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**Towards a transfer function used to adjust audio for**  
**bone-conduction transducers**

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Bone-conduction transducers may effectively replace normal air-conduction headphones in cases where the ears need to be plugged, or else remain unoccluded. However, sounds designed to be presented via air conduction need to be adjusted to maintain optimal perception via bone conduction. This study sought to find bone-to-air amplitude and phase shifts, as preliminary data for a complete transfer function between the bone-conduction and air-conduction pathway. The variability or stability of the shift data can indicate the feasibility of making effective adjustments to sounds to account for the bone-conduction pathway. Listeners cancelled air-conducted and bone-conducted tone pairs by method of adjustment at three frequencies (500, 3150, and 8000 Hz). The amplitude adjustments were relatively consistent, while the phase adjustments were quite variable. Further analysis revealed that the variability in phase adjustments came from differences between people, but were relatively consistent within a person. Together, these data suggest that generalized adjustments for the bone-conduction pathway may not be effective, but that individualized adjustments may be both necessary and potentially quite effective. These results can be extended to continuous transfer functions applied to sounds before they are presented via bone-conduction transducers ("bonephones") in an auditory display.