Cochlear™

Nucleus® CP802 Sound Processor

User Guide

Hear now. And always

Cochlear™

Symbols

	Caution (no harm) Special care to be taken to ensure safety and effectiveness. Could cause damage to equipment.
	Note Important information or advice. Can save inconvenience.

Contents

Introduction

Purpose of this guide

This user guide is designed to help recipients, parents and carers understand how to use and take care of the Cochlear™ Nucleus® CP802 Sound Processor. The guide provides step-by-step instructions for wearing and using the processor. It also provides guidance on how to take care of the processor.

It is important that you read and understand the warnings and precautions information provided in this guide. The Important Information Booklet included in the document pack you received with your processor also contains important safety information about the processor.

The CP802 Sound Processor

The CP802 Sound Processor is used together with a cochlear implant to transfer sound to the cochlea, which is the inner ear.

The processor consists of a processing unit, earhook, coil, coil cable and a battery module or a battery pack and battery pack cable. The two buttons on the processing unit allow you to control the functions of your processor.

Getting to know your processor

This section helps you familiarise yourself with your processor.

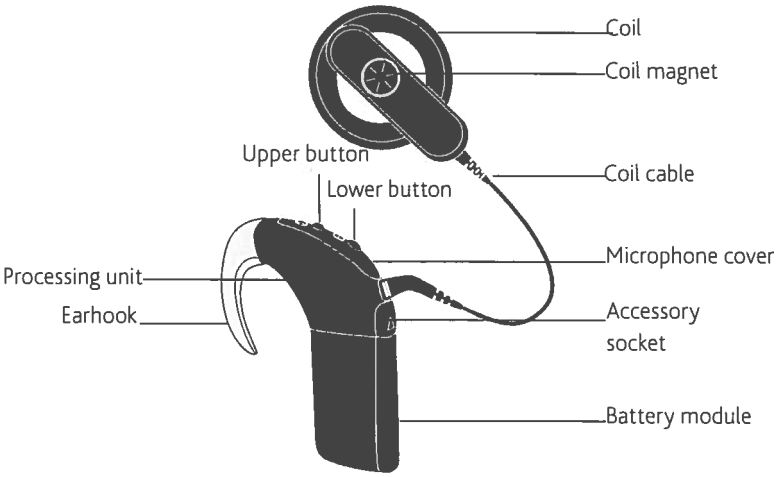


Figure 1: Processing unit with battery module

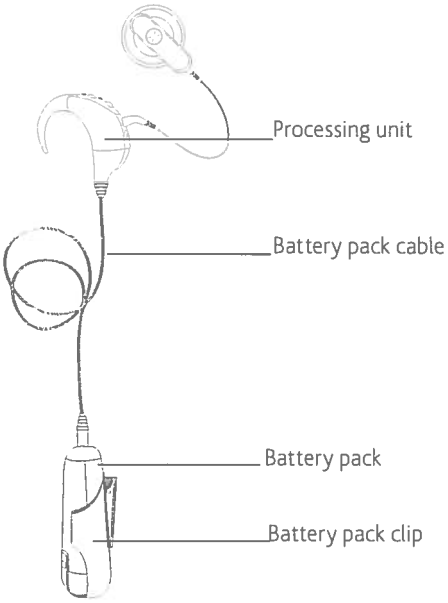


Figure 2: Processing unit with battery pack

The processing unit allows you to perform the following functions:

Function	Simple option button press sequence	Advanced option button press sequence
Turn processor on or off	Press the lower button for two seconds.	Press the upper and lower buttons together for two seconds. Pressing the lower button only for two seconds will also turn on the processor.
Change listening program*	Press the lower button.	Press and hold the lower button.
Turn telecoil / audio accessory on or off*	Press the upper button.	Press and hold the upper button.
Lock or unlock processor buttons	Briefly press both the upper and lower buttons together.	Briefly press both the upper and lower buttons together.
Adjust volume or sensitivity	Not available.	Press the upper button to increase volume or sensitivity. Press the lower button to decrease volume or sensitivity.

* Only if enabled by your clinician.

Discuss with your clinician which option would be more suitable for you.

Indicator lights

The indicator light on the processing unit displays when you perform a function (e.g. change the program), or when there is a problem (e.g. processor battery is empty).

Indicator light	What it means
Short flashes of green	Turning on the processor. The number of flashes corresponds to the number of the selected program.
 Short flashes of green	Changing the program. The number of flashes corresponds to the number of the selected program.
Steady orange while the lower button is pressed.	Turning off the processor.
Short flash of green.	Changing volume or sensitivity level.
Long flash of green.	Changing from using: • The microphones to using the telecoil. • The microphones to using an audio accessory.
Long flash of orange.	Changing from using: • The telecoil to using the microphones. • An audio accessory to using the microphones.
Flash of green followed by a flash of orange.	Locking the processor buttons.
Flash of orange followed by a flash of green.	Unlocking the processor buttons.
Rapid flashes of green.	Indicates that the microphones are capturing sound.

Indicator light	What it means
● ● ● ● Flash of orange every second.	The coil may be off, or the processor is not connected to the correct implant.
▬ Steady orange. If a general fault and coil off error occur at the same time, you only see the general fault indicator light (steady orange light).	Indicates a general fault. This could mean: • There is a fault with the processor. • There is a fault with the coil or coil cable. • There is a corrupt program in the processor.
● Flash of orange when you press a button.	Processor buttons are locked.
●●●●●● Continuous rapid flashes of orange. If a battery empty warning and general fault occur at the same time, you only see the battery empty indicator light (continuous rapid flashes of orange).	Processor battery is empty.

Private tones

When private tones are enabled, you hear a tone when you perform a function (e.g. change the program), or when there is a problem (e.g. processor battery is empty). Private tones can be heard only by you.

Tone	What it means
Short high pitched tones.	Changing the program. The number of tones corresponds to the number of the selected program.
Single high pitched tone.	Changing volume or sensitivity level.
.. Single long high pitched tone.	Changing from using: • The microphones to using the telecoil. • The telecoil to using the microphones. • The microphones to using an audio accessory. • An audio accessory to using the microphones.
.. .. Sequence of long low pitched tones.	General fault.
Short low pitched tone when you press a button.	Processor buttons are locked.
Two short low pitched tones.	Processor battery is low.
Sequence of short low pitched tones.	Processor battery is empty.

Earhook

The earhook secures the processing unit in place on your ear. It is attached to the processing unit and is available in a range of sizes. The Cochlear™ Nucleus® CP802 Tamper Resistant Earhook can be used to reduce the risk of children removing the earhook from the processor.

Figure 3: Earhook

Battery

You can use a Cochlear™ Nucleus® CP802 Standard Battery Module, (which uses two zinc air batteries), or a CP802 Rechargeable Battery Module, or a CP802 Battery Pack (which uses two AAA batteries).

Figure 4: Standard Battery Module (1), Standard Rechargeable Battery Module (2) and Battery Pack(3)

The Standard Battery Module consists of a battery holder and a battery cover.

Figure 5: Battery holder with zinc air batteries (1), tamper resistant battery cover (2) and battery lock (3)

You can use the tamper resistant battery cover to prevent children from detaching the battery cover from the battery holder. You can lock the standard battery module or the rechargeable battery module to the processing unit.

Coil and coil cable

The coil transfers electromagnetic signals from your processing unit to the implant. The coil is attached to a removable coil cable, which plugs into the processing unit.

Figure 6: Coil and coil cable

Coil magnet

A magnet holds the coil in place over your implant.

Figure 7: Coil magnet

Microphone cover

The processor microphones capture sound, which is processed by the processing unit for transfer to the implant. The Cochlear™ Nucleus® CP802 Microphone Cover is designed to protect the microphones from dirt and moisture. It is important that you keep the microphone cover in place at all times.

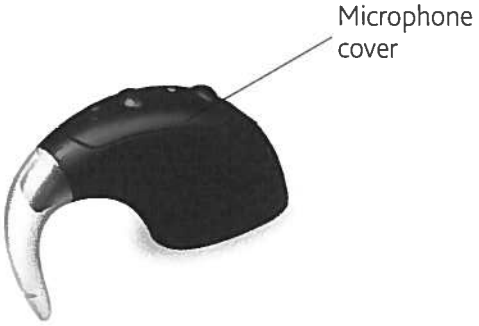
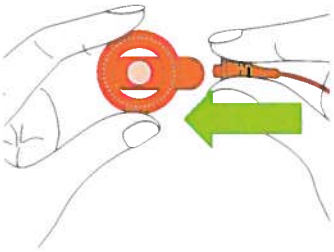


Figure 8: Microphone cover

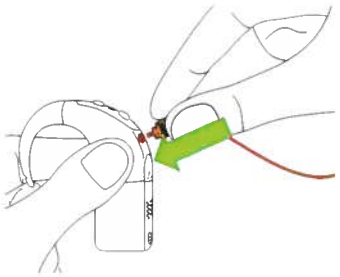
Wearing your processor

To be able to hear sound from the processor, it needs to be placed on the ear.

Attaching the coil and coil cable



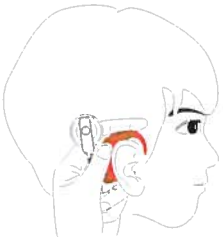
1. Push the coil cable plug firmly into the coil until it clicks into place.



2. Push the coil cable firmly into the coil cable socket on the processing unit.

The coil functions properly only when the coil cable is fully inserted into the processing unit.

Placing the processor on your ear

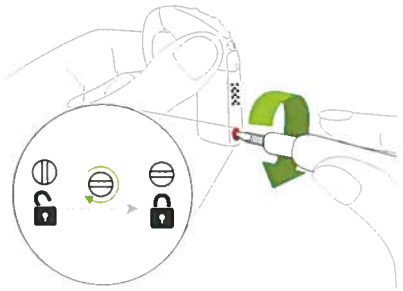


1. Place the processor on the ear as shown.

2. Place the coil on the head over the implant. The coil magnet will hold the coil in place over the implant.

Locking and unlocking the tamper resistant battery cover

To lock the tamper resistant battery cover:

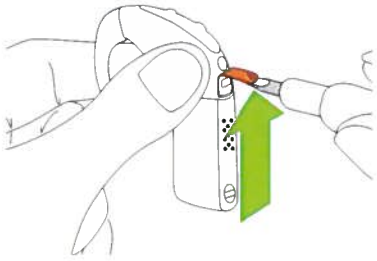


1. Insert the battery holder into the battery cover.
2. To lock the battery cover, turn the lock clockwise using the Cochlear™ Nucleus® CP802 Battery Cover Locking Tool.

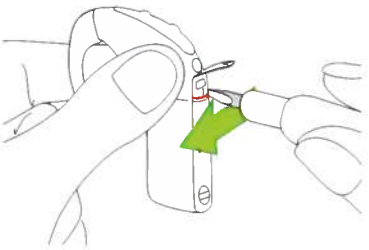
To unlock, turn the lock counter-clockwise. Do not overturn the lock as it could damage the lock.

Locking and unlocking the battery module

To lock the battery module to the processing unit:



1. Lift the accessory socket cover of the processor. The lock is located below the accessory socket.



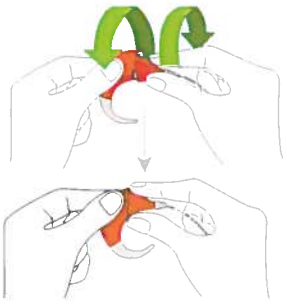
2. Using the Locking Tool, push the lock to your left.

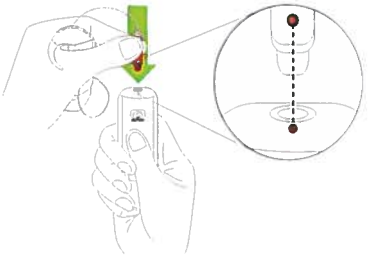
To unlock, push the lock to your right.

Using the battery pack

The Cochlear™ Nucleus® CP802 Battery Pack Cable allows you to wear the Cochlear™ Nucleus® CP802 Battery Pack on the body.

To attach the battery pack to the processing unit:





1. Hold the processing unit and the upper end of the battery pack cable at an angle and twist together as shown.
2. Line up the Cochlear logo and dot marks on the lower end of the battery pack cable with the Cochlear logo and dot marks on the battery pack.
3. Connect the plug on the battery pack cable to the socket on the battery pack.

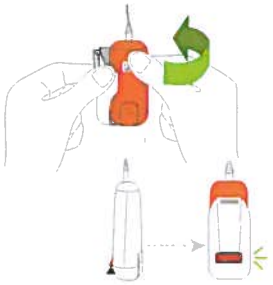
Locking and unlocking the battery pack

To lock the upper end of the battery pack cable to the processing unit:

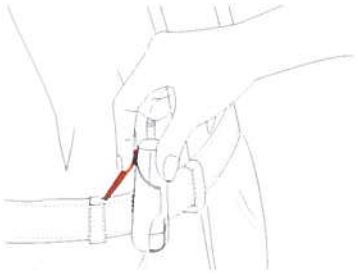
1. Lift the accessory socket cover.
2. Using the Locking Tool, push the lock to your left.

To unlock, push the lock to your right.

To attach the battery pack to the Cochlear™ Nucleus® CP802 Battery Pack Clip:



1. Slide the battery pack into the battery pack clip at an angle. Continue sliding it up until the hinge clicks into place on the battery pack clip.



2. Clip the battery pack to your clothes.

To remove the battery pack cable:

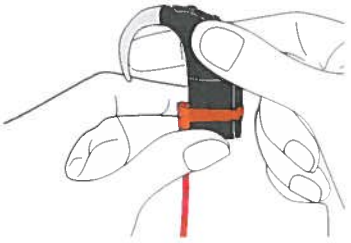
1. Twist the processing unit and the upper end of the battery pack cable counter-clockwise to separate the two parts.
2. Pull the lower end of the battery pack cable away from the battery pack.

To remove the battery pack from the battery pack clip, twist and pull the battery pack away from the battery pack clip.

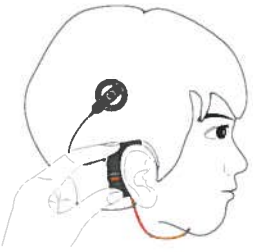
Using the Mic Lock

The Cochlear™ Nucleus® Mic Lock™ helps hold the processing unit in place behind the ear.

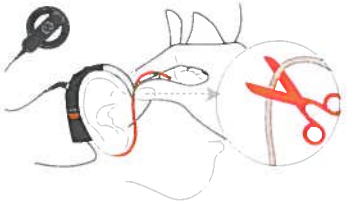
To use the Mic Lock with the standard or rechargeable battery module:



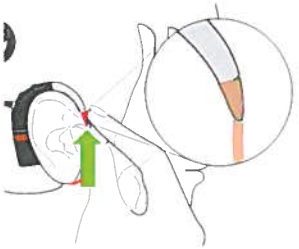
1. Insert the processor through the Mic Lock band.



2. Place the processor on your ear.
3. Bring the tubing around to the front and up to the earhook.



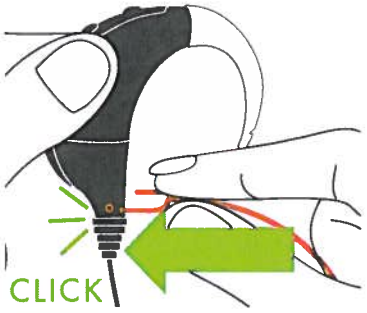
4. Cut the tubing up to the notch on the earhook, making sure you do not cut the tubing too short.



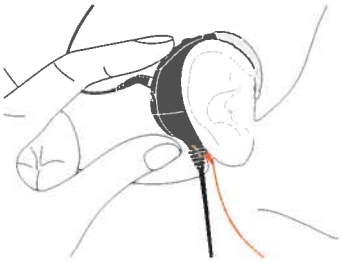
5. Attach the Mic Lock to the earhook by pushing the tubing up to the notch on the earhook.

To remove the Mic Lock, ease the tubing off the earhook and slide the Mic Lock band away from the processor.

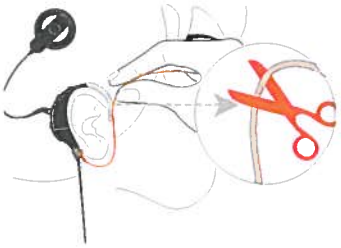
To use the Mic Lock - Stirrup with the battery pack:



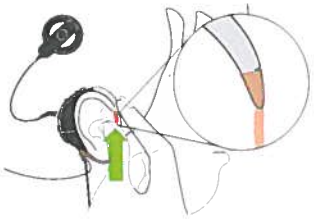
1. Clip the Cochlear™ Nucleus® Mic Lock™ - Stirrup into the two holes at the upper end of the battery pack cable.



2. Place the processor on your ear.
3. Bring the tubing around to the front and up to the earhook.



4. Cut the tubing up to the notch on the earhook, making sure you do not cut the tubing too short.



5. Attach the Mic Lock to the earhook by pushing the tubing up to the notch on the earhook.

To remove the Mic Lock, pull it out of the holes on the battery pack cable and ease the tubing off the earhook.

Changing processor parts

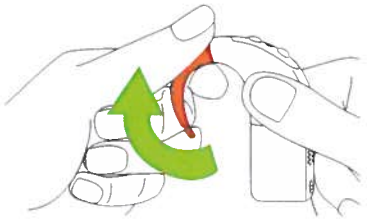
For a secure and comfortable fit, you may want to:

- Change the earhook
- Change the coil magnet
- Change the coil cable

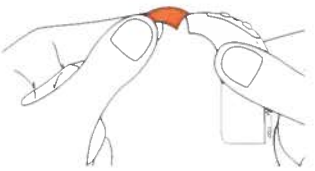
Changing the earhook

If your earhook becomes loose, you should replace it.

To change the earhook:



1. Remove the earhook by pulling it upwards.



2. Attach the new earhook by pushing it back into place.

Avoid twisting the earhook as it may become loose.

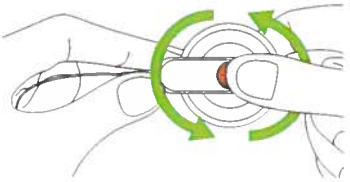
The tamper resistant earhook requires significant effort to remove.

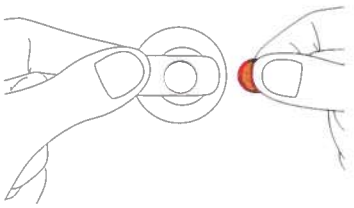
Changing the coil magnet

If the magnet strength is too weak, the coil may fall off. If it is too strong, it may cause discomfort or skin irritation. You may consult your clinician if you are unsure about correct magnet strength.

You can replace the magnet with a stronger or weaker magnet.

To change the magnet:



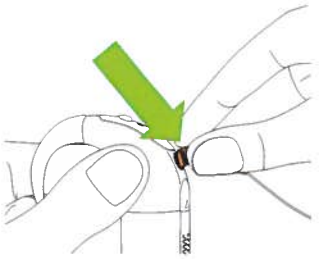


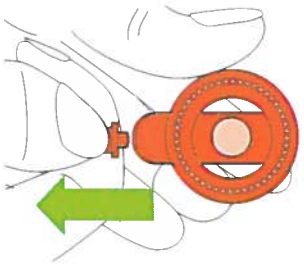
1. Remove the magnet from the coil by turning the magnet counter-clockwise.
2. Insert the new magnet into the coil hole from the top of the coil. The side with the star should face upwards.
3. Turn the magnet clockwise until it is in position.

Changing the coil cable

If you find that the coil cable is too long or too short for your comfort, you can change the coil cable. Regularly check to see if the coil cable is damaged. If damaged, you will need a new coil cable.

To change the coil cable to a longer or shorter one, do the following:



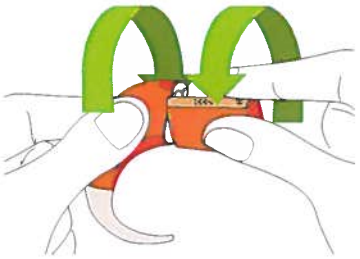


1. Using the side grips on the coil cable, gently pull the coil cable plug away from the processor.
2. Firmly pull the coil cable away from the coil.
3. Attach the new coil cable to the coil.

Removing the coil cable from the coil is not recommended. You should remove the coil cable only if you are changing it to a different one. To avoid breaking the coil cable, do not pull on the coil cable or twist the coil cable plug.

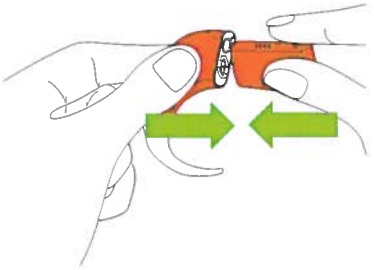
Detaching and attaching the battery module

You need to detach the battery module from the processing unit if changing the battery module to a different one, or when charging the rechargeable battery module.

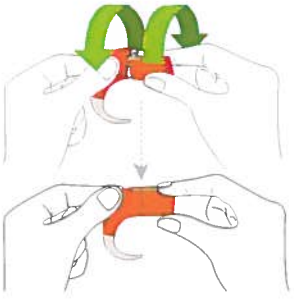


To detach the battery module from the processing unit, twist the battery module and the processing unit together as shown.

To attach the battery module to the processing unit:



1. Hold the battery module and the processing unit at an angle so they touch.



2. To attach the two parts, twist the battery module and the processing unit together as shown.

Make sure the battery module is correctly aligned. Check for broken or bent contacts between the battery module and the processing unit, which can cause misalignment. If any contacts are broken, return the processor to your clinician.

Using your processor

Using the telecoil

The telecoil is used to receive sound signals from a telephone, roomloop, neckloop, etc. The telecoil is a feature that needs to be enabled by your clinician.

When an audio accessory is connected to your processor, you will not receive any sound from the telecoil. To move back to using the telecoil, remove the audio accessory from the processor. Turn off the telecoil when not in use, as it reduces the microphone volume.

Using the telephone with your processor

You may use your telephone and your processor with the:

- Microphones.
- Telecoil.
- Telecoil and microphones on at the same time.

When using the telephone, position the telephone so that its earpiece is aligned with your processor microphones.

Controlling microphone sensitivity

The microphone sensitivity setting adjusts how much sound is picked up by the microphones. If your clinician has enabled you to change the sensitivity, you can:

- Reduce the sensitivity of the sound to reduce background noise in noisy situations.
- Increase the sensitivity of the sound to hear very soft sounds in quiet situations.

Controlling volume

The volume setting adjusts the loudness of a sound. If your clinician has enabled you to change the volume, you can:

- Reduce the volume if sounds are uncomfortably loud.
- Increase the volume if speech, including your own voice, is too soft.

If you are adjusting the volume setting often, or if adjusting the volume causes you discomfort, consult your clinician.

Auto Processor Off

Your processor automatically turns off when the coil is off (e.g. coil is not placed on your head) for more than two minutes. The coil-off indicator light (flashes of orange) flashes until the processor turns off.

Your clinician needs to enable the Auto Processor Off feature.

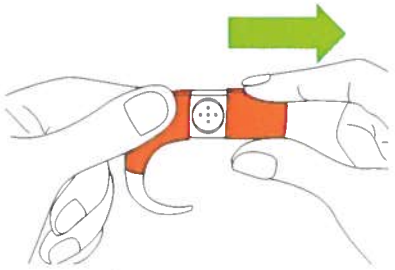
Replacing and recharging batteries

Replacing disposable batteries

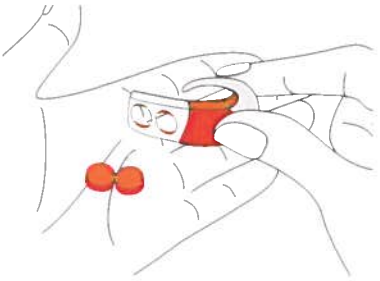
Replace disposable batteries when any of the following occur:

- You see continuous rapid flashes of orange on your processor.
- You hear two short low pitched tones (battery is low) or a sequence of short low pitched tones (battery is empty).
- You stop hearing sound.
- The sound you hear becomes intermittent.

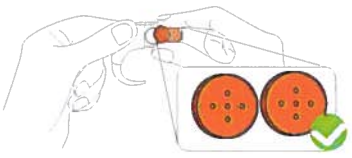
To replace Standard Battery Module batteries:



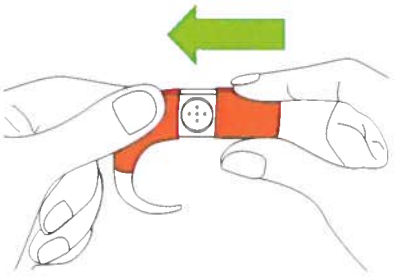
1. Make sure the battery cover is unlocked.
2. Pull the battery cover away from the battery holder as shown.



3. Remove the batteries from the battery holder.

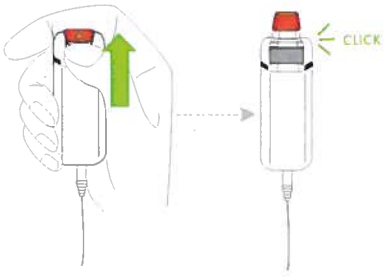


4. Insert the new batteries with the flat side facing up.

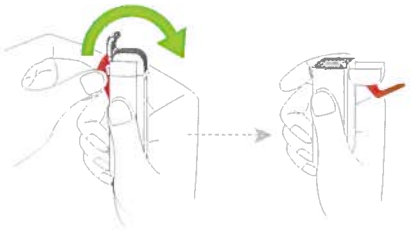


5. Replace the battery cover.

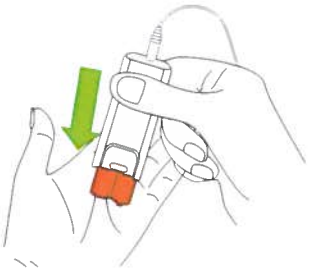
To replace Battery Pack batteries:



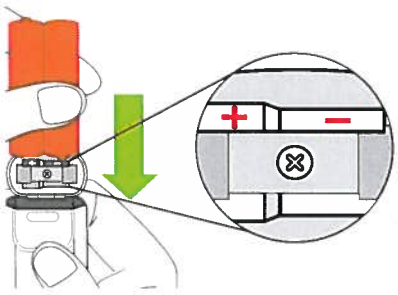
1. Lift the battery pack lever up as shown.



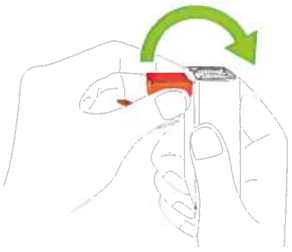
2. Open the battery compartment by pulling the cover upwards.



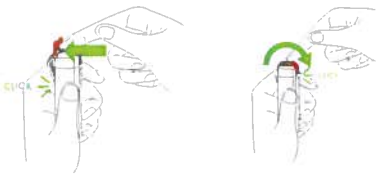
3. Remove the batteries from the battery compartment.



4. Insert the new batteries, making sure the '+' and '-' marks on the batteries line up with the '+' and '-' marks on the battery pack.

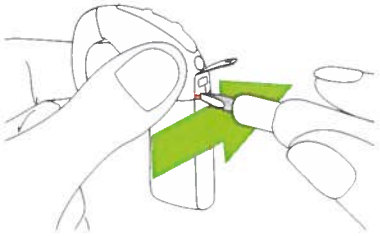


5. Push the cover down to close the battery compartment.

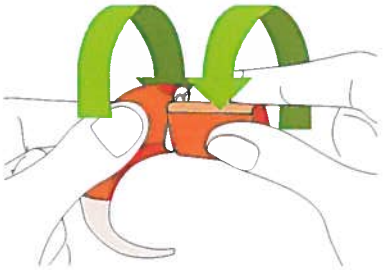


6. Push the lever back until it clicks into place.

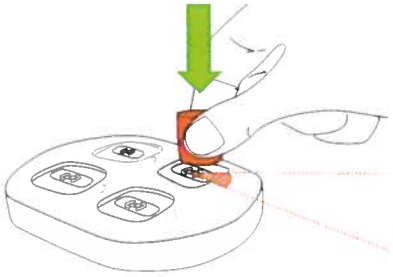
Recharging the Rechargeable Battery Module



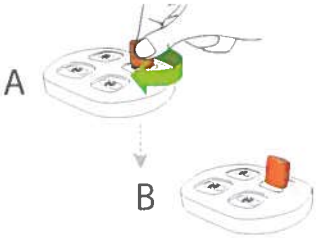
1. If the battery module is locked, push the lock to the far right position to unlock.



2. To remove the battery module from the processing unit, twist the two parts together as shown.

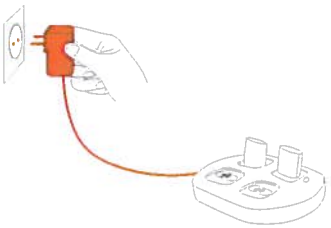


3. Place the battery module on the Cochlear™ Nucleus® Battery Charger at an angle.

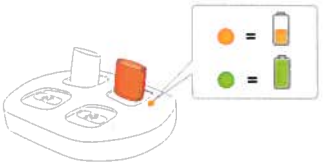


4. Twist clockwise to connect the battery to the charger.

5. Connect the battery charger to the Cochlear™ Nucleus® Global Power Adaptor.



6. Plug the power adaptor into mains power and turn it on.



When the battery charger light goes green, the battery module is fully charged.

Battery charger lights

Battery charger socket light	What it means
Steady orange	Battery is charging.
Steady green	Battery is fully charged.
Flashing orange	Indicates a problem with the battery.
Does not light up	• Battery is not properly placed on the battery charger, or • There is no power.

When recharging the battery module, the battery charger mains power indicator light is green.

Recharging rechargeable Battery Pack batteries

Use the PowerBase Battery Charger supplied to charge AAA batteries. For information on how to use the charger, see the instructions supplied with it.

Using audio accessories with your processor

Cochlear supplies a range of audio accessories to help optimise hearing in different listening environments. You can connect the following audio accessories to your processor:

- Cochlear™ Nucleus® CP800 Series Lapel Microphone, to improve communication in noisy environments (e.g. meetings).

  To use the Lapel Microphone, connect the processor end of the Lapel Microphone cable to your processor audio accessory socket and place the other end near the sound source.

Figure 9: Sound source end (1) and processor end (2) of the Lapel Microphone

- Cochlear™ Nucleus® CP800 Series Monitor Earphones for use by another person (with unaided hearing) to check that you can hear sound from the following sound sources:
  - Microphone signal.
  - Telecoil signal.
  - Accessory signal.
  - Mix of microphone and telecoil signal.
  - Mix of microphone and accessory signal.
  - Signal received from FM devices connected to the monitor earphones.

  Monitor earphones do not indicate the quality of the sound heard by the recipient.

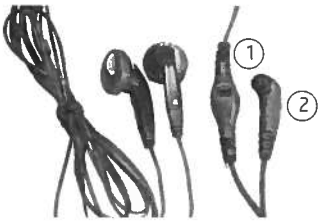


Figure 10: Accessory/FM system connector (1) and processor connector (2) on the monitor earphones

To use the monitor earphones:

1. Ensure that your processor is turned on.
2. Lift the accessory socket cover of your processor and connect the monitor earphones to the accessory socket.
3. If you wish to test an accessory or FM system, connect it to the accessory socket on the monitor earphones. Make sure that you can hear sound through the monitor earphones before connecting an accessory or FM system.

- Cochlear™ Nucleus® CP800 Series Personal Audio Cable for connecting a battery-powered sound source (e.g. portable CD player) to your processor.

  To use the Personal Audio Cable, connect the processor end of the cable to your processor and the other end to the battery-powered sound source. Do not use the Personal Audio Cable to directly connect to a mains powered sound source (e.g. TV).

Figure 11: Sound source end (1) and processor end (2) of the Personal Audio Cable

- Cochlear™ Nucleus® CP800 Series Bilateral Personal Audio Cable for connecting a battery powered sound source to two processors (bilateral use).

  To use the Bilateral Personal Audio Cable, connect the processor end of the cable to your processors and the other end to the battery-powered sound source. Do not use the Bilateral Personal Audio Cable to directly connect to a mains powered sound source (e.g. TV).

Figure 12: Sound source end (1) and processor end (2) of the Bilateral Personal Audio Cable

- Cochlear™ Nucleus® CP800 Series Portable Phone Cable for connecting a phone or a battery powered sound source with a 2.5 mm socket.

  To use the Portable Phone Cable, connect the processor end of the cable to your processor and the other end to the phone or the battery powered sound source.

Figure 13: Phone or battery powered sound source end (1) and processor end (2) of the Portable Phone Cable

- Cochlear™ Nucleus® CP800 Series Mains Isolation Cable for connecting the Personal Audio Cable or the Bilateral Personal Audio Cable to a mains powered sound source (e.g. TV). The Mains Isolation Cable provides electrical protection from mains power.

Figure 14: Mains Isolation Cable

- FM Cables, to send sound signals from a commercially available FM listening system to your processor. FM systems are wireless communication systems that help enhance hearing performance and speech understanding in certain environments (e.g. noisy environments, at school, etc.).

Figure 15: FM listening system end (1) and
Freedom Accessory Adaptor end (2) of the FM Cable

- Cochlear™ Nucleus® Freedom™ Accessory Adaptor for connecting FM Cables and Freedom audio accessories (e.g. Freedom Monitor Earphones) to your processor.

Figure 16: Freedom Accessory Adaptor

Only use audio accessories supplied by Cochlear. Certain accessories may not be available in all countries. Please contact your clinician or local Cochlear office for confirmation.

Connecting and disconnecting audio accessories

To connect an audio accessory to your processor:

1. Lift the accessory socket cover of your processor.
2. Using the side grips on the audio accessory, gently push the accessory connector into the accessory socket until it clicks into place.

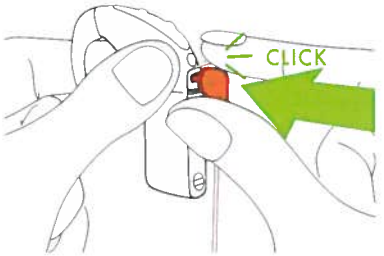


Figure 17: Connecting an audio accessory

To connect a Freedom accessory using the Freedom Accessory Adaptor:

1. Connect the Freedom audio accessory to the Freedom Accessory Adaptor. Ensure that you connect the audio accessory to the Freedom Accessory Adaptor before connecting it to your processor.
2. Connect the other end of the Freedom Accessory Adaptor to the accessory socket on the processor.

To use an FM cable:

1. Connect the FM cable to the Freedom Accessory Adaptor.
2. Connect the Freedom Accessory Adaptor to the processor accessory socket.
3. Connect the FM listening system end of the FM cable to the FM listening system as per manufacturer's instructions.

To use the Mains Isolation Cable:

1. Connect the Personal Audio Cable or the Bilateral Personal Audio Cable to your processor.
2. Connect the Mains Isolation Cable to the Personal Audio Cable or the Bilateral Personal Audio Cable.

3. Plug the other end of the Mains Isolation Cable into the mains powered sound source, e.g. TV.

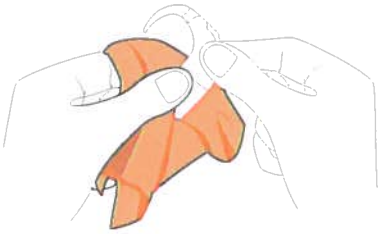
Figure 18: Mains powered sound source end (1) and Personal Audio Cable or Bilateral Personal Audio Cable end (2) of the Mains Isolation Cable

When you connect an audio accessory, your processor automatically detects it. When you are not using the audio accessory, you can disconnect it from the processing unit.

Monitor earphones are enabled on your processor. If you wish to use the other audio accessories, they need to be enabled by your clinician.

Caring for your processor

Your processor is a medical device requiring good care and maintenance to ensure that it provides optimal hearing performance. This section provides guidance on how to take care of your processor.



- Clean the processor parts with a soft dry cloth to prevent dirt from building up and affecting sound quality.
- If you notice any dirt in the battery holder, remove the batteries and clean the battery contacts with a cotton bud.

Take the processor off before applying hair products, skin care or cosmetics.

Do not wear the processor while bathing, swimming or showering.

If the processor gets wet, wipe the processor and place it in the dry aid kit for at least 12 hours. If the processor gets exposed to salt water or chemicals, wipe it with a damp cloth before placing it in the dry aid kit.

Wearing your processor in cold or hot temperatures

Generally, in cold temperatures your body heat is sufficient to keep your processor warm and working well. In very cold weather, wear a hat or headband over your processor.

When you are not wearing your processor, do not leave it in very hot areas (e.g. in direct sunlight, behind a window, in a car, etc.).

For information on operation and storage temperatures for your processor, see *Technical information, Environmental Conditions*.

Protecting your processor from dust or water damage

- Ensure that the microphone cover is in place at all times.
- Ensure that the accessory socket cover is properly closed when you are not using an audio accessory.
- Ensure that the coil cable plug seal is not damaged and that the coil cable plug is properly inserted into the processor coil cable socket.
- Always keep the coil cable plugged into the processor to prevent moisture getting into the coil cable socket. It is also important that you keep the coil cable plugged into the coil.
- If the battery contacts on the battery module become loose, contact your clinician as the connector between the processing unit and the battery module could be broken.

Cleaning the battery charger

If you notice any dust or dirt in the Cochlear battery charger, clean it as follows:

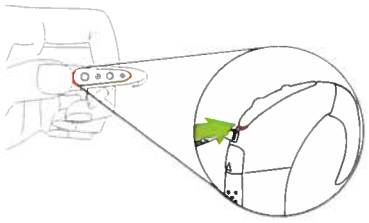
1. If the battery charger is plugged into the power adaptor, unplug it.
2. Remove any batteries placed on the charger.
3. Hold the battery charger upside down and tap on it to remove any dirt from the battery charger sockets.
4. Wipe the battery charger sockets with a soft dry cloth.

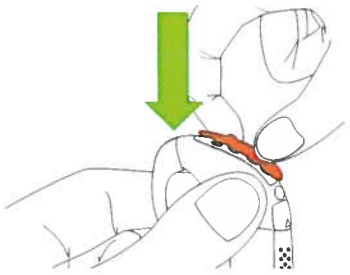
If the battery charger gets splashed with liquid, shake out the liquid and dry it for approximately 24 hours. Do not use the battery charger until it is dry.

Replacing microphone covers

Microphone covers are designed to protect the microphones from dirt and moisture. A dirty or blocked microphone cover results in the gradual deterioration of sound quality. Replace the microphone cover if you notice degradation in the sound quality, or if the cover looks dirty.

To replace the microphone cover





1. Place your fingernail in the space between the microphone cover and the coil cable socket.
2. Lift the microphone cover off.
3. Clip the new microphone cover back into place, making sure the narrow end of the cover is facing the earhook.

Storing your processor when not in use

Moisture or humidity may cause your processor to cut-out or stop working.

Store your processor overnight or when you are not using it, in the dry aid kit. The coil, coil cable, coil magnet and battery module (if it is not being charged) should remain attached to the processing unit. Turn off your processor before placing it in the dry aid kit.

Using the Storage Case

Use the Cochlear™ Nucleus® Storage Case for storage, or for carrying the processor when travelling.

General warnings and precautions

Processor and parts

- Do not place your processor or parts in nose or mouth or other body openings.
- Make sure you do not entangle your processor or parts in a way that will restrict your airways (e.g. when using the long coil cable).
- Do not let your processor or parts entangle with any jewellery (e.g. earhook and earrings) or machinery.
- Do not apply continued pressure to the coil when in contact with the skin (e.g. while lying on coil, or using tight-fitting headwear).
- Remove the processor and coil immediately if there is any discomfort or pain (e.g. if device becomes hot, or sound is uncomfortably loud) and inform audiologist or clinic.
- Do not wear your processor and coil while sleeping.
- Do not attach or wear a body-worn battery configuration beneath layers of clothing in direct contact with the skin (e.g. in pocket or under child's vest).
- Make sure all cables used by a child are securely attached to their clothing.
- Do not place processor or parts in any household devices (e.g. microwave oven, dryer).
- Do not modify your processor. Warranty will be void if modified.
- Do not use a drying aid that has an Ultra Violet C (UVC) lamp (e.g. Freedom Dry and Store).
- Store spare magnets safely and away from cards that may have a magnetic strip (e.g. credit cards, bus tickets, etc).

Batteries

- Dispose of used batteries promptly and carefully, in accordance with local regulations. Keep away from children.
- Wash hands after handling disposable batteries.

- Do not recharge disposable batteries.
- Do not disassemble, deform, immerse in water or dispose of batteries in fire.
- Do not mix old and new batteries or batteries of different types or brands.
- Replace disposable batteries with Cochlear supplied or recommended batteries only. For the Standard Battery Module, do not use silver oxide or alkaline batteries.
- Only use rechargeable batteries and battery chargers supplied or recommended by Cochlear. Use of other batteries or battery chargers may result in harm or injury.
- Do not allow children to replace batteries without adult supervision.
- Zinc air batteries are small parts and may cause harm or injury if swallowed by children.
- Do not touch the battery charger contacts or allow children to use the battery charger without adult supervision.
- Do not short-circuit batteries, (e.g. Do not let terminals of batteries contact each other, do not place batteries loose in pockets, etc.).
- Store unused batteries in original packaging, in a cool dry place. When processor is not in use, remove the disposable or rechargeable batteries and store separately in a cool dry place.
- Do not expose batteries to heat (e.g. Never leave batteries in sunlight, behind a window or in a car).
- Do not use damaged or deformed batteries. If skin or eyes come into contact with battery fluid or liquid, wash out with water and seek medical attention immediately.
- Never put batteries in mouth. If swallowed, contact your physician or local Poison Information Centre.

Audio accessories

- Always use the Mains Isolation Cable, to prevent electric shock, when connecting the Personal Audio Cable or the Bilateral Personal Audio Cable to:
  - A mains powered sound source (e.g. TV).

  - A battery powered sound source connected to mains power (e.g. a laptop computer connected to mains power for charging).

- The Freedom Accessory Adaptor is a small part and can be a choking hazard if swallowed. Cochlear does not recommend the use of this part by children aged three years or younger.
- Audio accessories can be used with adult supervision by children aged over three years.
- When an audio accessory is attached, your processor will not be protected from water or dust damage.
- Do not use excessive force, twist or pull on accessories when connected or being connected to the processor (e.g. do not twist the accessory socket cover).

Other information

Technical information

Specifications

Physical configuration

The CP802 Sound Processor is a modular device, made of four parts: the processing unit, battery module or battery pack, coil and coil cable. The complete device sits behind the ear (when using the battery module) during normal operation, with the coil aligned over the implant.

The processing unit comprises:

- Two omni-directional microphones for receiving sound.
- An internal telecoil for receiving magnetic fields radiated by phones, neckloops and roomloops (optimised for phone use).
- Custom analogue and digital integrated circuits with digital signal processing (DSP) and bi-directional wireless communication capabilities.
- A dual-colour light emitting diode (indicator light) for visual indication of processor function or processor problem.
- Two push-buttons to allow user control of key features.
- Custom 4-pin accessory connector for connection of audio accessories (e.g. Personal Audio Cable).
- Custom 4-pin coil connector for connection of the coil cable.
- A range of earhooks.

The batteries provide power to the processor. The following options are available for powering the processor:

- Disposable batteries.
- Rechargeable batteries.

The coil acts as a transformer coupling that transfers energy and data to the implant. It is connected to the processing unit by the coil cable. The coil cable can be detached from both the coil and the processing unit. It is connected to both the coil and the processing unit by custom 4-pin connectors. The connection forms a seal to prevent moisture ingress.

Materials

- Processing unit is made of copolyester and elastomer.
- Battery modules (all types) are made of copolyester.
- Battery pack is made of copolyester, nylon and elastomer.
- Coil is made of polypropylene and elastomer. The coil cable is made of polypropylene, elastomer and PVC.

Product component dimensions

Component	Length	Width	Depth
Processing unit	28.9 mm	44.3 mm	10 mm
Standard battery module	30.9 mm	20.4 mm	10 mm
Standard rechargeable battery module	30.9 mm	20.4 mm	10 mm
Battery pack	70 mm	27.6 mm	23 mm
Coil	40.2 mm	30.9 mm	8.5 mm

Weight

Component	Weight
Processing unit (including earhook)	5.6 g
Standard battery module with batteries	7.4 g
Standard rechargeable battery module	7.8 g
Battery pack (with batteries)	42 g
Coil (without coil magnet)	4.5 g

Operating characteristics

Processing unit

Characteristic	Value / range
Frequency range	100 Hz to 8 kHz
Operating input voltage	2.0 V to 4.5 V
Power consumption	20 mW to 100 mW
Push-button functions	Turn processor on and off, turn telecoil on and off, change program, lock/unlock buttons, change sensitivity or volume level.

Battery module

Type	Characteristics
Standard battery module	• Two PR44 (Zinc Air) button cell batteries. • Voltage is 1.45 V. • Cochlear recommends Power One p675 Implant Plus batteries.
Standard rechargeable battery module	205 mAh / 3.0 V to 4.2 V
Battery pack	• Two AAA (R03) batteries. • Voltage range is 1.25 V to 1.5 V. • Cochlear recommends Sanyo Eneloop AAA batteries. • You may use LR03 (alkaline), FR03 (Li/FeS2) or HR03 (NiMH) batteries.

Coil

Characteristic	Value / range
Operating input voltage	2.0 V to 2.6 V
Operating frequency	5 MHz

Environmental conditions

Sound processor, coil, coil cable and accessories

Condition	Minimum	Maximum
Storage temperature	-40 ºC	+50 ºC
Storage relative humidity	0% RH	90% RH
Operating pressure	700 hPA	1030 hPA
Operating temperature	+5 ºC	+50 ºC
Operating relative humidity	0% RH	90% RH

Disposable batteries

Check the battery manufacturer's recommended operating conditions for disposable batteries used in your processor.

IP rating of processor

Protection rating	What the protection rating means	When do you have this protection
IP57	Protects against: • Access of solid foreign objects 1.0 mm diameter (or larger) in size • Failure from dust • Failure from temporary immersion in water	When using processor with: • Standard Rechargeable Battery Module • Battery Pack • Coil and coil cable attached • Accessory socket closed (no accessory attached)
IP44	Protects against: • Access of solid foreign objects 1.0 mm diameter (or larger) in size • Failure from splashing water	When using processor with: • Standard Battery Module • Coil and coil cable attached • Accessory socket closed (no accessory attached)

Certification and applied standards

The CP802 sound processor fulfils the essential requirements listed in Annex 1 of the EC directive 90/385/EEC on Active Implantable Medical Devices as last amended by EC Directive 2007/47/EEC. It was approved for CE-Mark according to Annex 2 by Notified Body 0197 in 2012.

CE 0197

Equipment classification

Your processor is internally powered equipment Type B as described in the international standard IEC 60601-1:2005 - Medical Electrical Equipment Part 1: General Requirements for Safety and Essential Performance.

FCC (Federal Communications Commission) compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications made to this equipment not expressly approved by Cochlear Limited may void the FCC authorization to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC ID: WTOP802

IC ID: 8039A-P802

Labelling symbols

The symbols below apply to your processor components and packaging:

REF	Catalogue number
SN	Serial number
LOT	Batch code
CE 0197	CE mark approved by a notified body 0197
	Consult instructions for use
	Temperature limitations
	Humidity limitations
	Type B applied part
Rx Only	By prescription (US requirement only)
	Recyclable material
	Green dot
EC REP	Authorised representative in the European community
	Segregate electronic waste

Legal statement

The statements made in this guide are believed to be true and correct as of the date of publication. However, specifications are subject to change without notice.

Nucleus® cochlear implant systems are covered by one or more international patents.

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363778 Iss2 MAR12