REXTON BICORE
MY VOICE 2.0

HANDBOOK

JULY 2022

REXTON

INTRODUCTION

In a meaningful conversation, we are not only listening to our partner but also talking ourselves. In order to feel confident while speaking with others, we should have a reliable perception of our own voice. For hearing aid users, the sound of their own voice, which is normally amplified by the hearing aids just like all other sounds, can have an unfamiliar sound and cause them to feel a lack of confidence in their communication abilities.

Rexton has provided My Voice as solution for this challenge with great success. The new My Voice 2.0 is now based on our trusted Speech Preservation Technology. This helps users to relate to their own voice and speak with more confidence.

When sound waves reach the ear, the characteristics of the sound waves are different depending on where the sound came from. Consequently, the hearing aid user's voice has distinctive markers when it reaches the hearing aids' microphones, due to the individual shape and size of the user's head. These characteristics can be utilized to identify the origin of a sound. Based on this principle, My Voice learns to reliably identify the times when a hearing aid user is speaking and changes the hearing aids' processing to optimize perception of their own voice.

My Voice 2.0 is powered by Speech Preservation Technology and additionally makes use of spatial separation between their own voice and background noise. Because the user's own voice originates from the front, My Voice 2.0 can regulate processing of their voice signal separately from environmental sounds in the background. This results in a more stable sound impression for the hearing aid user.

For the hearing care professional, it is very easy to activate My Voice 2.0. A short session in Connexx to train the hearing aids to recognize the user's voice is all it takes. During training, the hearing aid user is asked to count continuously until the process is completed, which takes no longer than one minute.

My Voice 2.0 maintains the individual characteristics of the hearing aid users` own voice while supporting a reliable representation of the environment, allowing the user of BiCore hearing aids to rely on Rexton and confidently engage in conversations with others.

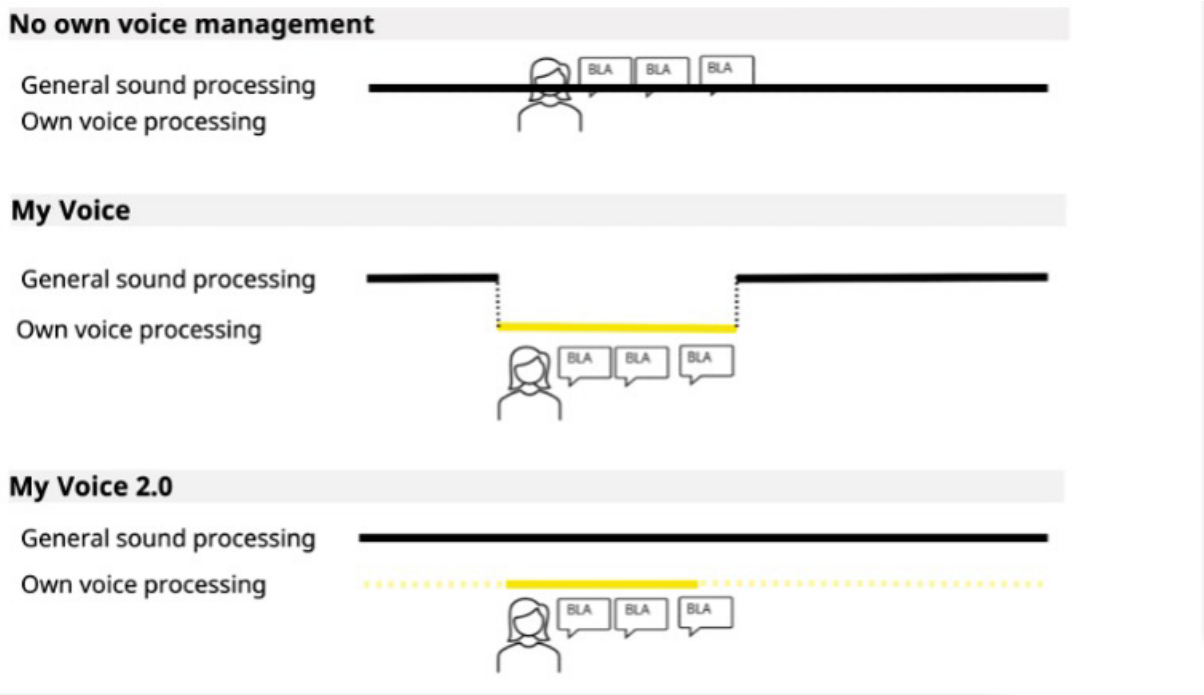

Figure 1. Comparison of processing strategies when no own voice management is applied, when My Voice is applied and when My Voice 2.0 is applied. Difference between My Voice and My Voice 2.0 is the parallel pathway with a dedicated processing for own voice without interruption general sound processing.

HOW IT WORKS

Traditionally, the audiogram is the basis for the hearing aid fitting. With My Voice 2.0, the user's voice is scanned as a short additional step during the fitting. During the acoustic scan, the user simply talks for a few seconds and a three-dimensional acoustic model of the user's head is created. This model is used to detect if sound originates from the user's mouth, or from an external source.

To use My Voice 2.0, you need to perform a short training procedure after First Fit. The training allows the hearing aid to distinguish the user's voice from the soundscape by scanning the voice path between the user's mouth and the two microphones on each hearing aid. This path arises due to the interaction of the user's voice with the unique physical characteristics of the head and associated wearing position of the hearing aids.

PREREQUISITES

To set up MY VOICE 2.0 a few prerequisites must be met:

- Install Connexx 9.7, Rexfit 9.7.0
- Update hearing aid firmware if necessary
- Once firmware updated, My Voice 2.0 is available for performance levels 80, 60, 40

PREPARING FOR MY VOICE 2.0 TRAINING

My Voice 2.0 training should be carried out after First Fit. This is also why it is located as the second tab on the left navigation bar after *First Fit* in Connexx (Figure 2).

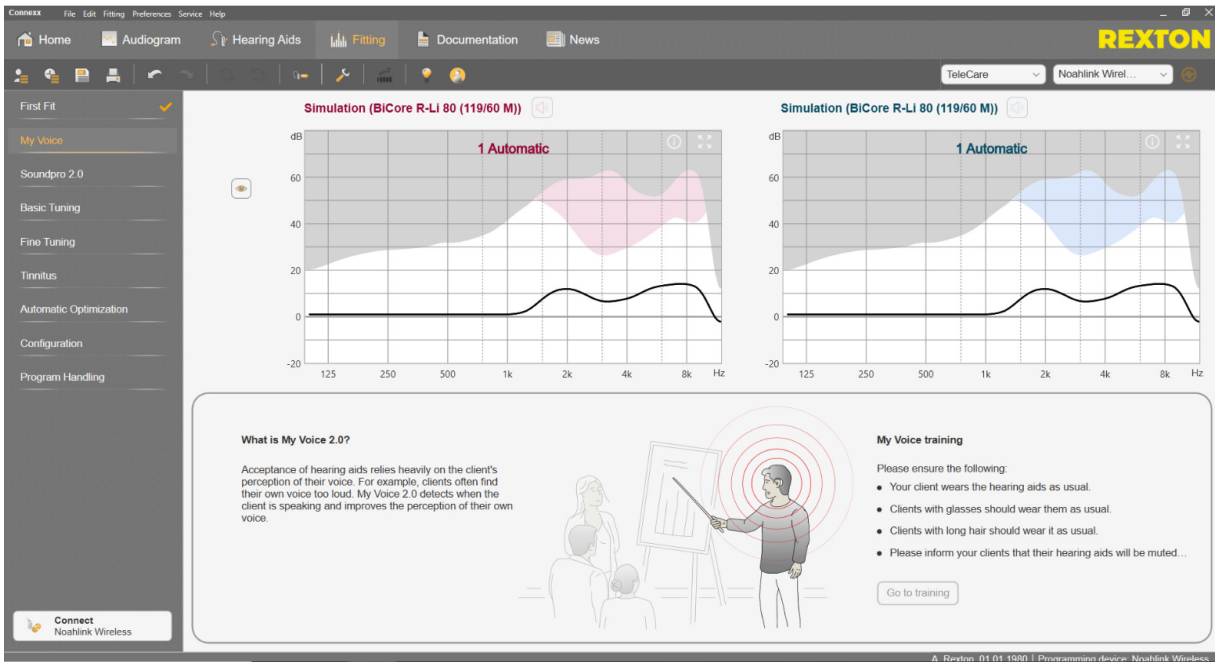

Figure 2. My Voice tab on the left navigation bar

Once the HCP clicks on *Go to training*, Connexx provides helpful guidelines to ensure the best training results. Review these tips before starting the My Voice 2.0 training procedure.

Connexx provides a general indication of whether the background noise level in the room is low enough to carry out the training. When the room is sufficiently quiet, you can see a yellow check mark next to *Background noise is appropriate* (Figure 3). If an orange warning is shown instead, it means that the background noise should be reduced before carrying out the training. In this case, it is still possible to perform the training, but the quality of My Voice 2.0 might be reduced.

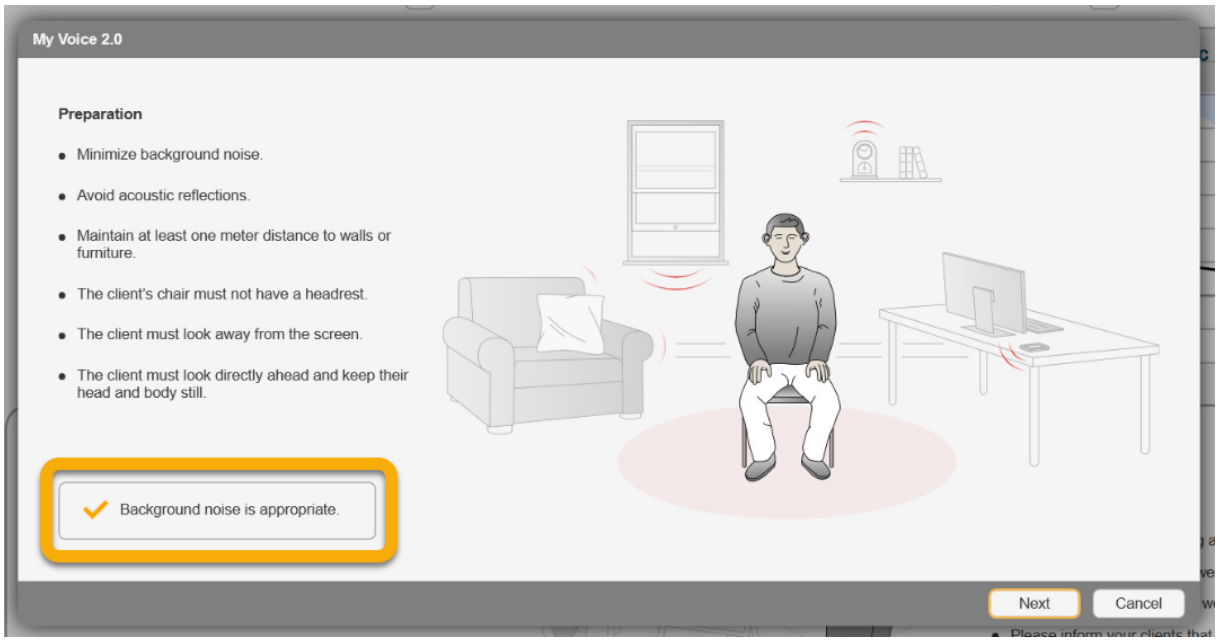

Figure 3. Background noise level check in Connexx

CONDUCTING MY VOICE 2.0 TRAINING

While the user instructions are to count aloud, exactly what is being spoken aloud is irrelevant. The user can count from 21 or count in any language. The key is to talk continuously aloud in a slightly raised volume for the duration of the training (Figure 4). The pauses in between the words should be as short as possible.

Figure 4. Instruct the user to count loudly and continuously. Then start training

Once the HCP clicks *Start Training*, the user should start counting regardless of the beeps that they may hear in the hearing aids. Note that the user may also notice that the microphones are muted

during training. Count until the yellow checkmark appears, indicating that training has been completed. This training process usually takes less than 10 seconds (Figure 5).

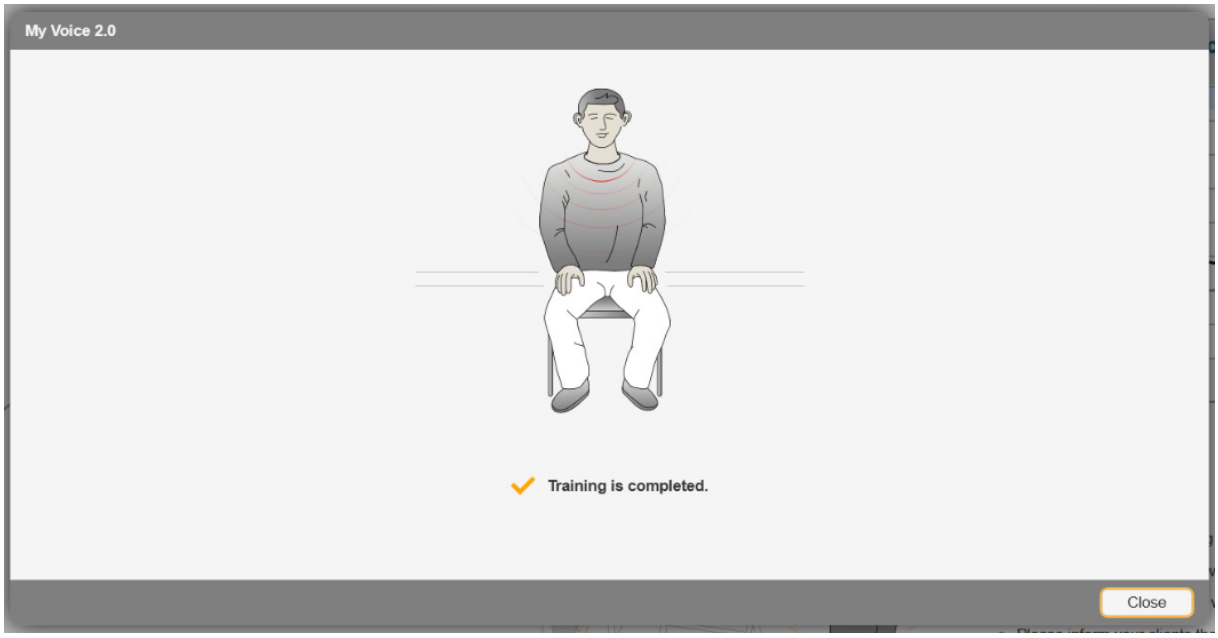

Figure 5. Yellow check mark indicating completion of My Voice 2.0 training

Click *Restart training* to discard previously recorded training results and repeat the training if necessary. The HCP can also terminate the training if, for example, unexpected noise occurs in the room (Figure 6).

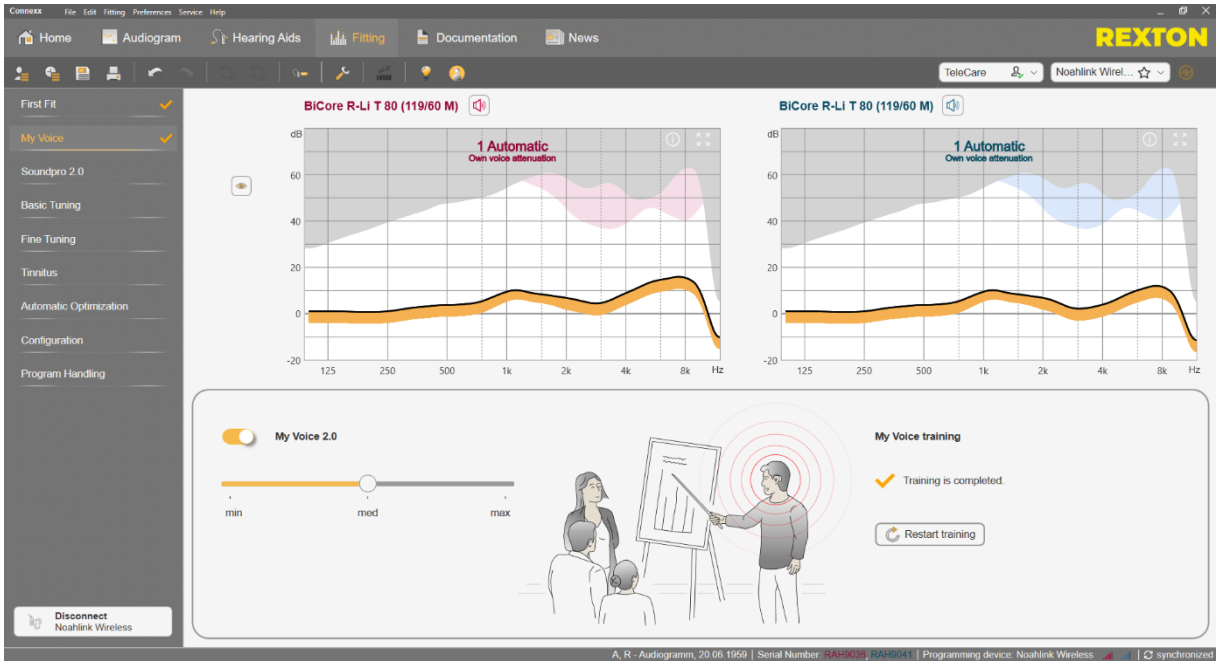

Figure 6. Restart training if necessary

USING MY VOICE

Once training is complete, *My Voice* 2.0 is automatically activated. The default My Voice 2.0 setting is ideal for most users and should not be adjusted unless it is specifically necessary.

Besides the music programs, My Voice 2.0 is active in all other hearing aid programs.

If the user reports that their voice sounds muffled or too soft, consider reducing the setting to *min*. This may happen for more experienced hearing aid users who have become used to hearing their own voice louder. On the other hand, if a new user still reports that their voice is too loud, consider adjusting the setting to *max* (Figure 7).

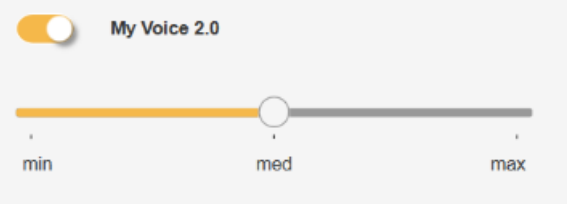

Figure 7. My Voice 2.0 settings

If the user raises own voice issues and adjusting My Voice 2.0 does not resolve it, it is likely the result of true occlusion and you can consider increasing the venting accordingly.

The curve view will now also provide you with a visualization of the My Voice 2.0 gain reduction to indicate that the feature has been activated. This is depicted by the yellow area in the curve view (Figure 8).

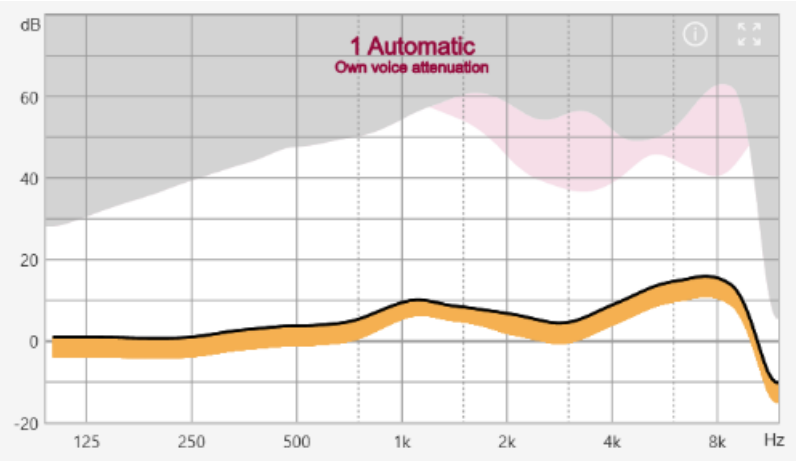

Figure 8. Curve view with a visualization of the My Voice effect

Upon completion of the training and when the user's voice is detected, the hearing aids activate a dedicated My Voice path, which optimizes the perceived sound quality of the user's voice almost instantly. This is achieved by dynamically adapting gain compression settings to reduce output in relation to the user's voice for the selected acoustic coupling. Conversely, when the user's voice is not detected, the hearing aid immediately reverts to the soundscape processing path.

Since own voice detection is based on spatial cues rather than the "sound quality" of the user's voice, it is highly reliable in real world conditions. If the user's vocal dynamic varies (shouting versus whispering), if the user's voice is affected by a cold, or if the user speaks in a different language, the voice detection algorithm retains its accuracy.

With My Voice 2.0, the adage "fit as open as necessary and as closed as possible" has never been easier to apply. The positive effect from this improved workflow is that fittings will tend to use less venting and users will receive greater benefit from the robust signal processing in Rexton hearing aids. Using a more closed fitting path means that the hearing aids can deliver a greater proportion of processed sound versus unprocessed ambient sound, and the user benefits more from directionality and noise reduction. As such, My Voice 2.0 simplifies the troubleshooting workflow for HCPs even before own voice issues are encountered.

RELY ON REXTON

We believe that nothing hearing related should ever be left to chance, both for the people with hearing loss, and those who depend upon them. We understand their challenges and we meet them with proven hearing technology that is made Lifeproof so it can be counted upon to perform reliably in even the harshest environments. At work, at home, during leisure time, exercise and in all weather, you can always **RELY ON REXTON**.

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