

P. N. Kulkarni, P. C. Pandey, and D. S. Jangamashetti, Binaural dichotic presentation to reduce the effects of spectral masking in moderate bilateral sensorineural hearing loss, *Int. J. Audiology*, accepted 2012.

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Abstract

Objective: The objective of the study was to evaluate the effectiveness of binaural dichotic presentation using comb filters with complementary magnitude responses, based on fixed bandwidth and auditory critical bandwidth, in improving speech perception by persons with moderate bilateral sensorineural hearing loss and to assess its effect on localization of the sound source. **Design and Study Sample:** Listening tests involving consonant recognition and source direction identification were conducted on six normal-hearing subjects under simulated hearing loss and on eleven subjects with moderate bilateral sensorineural loss in quiet. **Results:** The tests on normal-hearing subjects showed higher recognition scores and smaller response times for the comb filters based on the auditory critical bandwidth. The tests using these comb filters on the hearing-impaired subjects resulted in an increase of 14% - 31% (mean: 22%) in recognition scores and a significant decrease in response times, with no significant effect on the identification of the direction of broad-band sound sources. **Conclusions:** The results show that dichotic presentation may be useful for speech processing in binaural hearing aids.