

Cochlear Family

At-home listening and
auditory training guide

“I really attacked my auditory training with a vengeance. I spent about four hours a day on structured and unstructured exercises in the first year, while Jeff did similar activities and spent about 2.5 hours a day on training in his first year.”

Debbie and Jeff, Cochlear™ Nucleus® system recipients.



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“Listen to what you know or remember, even if it’s from long ago. And don’t give up – play that song over and over again – because eventually something will filter through. Even if it’s just something small, once you’ve had that breakthrough everything comes together.”

Charlotte, Cochlear™ Nucleus® system recipient.

Introduction

Dedicating time to doing regular listening and rehab exercises after initial activation is shown to be beneficial and can help you get the most out of your cochlear implant. Studies also suggest that regularly doing rehab at home continues to benefit cochlear implant recipients who have been fitted for years^{1,2}.

Working on auditory training with your hearing healthcare professional is an important part of the hearing journey. This guide is designed to supplement the guidance you receive from your hearing healthcare professional. Please bear in mind that the information contained within this guide has been developed for adult recipients who received a cochlear implant after spoken language was developed. For a more tailored rehabilitation plan, we recommend speaking with your hearing healthcare clinician.

Remember, everyone’s experience after initial activation is different. Your experience with auditory training depends on a number of factors that your clinician can discuss with you.

Information within this guide has been extracted from the Adult Cochlear Implant Home-Based Auditory Training Manual: Postlingual Hearing Loss³.

Getting started with auditory training home

Whether you are doing independent listening exercises or practising with a partner, we want you to feel supported and have the best opportunity to achieve your listening goals. Below are practical tips to help you get started.

Get used to wearing your sound processor

- 1 Whether you are out and about or at home by yourself, the first step is to get used to listening to sound via your sound processor as much as possible. This will also help you get used to how the sound processor works and the settings that best suit your environment.

Go at your own pace

- 2 Hearing rehab can take time to see improvements. So, start slow and take breaks if you need to. We recommend building listening practice into your daily routine. Start by doing 10 to 15 minutes per day, when you are feeling fresh and relaxed.

Work with a partner

- 3 If you have a family member or friend that you feel comfortable working on listening exercises with, we recommend asking for their support.

Practise in a quiet room

- 4 When first getting started, we recommend finding a quiet room at home that is free of distractions. If you will be working with a partner, we recommend finding a room that has plenty of bright, natural light. This will help you more easily see your partner’s facial expressions and lip movements.

Check your sound processor settings and set listening goals

- 4 We recommend speaking to your hearing healthcare clinician about the listening settings on your sound processor. Find out what sound processor settings are available and try using them in different listening environments.

We also recommend thinking about what you want to achieve with your listening. From there, you can discuss these goals with your hearing healthcare clinician and they can help to break these down into realistic and manageable goals that are tailored to your hearing.

Start a listening diary

- 5 Using a listening diary to note down your experiences can help with discussions that you have with your hearing healthcare clinician. It can also help you track your progress with the listening exercises in this guide.

Independent auditory training and listening exercises

Identifying environmental sounds

After initial activation, you may become more aware of sounds that you have not heard for a long time, or they may sound different to the way you remember them. You may find it helpful to spend time each day focusing on the sounds around you and trying to identify them. Below are a list of suggested sounds that you can try identifying.

Exercise 1:

For this exercise, you can choose to focus on a specific group of sounds, such as low-pitched sounds. Alternatively, you may wish to try listening to a few from each of the groups of sounds. We recommend noting down the date and sounds you try listening to in your listening diary. For example, you may find that you struggled to identify the sound of birds chirping on day 1 of listening practice, but hear it on day 15.

Low-pitched or deeper sounds	
<input type="checkbox"/> Fridge humming	<input type="checkbox"/> Fan
<input type="checkbox"/> Man's voice	<input type="checkbox"/> Boiling water
High-pitched or squeakier sounds	
<input type="checkbox"/> Birds chirping	<input type="checkbox"/> Car indicators
<input type="checkbox"/> Child's voice	<input type="checkbox"/> Microwave beeping
Rhythmic or repetitive sounds	
<input type="checkbox"/> Footsteps	<input type="checkbox"/> Clock ticking
<input type="checkbox"/> Tap dripping	<input type="checkbox"/> Tapping on a keyboard
Continuous Sounds	
<input type="checkbox"/> Rain on the roof	<input type="checkbox"/> Vacuum cleaner
<input type="checkbox"/> Clothes dryer	<input type="checkbox"/> Waves on the beach
Very soft sounds	
<input type="checkbox"/> Deep breathing	<input type="checkbox"/> Paper rustling
<input type="checkbox"/> Spray from perfume	<input type="checkbox"/> Mosquito buzzing
Louder sounds	
<input type="checkbox"/> Cutlery being placed in a drawer	<input type="checkbox"/> Own chewing
<input type="checkbox"/> Jangling keys	<input type="checkbox"/> Dog barking
Distant sounds	
<input type="checkbox"/> Airplane flying overhead	<input type="checkbox"/> Children at a playground
<input type="checkbox"/> Neighbour coming and going	<input type="checkbox"/> Car coming down the road

Practical listening exercises

In the weeks following your initial activation, wearing your sound processor during all waking hours can help facilitate incidental listening. This can make it easier for your brain to learn and recognise speech. Below are steps you can follow to get started with practical and independent exercises at home.

Read out loud

STEP 1 After initial activation, your own voice may sound quite different. We recommend reading a newspaper or book out loud and paying close attention to what you are reading. This exercise can help to familiarise you with the sound of your own voice.

Access auditory training websites or apps

STEP 2 Look for websites or apps that will help you in the areas of vowel and consonant identification. We also suggest speaking to your hearing healthcare professional to see if they have a list of apps or websites they can recommend.

For example, you may find the Angel Sound™ website helpful. It is an interactive auditory training and hearing program which aims to give practice in discriminating and identifying speech sounds.

You may also find it helpful to download an auditory training app such as Hearoes*. Hearoes is an interactive auditory training platform designed to help familiarise different environmental sounds and improve auditory feedback.

Try streaming audio to your sound processor

STEP 3 Streaming audio from your mobile phone, tablet, laptop or television to your sound processor can help to optimise the clarity of speech. We recommend experimenting with direct streaming for the listening exercises listed in steps 4 to 7.

For example, you may want to start by doing steps 4 to 7 using audio streaming. Then, when you feel more confident or ready to increase the difficulty, try repeating the steps without streaming the audio.

- Direct streaming: If your sound processor technology permits, we recommend directly streaming audio using a compatible Apple™ or Android™ device. For information regarding the compatibility of Cochlear's Sound Processors with Apple or Android devices, visit www.cochlear.com/compatibility.

- Streaming using a wireless device: If your current mobile phone or sound processor technology does not allow for direct streaming, this can be achieved using wireless accessories. Visit the Device Support page on cochlear.com or refer to your sound processor user manual for instructions on how to use these accessories with your sound processor.

Follow along to an audiobook

STEP 4 Listening to an audiobook and following along using a printed book can help with identifying individual words and speech sounds. It's also a good way to learn to hear the rhythm and pattern of sentences.

Watch movies or videos

STEP 5 To start with, we recommend watching movies with a storyline that you are familiar with. Switch the captions on so you can follow along to the words that are spoken by the actors. To increase the difficulty, you can try turning the captions off. To increase the difficulty further, close your eyes and practise listening to the words only. Remember this is a listening exercise and it will take more focus and effort. So, take breaks if you are feeling tired.

If you prefer to watch shorter clips that also have closed captioning options, you could try watching online videos instead.

Listen to a podcast or audiobook

STEP 6 For this next step, try listening to a podcast or an audiobook without the text to follow along to. If your audiobook permits, you could try slowing down the reading speed. We recommend stopping every 2-5 minutes and making quick notes about what you heard. This will help turn this exercise into both a listening and comprehension activity.

For your podcasts and audiobooks, try finding narrators or hosts with different voices. For example, if your first podcast or audiobook has a female speaker, try listening to a male speaker the next time. For increased difficulty, try listening to different accents.

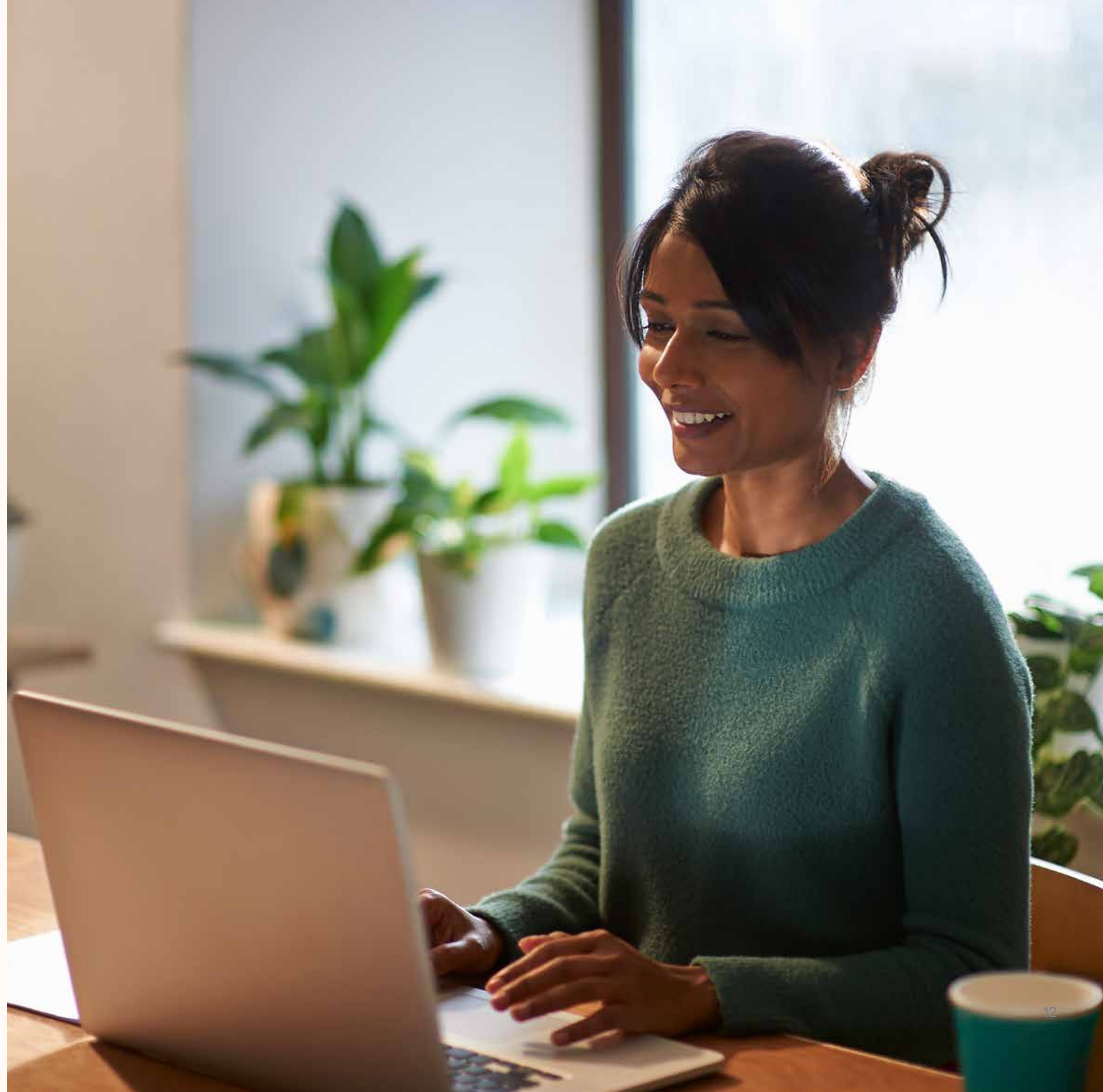
Do phone or video call listening exercises

STEP 7 We recommend incorporating phone and video call listening exercises into your auditory training plan. Not only can this help with speech recognition over the phone, but it can be a good way to gain more confidence having conversations on the phone and on video calls.

Refer to the *Adult Phone and Online Communication Guide* for practical advice to help you get started, ways to optimise your hearing technology and step-by-step listening exercises.

Try singing

STEP 8 A recent study suggests that singing can help to improve our ability to distinguish speech in noisy listening environments⁴. The researchers suggest that vocal training or singing improves speech-in-noise processing because singing can enhance our ability to distinguish different pitches.



Auditory training and listening exercises with a partner

In this section, you will find seven different exercises that you can do at home with the help of a partner or friend. Begin by doing all of these exercises in a quiet area of your home that’s free of distractions and background noise. When you feel confident and ready to increase the difficulty of these exercises, try adding some background noise. You can do this by turning on the radio or television.

Identifying speech sounds

Exercise 1:

The speech listening exercises below progress from easier to more difficult. This exercise will require the help of a partner. If you are experiencing consistent difficulty differentiating between the word pairs, we recommend speaking to your hearing healthcare professional about your sound processor settings.

Instructions for partners

1. Begin by positioning yourself approximately 1 to 1.5 metres away and facing directly at your partner so they can clearly see your face and mouth.
2. In the tables, you will see words are grouped in pairs, e.g. theme and thumb. Using normal conversational volume and a clear voice, say the two words and point to the word as you say it.
3. Repeat one of the two words, e.g theme. Do not point to the word this time and speak at a normal conversational volume.
4. Ask your partner to point or repeat the same word.
5. If your partner is struggling to correctly identify the word, repeat steps 2 to 4 again. If this task is proving to be challenging, we recommend revisiting this task again after your partner has spoken to their hearing healthcare professional about their sound processor settings.
6. Give your partner positive feedback and encouragement.

Vowel identification⁵

Level 1			Level 2			Level 3		
1	Theme	Thumb	1	Bath	Booth	1	Tea	Too
2	Sharp	Ship	2	Spark	Speak	2	Pit	Put
3	Teach	Touch	3	Tar	Too	3	Cap	Cup
4	Barn	Bin	4	Parch	Peach	4	Pit	Pet
5	Leak	Luck	5	Tart	Toot	5	Beat	Boot
6	Carp	Cup	6	Fast	Feast	6	Kid	Could
7	Port	Put	7	Hard	Herd	7	Bat	But
8	Peep	Pip	8	Barn	Bean	8	Bid	Bed
9	Mast	Must	9	Bars	Booze	9	Feed	Food
10	Wall	Wool	10	Park	Peak	10	Pill	Pull

Consonant Identification⁵

Level 1			Level 2			Level 3		
1	Rip	Rib	1	Pea	Me	1	Sum	Numb
2	Cap	Cab	2	Pop	Mop	2	Sea	Knee
3	Mop	Mob	3	Pie	My	3	Sap	Nap
4	Pick	Pig	4	Seen	Seat	4	Sit	Knit
5	Duck	Dug	5	Ban	Bat	5	See	Need
6	Lack	Lag	6	Seen	Seat	6	Moose	Moon
7	Lock	Log	7	Ban	Bat	7	Horse	Horn
8	Cod	Cot	8	Mail	Bail	8	Mass	Man
9	Card	Cart	9	Me	Be	9	Man	Cane
10	Hard	Heart	10	Corn	Cord	10	Dice	Dine

Consonant Identification⁵

Level 1			Level 2			Level 3		
1	Lip	Nip	1	Boat	Goat	1	Fought	Short
2	Lap	Nap	2	Bub	Dub	2	Few	Shoe
3	Let	Net	3	Big	Dig	3	Fell	Shell
4	Fine	File	4	Dad	Gad	4	Sam	Sham
5	Spin	Spill	5	Bet	Get	5	Buff	Bus
6	Chew	Shoe	6	Peer	Tier	6	Mine	Nine
7	Chip	Ship	7	Peak	Teak	7	Gum	Gun
8	Chore	Shore	8	Tool	Cool	8	Boom	Boon
9	Cheers	Shears	9	Hop	Hot	9	Game	Gain
10	Chair	Share	10	Tool	Cool	10	Lime	Line

Remember to take your time with these exercises and spread them out over a few weeks or months. We recommend documenting your progress in your listening diary.

Identifying words

Exercise 2

For this exercise, you will be asked to identify single words. This exercise has two levels. Level 1 will be easier as you will be given information on the topic. Level 2 will increase in difficulty as you will not be provided with the topic and words will be selected at random. We have prepared four lists to help you get started. However, we recommend creating your own sets of words and topics, such as types of food or plants. Remember to document your progress in your listening diary.

Instructions for partners

1. Position yourself approximately 1 to 1.5 metres away and facing directly at your partner so they can clearly see your face and mouth. Remember to give your partner positive feedback and encouragement during this exercise. It is important to speak normally without raising your voice or over-emphasing the sounds.
2. Level 1 exercises: using the tables below, tell your partner the topic and ask them to repeat this back to you.
3. Going down the list, say each word and ask your partner to repeat this back to you.
4. If your partner is having difficulty identifying the word after three attempts, show them the word and come back to it later.
5. Level 2 exercises: follow the instructions above, but this time, do not tell your partner the topic. We recommend choosing a selection of words from different topic lists.

List 1		List 2		List 3		List 4	
Animals		Months		Colours		Transport	
1	Tiger	1	September	1	Blue	1	Car
2	Snake	2	March	2	Red	2	Train
3	Rabbit	3	July	3	Green	3	Airplane
4	Dog	4	February	4	Yellow	4	Bus
5	Monkey	5	August	5	Grey	5	Bicycle
6	Bear	6	October	6	Orange	6	Truck
7	Elephant	7	December	7	Black	7	Motorcycle
8	Cat	8	June	8	Pink	8	Boat
9	Deer	9	May	9	White	9	Helicopter
10	Frog	10	April	10	Purple	10	Van

Recognising sentences

Exercise 3

For this exercise⁶, you will be asked to repeat short sentences on a topic that you know about. This is to help you gain practice in recognising speech when you know that the topic is, but don't know what the possible sentences will be.

We have prepared two lists to help you get started. However, we recommend expanding upon these lists or creating your own sets of topic and sentences.

Instructions for partners

- 1. Position yourself approximately 1 to 1.5 metres away and facing directly at your partner so they can clearly see your face and mouth. Remember to give your partner positive feedback and encouragement during this exercise.
- 2. Using the tables below, tell your partner the topic and ask them to repeat this back to you.
- 3. Going down the list, read the sentences and ask your partner to repeat them back to you.
- 4. If your partner is having difficulty repeating the sentence, encourage them to use communication repair strategies such as "Did you say...?" or "Can you say it in a different way?" For more communication repair strategies, refer to the *Adult Communication Strategies Guide*.
- 5. If your partner continues to have difficulty identifying the sentence after three attempts, show them the sentence and come back to it later.

List 1		List 2	
At a restaurant		At the grocery store	
1	Good evening. May I take your order?	1	What aisle is the cereal in?
2	How would you like your steak cooked?	2	I have five things on my shopping list
3	Would you like a table for two?	3	What time does the store close?
4	Is there anything else I can get for you?	4	I will use a shopping trolley today
5	What can I get you for dessert?	5	The bakery has fresh bread
6	I would like a glass of water please	6	I need to buy laundry washing powder
7	Will you be paying with card or cash?	7	Where is the coffee and tea aisle?
8	What are the specials for today?	8	The strawberries on display look delicious

Recognising link sentences

Exercise 4

In this exercise⁷, you will be asked to identify sentences when you know what the possible options are. This exercise is more difficult than the previous sentences as the topics are not known and there are many possible options.

We have prepared a table to help you get started. However, we recommend expanding upon these lists or creating your own sets of topic and sentences.

Instructions for partners

- 1. Position yourself approximately 1 to 1.5 metres away and facing directly at your partner so they can clearly see your face and mouth. Remember to give your partner positive feedback and encouragement during this exercise.
- 2. Level 1: Give your partner a copy of the table and start by reading sentences across a row. Don't tell them which sentence you have chosen to read. Ask your partner to repeat the sentence back to you. If your partner continues to have difficulty identifying the sentence after three attempts, show them the sentence and come back to it later.
- 3. Level 2: Once your partner can identify all the sentences you have read, it's time to move onto level 2. In this level, create new sentences by selecting one word from each column. For this level, your partner should still have a copy of the table in front of them.
- 4. Level 3: If your partner feels ready, it's time for level 3. In this level, continue to create new sentences by selecting one word from each column. This time, your partner will not have the table in front of them to refer to.
- 5. If your partner is having difficulty repeating the sentence in Level 2 or 3, encourage them to use communication repair strategies or reduce the number of columns to choose from.

Link sentences list				
Name	Verb	Number	Adjective	Noun
David	Owns	Ten	Old	Jackets
James	Sends	Two	Red	Boxes
Matthew	Sees	Seven	Good	Roses
Andrew	Bought	Three	New	Birds
Steven	Won	Six	Green	Windows
Nicole	Gets	Twenty	Lovely	Cars
Rachel	Sold	Eight	Pretty	Shirts
Anna	Gives	Thirteen	Big	Dogs
Lucy	Chose	Five	Yellow	Gifts
Grace	Made	Eleven	Funny	Trees

Recognising common phrases

Exercise 5

In this exercise, you will be asked to repeat commonly used phrases. This is to help you gain practice in recognising phrases regularly used in everyday life.

We have prepared two lists to help you get started. However, for further practice you can also try creating a list of phrases that you use day to day.

Instructions for rehab partners

- 1. Position yourself approximately 1 to 1.5 metres away, but do not face your rehab partner. Try sitting next to them. That way, they cannot easily see your lips moving. Remember to give your partner positive feedback and encouragement.
- 2. Using the list below, read out the sentences and ask your partner to repeat as many words as they can. If they are not sure, ask them to give you their best guess.
- 3. Confirm which of the words your partner got correct and encourage them to use communication repair strategies.

List 1		List 2	
At a restaurant		At the grocery store	
1	What time is it?	1	Would you like some help?
2	I'll see you later!	2	Please close the door
3	How was your day?	3	What would you like to watch on tv?
4	Would you like a cup of coffee?	4	I'll be there in a minute
5	Have a nice day	5	Happy birthday!
6	Do you need a lift?	6	What would you like for breakfast?
7	What is the weather like?	7	Pass the bread and butter please
8	What are we having for dinner?	8	Let's go for a walk today

Role play

Exercise 6

This exercise continues to work on both listening and comprehension. The aim of this exercise is to help with conversations you may have in real-life situations.

Instructions for partners

- 1. Position yourself approximately 1 to 1.5 metres away, facing your partner so they can see your lips clearly. Remember to give your partner positive feedback and encouragement.
- 2. Start by giving your partner basic information about the conversation context and purpose. For example, tell them that you are going to the cinema to purchase a movie ticket.
- 3. If you partner is having difficulty answering the questions, try asking the questions in a different way.

Role play 1		Role play 2	
Purchasing a movie ticket at the cinema		Ordering a meal	
1	What would you like to watch?	1	What would you like to order?
2	What time would you like to see the movie?	2	What portion size would you like?
3	How many tickets would you like to buy?	3	Would you like to add any sides?
4	Where would you like to sit?	4	Would you like to add any drinks?
5	Would you like to buy popcorn?	5	Is that all for today?
6	Would you like to buy a drink?	6	Will you be paying with a card or cash?
7	What is the weather like?	7	Pass the bread and butter please
8	What are we having for dinner?	8	Let's go for a walk today

Interactive stories

Exercise 7

This exercise will work on both listening and comprehension. This is to help practise understanding the message instead of just repeating what is heard. We have prepared two stories to help you get started. However, you can also try creating your own phrases or reading from a book.

Instructions for partners

- 1. Position yourself approximately 1 to 1.5 metres away, facing your partner so they can see your lips clearly. Remember to give your partner positive feedback and encouragement.
- 2. Without telling your partner the topic of the story, read the stories and ask your partner to answer a list of questions that are listed underneath each story.
- 3. If you partner is having difficulty answering the questions, start by giving them the topic and slowing down your pace of reading. Repeat the story and encourage them to use communication repair strategies.

Level 1 Topic: Breakfast ⁶		
Breakfast is probably the most important meal of the day. It gives us energy to go through the morning. Most people eat breakfast at about seven o'clock in the morning. I like cereal, toast and juice for breakfast. On Sundays, it's nice to go out to a restaurant for breakfast.	1	What was I talking about?
	2	What time do most people eat breakfast?
	3	What time do you eat breakfast?
	4	What do you like to eat for breakfast?
	5	What do you drink with your breakfast?
	6	Do you ever go to a restaurant for breakfast?

Level 2 Topic: A disappointed cat ⁸		
One day, a little bird sat in a tree and looked around. He wanted something to eat and saw a piece of bread on the ground. He flew down and began to eat it. An old black cat saw the bird and crept up behind him. She almost caught him, but the little bird heard her and flew back into the tree. The cat was disappointed. She lay down on the steps and went to sleep. Then the little bird flew down again and ate the bread.	1	How big was the bird?
	2	What did the bird see on the ground?
	3	Did the cat catch the bird?
	4	What colour was the cat?
	5	Where did the cat fall asleep?
	6	Did the bird get to eat the bread?

Listening exercises in background noise

Exercise 8

For this last exercise, we recommend taking your auditory training and listening exercises out into the real world. We recommend working with the same partner and scheduling regular meetings to run through the 7 listening exercises listed before. For example, you may want to try doing these listening exercises at a café or at an outdoor space where you can hear traffic noise or other people talking.

Step 1

- STEP

1
- Introducing background noise will increase the difficulty of these listening exercises. To begin, we recommend incorporating direct streaming or using assistive listening devices during each of the exercises. Remember to note down your experience and progress.
- Direct streaming: If your sound processor has direct streaming capabilities[^], and you have a compatible iPhone, try placing the phone in the centre of the table between you and your partner. Then, enable the Live Listen[®] function. With Live Listen, your iPhone can act like a microphone that sends the sound signal directly to your sound processor.
 - If you have a wireless assistive listening device, try placing this horizontally in the centre of the table between you and your partner. This may help improve speech clarity and reduce listening effort.

Step 2

- STEP

2
- Once you feel more confident doing the exercises in background noise while streaming audio, try doing these exercises without streaming your partner's speech. You may notice a significant difference in the clarity of speech. Make a note of the words or sounds that are more difficult and try using some of the communication repair strategies suggested in the *Adult Communication Strategies Guide*.

Working on listening and auditory exercises at home takes time, commitment, and patience. Don't forget to go at your own pace, schedule time to do regular rehab and celebrate your achievements.

If you are looking for ways to continue listening training at home in the areas of music appreciation, conversations on the phone, or want to familiarise yourself with communication repair strategies, the *Adult Recipient Support Toolkit* has guides that may help you in these areas.

For more information reach out to the Cochlear customer service team or speak to your hearing healthcare clinician about specialised auditory training.

Hear now. And always

Cochlear is dedicated to helping people with moderate to profound hearing loss experience a world full of hearing. As the global leader in implantable hearing solutions, we have helped more than 700,000 people of all ages to hear and connect with life's opportunities.

We aim to give people the best lifelong hearing experience and access to next generation technologies. We collaborate with leading clinical, research and support networks to advance hearing science and improve care.

That's why more people choose Cochlear than any other hearing implant company.

www.cochlear.com

References

1. Adult Cochlear Implant Home-Based Auditory Training Manual: Postlingual Hearing Loss, Belinda Henry, Karen Pedley, Qian-Jie Fu, July 2015, produced by Cochlear Ltd (N585130-585133 ISS2 JUL15).
2. Fu, QJ., Galvin, JJ 3rd. Maximizing cochlear implant patients' performance with advanced speech training procedures. *Hear Res.* 2008 Aug; 242 (1-2):198-208
3. Oba, SI, Fu QJ, Galvin JJ 3rd. Digit training in noise can improve cochlear implant users' speech understanding in noise. *Ear Hear.* 2011 Sep-Oct;32(5):573-81
4. Dubinsky, E., Wood, E. A., Nespoli, G., & Russo, F. A. (2019). Short-Term Choir Singing Supports Speech-in-Noise Perception and Neural Pitch Strength in Older Adults With Age-Related Hearing Loss. *Frontiers in neuroscience*, 13, 1153. <https://doi.org/10.3389/fnins.2019.01153>
5. Adapted from Plant, G. (1984) *Commtram: A communication training program for profoundly deaf adults*. Sydney: National Acoustic Laboratories.
6. Pedley, K. Synthetic training. In: Pedley, K., Lind, C., & Hunt, P. (2005) *Adult Aural Rehabilitation: A guide for cochlear implant professionals*. Sydney: Cochlear Ltd. Based on concept of Plant, G. (1984). *Commtram: A communication training program for profoundly deaf adults*. Sydney: National Acoustics Laboratories.
7. Based on concept of Hagerman, B. (1982). "Sentences for speech intelligibility testing in noise," *Scandinavian Audiology*, 11: 79-87. Words adapted from Angel Sound.
8. NSW Department of School Studies (1990). Courtesy of the NSW Department of Education and Training.

*Not available in all countries

^ For compatibility information visit www.cochlear.com/compatibility.

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 follow the directions for use. Not all products are available in all countries. Please contact your local Cochlear representative for product information. Views expressed are those of the individual. Consult your health professional to determine if you are a candidate for Cochlear Technology.

Cochlear™ Nucleus® implant systems are intended for the treatment of moderately severe to profound hearing loss. Baha implant systems are intended for the treatment of moderate to profound hearing loss Cochlear, Hear now. And Always, the elliptical logo, True Wireless, Nucleus, ForwardFocus*, Kanso and Baha are either trademarks or registered trademarks of Cochlear group of companies.

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