Taking Control of the Information Jungle:

NHS Evidence – ENT and Audiology

Steve Sharp
sssharp@speclib-ent.org
www.library.nhs.uk/ent
Overview

• Beware Information Overload
• The Specialist Collection
  – Background, content, features
• Annual Evidence Update for Hearing
• Uncertainties – filling the evidence gaps
• Questions
The Need for Knowledge

- Specific information needs
- Minimal time to find reliable sources
“The medical literature can be compared to a jungle. It is

• fast growing,
• full of dead wood,
• sprinkled with hidden treasure and
• infested with spiders and snakes.”

Peter Morgan, Scientific Editor, Canadian Medical Association
Information Overload

• 30,000 biomedical journals in publication

• 3000 audiology articles in 2009

• Audiology 100,000 Medline records

• Misinformation overload?
When a Clinical Question arises do you:

A. Rely on your own experience
B. Consult a colleague
C. Conduct a search of the literature
Guidelines exist → Adapt and apply guideline locally

Reviews exist → Search for systematic reviews (e.g. Cochrane Library, Clinical Evidence, Medline, Embase)

Primary studies exist → Adapt, appraise and apply locally

Search for **Guidelines** and **evidence summaries**

No Guidelines → Search for systematic reviews (e.g. Cochrane Library, Clinical Evidence, Medline, Embase)

No Reviews → Search for **primary literature** (e.g. Medline, Embase)

No papers → Attempt an **Internet** search
Search for Guidelines and evidence summaries

Guidelines exist
Adapt and apply guideline locally

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(e.g. Cochrane Library, Clinical Evidence, Medline, Embase)

Search for primary literature
(eg Medline, Embase)

No Guidelines
No Reviews
No papers

Attempt an Internet search
Specialist Collection for ENT and Audiology

- Launched February 2005 to support evidence based decision making
- Serves a multidisciplinary audience
- Expanding collection with emphasis on quality assured, up-to-date, accessible resources
- Logical layout for browsing or searching
Central NHS Evidence Team

Project Team
- Clinical Lead
  - Martin Burton
- Knowledge Manager
  - Steve Sharp

Other SCs

Stakeholders (representing UK-based professional/patient organisations)

Reference Group (representing users)

Other SCs
### Partner Organisations

| British Society of Hearing Aid Audiologists |
| British Tinnitus Association |
| Cochrane Cancer Network |
| Cochrane ENT Group |
| The Ear Foundation |
| ENT.UK |
| Hearing Concern |
| Meniere’s Society |
| Medical Research Council |
| National Cochlear Implant Users Association |
| National Deaf Children’s Society |
| NHS Direct |
| RNID |
| RCSLT |
| RCN ENT Forum |
| RNTNE Hospital |
| British Association of Teachers of the Deaf |
| British Cochlear Implant Group |
| British Deaf Association |
| British Rhinological Society |
| British Society of Audiology |
| British Association of Paediatric Physicians |
| British Association of Paediatric Otolaryngology |
| British Association of Audiological Physicians |
| British Academy of Audiology |
| British Acoustic Neuroma Association |
| British Association for Paediatric Audiology |
| Action for Tinnitus Research |
| Association of ENT Trainees |

**Partner Organisations**
Resources Included

- Guidelines
- Systematic Reviews
- Reference and learning Materials
- High quality patient information
- Organisations, events, news
- Links to contents pages of major journals
Welcome to NHS Evidence - ENT and audiology

Your unique gateway to the best available evidence in ENT, audiology and thyroid disorders

For each of the topics in the left hand menu, resources are categorised into:

- Guidance & pathways - for clinical and service guidelines
- Evidence - Systematic Reviews, evidence updates and other evidence-based research
- Reference - for specialist websites, organisations, news items and events
- Education/CPD - for learning materials and online coursework
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Sign up for our free bi-monthly e-newsletter of recent additions and forthcoming events.

Now Available - Annual Evidence Update on Hearing Disorders

The 2010 Annual Evidence Update on Hearing Disorders is now available.

Update your knowledge here.

Latest News

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150610 Hearing disorder research continues to proliferate and this evidence update will present a concise summary of the latest emerging evidence on key topics.

ENT UK position paper on congenital ear abnormalities
02/03/10 This brief position paper summarises the incidence, impact and the evidence base supporting the current management of congenital ear abnormalities.

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View the latest update of recent additions to the collection.

02/03/10 Latest guidelines, systematic reviews and events.

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**Cochlear implantation under the first year of age - the outcomes. A critical systematic review and meta-analysis**

**Publisher:** International Journal of Pediatric Otorhinolaryngology, Elsevier  
**Publication Date:** 04 Nov 2008

**Interventions to promote the wearing of hearing protection**

**Publisher:** John Wiley & Sons, Ltd  
**Publication Date:** 07 Oct 2009

**Interventions to prevent occupational noise induced hearing loss**

**Publisher:** John Wiley & Sons, Ltd  
**Publication Date:** 08 Jul 2009

**Effectiveness of multi-channel unilateral cochlear implants for profoundly deaf children: a systematic review**

**Publisher:** Clinical Otolaryngology  
**Publication Date:** 28 May 2009

**Bilateral paediatric cochlear implants: A critical review**

**Publisher:** International Journal of Audiology, Taylor and Francis Ltd  
**Publication Date:** 20 Apr 2009
Why not use Google?

• Simplicity and Speed

Vs

• Quantity and Quality
Speech perception, localization, and lateralization with bilateral cochlear implants.

Bilateral cochlear implants in adults and children.

Three-month results with bilateral cochlear implants.

... on central auditory development in children with unilateral and bilateral cochlear implants.

... discrimination, and speech intelligibility advantages in noise for a bilateral cochlear implant.

Otopathological findings in a patient with bilateral cochlear implants.

The death in 1970 of a patient who had a multiple-electrode cochlear implant in one cochlea and a single-electrode cochlear implant in the other provided a
Google’s further Weaknesses

- Duplication
- Lack of currency and coverage
- Secrecy of sources and inclusion criteria
- Lack of limiting options
- Lack of additional support
Results: 1 to 20 of 515

1. Dysplasia of the cerebellum in Waardenburg syndrome: Outcomes following cochlear implantation
   Kaufmann L, Sauter TB, Lee DJ.
   Int J Pediatr Otorhinolaryngol. 2009 Nov 17. [Epub ahead of print]
   PMID: 19926145 [PubMed - as supplied by publisher]
   Related articles

2. Paediatric cochlear implantation in the critical period of the auditory pathway, our experience.
   Martínez-Beneyto P, Morant A, Fitarch MI, Latorre E, Platero A, Marco J.
   PMID: 19814932 [PubMed - in process]
   Related articles Free article

3. The effectiveness and cost-effectiveness of cochlear implants for severe to profound deafness in children and adults: a systematic review and economic model.
   Health Technol Assess. 2009 Sep;13(44):1-330
   PMID: 19799825 [PubMed - in process]
   Related articles Free article

4. The prelexical development in children implanted by 16 months compared with normal hearing children.
   Oliveira E, Delgado Álvarez N, et al.
   "Related articles Free article"
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Total records: 20

You searched for: "bilateral cochlear implants"

Page: 1 2 of 2

1. **Bilateral paediatric cochlear implants: A critical review**
   - Publisher: *International Journal of Audiology, Taylor and Francis Ltd*
   - Publication Type: Systematic Review
   - Publication Date: 20 Apr 2009

2. **2009 Annual Evidence Update on Hearing Disorders: Cochlear Implants**
   - Publisher: *NH Evidence Library for ENT and Audiology*
   - Publication Type: Annual Evidence Update
   - Publication Date: 18 Mar 2009

3. **A systematic review to determine the effectiveness of using amplification in conjunction with cochlear implantation**
   - Publisher: *Journal of the American Academy of Audiology, American Academy of Audiology*
   - Publication Type: Systematic Review
   - Publication Date: 31 Oct 2008

4. **Long term effects of bilateral cochlear implants for profound deafness**
   - Publication Type: Known Uncertainty
   - Publication Date: 26 Mar 2009

5. **2008 Annual Evidence Update on Hearing Disorders: Cochlear Implants**
   - Publisher: *NH Evidence Library for ENT and Audiology*
   - Publication Type: Review
   - Publication Date: 17 Mar 2008
Bilateral cochlear implantation: an evidence-based medicine evaluation

Bottom-line conclusion: The available evidence indicates that bilateral cochlear implantation confers material benefits not achievable with unilateral implantation, specifically in terms of sound localization and understanding of speech in noise. Well-designed prospective studies of sufficient size are now needed to precisely quantify these benefits, to validate outcome measures, especially in children, and to define the criteria for intervention.

Method: A detailed search of the medical literature was performed using the Medline, Embase, and CINAHL databases starting from the date of their conception. The quality of evidence in each article was assessed according to the categories of evidence as defined by the Oxford Centre for Evidence-based Medicine, Levels of Evidence (May 2001).

Results: A total of 37 studies were included: 28 (76%) investigated adult participants only, 7 (19%) investigated child participants, and 2 (5%) contained both groups. Of the studies presented, 9 (24%) studies contained level 2b evidence, 2 (6%) level 3b, 16 (43%) level 4, and 10 (27%) level 5 evidence. No studies were identified as representing evidence level 1. Adult bilateral recipients demonstrated an increase in sentence recognition of 21% correct over their first implanted ear (P < .001) and mean bilateral localization errors of 24[degrees] against a monaural error of 67[degrees] (P < .005).

Specialist Library Quality Assessment:
The review stated a clear objective and defined the patient population and intervention clearly. Outcome measures of sound localisation and hearing in noise were clearly specified. Inclusion criteria for studies were broad due to the sparsity of evidence on the topic, but case reports and studies from non-peer reviewed journals were excluded. Non-English language studies were also excluded, thereby raising the possibility of language bias. Nevertheless, the literature search was comprehensive, covering four appropriate databases and embracing both published and unpublished material. Reference lists were also followed up. The quality of included studies was assessed using an established framework, but it is not clear whether this involved more than one assessor. No attempt was made to combine the results of studies due to the heterogeneity between included studies. The conclusions follow from the results and the recommendation for larger and well designed prospective studies was justified.

Citation: Murphy J and O'Donoghue G. Bilateral Cochlear Implantation: An Evidence-Based Medicine Evaluation. Laryngoscope 2007;117:1412-1418.

Access: Full-text online access to this article requires subscription to the journal. NHS staff please contact your local NHS library for further assistance.
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Attempt an **Internet** search
Additional Service: Rapid Response Searching

- Searching Service for specific queries
- Direct email submission or via website
- Rapid turnaround to meet deadlines
- Use local NHS library as starting point
Sample Searches

Bilateral cochlear implants
Paediatric vestibular assessment
Combined electroacoustic stimulation
Acquired dysarthria and dysphagia in patients with Parkinson's Disease
Allergic rhinitis evidence update
Auditory neuropathy in Cockayne's syndrome
Medical investigation of children with unilateral/bilateral hearing loss

Purpose

Inform NICE consultation
Support CPD course
Support systematic review
Inform Patient Case
Inform Clinical Knowledge Summary synthesis
Inform Patient Case
Inform BAAP evidence based guideline synthesis
Annual Evidence Update

• Comprehensive update on all emerging research

• Includes all stages of clinical process

• Expert commentaries on research themes

• Content retained on site indefinitely
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RSS More...
**2010 Annual Evidence Update on Hearing Disorders: Contents**

Published: 15 March 2010

Welcome to the 2010 Annual Evidence Update on Hearing Disorders. The update aims to present expert commentary linked to a comprehensive collection of up-to-date research evidence published in the 12 months since the 2009 update. Please use the links below to access each section and take a few moments to provide brief feedback.

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<tr>
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<td>Creator: NHS Evidence - ENT and Audiology</td>
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<td>Next Review Date: 09 Feb 2011</td>
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Identifying Uncertainties

• Uncertainty – Treatment question/topic without existing evidence

• Database of uncertainties launched http://www.library.nhs.uk/duets

• Alert researchers to evidence gaps

• Prompt fundholders to prioritise funding
One creditworthy contribution to posterity

“As we know, there are known knowns. There are things we know we know.

“We also know there are known unknowns. That is to say we know there are some things we do not know.

“But there are also unknown unknowns, the ones we don't know we don't know.”

Donald Rumsfeld
Therapeutic Uncertainties

Identifying Uncertainties in ENT and Audiology

The Specialist Collection for ENT and Audiology is now identifying uncertainties about the effects of treatments for ENT and hearing disorders, to be added to the UK Database of Uncertainties about the Effects of Treatments (DUETs). DUETs has been established to publish uncertainties that cannot currently be answered reliably by referring to up-to-date systematic reviews of existing research evidence. Raising the profile of uncertainties in this way will help to stimulate and direct future research where it is most needed. DUETs draws on three main sources to identify uncertainties about the effects of treatments:

- Patients', carers' and clinicians' questions about the effects of treatments
- Research recommendations in reports of systematic reviews and clinical guidelines
- Ongoing research, both systematic reviews in preparation and new 'primary' studies

If you have identified any uncertainties relating to treatments in ENT and audiology, that you do not believe can be answered by existing systematic reviews, please let us know here

It would help us if you could summarise the patient group, intervention, comparison and outcome. Please also tell us if you are a patient, carer or clinician, so that the uncertainty can be tagged accordingly in DUETs.

For examples of uncertainties that have already been collected, visit DUETs here
Prioritising uncertainties
assembled in DUETs,
for additional research
Identifying treatment uncertainties

Developing Priority Setting Partnerships

Agreeing shared priorities in treatment uncertainties

Making funders aware of these shared priorities

Successful research bids for clinical trials based on priorities
Summary

- Why use the Specialist collection?
  - Quality
  - Currency
  - User friendliness
  - Responsiveness

www.library.nhs.uk/ent