Nucleus™ Cochlear Implant optimization guide

Optimization will take place between 30 and 90 days after activation. Patients stay in the Optimization phase until they reach average performance milestones or they may return to the Optimization phase if performance declines at a later date.

(e.g., Post-operative CNC Word scores in the implanted ear of 56% or better **OR** scores in the implanted ear have improved by at least 20% when compared to scores obtained in that ear prior to implantation)[1–2]

Prior to programming:

- Inspect the implant site, ear canal and area behind the pinna for healing and overall health at the surgical site and under the magnet
- Perform a listening check of the sound processor microphone and ensure the microphone cover(s) are clean and free of debris **OR** check equipment status in the Nucleus Smart App

01 Confirm audibility and appropriate loudness

- Perform a soundfield audiogram or review Aided Threshold Test (ATT) from Remote Check to ensure soft sounds are audible to the patient (Soundfield thresholds should be 25 dB HL or better, ATT thresholds should be 20 dB HL or better)

02 Evaluate progress

Progress may be evaluated in different ways depending on how long the patient has been using their device. Consider the following options:

Up to one month:

- Informal speech perception measures (e.g., common phrases, numbers, Ling sounds)

One to three months:

- CNC words in the implanted ear and in the everyday listening condition **OR** Digit Triplet Test (DTT) if using Remote Care

- Optional:
  - AzBio Sentences at 65 dBA with a +10 dB SNR in the everyday listening condition
  - Patient-reported satisfaction measure (e.g., SSQ, CI-QOL)

Please refer to the Minimum Speech Test Battery 3 (MSTB-3) for additional guidance on post-operative testing recommendations.

03 Review datalogs

Select the patient from the patient list and click **Open**.
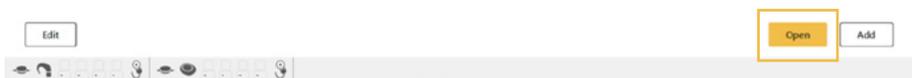
In the patient dashboard, click in the usage data box to review **Datalogs**.
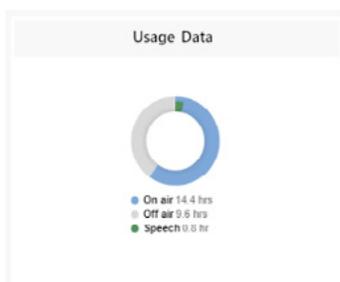
Review datalogs and discuss usage with patient.
Confirm at least 10+ hours per day of device usage.

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04 Optimize the MAP

T levels:

In the **Adjust** tab, click on **Thresholds**. Use this screen to measure T levels at least once during the optimization phase. Use the streamlined fitting method to set T's on 3-5 electrodes (the software will automatically estimate the T levels between). T's should be behaviorally set at the lowest level where they are 100% detectable by the patient. Ensure a minimum dynamic range of 40 CL is maintained across the array.
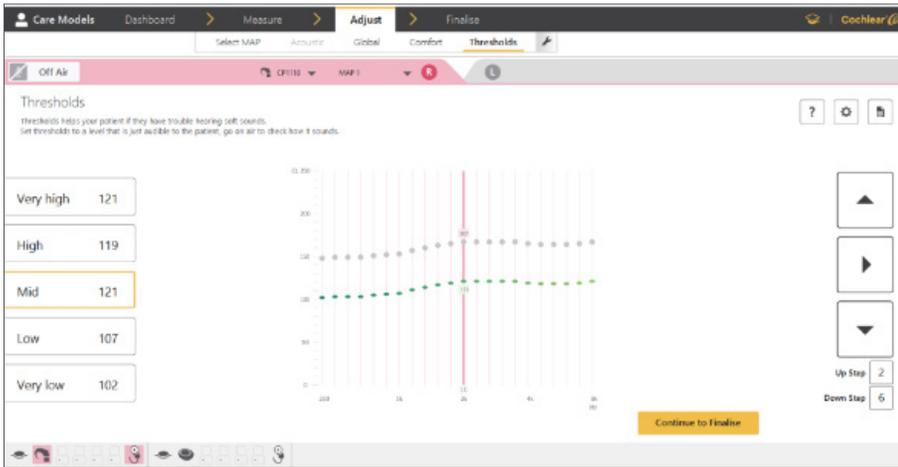
Note: After they have been measured once, T levels should only need to be re-assessed if indicated by audibility testing.

C levels:

In the **Adjust** tab, click on **Comfort**. Use this screen to sweep at C level in bands to ensure broadly-equivalent loudness across the frequency range. While C levels should be set to "loud" while patients are acclimating to sound at activation, patients may set to "loud but comfortable" once in the optimization phase (e.g., 30+ days after activation).
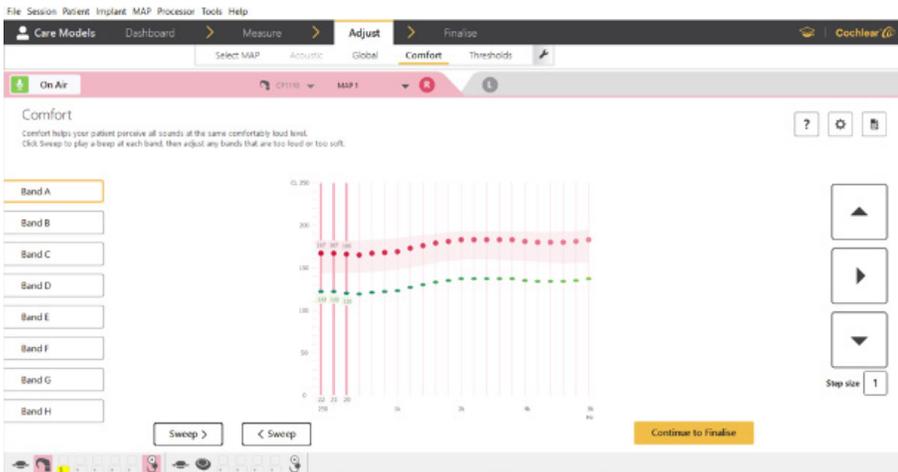
05 Adjust processor settings as needed

Review processor settings based on patient usage and datalogging.
Unless otherwise indicated, it is recommended to keep the following programs:

Program Slot 1: SCAN 2 FF

Program Slot 2: SCAN 2

In processor settings, allow for the adjustment of MVBT and Forward Focus* unless contraindicated.

06 Address hearing needs in the contralateral ear

If the patient is using a Smart Bimodal device and it has not yet been linked, open the **Processor Settings** and follow the steps to link a bimodal hearing aid:
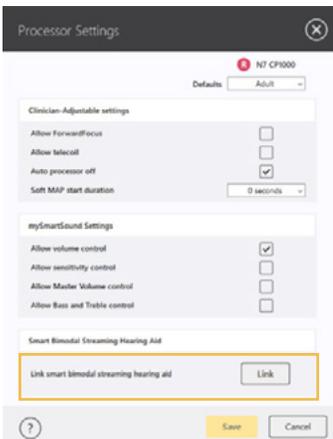
Refer to the Bimodal Fitting Flow in the Custom Sound Pro Help menu for further details on how to optimize a bimodal fitting.

Consider whether bilateral implantation may be appropriate for the patient based on their reported bimodal benefit and/or speech recognition obtained in the best aided condition of the non-implanted ear.[3]

Select **Save** and write to processor with coil on head and then **End Session**.

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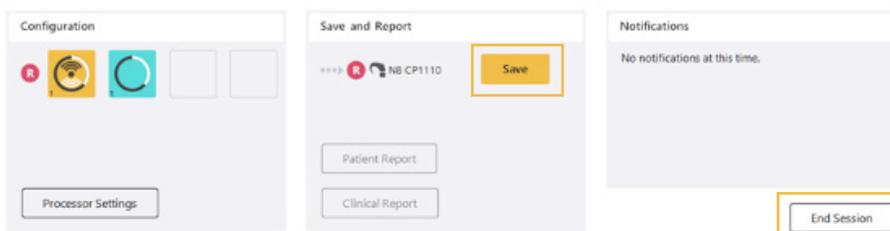
07 Utilize Remote Care to support the patient

Remote Care (i.e., Remote Check and Remote Assist) should be introduced to the patient in the optimization phase (if not already done). Examples of uses include:

- Interim evaluation of performance and checking of the device with Remote Check
- Global adjustments in lieu of in-person appointments with Remote Assist
- Individual ear testing that enables isolation of the implanted ear in patients with Unilateral Hearing Loss (UHL) and Single-Sided Deafness (SSD)

For further guidance about the use of Remote Care, please refer to the Getting Started Guide with Remote Care (FUN4669).

07 Counsel the patient on device use

Review the patient's progress and let them know how they are doing

Ensure the patient is ready for Remote Care

Discuss ongoing aural rehabilitation and provide more support as needed

Review accessory usage and schedule time with the Cochlear Recipient Solutions Manager (RSM) for ongoing orientation and support

For further support during programming, please contact the Audiologist on Call at 877 883 3101

1. Clinical Evaluation of the Nucleus CI532 Cochlear Implant in Adults 2019: Internal Analysis
2. Buchman, et al (2020) Assessment of speech understanding after cochlear implantation in adult hearing aid users. JAMA Otol Head & Neck Surg, doi:10.1001/jamaoto.220.1584
3. Gifford RH, Dorman M. (2019) Bimodal hearing or bilateral cochlear implants? Ask the patient. Ear Hear. May/Jun;40(3):501-516. doi: 10.1097/AUD.0000000000000657

* ForwardFocus can only be enabled by a hearing implant specialist. It should only be activated for users 12 years and older who are able to reliably provide feedback on sound quality and understand how to use the feature when moving to different or changing environments. It may be possible to have decreased speech understanding when using ForwardFocus in a quiet environment.

This material is intended for health professionals. If you are a consumer, please seek advice from your health professional about treatments for hearing loss. Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome. Always read the instructions for use. Not all products are available in all countries. Please contact your local Cochlear representative for product information.

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