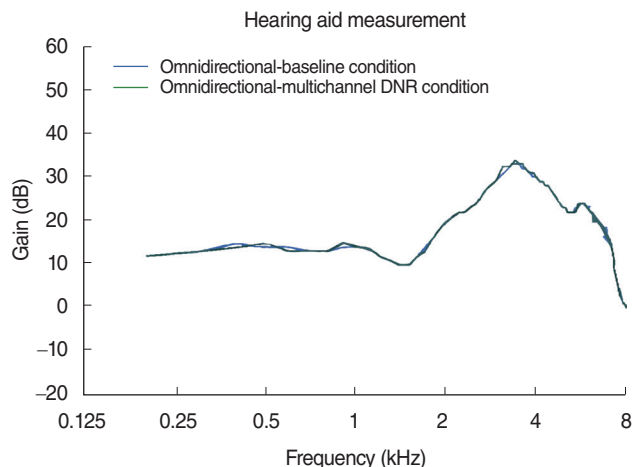
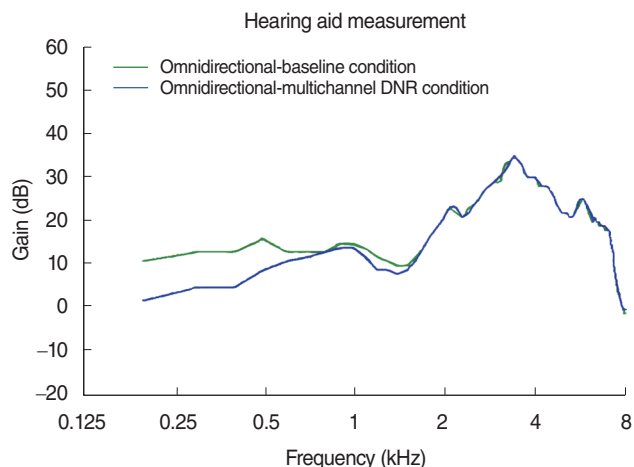


**Supplementary Fig. 1.** Gain frequency responses for the omnidirectional-baseline condition when two stimuli, Digital Speech and Composite Noise were presented during the 2-cc coupler measurement. To determine the gain reduction by digital noise reduction (DNR) activation of the Siemens Motion BTE hearing aid, coupler measurements were performed using two acoustic stimuli, the Digital Speech and the Composite Noise as speech and noise, respectively. At first, a sample audiogram with a sensorineural flat hearing loss (60 dB HL) was given to NOAH 4.0. The Motion BTE hearing aid was fitted regarding National Acoustic Laboratories-Nonlinear 2 by Siemens CONNEX 6 software. The other digital signal processing algorithms such as SoundSmoothing, eWindScreen, Feedback Stopper were inactivated. The first 2-cc coupler measurement was performed using the Digital Speech as well as the Composite Noise stimuli when the hearing aid microphone type was omnidirectional and the DNR was inactivated (i.e., omnidirectional-baseline condition). There is no difference between these two gain frequency responses.



**Supplementary Fig. 2.** Gain frequency responses for the omnidirectional-baseline condition and the omnidirectional-multichannel digital noise reduction (DNR) condition, respectively when the Digital Speech stimulus was presented during the 2-cc coupler measurement. To assess the accuracy of the hearing aid reaction to speech and noise signals, the Digital Speech stimulus was presented to hearing aid users while the hearing aid microphone type was omnidirectional and the DNR algorithms were activated as multichannel type (omnidirectional-multichannel DNR condition). There is no difference between these two measured gain frequency responses.



**Supplementary Fig. 3.** Gain frequency responses for the omnidirectional-baseline condition and the omnidirectional-multichannel digital noise reduction (DNR) condition, respectively when the Composite Noise stimulus was presented during the 2-cc coupler measurement. The Composite Noise stimulus was presented to hearing aid users while the hearing aid microphone type was omnidirectional and the DNR algorithms were activated as multichannel type (omnidirectional-multichannel DNR condition). There is a major gain reduction at low frequencies as well as minor gain reduction at mid frequencies.