

9.01 Study Questions

Class 17 (CNS Development, continued)

1. Define "apoptosis". (For help with this, you may want to do a web search on "Apoptosis, nervous system".)
2. Contrast trophic and tropic effects of chemical factors that influence axon growth.
3. How have neuroscientists been able to study axonal growth without direct observations of embryonic brains? Briefly, describe at least two different ways.
4. Describe the experiment of Roger Sperry on the formation of a topographic map by axons from the retina. Did Sperry observe chemoaffinity? What was he measuring?
5. Give an example of plasticity in the formation of the topographically organized retinotectal projection. Does such plasticity argue against "chemoaffinity"?
6. What is the guidepost theory of how elongating axons follow specific trajectories? What kind of evidence supports it?