

MAKING CONNECTIONS

EAS Cochlear Implants



The University of Southampton Auditory Implant Service supports the use of a combined hearing aid and cochlear implant in the same ear, known as EAS. This leaflet tells you about the differences between EAS and standard cochlear implantation. It should therefore be read with the leaflet entitled 'Cochlear Implants'.

What is EAS and how does it work?

EAS stands for electro-acoustic stimulation and refers to the combination of a cochlear implant and hearing aid in the same device. The hearing aid (which is hidden inside the same external part as the cochlear implant processor) provides natural sound quality for low pitched sounds while the implant provides hearing for higher pitched sounds.

There is no difference in the internal device between EAS and standard cochlear implantation.



Examples of EAS speech processors

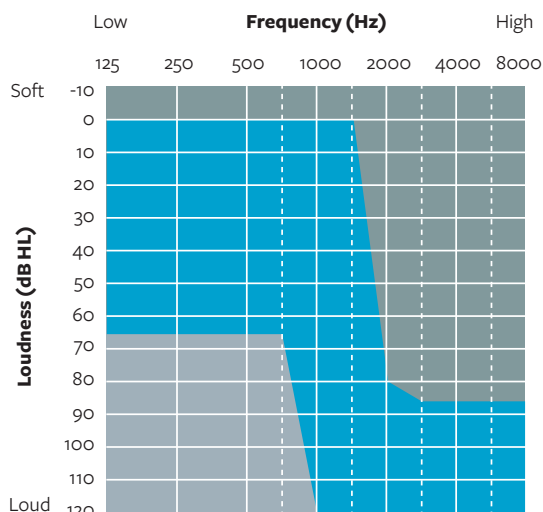
Who is it for?

EAS is for cochlear implant users of any age who retain a degree of low-pitch hearing after surgery. This typically means air conduction hearing thresholds of 65dBHL or better at frequencies of 500 Hz and lower, as shown in the diagram pictured right. It is easy to move between EAS and standard cochlear implant fitting at any time.

Patient benefits compared to standard cochlear implantation

Most people do well with cochlear implants. EAS is an extra feature for cochlear implant users with low-pitch residual hearing. It may provide additional benefits such as improvements in the following:

- Understanding of speech in noisy surroundings
- Perception and appreciation of music
- Recognition of voice characteristics such as emotional tone and pitch



Candidacy region for EAS users highlighted



**“It is 100% better,
and it’s when I hear
odd everyday sounds
that I realise I have
got more back than
I thought possible.”**

How does assessment differ from the standard cochlear implant assessment pathway?

- There will be additional counselling about use of the EAS speech processor which includes a small acoustic hearing aid in addition to the cochlear implant part.
- A new earmould designed for EAS may need to be made, either before or after the operation.
- Information about device choice will be tailored for EAS.
- Further counselling about the risks of losing residual hearing will be given. On average, patients lose about 15 to 20 dB of hearing after the operation, but this varies considerably between individuals.

How does surgery differ from standard cochlear implantation?

The surgeon will take extra care to use non-traumatic techniques in the surgery to get the highest likelihood of preserving residual hearing. This may include the use of additional anti-inflammatory medication delivered during the operation. Otherwise, the operation timing and procedure is exactly the same as for a standard cochlear implant.

How do things differ after surgery, compared to a standard cochlear implant?

Just prior to initial tuning, the user will undergo an additional hearing check to determine if there is enough residual hearing to benefit from EAS, in order to decide whether an EAS or non-EAS processor/fitting will be used. For younger children, this may involve an additional appointment about a week before initial tuning.

The tuning process with an EAS will involve adjustment of the hearing aid as well as the cochlear implant part of your device, which may involve a little more time than a standard cochlear implant fitting.



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