

Verification and Establishment of Inter-aural Attenuation Value for Indians*

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The transfer of intense stimuli from one ear to the other ear is the frequent problem in air-conduction audiometry. The term "inter-aural attenuation" refers to the reduction of a signal's intensity as it passes between the ears.

The present study was an attempt to investigate the inter-aural attenuation values for Indians. It was investigated in five subjects with total unilateral deafness. Air-conduction audiometry was performed to establish thresholds for pure tones, narrow band noise and white noise. Later the inter-aural attenuation values were established for pure tones, narrow band noise and white noise using TDH 39 ear phones with MW 41/AR Cushion. The next step, inter-aural attenuation values for narrow band noise and white noise were established using a Madsen Insert receiver with one ear unoccluded.

Conclusions

- (1) The inter-aural attenuation values with phone on condition are different at different frequencies with the lowest value of 45 dB at 250 Hz. So, it is recommended following this

study that this lowest value of 45 dB be used as the conservative estimate of minimum inter-aural attenuation which is in agreement with most of the studies.

- (2) The present study yielded inter-aural attenuation values almost similar to others studies.

Certain variations in inter-aural attenuation values given by many investigators and the present study may be attributed to differences in measurement method and subject selection as mentioned by Chaiklin (1967).

- (3) The inter-aural attenuation values are different for different stimuli; like pure tones, narrow band noise and white noise. So it is recommended that clinicians should consider different inter-aural attenuation values for different stimuli.
- (4) The use of the insert receiver as being proved to be an effective means to increase the inter-aural attenuation between the ears to as much as 20 dB and thus providing a better scope in clinical masking.
- (5) The inter-aural attenuation value may not differ significantly as a function of the size of the head.

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(6) Inter-aural attenuation values do not vary significantly as a function of frequency.

(2) Inter-aural attenuation values for speech may also be studied to examine its relationship with other stimuli.

Recommendations

(1) A large sample may be tested to further establish the inter-aural attenuation value.

(3) Inter-aural attenuation for pure tones with an insert receiver may be investigated; this was not possible to be included in this study because of some instrumental limitation.