

9.14

Classes #24-25: Auditory and related sensory systems

Monday April 4, Wednesday April 6.

Questions based on lectures:

1. Instinctive aversive behavior in response to loud noise, and learned fear responses to specific sounds, depend on different ascending connections. Contrast the connections.
2. What are the major functional requirements of a predator's auditory system that led to the evolution of two major ascending auditory system pathways? Where do these pathways terminate?
3. How is impedance matching achieved in the transfer of sound vibrations from air to fluid?
4. How is a "place code" used for encoding of sound frequency information? Describe the apparatus at the level of the periphery and of the secondary sensory neurons.
5. Describe a neuroanatomical difference between chimpanzees and rats in their ascending auditory pathways to the thalamus.
6. Describe how spatial summation and convergence are used in the detection of sound locations.
7. Where does information about location of sounds and sights converge in the CNS? What happens if the auditory and visual maps get out of register?
8. How are the maps of neocortical areas very similar in the visual system and the auditory system?
9. What is the function of auditory cortex, from the results of unit recordings and from the effects of ablation?