

## Dental Conference 5 -- Vestibular and Motor Systems

1. What are differences between the semicircular canals and the utricle?
2. How does the vestibular system function in vision?
3. Is there a motor neuron innervation of intrafusal muscle fibers? What purpose is served by coactivating  $\alpha$  and  $\gamma$  motor neurons during muscle contraction?
4. How do feedforward and feedback control of motor systems differ? Give an example of each.
5. What is a central pattern generator and why have it?
6. What are the symptoms of cerebellar lesions and what do they reveal about the normal functions of the cerebellum?
7. Is the output of the cerebellum excitatory or inhibitory? Explain in terms of the basic input-output circuitry of the cerebellum.
8. What is the relevance of a "population vector" to voluntary movement?
9. How does the involvement of supplementary motor cortex in movement differ from that of primary motor cortex?
10. What is set-related activity? Is it restricted to the primary motor cortex?
11. Define
  - a. corticomotoneuronal cell
  - b. mirror neuron
  - c. sensorimotor transformation
  - d. choice effect
  - e. movement kinematics
  - f. movement dynamics
12. How do neurons of the primary motor cortex differ from spinal motor neurons?