JAAA CEU Program

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Questions refer to Korhonen et al, "Evaluation of a Wind Noise Attenuation Algorithm on Subjective Annoyance and Speech-in-Wind Performance," 46–57.

Learner Outcomes:

Readers of this article should be able to:

- Identify the style of hearing aid that experiences the greatest amount of wind noise.
- Explain how least-mean-squares filtering can reduce uncorrelated noise, serving as the basis for hearing aid wind noise attenuation.

1. Wind noise in hearing aids is generated when:
   a. wind passes objects (trees, shrubs, car window) in the listening environment and creates noise
   b. wind generates turbulences at the hearing aid microphone membrane
   c. hearing aids generate internal circuit noise

2. Because of its microphone placement, completely-in-the-canal and in-the-canal devices generally:
   a. experience less wind noise than BTE devices
   b. experience more wind noise than BTE devices
   c. are immune to wind noise

3. Generally, the strongest wind noise level is experienced for wind originating from the:
   a. front
   b. back
   c. side

4. Wind noise attenuation (WNA) algorithms typically use _____ to detect wind noise.
   a. anemometer sensors
   b. quick changes in the input signal
   c. correlation of input signals between front and back microphones

5. The adaptive WNA algorithm in the current study was designed to remove:
   a. uncorrelated noise
   b. correlated noise
   c. both correlated and uncorrelated noise

6. Stimuli were prerecorded in a wind tunnel and presented via insert earphones to allow:
   a. control of wind characteristics across hearing aid processing conditions
   b. post processing with experimental algorithms
   c. presenting the stimuli at more comfortable levels

7. The wind noise levels measured at the output of the hearing aid ranged from:
   a. 81 to 109 dB SPL
   b. 91 to 119 dB SPL
   c. 101 to 129 dB SPL

8. The measured signal-to-noise benefit at 50% performance level when using the WNA algorithm was ___ dB when wind originated from 0° at 5 m/sec.
   a. 2.39
   b. 4.39
   c. 8.39

9. Greatest change in annoyance when using the WNA algorithm was reported at a wind speed of:
   a. 4 m/sec
   b. 6 m/sec
   c. 10 m/sec

10. The phenomenon "apparent wind" refers to:
    a. subjective perception of wind severity
    b. average wind experienced throughout the day
    c. the vector sum of true wind and headwind experienced in still air due to physical movement

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