Chapter 8: Nervous System II

BIO 105

Protection for the Central Nervous System

1. Encased in hard bony structures
2. Meninges
3. Cerebrospinal fluid
   - Shock absorption
   - Support
   - Nourishment
   - Waste removal
4. Blood-brain-barrier
Human brain - Cerebrum

Cerebrum organization

Gray matter – contains neuroglial cells, nerve cell bodies and dendrites, unmyelinated axons

White matter – interior of cerebrum, composed of myelinated axons
Cerebral Lateralization

- Hemispheres receive sensory data from and control muscles on the opposite side of the body
- L hemisphere – reasoning, scientific/math skills, spoken & written language
- R hemisphere – musical & artistic awareness, spatial and pattern discrimination, recognition of faces and emotional content of language

Thalamus & Hypothalamus

- Conducive to thalamic sensory area for speech
-提供解剖符号
- 转化至纹状体
- 正常反应

Limbic System + RAS

- Conducive to thalamic sensory area for speech
- 提供解剖符号
- 纹状体
- 正常反应
- 植物性神经
- 非条件反射
- 情感脑
- 视觉语言中枢

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**Limbic System**

- Hippocampus – learning & memory smaller in depressed people
- Amygdala – emotion, memory (emotionally charged)
- Olfactory bulbs – part of olfactory pathway
- Hypothalamus

**Spinal Cord**

Functions:
1. Transmission of messages to and from the brain
2. Reflex center