

Cochlear[™] Remote Check

Frequently Asked Questions

FOR PROFESSIONALS

Contents

General Remote Check information 3

Patient enrolment in Remote Check6

Remote Check activities..... 8

Reviewing results in myCochlear Professional..... 9

References.....13

General Remote Check information

Q1. What is Cochlear™ Remote Check?

Cochlear™ Remote Check is the first telehealth patient-driven assessment tool for cochlear implant (CI) recipients. It is designed to transform care delivery by offering patients a convenient and cost-effective aftercare solution. As a result, clinicians may benefit from having time to see more patients, redirecting attention to patients requiring more support, or allocating resources to patient care activities which generate higher revenue. Remote Check works by having patients complete a series of hearing health activities and then forwarding results to their clinician for review via myCochlear Professional (mCP). Remote Check does not currently include remote programming of a sound processor.

Q2. Does Remote Check replace the need for an in-clinic appointment?

Remote Check is designed to provide a snapshot of a patient's hearing health, so a clinician can quickly determine whether further clinical intervention is required. Remote Check is intended to supplement clinic-based and programming appointments by enabling remote triage and troubleshooting or performance monitoring over time. Not every patient will be suitable for a Remote Check and some may prefer face-to-face appointments. We therefore expect most clinics to offer a combination of remote and in-clinic appointments for their patients.

Q3. What equipment is required for a Remote Check?

To complete a Remote Check, a patient requires:

- A compatible implant type (including Profile™ Plus CI600 series, Profile™ CI500 series, Nucleus® CI24RE series, Nucleus® CI422, and Nucleus® CI24M/R series). Implant devices not currently supported include Nucleus® 22 series, Nucleus® 24 ABI and the Nucleus® Double Array.
- The latest version of the Nucleus® Smart App with a registered Cochlear account, accessible on an Apple or Android™ smartphone that is compatible with the Nucleus® 7 Sound Processor (CP1000) or Kanso® 2 Sound Processor (CP1150). See www.cochlear.com/compatibility for information on compatible smartphones.
- Clinics require access to the web-based myCochlear.com Professional (mCP) to access and review results. The recommended browser is Google Chrome.

Q4. Which activities are included in a Remote Check and must all be completed in every check?

Remote check is customisable. A clinician can assign any or all of the following activities for patients to complete as part of their Remote Check:

1. Implant site photographs to check for skin irritation or inflammation.
2. Questionnaires to gather information about general health, the fitting and sound quality the sound processor, their recent listening activity and whether training assistance is required.
3. An Aided Threshold Test (ATT) to precisely measure thresholds across a range of frequencies.
4. A Speech-in-Noise check assessed with a Digit Triplet Test (DTT).
5. Impedance (implant) Check to assess the performance of the implant electrodes.

Clinicians can customise a check during enrolment in mCP by unchecking any activities which are not required or might be too difficult for an individual patient. Only the selected tasks will then appear in the app when the patient opens Remote Check. Having patients complete the entire suite of activities will provide the most comprehensive feedback on their hearing performance. In addition to results from the patient-driven tasks, datalogging and hardware diagnostic information is captured automatically for every Remote Check.

Q5. How were activities selected for Remote Check?

Remote Check activities were selected to give broad coverage of a range of clinically validated hearing health metrics and to provide meaningful real-world insights to inform clinical decision making. An additional consideration was that the tasks had to be quick and easy for patients to independently and reliably complete.

Q6. Does the patient ever see the Remote Check results?

Remote Check results are only visible to the clinician in myCochlear Professional (mCP). The patient does not see any test results when their check is completed. After reviewing results, a clinician will send a notification to the patient advising as to whether a clinic visit is required, and they can add a note providing additional information or instruction. Remote Check results can also be exported as a PDF report and shared with the patient if required.

Q7. What is the purpose of a Baseline Check?

At the time of initial enrolment, the first Remote Check is sent immediately to a patient. This is called the baseline check. This provides a base reference of performance and hearing health metrics for the patient against which future results can be compared. It is recommended where possible, to assign all Remote Check activities for completion in the baseline check. This will help gauge patient suitability for completing checks remotely, and guide customization of Remote Check activities for future checks.

Q8. How should Remote Check be used clinically?

Remote Check can be utilised in different ways to support a range of patient and clinical preferences and pathways. Some factors to consider include patient travel time and costs, the need to minimise disruption to school and work schedules, and the mobility and health status of the patient or their carer.

Clinical uses of Remote Check include:

- Baseline check: following MAP stabilization or sound processor upgrade
- Acute support: supplementing early activation appointments
- Clinical check: substituting a follow up/ annual check or following a sound processor upgrade
- Clinical triage: remote troubleshooting and problem-solving

Q9. Who is a candidate for Remote Check enrolment?

Enrolment is at clinician discretion as there will be patients who prefer face-to-face appointments or have needs best suited to an in-clinic check. Some candidacy considerations include:

- Device and smartphone compatibility listed previously
- Comfort with smartphone and Nucleus® Smart App use
- Distance from the clinic
- Health concerns
- Capability and motivation for completing remote activities

Bimodal and bilateral patients as well as those with single-sided deafness can be enrolled. Patients using a Hybrid™ hearing solution with an acoustic component should not be enrolled for performance tests, as only the electrical output from the sound processor to the implant has been calibrated.

Q10. Can Remote Check be used with children?

Children can be enrolled for Remote Check provided their carer has a Cochlear Account. As part of enrolment, a clinician nominates the Remote Check session to be an adult or paediatric check. If a paediatric check is selected, the questionnaires administered are adapted for paediatric use and caregiver feedback. If the child is unlikely to reliably complete the performance tests in Remote Check, these tasks can be excluded during the enrolment process. It is at the discretion of the clinician to determine suitability for paediatric enrolment.

Q11. Is there a time limit for completing a Remote Check?

After receiving notification to complete a check, a patient has 14 days to complete it. Reminder emails and app notifications will be sent automatically on days 7 and 13 to prompt them to complete their check. If the 14-day period expires without the check being done, the patient will see an 'overdue' status in the app, but will still be able to open and complete their Remote Check.

Q12. Is Remote Check available in different languages?

If the phone language setting is supported by Remote Check, text and audio will be in that language. Remote Check is currently available in English, German, Dutch, French, Swedish, Arabic, Japanese, Spanish, Finnish, Danish, and Italian languages. Further language-specific versions are in development.

Q13. How are Remote Check software updates delivered?

From time to time, Remote Check software updates will become available for mCP and the Nucleus® Smart App. Updates to mCP are automatic and do not require any action from the clinician. Updates to the Nucleus Smart App can be downloaded by the patient from the Apple App store or Google Play store.

Q14. Will I get notified when results come into mCP for review?

Email notifications are disabled by default, but a clinician can opt-in to be notified by email when a Remote Check has been completed and is awaiting review. Notification preferences are set up in 'My Account.' If email notifications are disabled, a clinician should regularly review the status of checks in myCochlear.com Professional (mCP) under the 'Awaiting Review' tab.

Q15. Can I export and access Remote Check results in Custom Sound® Pro fitting software?

Remote Check results for individual patients can be downloaded in pdf format via the 'Check Review' screen in mCP or exported in a CSV format. Custom Sound® fitting software does not directly interface with mCP, so Remote Check data cannot be imported or viewed within the fitting software at this time.

Q16. How is data privacy and security maintained?

Cochlear is committed to protecting the privacy of customer information in accordance with applicable privacy and data protection laws, however this is a shared responsibility with patients and clinicians. Cochlear has a Global Privacy team who ensure personal information remains confidential and safe, and an IT Risk and Security team who maintain protection of systems and information from unauthorised access. For further information please refer to the Cochlear website or the Cochlear Limited Recipient Data Privacy brochure.¹

Patient enrolment in Remote Check

Q17. How do I enrol a patient for a Remote Check?

Patients are enrolled via mCP and enrolment steps are as follows:

- Login to myCochlear.com with Google Chrome
- Go to Online Services and search for the patient you wish to enroll
- Check the Cochlear Account field to see if the patient has a Cochlear account. If there is no existing account, an invitation to create one will be sent with the enrolment invitation.
- Check that a Nucleus® 7 (CP1000) or Kanso® 2 (CP1150) Sound Processor is registered. Add any unregistered devices.
- For patients with a nominated caregiver who wishes to manage notifications and alerts, add their details to the parent/guardian section if not already listed.
- Click 'enrol' and then select the Check type and the activities you wish the patient to complete.
- A baseline check will be set immediately, then click 'next' to specify the date for a follow up check to be scheduled.
- Click 'next' to complete the enrolment.
- An automated email will then be generated and sent to the patient. Wording will vary according to whether they have a registered Cochlear account or not. Patients should follow the instructions provided to access Remote Check and complete their check.
- The Remote Check status will be updated to reflect that the patient has been successfully enrolled.
- To change a future check date or customise the tasks select 'Update.'
- To unenrol a patient at any time, select 'unenrol.' This cancels any checks which have not yet been submitted or reviewed.

Q18. How do I reschedule an existing check?

A clinician can reschedule a check under Recipient management in mCP by selecting 'Update.' The due date for a check can be brought forward as early as the next day or scheduled beyond any future date. If a check is already overdue, a clinician can cancel the existing check and schedule a new check with a different or reduced set of activities if required.

Q19. Why can't I find my patient when I search in Online Services?

There are two reasons why a patient may not be visible when searching: (1) **The patient is not linked to the clinic.** In this case, the clinician can search for the patient using 'Advanced Search' (additional info will be requested e.g. previous clinics, Sound Processor serial number etc). After Remote Check enrolment the patient will be automatically linked to the clinic. (2) **The patient does not have a registered device.** The clinician can register the patient's sound processor in mCP which will automatically link the patient to the clinic. It is important to carefully search for a patient using the advanced search function in mCP (search first and last name, Date of Birth and processor serial number). If no recipient found, only then create an account.

Q20. I enrolled a patient, so why is Remote Check is not appearing in their Nucleus® Smart App?

Reasons preventing Remote Check from appearing in the Nucleus® Smart App include:

- Nucleus Smart App is not the most up-to-date version. Ensure automatic downloads for app updates is enabled or download the latest app version from the Apple App store or Google Play store.
- Invalid account. The account used to log into the Nucleus Smart App and paired to the sound processor must be a Recipient Account. The patient must also log into the Nucleus Smart App with the account that was used to enrol them into Remote Check. Contact Cochlear customer service for assistance with resolving account issues which can sometimes take 48- 72 hours to resolve.
- Ensure Data Sync is switched on and the smartphone device is connected to the internet.

Q21. My patient did not create an account after receiving my enrolment invitation. What happens next?

If a patient does not complete the account creation process from the invitation email within 14 days, the activation link will expire, and the clinician will have the option to either resend the email invitation with a new link, or unenrol the patient from Remote Check. Both options are available within the Patient Overview page of the Professional Portal.

Q22. How does Remote Check work for carers with multiple recipients, or patients with multiple carers?

If a smartphone has been paired with multiple sound processors from different recipients, a carer will need to ensure that the smartphone is currently connected to the processor of the recipient scheduled for Remote Check. Confirm which recipient's processor is to be connected in the Nucleus Smart App by navigating to Setting > About.

For patients with multiple carers who each have the Nucleus Smart App installed on their smartphone, only one carer will be able to support the patient through their Remote Check. A parent/carer needs to log into the app with the nominated email address used by the clinic to send the Remote Check. This will then enable the child to complete the check.

Q23. What if a parent/carer accidentally sets themselves up as a patient?

The Parent/carer will need to contact their local customer service team and request the account to be deleted or amended.

Q24. What's the difference between an adult and a paediatric check?

Currently the only difference between an adult and pediatric Remote Check is the Questionnaires. There are 30 questions in the adult version, and 38 questions in the pediatric version. This is because the adult version uses SSQ12² whereas the pediatric check uses SSQ Parent³ developed for use with children/carers.

Q25. What happens if my patient transfers to another clinic?

If a patient transfers elsewhere, they will need to notify their previous clinic so they can be unenrolled, before their new clinic can enrol them. The previous clinic will be able to see results of all existing checks but will not see any future checks once the patient has been unenrolled and any pending checks will be cancelled. The new clinic will only see the results of any new checks they schedule.

Remote Check activities

Q26. How long does it take to complete a Remote Check?

The timing of a Remote Check will be impacted by:

- whether the patient is a unilateral or bilateral user
- how many of the activities have been assigned for them to complete
- how familiar the patient is with using the app and navigating their smartphone
- patient response time and concentration for different tasks
- whether the patient takes a break or is interrupted during the check

Remote Check has been designed to take as little as 15 minutes.⁴ Factoring in travel and appointment waiting time, a Remote Check is expected to take much less time than an in-clinic appointment. A clinician requires as little as 10 minutes⁵ to review Remote Check results.

Q27. Can patients take a break during their Remote Check?

If a patient takes a short break or is interrupted during a session (with a phone call for example), their progress will be saved. When they log back into the app they will restart at the point at which they stopped, except for the Audiogram or the Speech in Noise tasks which will restart at the beginning of the activity.

Q28. Do processor or MAP settings affect Remote Check results?

During the Audiogram and Speech in Noise tests, Remote Check goes into '**hearing test mode**' while streaming. This mode switches off the microphones to block ambient noise and disables any processing settings such as microphone sensitivity, mixing ratio, and SCAN settings. It also overrides the volume settings on the smartphone. The original processor settings are restored when the performance tests are completed, or the patient stops the check for a set time period. The MAP selected for use during a check and MAP-related settings like volume, Master Volume, Bass and Treble will have an impact on streaming. It is therefore important to remind patients to complete their check using their preferred MAP and processor settings used daily, especially the volume setting.

Q29. Does the condition of the sound processor affect Remote Check results?

The Audiogram and Hearing in Noise tests use direct streaming to the sound processor, so any external equipment faults such as defective microphones or covers, will not affect Remote Check results. These equipment defects will be detected as part of the hardware diagnostic check and reported in the dashboard as either a sound processor or microphone fault. Patients are also asked in the questionnaires to report any concerns with their external equipment and to indicate when microphone covers were last replaced. This information will help gauge whether any equipment should be replaced.

Q30. Do bilateral patients have to remove their devices during Remote Check?

The implant site photos task is the only activity where the patient is required to remove their processors or coils. When photos are completed, both processors and coils should be replaced and remain on the head for the remainder of the check. During a bilateral Remote Check, the app will automatically control muting and unmuting of each device at the right time and place.

Q31. Why did Remote Check stop part-way through the check?

Certain hardware faults or streaming and connectivity issues can prevent a patient from starting or completing a Remote Check. Some troubleshooting tips include:

1. Follow any in-app guidance and instructions
2. Check Wi-Fi and streaming connections
3. Check the processor is connected to the smartphone and disconnected from other bluetooth devices
4. Resolve any processor status alerts in the Nucleus® Smart App (such as low battery)
5. Power the sound processor off/on and restart the Nucleus Smart App and Remote Check
6. Request the patient submit a diagnostics report directly to Cochlear from the app

Reviewing results in the myCochlear.com (mCP) portal

Q32. How do I determine if a patient should be recalled for an in-clinic appointment?

Each patient's Remote Check results are viewable via a dashboard in mCP. For some Remote Check tasks (Impedance, Questionnaire, Hardware Health), the dashboard will highlight if any issues or changes were detected, prompting closer review. Some of the activities such as implant site photos and the Audiogram will require a clinician to review and make judgements about appropriate clinical intervention. This may include a request for an in-clinic appointment or scheduling of an additional Remote Check. It is at the discretion of the clinician to determine an appropriate course of action following Remote Check review.

Q33. What is Remote Check messaging and how does it work?

While reviewing Remote Check results, you can now use mCP to message back and forth with your patient. Remote Check messaging enables you to send additional patient instructions, share links to instructional videos, or request further information before finalising a Remote Check review. To use Remote Check messages, open a check which is awaiting review, scroll to the 'Message Recipient' field, type your message and send it to your patient. They will receive your message via the Nucleus Smart App and can reply directly back to you. Once you have addressed any concerns and finalised the Remote Check review, the messages will be closed and you (or your patients) will be unable to send further messages for this check. Messages are saved with the Remote Check results and can be accessed at any time by opening and viewing the completed check. Your patient can also refer to previous messages by accessing 'Messages' within the Nucleus Smart App menu.

Q34. What does an 'unreliable' hearing result mean?

A result is deemed to be unreliable if the patient responses are highly inconsistent or inappropriate. For example, in the Audiogram test, an unreliable threshold is reported if a patient responds 'yes' to every stimulus including those which are deliberately inaudible. Frequencies with unreliable thresholds may be repeated at the end in an attempt to obtain a threshold. If results appear unreliable during the Speech in Noise test, the patient is prompted to repeat the test (one repeat only) but if results remain unreliable then 'participant's responses unreliable' will be reported in mCP. The patient will see the message 'Unfortunately, we could not get a result for this activity. Let's move on to the next activity.' In the Nucleus® Smart App.

Q35. Who can access and review a patient's Remote Check results in mCP?

Each patient's Remote Check results are viewable via a dashboard in mCP. Each clinician assigned a login to mCP can retrieve and review Remote Check results for any patients enrolled in their associated clinic. The 'reviewed' tab in Remote Check will show which clinician completed the review for each patient.

Q36. Impedances : Why can I only see Common Ground traces in the dashboard?

An impedance check using common ground (CG) stimulation mode detects the broadest range of intracochlear electrode issues such as shorts and open circuits, so this trace is displayed when results are reviewed. In the unlikely event of extracochlear MP1 or MP2 faults, these results will also be displayed.

Q37. Impedances : Why are impedance results absent?

Absent impedance data can be caused by (1) coil being off during measurements, (2) Implant ID disabled, (3) accidental enrolment of a non-supported implant type, or (4) connectivity issues.

Q38. Questionnaires : Why is the Speech, Spatial and Qualities of Hearing Scale used in Remote Check?

The Speech, Spatial and Qualities of Hearing Scale (SSQ)² is a validated self-assessment scale commonly used in cochlear implant and hearing aid research. It measures self-reported listening ability, function and hearing quality in real world listening situations. SSQ12 is a shorter form of the SSQ49 shown to be suitable for clinical use². As SSQ scores typically stabilize by 12 months post-implant^{6,7}, it's an ideal task for tracking performance changes over the longer term. SSQ in Remote Check is anchored, enabling the patient and clinician to see how results compare to the previous check.

Q39. Questionnaires : What happens if questions are not applicable for my patient?

There may be a few questions which some patients do not find applicable to them, especially with the SSQ. To advance through the questionnaires and onto the next activity, patients must enter a response for every question. We recommend advising patients to answer as best they can and send a comment to you via the notes.

Q40. Audiogram: What does a patient actually hear during the test?

During the audiogram test, Remote Check goes into 'hearing test mode' which switches off the microphones to block ambient noise and disables any input processing strategies such as SNR-NR and FF. During the test, the app will stream pure tones at different frequencies and intensities directly to the patient's sound processor. This will sound like a series of beeps. The signal is calibrated to ensure that the level of the streamed signal is received to the processor at the same level. The audiogram test is very similar to completing T level measurements in the fitting software, except that it is patient-driven.

Q41. Audiogram: Are thresholds accurate and what should I do if there has been a significant change?

The Audiogram is patient driven, so the testing paradigm has been optimised to ensure a high level of measurement accuracy and test-retest reliability including:

1. A patient can repeatedly press the stimulus button before responding to increase their level of certainty
2. Non-stimulus (sub threshold) presentations are included to train patients to expect 'no stimulation' at times
3. Near threshold, the step size is reduced to 1 dB to permit very fine threshold measurements
4. A convergence rule is applied to reduce the standard error to less than 1dB.

Aided thresholds for the previous and current check are displayed in mCP for comparison but no flagging of threshold changes is provided. It is at the clinician's discretion to determine if threshold levels or threshold changes are clinically significant necessitating further investigation with a MAP check. It is recommended to

only compare thresholds against the baseline or previous Remote Check, rather than to thresholds obtained via free-field measurement in the clinic.

Q42. Audiogram: How do streamed thresholds compare with free-field aided threshold measurements?

Free-field and streamed measurements differ in that when we use direct streaming, we completely bypass the external microphones and override sound processor settings. Additionally, the streamed pathway from the app to the processor and then onto the implant itself is completely digital, unlike booth equipment where acoustic transducers are typically used. Direct comparison of free-field vs streamed thresholds is therefore not recommended. In a clinical study, Remote Check app thresholds were compared with clinician-driven aided free-field measurements in the same session. It was found that the mean thresholds for Remote Check (averaged across all frequencies) was 6.7 dB lower than mean thresholds obtained via the free-field⁸.

Q43. Audiogram: Why does this test take longer than any other?

The Audiogram provides precise threshold measurements across seven different frequencies with step sizes reduced to 1 dB near threshold. Testing at 1kHz is also repeated at the end of every audiogram, and bilateral patients have each ear independently assessed. In addition, human factors such as a patient's health literacy, motivation level and confidence in test-taking and decision-making will also have an individual impact. These factors will all contribute to the testing time being longer than for free-field measurements driven by a clinician.

Q44. Speech in Noise: What is the expected range of performance?

For the Speech in Noise test, a Speech Reception Threshold (SRT) will be reported, as well as the degree of change (increase or decrease) in the SRT since the previous test. As expected with other performance tests, individual scores will show a spread across a range of performance. One Remote Check study with 84 patients⁸ showed the mean DTT SRT to be -4.3 dB SNR for adults (range -11.2 to 11.6), and -4.5 dB SNR for children (range -10.3 to 8.5). In another study with a smaller group of 45 adult patients, the median test score for DTT was -4.8 dB SNR.⁹

The test-retest reliability of DTT with the Remote Check App was evaluated by in a clinical study by comparing DTT results streamed in the clinic to those when streaming was done at home 2 weeks later. There was a non-significant SRT difference of 1.6 dB between conditions and the 95% critical difference score was 3.2 dB.

A considerable change in performance on the Speech in Noise test may warrant checking of MAP C levels (although consider other Remote Check and usage data to inform this decision).

Q45. Speech in Noise: What's the noise type used during the Digit Triplet Test (DTT)?

The noise type used for DTT is different to normal speech weighted or babble noise typically used for clinical speech in noise tests. A special non-modulated noise file with the same long-term average spectrum of digits, is used to provide optimal masking of digits and maintain a good psychometric function.

Q46. Hardware Health : What causes a processor error or a microphone error?

During a Remote Check, any microphone or processor issues identified since the last programming session will be captured and reported in mCP. A microphone error is flagged when the level of audio into the microphones is determined to be too low, indicating a fault with the microphone/s. In this instance the processor will likely require further investigation. A processor error is flagged when the firmware detects a potential problem with the processor. Processor errors can include a corrupt MAP or corrupt firmware, or faults with the processor chip itself. Most firmware issues are resolved when the recipient power cycles their processor off and on, so

the recipient may still be able to use their device. If persistent firmware errors are detected and causing sound quality or usage issues for the patient, the processor may need to undergo further investigation.

Q47. Usage data: Are the datalogs in Remote Check the same as in Custom Sound® fitting software?

Unlike Custom Sound® Pro fitting software which shows an aggregated view of usage data, Remote Check displays the usage data across time (e.g. daily/weekly). Remote Check captures usage data directly from the Nucleus® Smart App. The Nucleus Smart App adds a timestamp to the data collected and displays the data in Remote Check according to that timestamp. In contrast, Custom Sound® Pro fitting software captures usage data from the connected sound processor only and displays an aggregated view of the data since the last time the sound processor was connected to the fitting software. Datalogs include Time on air, Time spent in use and in standby for different accessories, Time spent in each program, Time spent in SCAN scenes, Proportion of time spent in various loudness scenarios, and the Time spent in ForwardFocus.

Q48. Usage data: Why do the datalogs (via Hearing Tracker) appear to be under-reporting Time in Speech?

Time in Speech (TIS) represents how much time per day a Nucleus 7 or Kanso 2 Sound Processor was optimised for use in an environment predominantly consisting of Speech or Speech-In-Noise, and where the device was streaming via direct streaming or through one of the True Wireless accessories. The Time per day is derived from SCAN which continually assesses the listening environment and adjusts signal processing to optimise listening for a given environment. SCAN is intentionally conservative and waits until there is a consistent pattern of sound (for up to 10 seconds) before changing the environment classification. Speech patterns in a listening environment can be intermittent so the SCAN technology may therefore not adjust the signal processing until a consistent pattern of speech is detected over time. If there are intermittent speech patterns present and due to the 10 second delay before switching scenes, SCAN may not classify and count that listening environment as being Time in Speech resulting in perceived under-reporting.

Q49. Usage data: Why does Time in Speech sometimes appear at the beginning of a day before a patient has been exposed to any speech or speech in noise?

This is expected behaviour of the Hearing Tracker relating to how it collects and displays data from a sound processor. The sound processor counts the time spent in listening environments and stores a series of 'counters' to track the usage time. Each hour, the Nucleus® Smart app connects to the processor to read the counters and display the usage data in Hearing Tracker. If the sound processor is not connected or within range of the smartphone at the hourly check, the counters will not be read and displayed until the next time the app is within smartphone range. Hearing Tracker averages data across days where the app is not connected to the sound processor. If the time between the counters being read spans multiple days, the counter data will be averaged across the days which had no readings. In this case, Hearing Tracker will apportion data to the day that the sound processor is re-connected to the app, even if on that day the customer had only just turned on their sound processor or had not been exposed to speech.

References

1. Cochlear Limited D1774127 Recipient Data Privacy Brochure V1 Nov 2020
2. Noble W, Jensen NS, Naylor G, Bhullar N, Akeroyd MA. A short form of the Speech, Spatial and Qualities of Hearing scale suitable for clinical use: The SSQ12. *International Journal of Audiology*. 2013 Jun 1;52(6):409-12
3. Galvin, KL; Noble, W, Adaptation of the speech, spatial, and qualities of hearing scale for use with children, parents, and teachers., *Cochlear Implants Int*, 2013, 14 (3), pp. 135 – 141
4. Cochlear Limited D1739391 Remote Check Usage Investigation Report. April, 2020
5. Cochlear Limited D1739547 Remote Check Pilot Evaluation UK & NZ. Feb 2019.
6. Zhang J, Tyler R, Ji H, Dunn C, Wang N, Hansen M, Gantz B. Speech, Spatial and Qualities of Hearing Scale (SSQ) and Spatial Hearing Questionnaire (SHQ) changes over time in adults with simultaneous cochlear implants. *American journal of audiology*. 2015 Sep;24(3):384-97.
7. Lenarz T, Muller L, Czerniejewska-Wolska H, Varela HV, Dotú CO, Durko M, Irujo AH, Piszczatowski B, Zadrożniak M, Irwin C, Graham PL. Patient-related benefits for adults with cochlear implantation: a multicultural longitudinal observational study. *Audiology and Neurotology*. 2017;22(2):61-73
8. Cochlear Limited. D1591643 Evaluation of test battery for remote monitoring (CLTD5654) Clinical Investigation Report. 28 Feb 2020.
9. Cochlear Limited. D1698858 Evaluation of Remote Care App and Nucleus Smart App with CP1000 sound processor (CLTD5704) Clinical Investigation Report. 18 Mar 2020.

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