Exam 3 Study Guide

Be familiar with:

1. How outer and inner hair cells are depolarized and hyperpolarized. What is the consequence of depolarization and hyperpolarization for each type of hair cell?

2. How auditory nerve fibers are tuned and how these fibers with different "best frequencies" are organized in the modiolus.

3. The general anatomy of the central auditory pathway.

4. Basic neuron anatomy and physiology including:
    a. Resting membrane potential
    b. What happens when neurons depolarize
    c. How action potential is propagated

5. The concept of a dipole and why neurons can be conceptualized as dipoles

6. How auditory evoked potentials are measured from the scalp. Specifically, how are dipoles related to AEPs?

7. How are AEPs acquired? Why is averaging important and how does this reduce the influence of background EEG activity on the recorded response?

8. What is the auditory brainstem response? What are the neural generators?

9. Which ABR waves are measured clinically?

10. What is an ABR latency-intensity function? How is it used to determine if response latency is within normal limits and to track Wave V to threshold?

11. Why are different ABR stimuli used? In general, how does the center frequency of the stimulus affect ABR latency?

12. How does age influence the ABR? Why must we consider patient age when determining if response is normal or abnormal?

13. What correction factors are and why they are necessary for estimating "true" behavioral thresholds

14. How conductive and sensorineural hearing losses impact the ABR latency-intensity function

15. How to interpret ABR findings in conjunction with OAEs, tympanograms, etc. in diagnostics

16. How newborn hearing screening work in general

17. Different approaches for testing pediatric patients within the following age ranges:
    a. 0-6 months
    b. 6-36 months
    c. 25 months – 5 years

18. What visual reinforcement audiometry is. Also know its limitations and how other test (OAEs, tympanograms) can help paint a more detailed picture of hearing status

19. What conditioned play audiometry is.

20. The one retrocochlear disorder that we discussed
    a. Vestibular Schwannoma

21. Technology options for treating hearing loss and when they are appropriate to use:
    a. Traditional hearing aids
    b. Bone anchored hearing aids
    c. Cochlear implant
    d. Auditory brainstem implant

22. Approaches for auditory habilitation for children:
    a. ASL/Bi-bi
    b. Auditory-Oral
    c. Auditory-Verbal
    d. Total Communication

23. Aspects of adult aural rehabilitation
    a. Self advocacy
    b. Coping with hearing loss and reducing avoidance
    c. Living with Hearing Loss groups