

What's the Evidence?

Noise generators for hyperacusis in children

Key findings

- People with hyperacusis experience everyday sounds as intrusively loud, uncomfortable and/or painful.
- The aim of noise generators is to reduce the sensitivity of the ear to gradually improve tolerance of sounds.
- We did not find any research evidence from clinical trials to inform whether this treatment is effective for children.
- NHS information suggests that noise generators are often used for twelve to eighteen months, and that during this time period, most people find a long-term improvement in their sensitivity, without needing to continue using them.

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What did we do?

We took the terms “hyperacusis”, “noise generator” and “children” and searched academic databases (Cochrane Library, TRIP & PubMed) and UK health databases (NHS Evidence & NICE) for evidence from research in relation to the use of noise generators for children with hyperacusis.

What did we find?

[Hyperacusis](#) generally describes ‘altered sound tolerance’ or hearing ‘oversensitivity’. People with hyperacusis experience everyday sounds as intrusively loud, uncomfortable and/or painful. The condition can be made worse by avoiding noises, which can increase sensitivity.¹ Noise generators are typically electronic devices that are fitted to the ear by Audiologists. They are like a hearing aid and generate ‘white noise’. They are usually

worn in both ears. When a device is fitted to the ear, care is taken to avoid blocking the ear. Bedside devices may also be used whilst sleeping, reading or studying.

The aim of this treatment is to reduce the sensitivity of the ear to gradually improve tolerance of sounds. The ‘white noise’ generated is a steady, unchanging sound like rain. It is set at a low volume and used at a consistent level. The ‘white noise’ should not interfere with hearing in daily life. The duration of use is often increased gradually. This is known as a ‘recalibration approach’.²

We did not find any research evidence from [clinical trials](#) to inform whether this treatment is effective for children.

However, we did find NHS guidance, which suggests that noise generators are a

commonly used method for treating hearing oversensitivity, or hyperacusis. ³ The NHS information suggests that noise generators are often used for twelve to eighteen months, and that during this time period, most people find a long-term improvement in their sensitivity, without needing to continue using them. There may be variation in implementing this guidance for individual treatment.

Signposts to other information

The National Deaf Children's Society has information about audiology services: http://www.ndcs.org.uk/family_support/audiology/audiology_service.html

We would like to hear your feedback on this summary – please email us at penclu@exeter.ac.uk if you have any comments or questions.

References

- 1 Katzenell, U. & Segal, S. (2001) Hyperacusis: review and clinical guidelines. *Otol Neurotol*. 22:321-327
2. Baguley, D.M. & Andersson, G. (2007) Hyperacusis, Mechanisms Diagnosis, and Therapies. Plural Publishing Inc. San Diego, Oxford, Brisbane.
- 3 NHS Choices [Online] Available at:
<http://www.nhs.uk/conditions/hyperacusis/Pages/Introduction.aspx>

Note: the views expressed here are those of the Peninsula Cerebra Research Unit (PenCRU) at the University of Exeter Medical School and do not represent the views of the Cerebra charity, or any other parties mentioned. We strongly recommend seeking medical advice before undertaking any treatments/therapies not prescribed within the NHS.