

## **MEASURING EAR CANAL RESONANCE IN PATIENT WITH RECONSTRUCTED EAR CANAL**

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This study was done to compare the characteristics of external ear canal resonance (frequency and amplitude) and factors that may affect the resonance (diameter, length and volume of the external ear canal) between subjects with reconstructed ear canal due to congenital ear canal atresia and those with normal external ear canals. Data was collected from 10 reconstructed external ear canals as a study subject and 16 normal canals as a control subjects. All subjects aged between 7-30 years old. Result showed that the mean frequency resonance value of reconstructed ear canals is 2745 +/- 521 Hz and amplitude was 15.64 +/- 3.69 dB. Both values are lower when compared to the mean resonance frequency and amplitude of those with normal ears (2931 +/- 404 Hz and 16.82 +/- 4.37 dB respectively). However, statistical analysis showed the difference between the two groups were not significant ( $p > 0.05$ ). Mann-Whitney U test also revealed that there are no significant differences between the two subject groups in terms of their diameter, length and volume of the ear canals ( $p > 0.05$ ). Because determining the external ear canal resonance is important in hearing aid fittings, the finding of this study suggest that for patients who had undergone ear canal reconstruction surgery they may used hearing aids which produce resonance at normal range in 2cm<sup>3</sup> hearing aid coupler. They also can use mean correction factor in procedure hearing aid prescribing as long as the external ear canal resonance exist in normal range.

Jamaludin, S. M. 2002. Measuring Ear Canal Resonance in Patient with Reconstructed Ear Canal. Bachelor of Audiology Thesis. Universiti Kebangsaan Malaysia.