Rexton Assist: Achieving the Perfect Fit with AI

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Introduction

Finding the ideal fit for hearing aids is essential, as every user's preference and perception vary. While the First Fit provides a solid foundation for successful fittings, individualization is often necessary to meet the users' unique needs.

Hearing care professionals use their expertise to determine an ideal starting point for each fitting. However, adapting to a new hearing aid takes time and collaboration between the user and the fitter. This process can be challenging due to several reasons, and sometimes an acceptable fitting might not ever be found (Bennet, B. 2021). Challenges can be:

- Users may struggle to express their preferences
- How the hearing care professional interprets the user's comments is an uncertain variable (Anderson et al. 2018)
- Improvements cannot always be tested in the fitting environment, since this is not the place where the issues occur
- Clinics cannot provide round-the-clock support
- The need for the user to travel to the clinic cannot always be met due to health conditions or distance

Users with identical audiograms may begin with similar hearing aid settings, yet over time, their preferences often diverge significantly after multiple adjustments. This highlights the deeply personal nature of hearing aid fittings. Achieving satisfaction and acceptance largely depends on the user's ability to fine-tune their hearing aids, particularly during the critical early stages of use.

By leveraging Artificial Intelligence, Rexton Assist delivers a high level of personalization and insight, enhancing customer satisfaction and ensuring that every user achieves their perfect fit.

Empowering Users and Improving Satisfaction

With Rexton Assist it is possible to enhance the precision of the First Fit by tailoring the sound to each users' preferences, making it the perfect companion to personalized customer care. Rexton Assist addresses the common challenges by offering AI-powered support, round-the-clock, giving users confidence in their hearing experience.

Rexton Assist enables users to be actively involved in the adaptation process of their hearing aids, which in turn enables:

- Faster adaptation by allowing users to adjust settings to their preferences
- Greater insights for professionals, who can view the user's adjustments in Connexx, supporting and guiding them toward an ideal listening experience

Artificial intelligence
Artificial intelligence (AI) is the capability of machines (such as computers) to perform challenging tasks which generally require human intelligence.

Machine learning
Machine learning (ML) aims to achieve AI through the principle of learning from experience. ML methods use example data to train computing systems to exhibit a specific behavior. A common example is training computers (e.g., using deep neural networks) to produce a label (e.g., "cat" or "dog") for a given image. To achieve this, many different images with the correct labels are used for training.

Deep neural network
Deep neural networks (DNNs) are powerful computing systems that have become the gold standard in many AI domains like computer vision and speech recognition. Neural networks were originally inspired by the structure of the brain, and function through the cooperation of small units (neurons) organized in layers. In recent years, new ML methods have allowed successful training of neural networks with many such layers, which has dramatically increased their computational power. These "deep" neural networks and the methods to train them are often referred to as "deep learning."

What is Rexton Assist and how is AI used

The foundation of Rexton Assist lies in its use of a deep neural network (DNN) to recommend hearing aid adjustments directly when the user encounters challenges. With it's AI-powered approach, Rexton Assist can predict the most effective solution for challenges the user may experience, at any time and any place.

When activated, Rexton Assist uses information from the current acoustic environment combined with audiometric user information stored in the hearing aids. Together with the problem description from the user it is then sent to a cloud-based AI system, which combines a DNN with a Wearer Preference Learning module.

This combination of personalized insights and collective intelligence fosters optimal sound adjustments tailored to each user's unique preferences and needs.

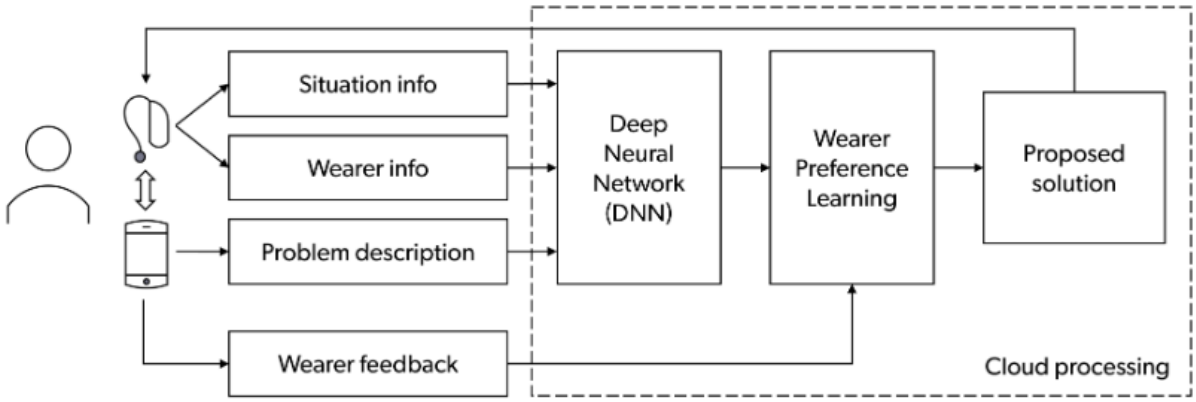


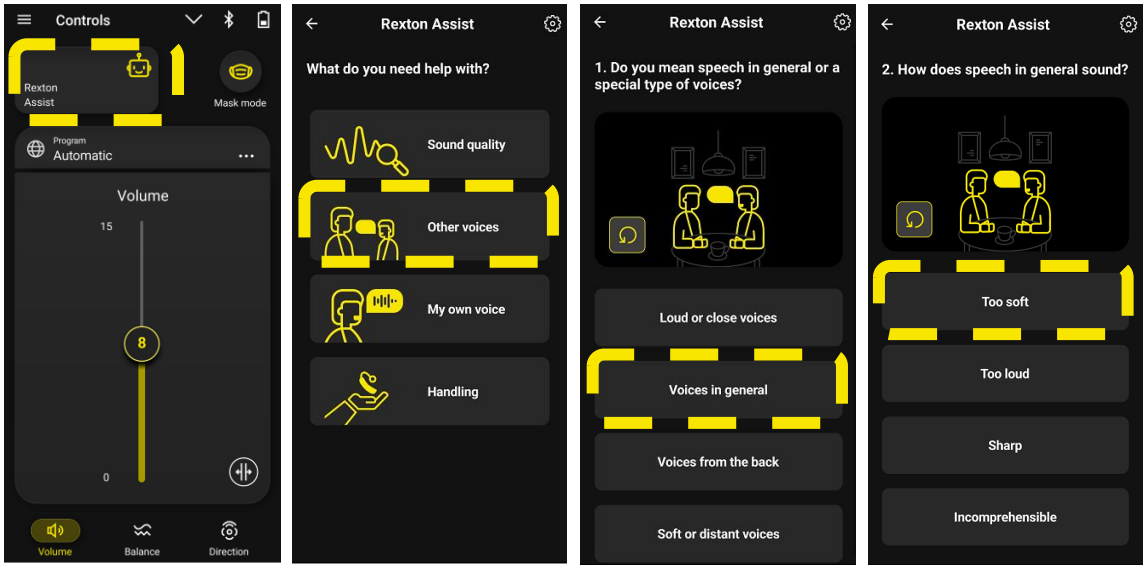
Figure 1: Simplified diagram of processing in Rexton Assist.

A proposed solution based on the comprehensive input will be sent back to the user who can try it out immediately. Based on the user's anonymized feedback through the Rexton App, Rexton Assist can continue to fine-tune the solution. When a solution is accepted by the user it will improve the system further by updating the Wearer Preference Learning module.

But it doesn't stop here. The Rexton Assists DNN is also built up on scientific findings documented in the literature (e.g., Jenstad et al. 2023), and our experience of hearing aid development. This creates an inexhaustible pool of anonymized data, gathered from thousands and thousands of users around the world, used to constantly learn, constantly develop and constantly improve the Rexton Assist.

Easy to Use

Rexton Assist is designed with user-friendliness in mind. Accessing the assistant is as simple as clicking the icon on the home screen of the Rexton App. The straightforward interface enables users of all ages and tech-savviness levels to be able to navigate the features without difficulty.



Summary

In the dynamic world of hearing aid technology, Rexton Assist stands out as a valuable tool for both users and hearing care professionals. Embedded in the Rexton App, this cloud-based AI assistant delivers real-time, personalized support, enabling users to maximize the benefits and rely on Rexton to get the most out of their hearing aids with ease.

By allowing users to independently adjust and resolve minor issues, Rexton Assist fosters greater autonomy and satisfaction while reducing reliance on professionals for routine concerns. This enhanced independence frees up professionals to concentrate on more complex cases, ultimately improving clinic efficiency and overall user care.

REFERENCES

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