

SUDDEN SENSORINEURAL DEAFNESS (SSD)

Sudden profound loss of hearing in one ear ([Inner Ear Conditions](#)), due to nerve damage, is a not uncommon occurrence. The cause is uncertain, possibly blockage of the labyrinthine artery, the only blood vessel to the ear. The deafness is usually permanent, with some recovery being gained in a minority of cases. The damage is rapid in onset, such that treatment is not available in time to prevent the loss.



Sudden profound single sided nerve deafness:

An implant may be optimal

The loss may or may not be associated with loss of balance and/or tinnitus.

Management Options

A multiplicity of treatments have been tried to alleviate the hearing loss, but their effect is questionable. Commonly, these cases present to the otologist after a significant delay, which renders the likelihood of effective treatment even less.

In the absence of recovery, the current options for SSD are:

- CROS or BiCROS aid
- Bonebridge implant system
- Bone anchored hearing aid (BAHA) implant system
- Cochlear Implant
- Communication strategies and hearing tactics/assistive listening devices

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Other Locations

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A **CROS** (Contralateral Routing of Sound) aid works via a receiver device on the deafened ear that transmits to an aid in the better ear (by Bluetooth). This eliminates the dead spot of hearing that is troublesome at a table, in meetings or groups, etc. The device does not restore direction-finding, stereo effect or the better appreciation of sound afforded by two ears. The CROS aid can give many benefits but does not require surgery.

A similar **BiCROS** aid also amplifies sound for the better ear if this side is partly deaf, e.g. due to age.

Bone conduction implants ([Bonebridge](#), [BAHA](#)) work by stimulating the inner ear by vibrating the skull, and are applicable only if there is good hearing in the better ear. The Bonebridge device is similar in shape to a cochlear implant and is inserted via a “thumbnail” incision on the rear of the ear, and is powered by a magnetic button type processor on the scalp. BAHA devices require a larger C-incision on the scalp, and the magnetic-attached processor is slightly larger than the Bonebridge button.

The benefits of the bone conduction devices are higher quality hearing but with the constraints of the CROS aid as above.

Alternatively, a [cochlear implant](#) may be considered. These implants provide better all-round sound awareness and stereo effect but require greater adaptation to the quality of sound received.

If the hearing has been impaired in one ear for a very long time or since birth, a cochlear implant is not an option as the CNS pathways or the auditory cortex itself are no longer suitably receptive to the stimuli from the ear. There may also be medical reasons that some management options are not suitable for you.

Assessments

If the patient is interested in one of the bone conduction type implant devices ([BAHA](#) or Bonebridge **1. 9. 3**), an external bone conduction hearing aid is taken on trial for a few days. This simulates the effect of a bone conduction device. If the patient is interested in pursuing this option, aided testing is undertaken, with and without the device, to check that the device provides sufficient benefit.

In addition, any patient who is considering surgery for a bone conduction implant is asked to trial a CROS aid for a week, to ensure that the options are fully informed. This is mandatory.

If, after exploring the various options, the patient prefers cochlear implantation (CI), a more in-depth information session on cochlear implants is arranged. CI assessment is more involved and the follow up and habilitation takes longer and requires greater time and commitment. However for some patients with SSD it can be a more appropriate solution.

More information

- [Inner Ear Conditions](#)

Med EI Bonebridge **2. 1. 9.6**

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