

9.14 - Brain Structure and its Origins
Spring 2005
Massachusetts Institute of Technology
Instructor: Professor Gerald Schneider

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Class #31: Amygdala and other aspects of limbic forebrain **Friday April 22, 2005 (completion on Monday April 25)**

Readings:

Brodal, Per (2004) *The Central Nervous System. Structure and function*, 3rd edition. Oxford Univ. Press. Chapter 20, The limbic structures, pp. 415 - 434. [Assigned for previous class]

Recommended again:

Mesulam, M.-Marsel . (2001) Behavioral neuroanatomy: Large-scale networks, association cortex, frontal syndromes, the limbic system, and hemispheric specializations. Ch. 1 (pp. 1-120) in Mesulam, M.-M. (ed.), *Principles of Behavioral Neurology*. Philadelphia, F.A. Davis Company. Pp. 49-64, Paralimbic (Mesocortical) Areas; Limbic structures of the septal area, nucleus basalis, and piriform cortex; The amygdala, emotion, and affiliative behaviors: gateway into the neurology of value; The hippocampus and the binding of distributed information into explicit memory: gateway into the neurology of recollection.

Questions on readings: Brodal

1. What is the "rhinencephalon"? (p. 433-434, note 1)
2. Describe Papez' Circuit (Papez, 1937). What did Papez claim about it? (*Discussed in class.*)
3. How can neocortex influence the autonomic nervous system? (pp. 420-423, *etc.*)
4. Distinguish between the two major subdivisions of the amygdala. (p. 417f)
5. Describe two sensory pathways to the amygdala. (p. 418-419)
6. What is the "stria terminalis" ? (p. 419)
7. Describe at least two behavioral effects of lesions of the amygdala, and at least two effects of electrical stimulation of the amygdala. (p. 420-421)
8. What is CRH, and what does it have to do with the amygdala? (p 422)
9. What is the "basal forebrain", and what is its involvement in Alzheimer's Disease? (p. 423-425)