

Supporting meaningful participation in tweens and teens with Oticon 4D Sensor technology

RESEARCH BRIEF AUTHORS:

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Meaningful participation reflects the level of engagement and the positive feelings experienced by children and teens from being able to contribute to their own important, relevant, interesting, and fun activities. New advancements in Oticon hearing aid technology called 4D Sensor technology have provided new opportunities to further support communication access in complex listening environments.

MATERIALS AND METHODS

Participants: 18 adolescents (12-18 years old) with hearing loss ranging from mild to severe. All were experienced bilateral hearing aid users with no additional developmental conditions.

Instruments:

- Oticon Intent™ 1 miniRITE hearing aids
- Android™ smartphones

PROCEDURE

Visit one:

- Participants completed an in-person visit to determine eligibility for the study, gather information, and make ear impressions if needed

Visit two:

- In-person visit to fit participants with Oticon Intent hearing aids using DSL Child -v5 prescriptive targets
- Completed speech recognition testing in a fixed, separated environmental condition with the 4D Sensor technology activated and deactivated
- Participants were sent home with the 4D Sensor technology either activated or deactivated

Visit three:

- Completed one week after visit two, remote programming appointment to deactivate or activate the 4D Sensor technology

Visit four:

- In-person visit where participants completed a follow-up questionnaire

EMA Surveys: Android smartphones were used to conduct short surveys throughout one week after visit two, and one week after visit three. In one of the weeks, the hearing aids had their 4D Sensor technology activated; in the other week, this feature was switched off and conventional adaptive directionality used. The order was randomized. Participants were asked about their acoustic environment, the difficulty of their listening situation, listening fatigue, and how often they were wearing their hearing aids.

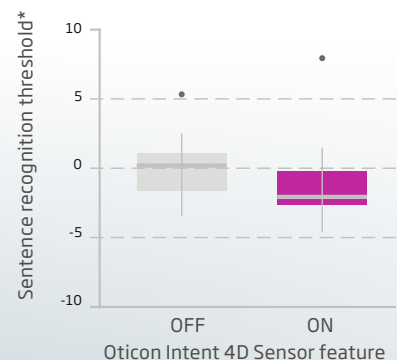
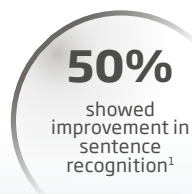
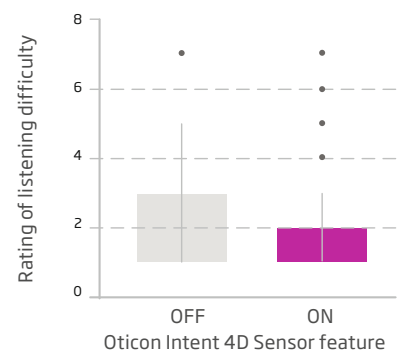
RESULTS

Listening difficulty:

- 77% (14 out of 18) of tweens and teens experienced a reduction in listening difficulties with 4D Sensor technology

Sentence recognition:

- 50% (9 out of 18) of tweens and teens showed improvement in sentence recognition with 4D Sensor technology in Oticon Intent on¹.



*Fixed separated condition.

REFERENCES

1. McCreery, R.W., Corbin, N., Henry, M., & Lewis, D.E. (2025). Laboratory and real-world measures of benefit for sensor-based hearing aid directional microphones in adolescents with hearing loss.

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