Technology Transmission Range

Audrey Taylor, B.A., Virginia E. Land, B.S., & Linda Thibodeau, Ph.D.
The University of Texas at Dallas, Callier Center for Communication Disorders

INTRODUCTION

Wireless Assistive Listening Devices (ALDs) have helped individuals improve word recognition by increasing the signal-to-noise ratio (SNR). However, the sound transmission can be dependent on variables affecting antenna strength. The Phonak digital wireless transmitters known as the Roger Pen and Roger Clip-On Mic have sensitive microphone arrays that are designed to improve the SNR in noisy environments. Manufacturer specifications state that the typical transmission range for a Roger Pen and a Roger Clip-On Mic is 10 meters/33 feet. However, if the Roger microphone and receivers are in a direct line of sight, the transmission range for a Roger Pen and a Roger Clip-On Mic is up to 20 meters/66 feet.

PURPOSE

The purpose of this study was to evaluate the transmission range of the Roger Pen and the Roger Clip-On Microphones in two conditions: inside and outside.

HEARING AID FITTING

- A participant with normal hearing was fit with a pair of Phonak Audeo V90 receiver-in-the-ear hearing aid (RITE HAs) with local microphones disabled for streaming.
- NAL-NL1 gain and output targets were met within 3 dB of the flat 10-40 HL representation of normal hearing as verified with a Verifit Audioscan Instrument Fitting System.
- Electroacoustic measures using the Verifit confirmed HAs within expectations for normal function based on ANSI S3.22 measurements.

EQUIPMENT

- Hearing Aid
  - Phonak Audeo V90 Receiver-in-the-Ear
- Streamer/Receiver
  - ComPilot II
  - Roger Pen
- Transmitters
  - Roger Clip-On Mic

RESULTS

Transmission range for the Roger Pen and Roger Clip-On Microphones for indoor and outdoor conditions is shown in Figure 3. The average transmission range was greater than the Pen (1.51 times) and Clip-On (1.82 times).

SUMMARY AND DISCUSSION

Clinically significant differences in transmission range were found as a function of microphone type and the test environment (inside or outside). The greatest transmission range (234 feet) was obtained with the Roger Pen in the inside measurement condition. For comparison, the reported transmission range for a Roger inspiro is approximately 15 meters/50 feet for indoors and 50 meters/170 feet for outdoors. It is possible that the transmission range is impacted by obstacles between the transmitter and receiver, such as a hand or having one's back turned, impacted the transmission range of the Clip-On Mic more than the Pen.

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REFERENCES