

Dental Conference 8 -- Development and Learning

1. What are the major classes of axonal guidance cues? Give an example of each.
2. How does connection to a synaptic target influence the survival of neurons?
3. If you knocked out the mammalian caspase homolog of *C. elegans* ced-3, would you still need neurotrophins to prevent cell death of sensory neurons?
4. Does acetylcholine play any role in causing its receptors on muscle cells to become mainly restricted to the synapse?
5. What is the role of each of the following proteins during formation of the neuromuscular junction: agrin, neuregulin, erbB, MuSK, rapsyn?
6. How will tetrodotoxin infused into the visual cortex of a neonatal kitten affect binocular vision? Why? Does the timing of the infusion matter?
7. What are the differences in the features of explicit and implicit learning? Which brain structures are important in the acquisition of each type?
8. Why is it typically easier to learn to play a musical instrument such as the violin as a young child rather than as an adult?
9. What properties makes the NMDA receptor well suited to play a key postsynaptic role in associative learning?
10. What is the relationship of CREB to learning?