

Naída and Sky: Advancing Hearing Solutions with Enhanced Fitting Efficiency and Bluetooth® Integration

Global Survey of Healthcare Professionals

THE ADVANCED BIONICS HEARING SYSTEM

The most advanced hearing system to date

In 2020, Advanced Bionics (AB) launched its most advanced hearing system yet, consisting of the Naída and Sky product families for adults and children, respectively. The AB Hearing System offers cochlear implant (CI) sound processors and dedicated Phonak Link hearing aids (HA) for bimodal listeners. In 2023, the Phonak CROS for unilateral CI users completed the portfolio of two-ear hearing solutions for all recipients.

The current generation, the Naída CI M and Sky CI M sound processors¹, Naída Link M and Sky Link M hearing aids, and CROS P-13, features the advanced scene classifier AutoSense OS 3.0², which provides enhanced speech intelligibility in challenging listening environments³, enhanced sound quality for music⁴, and universal Bluetooth® connectivity, allowing AB CI users to seamlessly connect with the people, places, and things in their world without limitations. A wide range of accessories and customization abilities enables the creation of a truly individualized hearing solution.

The accompanying fitting software, Target CI, allows CI processors and Hearing Aids to be fitted within the same software for the first time. Further innovations provided by Target CI include the ability to use the Noah database system and the possibility to use wireless fitting via Noahlink Wireless.



GLOBAL SURVEY

Gathering feedback from around the world

An online survey was launched globally in 2020 to gather feedback about the current generation of the AB Hearing System from users and healthcare professionals. Responses were collected between November 2021 and August 2023.

GENERAL

[1] Which population are you fitting at your center? (select all that apply)

<input type="checkbox"/> very young children (< 3 years old)	<input type="checkbox"/> young adults (19 to 30 years old)
<input type="checkbox"/> young children (3 to 6 years old)	<input type="checkbox"/> adults (31 to 65 years old)
<input type="checkbox"/> school-age children (7 to 12 years old)	<input type="checkbox"/> older adults (66 to 80 years old)
<input type="checkbox"/> teenagers (13 to 18 years old)	<input type="checkbox"/> elderly adults (> 80 years old)
	<input type="checkbox"/> N/A

[2] What type(s) of hearing device(s) are you fitting at your center? (select all that apply)

cochlear implant sound processors
 hearing aids
 N/A

[3] Which of the following best describes the duration of your personal experience with programming cochlear implants (CI)? (select one box only)

<input type="checkbox"/> less than 2 years	<input type="checkbox"/> more than 10 years
<input type="checkbox"/> between 2 and 5 years	<input type="checkbox"/> I have never programmed CIs
<input type="checkbox"/> between 6 and 10 years	<input type="checkbox"/> I have not programmed CIs in the last 5 years
	<input type="checkbox"/> N/A

[4] Which of the following best describes the duration of your personal experience with programming hearing aids (HA)? (select one box only)

<input type="checkbox"/> less than 2 years	<input type="checkbox"/> more than 10 years
<input type="checkbox"/> between 2 and 5 years	<input type="checkbox"/> I have never programmed HAs
<input type="checkbox"/> between 6 and 10 years	<input type="checkbox"/> I have not programmed HAs in the last 5 years
	<input type="checkbox"/> N/A

[5] Which devices of the Marvel system have you personally fit? (select all that apply)

<input type="checkbox"/> Naída CI M sound processor	<input type="checkbox"/> Sky CI M sound processor
<input type="checkbox"/> Naída Link M hearing aid	<input type="checkbox"/> Sky Link M hearing aid
	<input type="checkbox"/> N/A

The professional section of the survey was created for healthcare professionals fitting any part of the AB Hearing System. There were no restrictions on what part of the AB Hearing System (CI, HA, CROS, or combination thereof) professionals had experience with nor the professional setting they were working in (e.g., implantation clinic, rehabilitation center, hearing aid acoustician's office, etc.).

SURVEY RESULTS

Improvements for professionals and patients

Demographics data on respondents' location, and fitting experience were collected. Ratings were either performed on an absolute scale from zero (very poor/difficult) to ten (very good/easy) or on a comparative scale including the options much worse, worse, similar, better, and much better. For both types of scales, respondents had the option of indicating "I don't know" for items they were unable to rate. The number of respondents making use of this option for each item is indicated in the figures. Additional questions asked respondents to indicate their top three items as responses.

STUDY POPULATION

Replies from around the world

Eighty-six responses from professionals were collected from the following countries: Belgium, China, Denmark, Germany, India, Italy, Netherlands, Spain, Switzerland, the UK, and the USA (see Fig. 1).

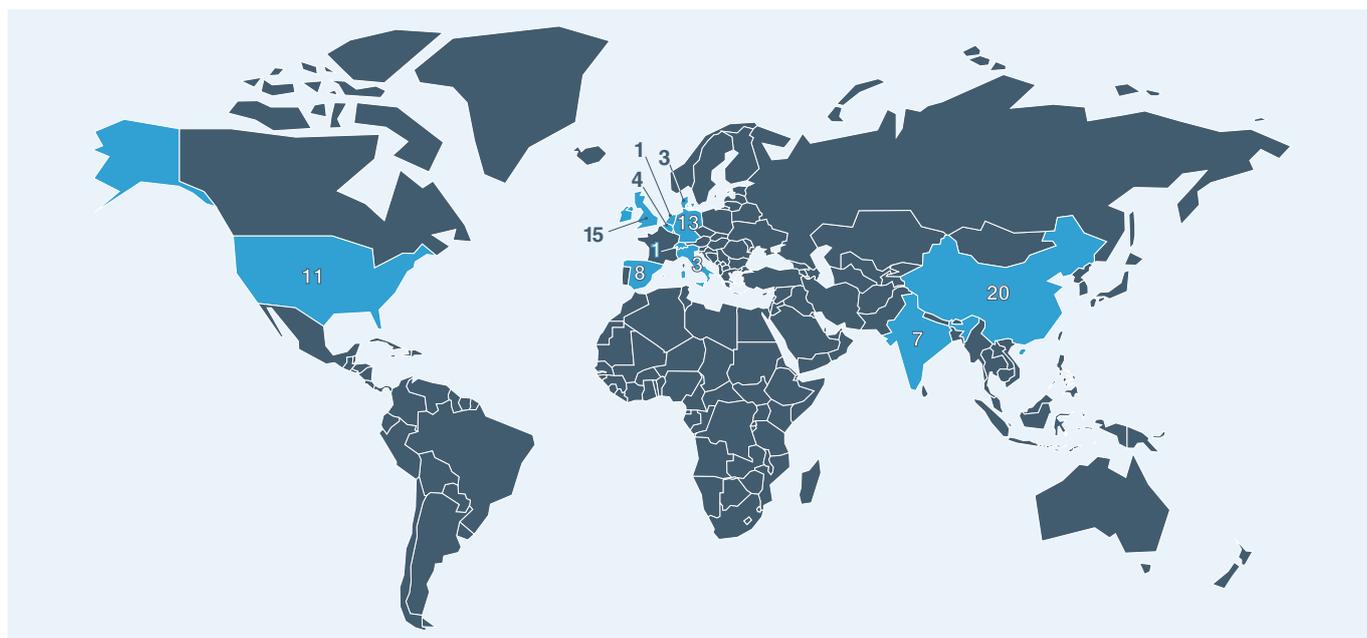


Fig. 1: Responses were collected from countries across the world.

GENERAL FITTING EXPERIENCE

Experienced professionals provide feedbacks

Of the 86 respondents, 38 reported fitting CIs only (44.7%), 2 reported fitting HAs only (2.4%), 45 reported fitting both CIs and HAs (52.9%), and one respondent indicated not fitting either device. The Majority of professionals reported having six years or more experience in fitting CIs and two years or more experience fitting hearing aids (see Fig. 2). Most professionals also reported experience in fitting all age groups of CI/HA recipients (see Fig. 3).

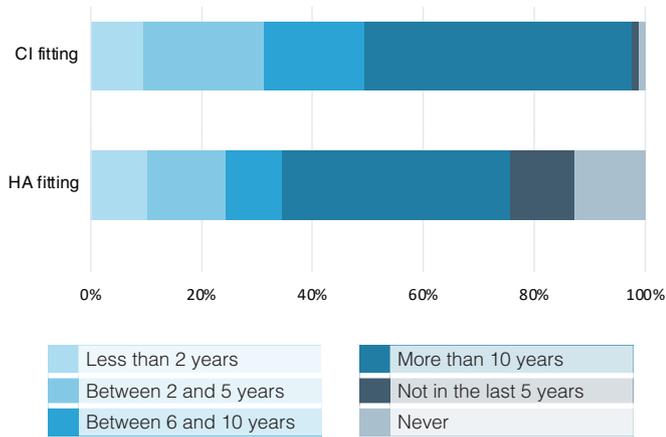


Fig. 2: Duration of experience fitting CIs (top row) and HAs (bottom row). N/A was indicated by three and eight respondents, respectively.

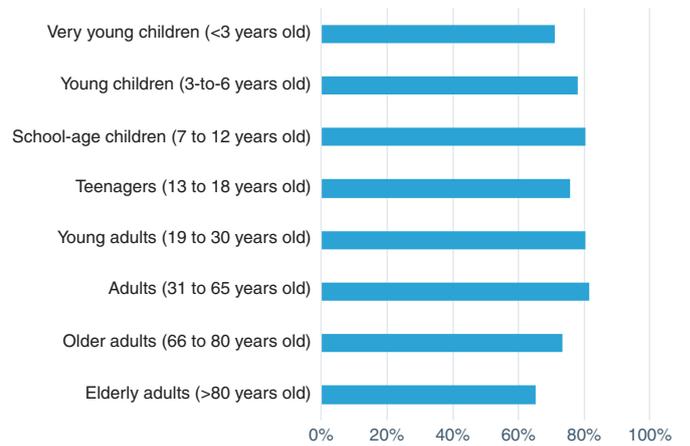


Fig. 3: Patient age groups fit by the surveyed professionals (N/A was indicated by two respondents).

Most respondents reported experience fitting the sound processors of the current generation of the AB Hearing System Naída CI M (91.6%) and Sky CI M (72.3%). Fitting experiences with the Naída Link M (47.0%) and Sky Link M (41.0%) hearing aids were less common. Three respondents did not provide feedback. Most professionals had experience fitting all types of device configurations, unilateral (91.6%), bilateral (77.1%), and bimodal (75.9%). More than three out of four (76.2%) reported the use of the Noah data management platform for Target CI. Compared to the previous software, SoundWave, professionals reported less familiarity with the Target CI fitting software (median familiarity rating of 10 out of 10 for SoundWave compared to 7 out of 10 for Target CI).

TARGET CI FITTING EXPERIENCE

Low effort software offers significant improvements

The respondents were asked to indicate how often different fitting parameters had to be adjusted when upgrading a CI user from a previous processor model to the current generation of the AB Hearing System. Most professionals indicated never or only sometimes having to adjust the global M-Levels, individual M-Levels, T-Levels, and the IDR (see Fig. 4). The overall effort to upgrade a CI user to the new CI system was rated as 7 out of 10 (median) on a scale from 0 (very high effort) to 10 (very low effort).

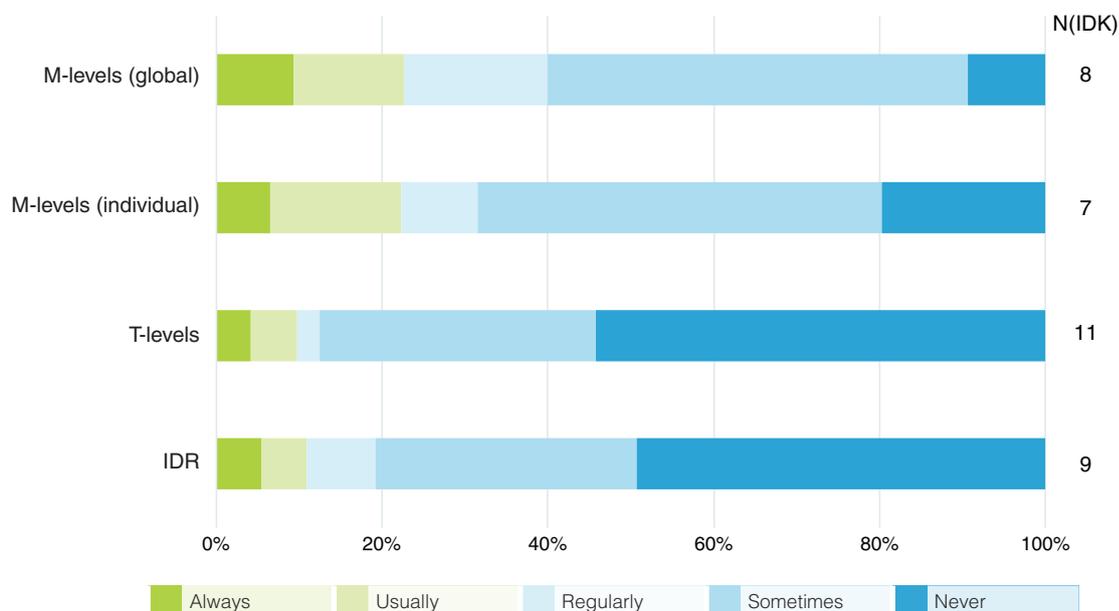


Fig. 4: Frequency of adjustments to fitting parameters required during processor upgrades. N(IDK) indicates the number of respondents who chose the "I don't know" option for each item.

When asked to indicate the top features in the Target CI fitting software, the availability of Noahlink Wireless and the ability to complete bimodal fittings in one software emerged as the most valuable attributes (see Fig. 5).

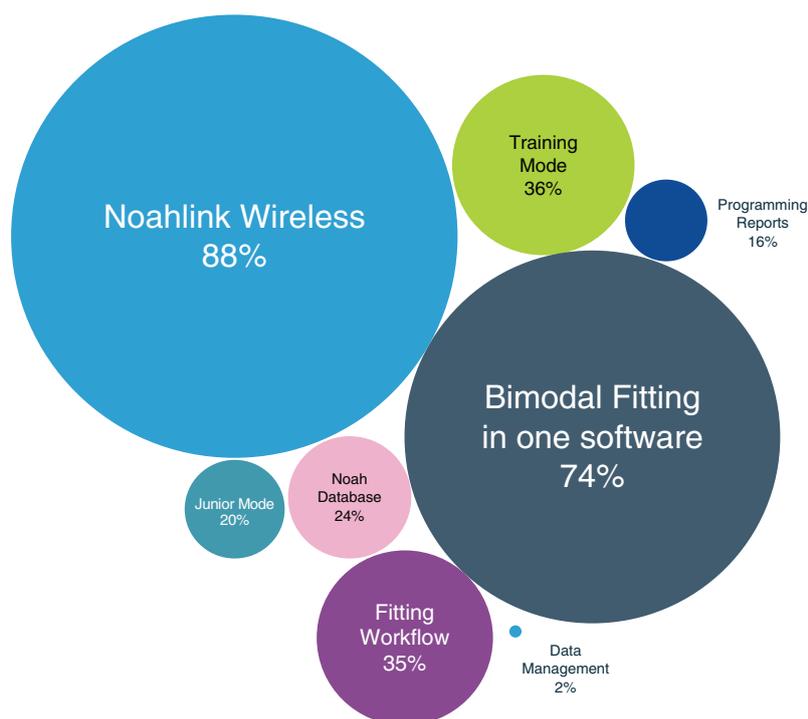


Fig. 5: Top features of Target CI according to professionals.

Professionals were asked to rate several aspects of Target CI compared to the previous fitting software, SoundWave. Results are presented in Fig. 6, with all aspects rated as significantly better* for Target CI compared to SoundWave indicated by asterisks.

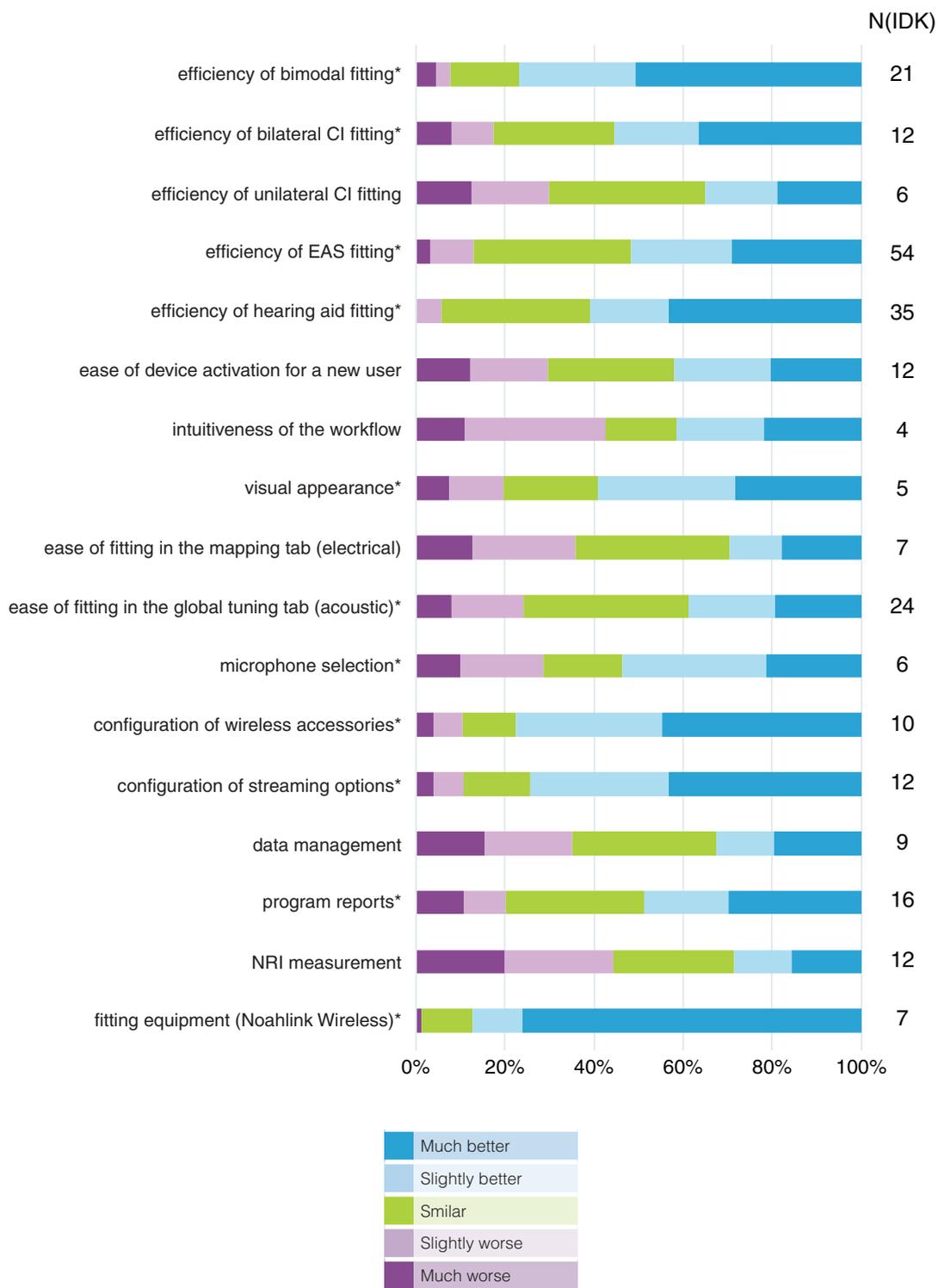


Fig. 6: Comparison of fitting tasks between Target CI and SoundWave. Items rated as significantly better with Target CI are indicated by asterisks. N(IDK) indicates the number of respondents who chose the "I don't know" option for each item.

*One-sample Wilcoxon signed rank test.

THE ADVANCED BIONICS HEARING SYSTEM

Universal Bluetooth® connectivity emerges as a top feature for recipients and professionals

In addition to reporting on their personal experience, healthcare professionals were queried about their patients' feedback. They were asked to rate features of the current generation of the AB Hearing System (Fig. 7) as well as to indicate the benefits compared to previous hearing systems (Fig. 8). All features except for EchoBlock were rated positively with ratings significantly* higher than 6 out of 10 and median ratings between 7 and 10 out of 10. Both the best-rated feature of the AB Hearing System and the biggest advantages compared to previous hearing systems were related to the built-in Bluetooth streaming capabilities.

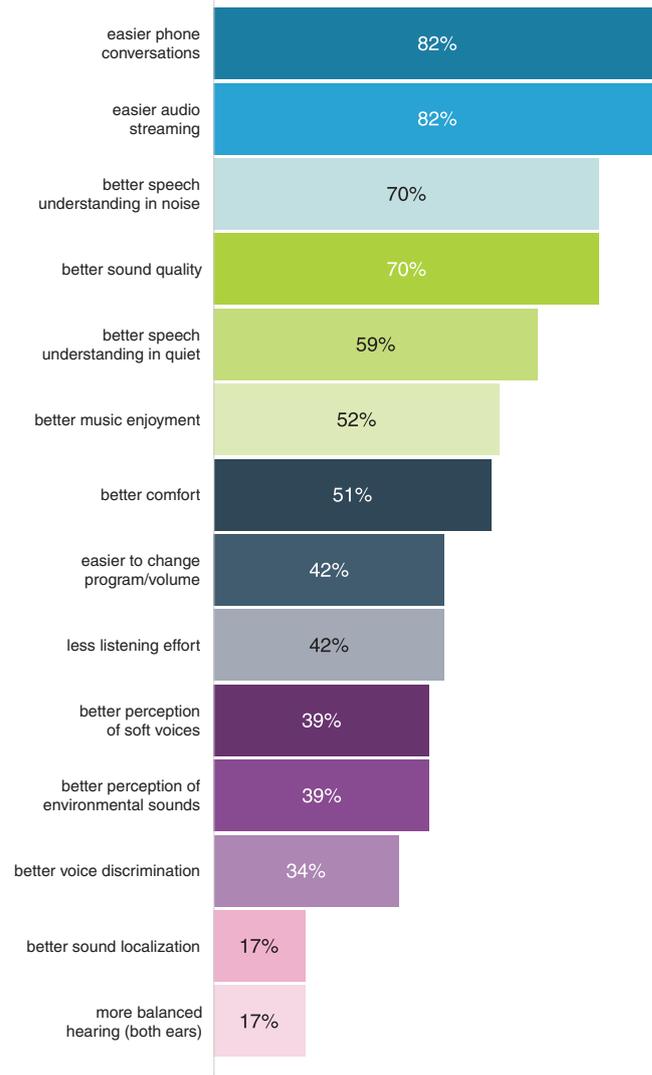
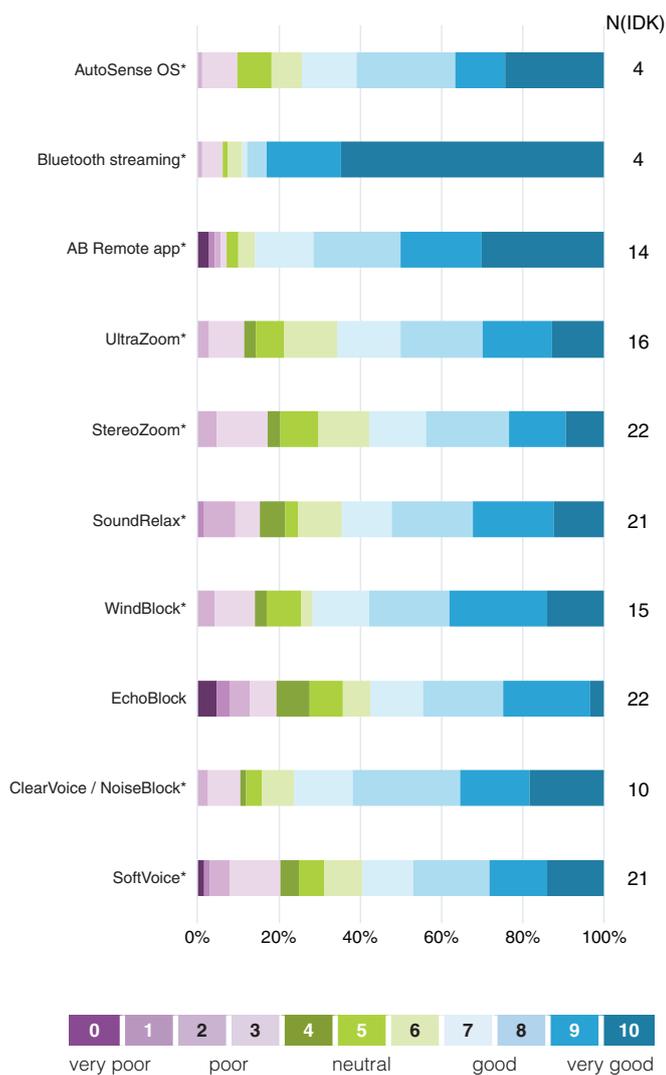


Fig. 7: Rating of features based on patient feedback. Asterisks indicate items rated as significantly higher than six out of ten. N(IDK) indicates the number of respondents who chose the "I don't know" option for each item.

Fig. 8: Benefits compared to previous hearing systems based on patient feedback. 9 respondents indicated N/A and 6 respondents indicated other with comments mentioning not being able to answer the question due to lacking feedback from patients.

*Paired Wilcoxon Signed Rank Test.

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More than 90% of professionals judged the benefit Target CI adds to their patient management by allowing CIs and hearing aids to be programmed in the same software and by providing the ability to stream directly via Bluetooth as high or very high.

The top three features of the current generation of the AB Hearing System, according to healthcare professionals, are presented in Fig. 9. The most frequently indicated feature was the integrated Bluetooth capability, with almost 90% of professionals selecting this item among their top three choices.

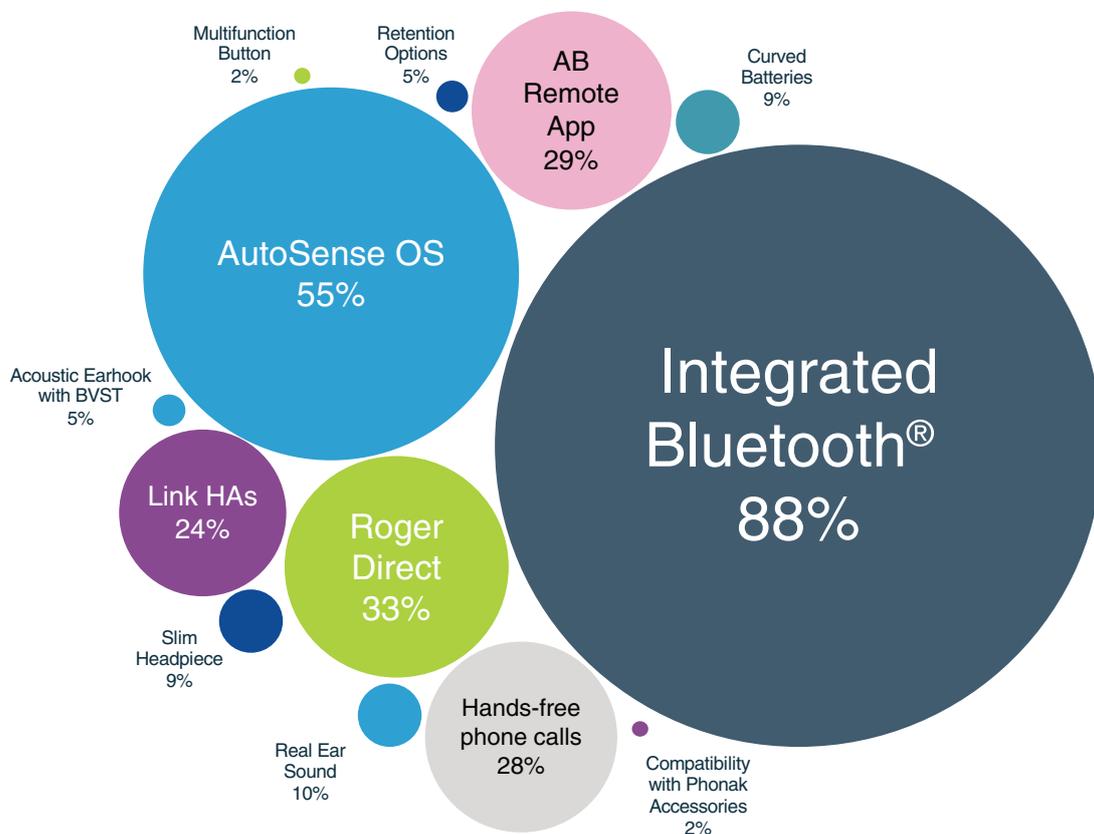


Fig. 9: Top features of the current generation of the AB Hearing System according to professionals.

SUMMARY

A well-received innovation

The new software Target CI proved to be an efficient fitting tool, providing significant improvements over the previously used fitting software despite professionals reporting less experience with the new software. The current generation of the AB Hearing System was well appreciated by the professionals and their patients. The integrated Bluetooth® capabilities emerged as the most outstanding feature based on professionals' experience as well as recipient reports.



10 out of **17**
aspects of CI and HA fitting
were rated as
significantly better with Target CI

REFERENCES

1. Marvel CI Technology - Leveraging natural ear acoustics to optimize hearing performance, White Paper, Advanced Bionics 2021, 028-Q049-02
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4. Agrawal S, Banik A, Nair A, Ajimsha KM, Jagmaag F, Backer S, Sasidharan P, Manoj MP. (2021). Real-world Evaluation of the Marvel CI Sound Processor in Children. 13th Asia Pacific Symposium on Cochlear Implants and Related Sciences. December 8th to 10th. Oral Poster: 28.