
Appendix 1. Instructions for parents and teachers

Hear Glue Ear Assistive Hearing Set for children:

Instructions for Use



HearGlueEar

What is the Hear Glue Ear assistive hearing set?

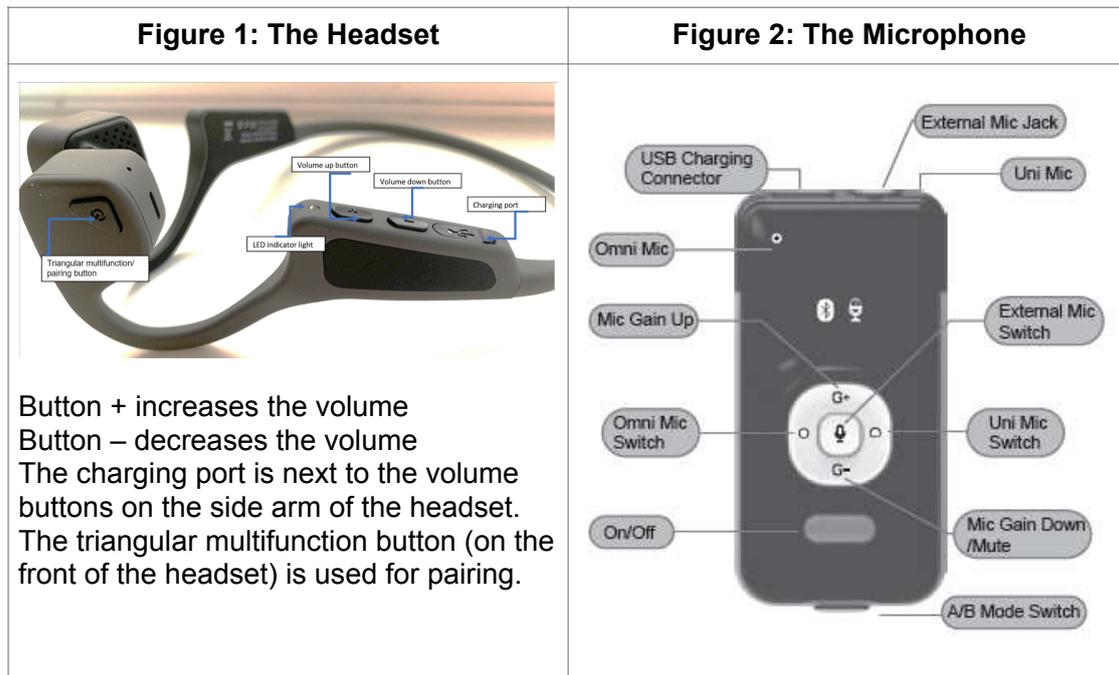
This set comprises two devices: a bone conduction headset, and a microphone. There is a video about setting up this product on website www.hearglueear.wordpress.com the 'menu' has an option at the bottom called "Research during covid-19" which has all the information about this study and videos for use.

The headset uses vibrations to enable your child to hear sound better. The vibrations go through their cheek bone and into their inner ear, avoiding the middle ear. This will assist your child to hear more clearly if they have a conductive hearing loss.

The microphone is used to transmit sound to the headset.

The headset can also be used like a set of normal headphones when paired with a mobile device (such as a tablet or mobile phone) to allow your child to hear high quality sounds when watching programmes, listening to audiobooks or playing games which are all available on the free Hear Glue Ear app which we would like you to download from the App Store.

For reassurance the Hear Glue Ear app is registered as a class 1 medical device and has been approved and recommended by professional audiology and medical bodies such as the, Organisation for the Review of Care and Health Apps, the British Audiology Association, and the National Institute for Health and Care excellence. It also won Children's app of the year at the UK app awards in 2019.



Your child can wear the headset at school, at home or for speech and language therapy. The microphone should be worn by the person whose voice your child needs to hear clearly, such as a teacher, parent, therapist or other family member/friend. An introduction sheet for teachers can be found at the bottom of this instruction sheet.

The headset can be worn during sports such as PE, running, cycling etc, but cannot be worn while swimming or bathing.

Intended use

This product set is intended to be used to aid hearing in children diagnosed with a mild – moderate conductive hearing loss. This conductive hearing loss could be caused by Glue Ear (a build-up of fluid/mucus behind the ear drum) or other causes. The product set is not indicated for children with purely sensorineural hearing loss. Your research team or clinical team will prescribe use of this product only if your child has the correct type of hearing loss. The products can be used for up to 4 -6 hours per day before needing to be recharged. It is recommended that they are used at school, in situations where there is background noise or, if your child is struggling to hear instructions. Your child should be encouraged to make adults aware if the sound is too loud or if they can't hear so that volume levels can be adjusted. They can always take the headset off, if they would like a break from wearing it. Please see the section of volume levels for adjusting if needed.

Instructions for Use

Before use, please check that the product has all the correct parts included:

- The headset
- Charging cable for headset
- The microphone
- Charging cable for microphone
- Instructions for use

Charging

Both elements of the system, the headset and the microphone, need to be fully charged prior to use.

The leads can be connected to a USB port on a computer or laptop, or to a USB plug for charging, as shown.

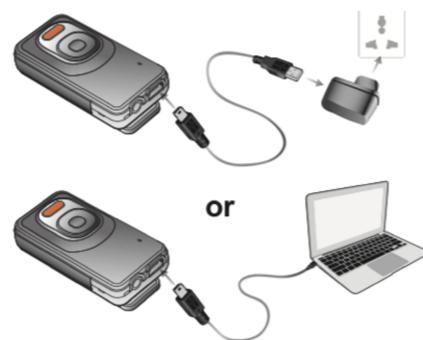
When the microphone is charging, the amber LED will light up. It will turn off when the microphone is fully charged.

The headset takes an hour and a half to completely charge. When charging the LED will be red. Once charged the LED will turn blue.

WARNING: Only use the provided leads to charge the devices.

WARNING: Do not use the devices whilst charging.

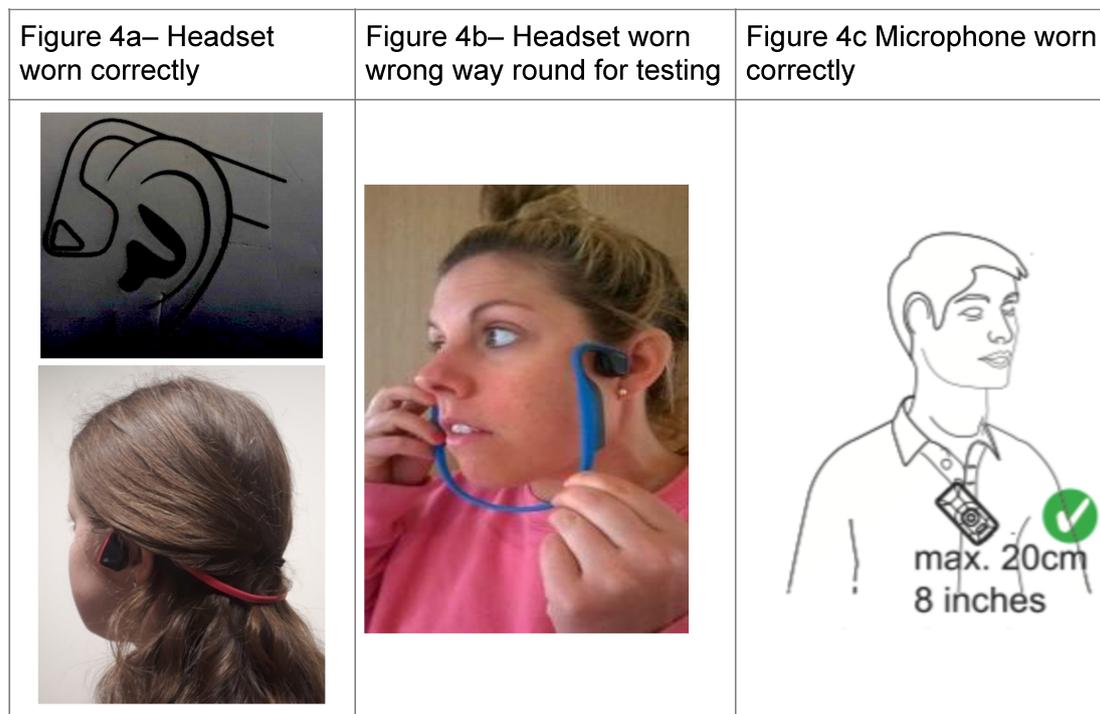
Figure 3. Charging methods



Wearing the headset and microphone

Videos are available to follow on the www.hear glueear.wordpress.com website under the section 'Research during Covid-19'. Your clinical team will also be able to tell or show you how to wear the headset during remote clinical consultation. During use, the headset is worn such that the vibrating speakers sit just in front of the ears, on the cheek bones. The headband sits behind the neck, as seen in Figure 4a.

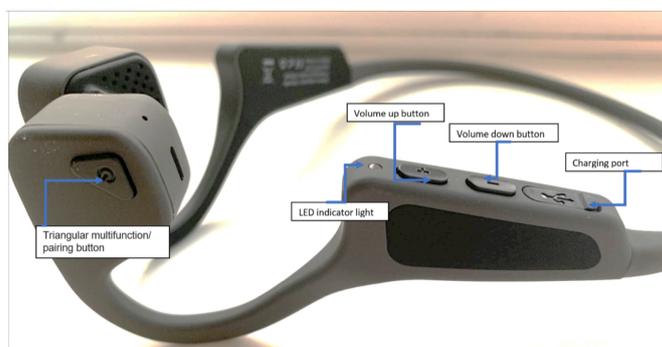
To check if the headset is working, an adult can place the headset on their cheek bones as shown in Figure 4b.

Figure 4: How to wear the products

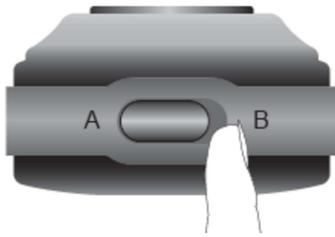
The microphone needs to be worn securely attached to clothing, with no lanyards or scarves worn around the neck, as shown in Figure 4c. Adjust the direction of the microphone to your mouth by rotating the Bluetooth Microphone.

Using your headset with the microphone

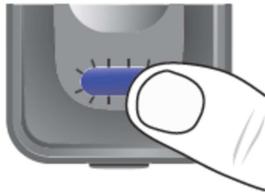
1. Turn on the headset (it will say “power on”). To pair the headset with any device HOLD your finger down on the triangular multifunction button (see picture below) for 5 seconds, until the LED flashes blue and red and the device says “Pairing”.



2. Ensure that the microphone is switched to Type A:



3. Turn on the microphone on and into Type A pairing by pressing the on/off button for 2 seconds until the LED flashes blue.



Type A pairing mode

4. The headset will automatically connect to the microphone and say “Connected”. The blue LED on the microphone will change to flash slowly. (This can take up to 30 seconds).
5. The headset can now be placed on your child’s head as shown in Figure 4a.
6. Remember to turn both the microphone and headset off after use:
To turn off the microphone, press and hold the on/off button for 2 seconds, the amber LED will stay on for 1 second and then turn off. Release the on/off button.
To turn off the headset, press and hold the on/off button. You will hear the headset say, “power off”.

Using the Microphone:

The microphone can be used in unidirectional and omnidirectional settings. Both have their advantages for different applications. It is important to make sure that you are speaking into the correct mic depending on the setting:

If you wish to use the external microphone attach this to the audio port and select the External Mic button on the microphone:



External Mic Switch

If you wish to mute the microphone, press and hold the G- button for 2 seconds. Press the G+ button to unmute. Whilst the microphone is muted, the power button LED will flash blue-amber-blue.

Using your headset with smart phone or tablet

You will need to pair the headset to your smart phone or tablet to use the Hear Glue Ear app. Pairing enables the two devices to talk to each other.

1. Ensure that the microphone is turned off. You will not need the microphone for this.
2. Turn on Bluetooth on your mobile device
3. Press and hold the on/off button on the headset for 5 seconds until the headset says "Pairing" and the LED blinks blue and red.
4. The headset should now be visible on your mobile device as "G18". Select the headset on your mobile device and the two products should then pair.
5. The headset will say "Connected" once the pairing is complete.
6. Once paired, any sound from the mobile device will be sent to the headset.

Warning: Be aware that all sound from the mobile device will be transmitted to the headset. Remember to disconnect or turn off Bluetooth once the child has finished using the mobile device.

Volume levels

The volume level will have been set at a default mid volume setting. Always adjust the volume from the headset: never use the microphone to adjust the volume. If your child complains about the volume level, you are able to adjust this by using Button + on the headset to increase volume, and Button - to decrease volume. This must be done whilst sound is playing through the headset.

We advise to only change the volume by one or two increments each way. The base volume level set is at the middle of the volume range of the device. If you need to reset to this level, please follow the procedure below:

1. Pair headset to a mobile device and play music through the mobile device.
2. Using 'Button -' to turn the volume down as low as possible. You will hear a tone each time you press the button. At the bottom of the volume level you will hear another tone.
3. From the lowest level, use 'Button +' to increase the volume 8 times. This is the middle of the volume range.

Trouble shooting

You can check if the device is functioning correctly by placing the headset on to your own cheek bones as shown in Figure 4b and tapping or blowing on the microphone. You should hear the sounds through the headphones.

Lights and indications on the product

Indication	Meaning	Action Required
Headset		
LED Solid red colour	Charging	None
LED Solid blue colour	Charging complete	None
LED Flashes red and blue	Pairing mode	Pair to microphone or mobile device
LED Blue double flash every 3 seconds	Connected	Connected to phone tablet or microphone
LED rapidly flashes red	Low battery	Charge device
Microphone		
LED amber colour	Charging	None
LED flashes blue every two seconds	Paired to headset	None
LED flashes blue every five seconds	Not connected	Turn both headset and microphone off and follow Instructions to pair to headset
LED flashes blue rapidly	Type A pairing mode	Ensure headset is in pairing mode
LED flashes blue and amber alternately	Type B pairing mode	Switch to type A pairing mode and follow instructions to pair to headset
LED flashes blue-amber-blue	Mute	Press the G+ button to unmute

Problem	Solution
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My child cannot hear properly when I walk away from them	The products work over a range of 10m, ensure the microphone and headset are always within this distance. If the microphone goes out of range it may disconnect and the blue light will flash blue at 5-second intervals. Turn both the microphone and headset off and follow the instructions to reconnect.
The volume is too loud	Turn the volume down by using Button - whilst talking into the microphone or while connected to a mobile device playing music.
The volume is too quiet	Turn the volume up by using Button + whilst talking into the microphone or while connected to a mobile device playing music.
When I try to change volume the headset just states the battery level	There needs to be sound playing through the headset to change the volume. Either try changing volume whilst talking into the microphone or connect the headset to a mobile device playing music to adjust the volume.
The microphone will not pair with the headset	Ensure both items are fully charged. Check that the microphone is set to Type A pairing mode. Turn both the headset and microphone off and follow instructions to pair to headset.

Warning: Neither product contains user serviceable parts. Do not attempt to dismantle or open the products.

Warning: The product cannot be used while it is charging.

Warning: This product cannot be used under water. It is water resistant but not waterproof. Do not wear for swimming, bathing or showering. If the product gets wet, turn it off and allow it to dry naturally before using.

Disposal

The products should not be disposed of in normal household waste. They must be returned to the clinical department who issued them.

Information for Teachers

Thank you for agreeing to use the Hear Glue Ear Assistive Hearing Products in the classroom – here is our guide to activating the device to allow the child to hear well. If you have used an 'FM' device before, then this works in a very similar way.

The reason the child needs to use the device:

The device is for children who cannot hear properly because the middle part of their ear does not work correctly. This might be a temporary or permanent problem. For the child it

feels a bit like their ears are blocked, or as if they are walking around with their fingers in their ears all day. This headset directs sound along the child's cheekbones, bypassing the middle part of the ear, and accessing the normal part of their inner hearing instead. Therefore, with the headset the child hears more easily. The child and their family has agreed to be part of a research study which is assessing children using this product when other services are reduced, closed or not easily accessed as a result of the coronavirus pandemic.

How to operate

1. Remove all staff badges, scarves or necklaces that may touch the microphone or interfere with it. Clip it onto your clothing.
2. Turn the headset on:
 - a. EITHER ...Ask the child to turn on their headset – the parent may have already done this. OR...
 - b. If you need to help by turning the headset on for the child, the easiest thing to do, is to place the headset on your own cheekbones (as in the picture). Press and hold the on/off button (The triangular button on the front of the headset) for 5 seconds, until the LED flashes blue and red and the device says "Pairing".
3. Ensure that the microphone is switched to Type A:



4. Turn on the microphone on and into Type A pairing by pressing the on/off button for 2 seconds until the LED flashes blue



Type A pairing mode

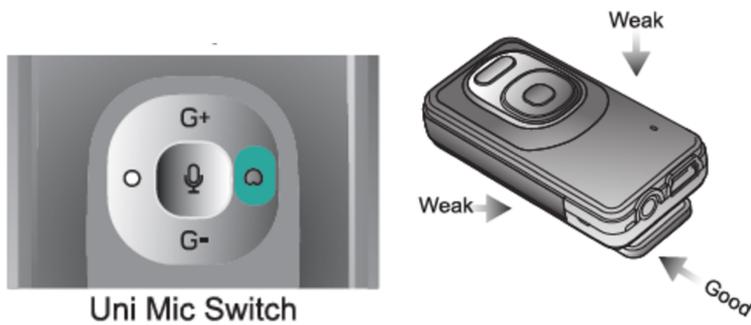
5. The headset will automatically connect to the microphone and say "Connected". The blue LED on the microphone will change to flash slowly. (Do not be concerned if this takes up to 30 seconds).
6. The headset can now be placed on your child's head as shown in Figure 4a.
7. Remember to turn both the microphone and headset off after use:

To turn off the microphone, press and hold the on/off button for 2 seconds, the amber LED will stay on for 1 second and then turn off. Release the on/off button.

To turn off the headset, press and hold the on/off button.



To reduce background noise, use the microphone in unidirectional mode by pressing the button below:



MUTING THE MICROPHONE:

If you wish to mute the microphone (e.g. when speaking to other children) press and hold the G- button for 2 seconds. Press the G+ button to unmute. Whilst the microphone is muted, the power button LED will flash blue-amber-blue