

Questions based on Lectures on Sound Processing in the Cochlea

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1. Describe the mechanism for generating passive travelling waves on the basilar membrane and what is the wave's function?
2. Why is cochlear amplification necessary and what is meant by *active* amplification?
3. Describe mechanisms of cochlear amplification of low-intensity sounds.
4. What is meant by nonlinear compression of the basilar-membrane response, why is it required and how is it achieved?
5. Describe mechanisms of stereocilia mechano-electrical transduction.
6. Describe mechanisms of somatic electromechanical transduction.
7. Describe the role of the tectorial membrane in cochlear amplification.
8. What is the endocochlear potential and why does its long-term reduction cause disproportionately large threshold losses?
9. Describe salient features of low- versus high-frequency sound encoding mechanisms.
10. Describe encoding mechanisms for sound intensity.