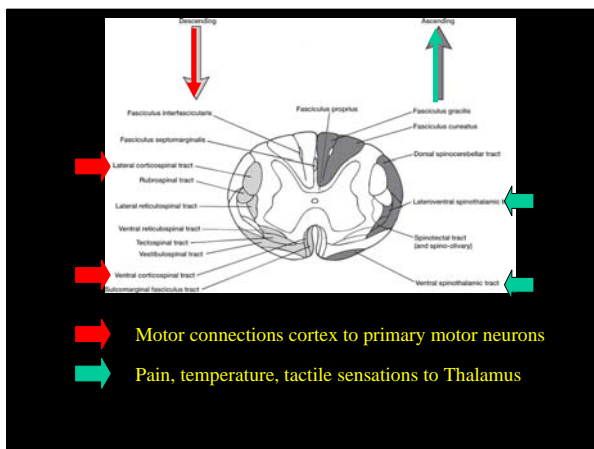
Medical Implications

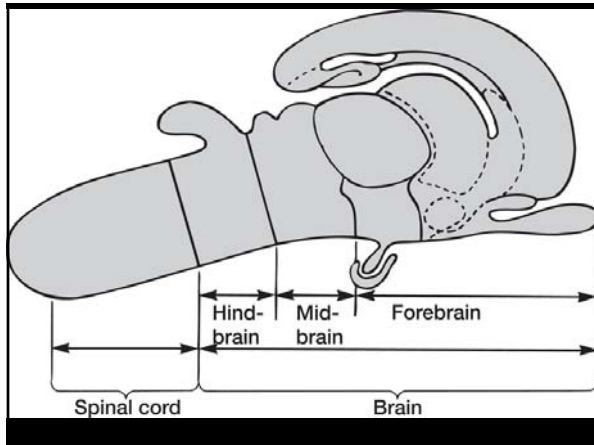
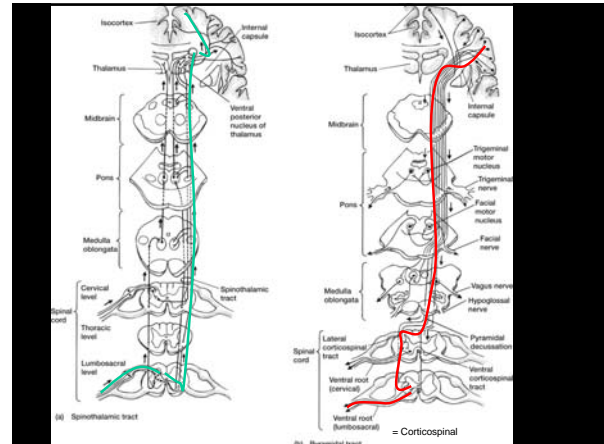
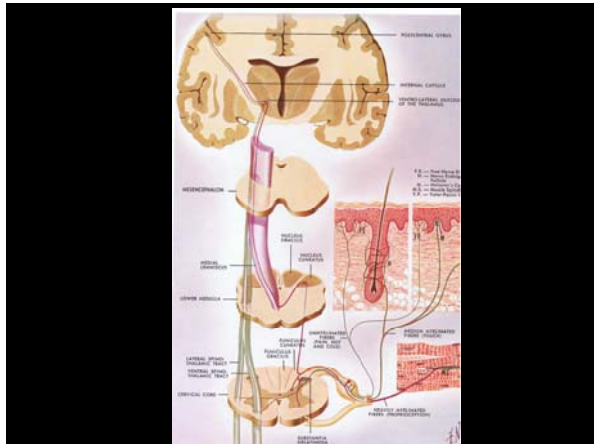
Raynaud's Disease



Types of Sensory Receptors

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





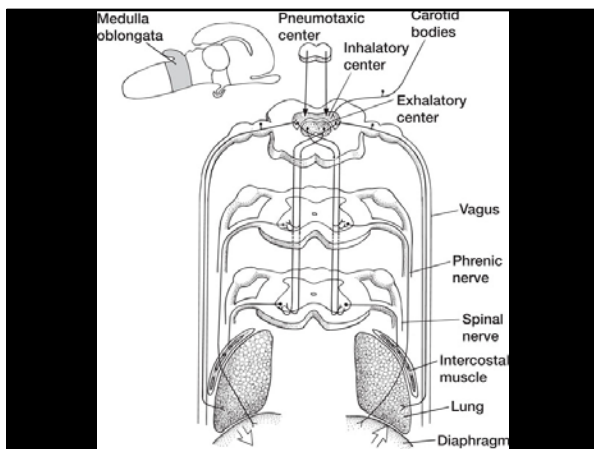
Medulla oblongata

Functions

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

Input

- sensory nerves, hypothalamus

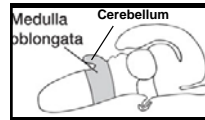
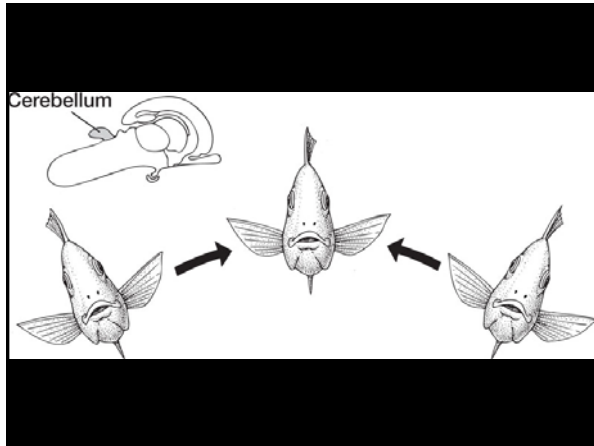


Medulla oblongata and **Cerebellum**

Cerebellum

Functions—monitors & modifies

- Equilibrium (touch, vision, hearing, etc)



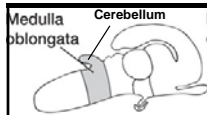
Cerebellum

Functions—monitors & modifies

Equilibrium (touch, vision, hearing, etc)

Refinement of motor action

Ataxia
Dysmetria



Cerebellum

Functions—monitors & modifies

Equilibrium (touch, vision, hearing, etc)

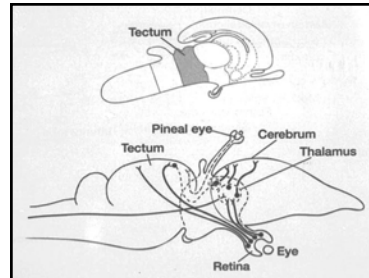
Refinement of motor action

Evolution

fishes—acousticolateralis system

(lateral line system)

tetrapods—proprioception from limbs,
body



**OPTIC LOBES
(mesencephalon)**

Anatomy

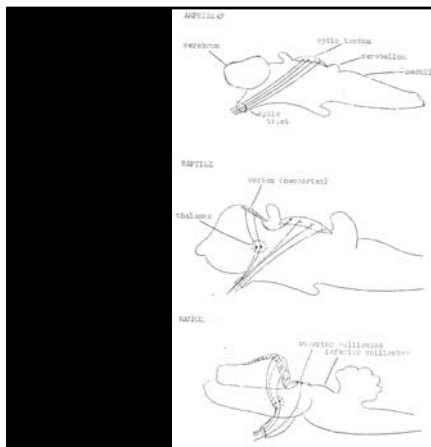
tectum—roof
sensory

tegmentum—floor
motor

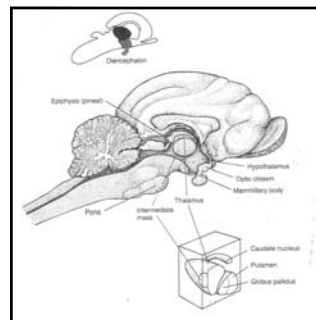
Evolution

transfer forward

Blindsight



Blindsight

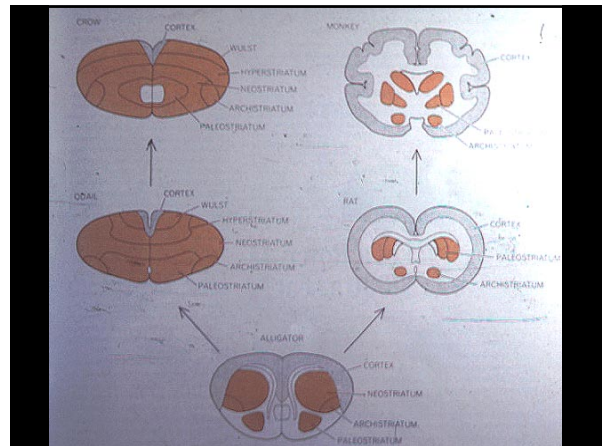
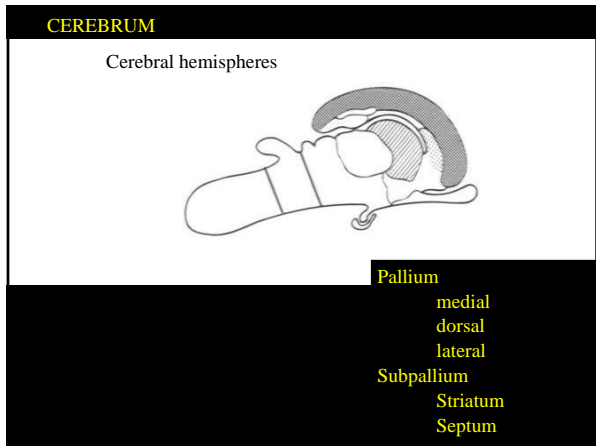


THALAMUS

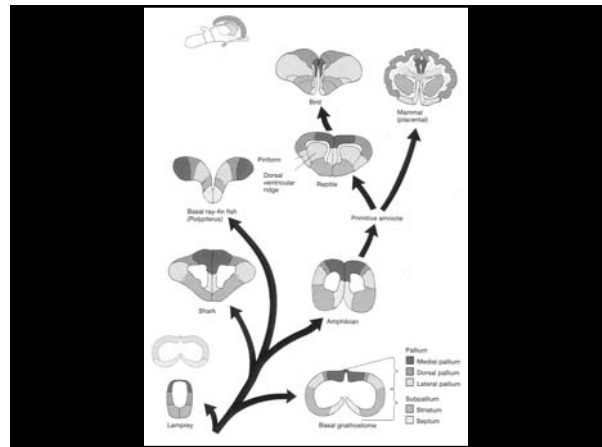
Epithalamus
pineal, habenular nucleus,
post. commissure

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

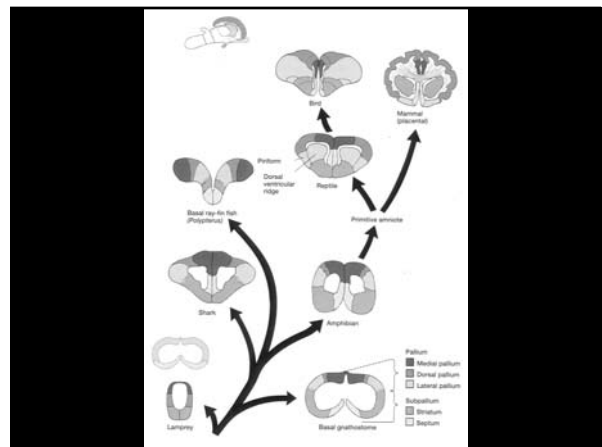
Thalamus proper
relay center

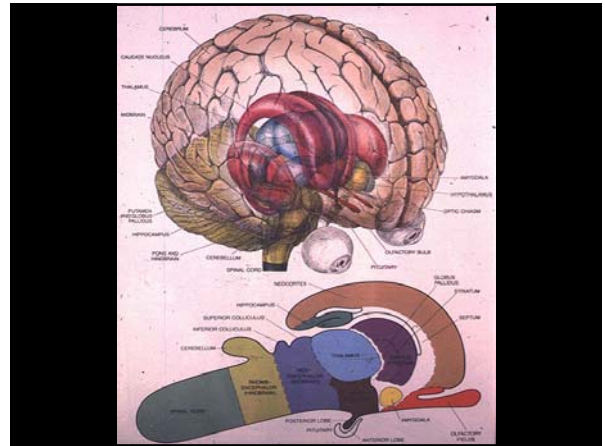
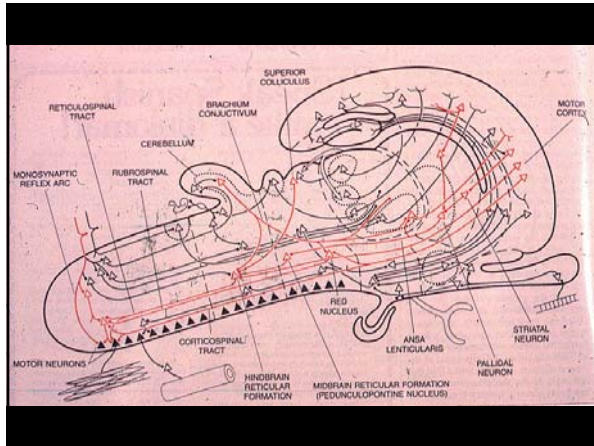


Morphological	out dated (tired)	Descriptive (wired)
PALLIUM		
Medial -----	Archipallium	(Hippocampus)
Dorsal } -----	Neopallium	(Cerebral cortex)
Lateral } -----	Paleopallium	(Piriform cortex)
SUBPALLIUM		
Striatum -----	Corpus striatum	(Basal nuclei)
Septum -----	Septum	(Septal nuclei)
	(limbic system)	

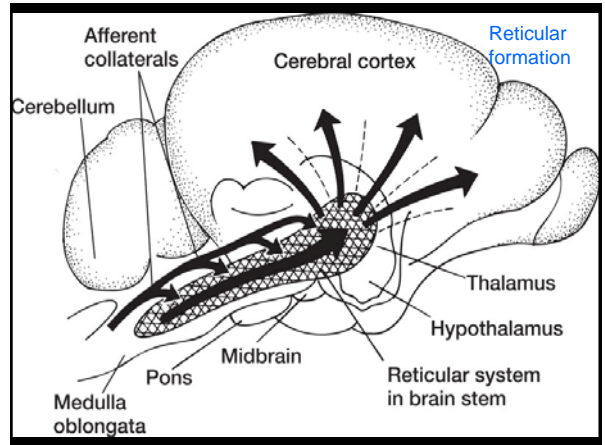
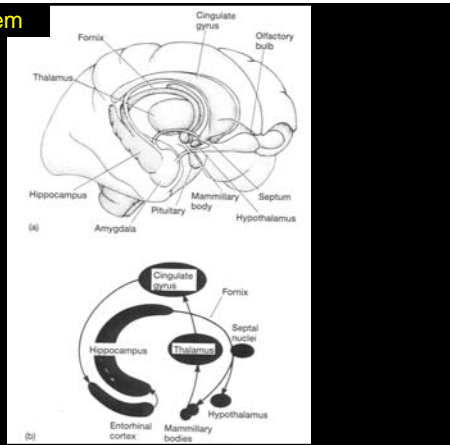


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Limbic System



Experimental Approaches

