*i*CAHE JC Critical Appraisal Summary

Journal Club Details

Journal club location: Women & Children's Health Network

Journal club Facilitator: Lisa C

Journal club Discipline: Audiology

Clinical Scenario

Article provided by journal club.

Article/Paper

Stapells, D.R., Gravel, J.A., & Martin, B.A. (1995). Thresholds for auditory brainstem responses to tone in notched noise from infants and young children with normal hearing or sensorineural hearing loss. *Ear and Hearing, 16*, 361-371.

Please note: due to copyright regulations CAHE is unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the DOHSA librarian.

Article Methodology: Cohort Study

The International Centre for Allied Health Evidence (*i*CAHE)
For more information on CAHE Journal Clubs email iCAHEjournalclub@unisa.edu.au
To receive CAHE updates register online at www.unisa.edu.au/cahe

*i*CAHE JC Critical Appraisal Summary

Ques No.	Yes	Can't Tell	No	Comments
1	✓			**Did the study address a clearly focused issue?** Yes – The study sought to address accuracy of threshold estimates determined using auditory brain stem responses to noises in a population of children and infants with either normal hearing or sensorineural hearing loss.
2		✓		**Did the authors use an appropriate method to answer their question?** No method with mention of study design was mentioned within the text of the study. From reading, the study appears to be a cohort design, but this is unclear. **Is it worth continuing?** Yes
3	✓			**Was the cohort recruited in an acceptable way?** Yes – Subjects with 'normal' hearing were referred to the study as part of a larger longitudinal project and subjects with hearing loss were referred to by other clinical facilities.
4		✓		**Was the exposure accurately measured to minimize bias?** The measurements collected regarding a participants hearing were objective in nature, however the 'all audiograms in this investigation were deemed reliable by the audiologist completing the behavioural program' – This makes no mention of risk of bias, and relied on subjectivity judgement that required no validation thus introducing potential for bias.
5		✓		**Was the outcome accurately measured to minimize bias?** Can't tell – Due to the risk of bias in the exposure, it cannot be determined if the resulting outcome has been affected by potential bias. Participants were not sorted into similar groups – thus introducing another complication. All subjects were tested whilst asleep – however the group in the 'normal' hearing range was tested in a natural sleep and the hearing impaired were tested after being sedated by their physician if they were over 6 months old.
6			✓	**Have the authors identified all important confounding factors?** No – While the authors note the subjectivity of the way in which some data are collected, there is no mention otherwise of any other potential confounding factors in the study/ **Have they taken account of the confounding factors in the design and/or analysis?** No – There is no mention of confounding factors
7		✓		**Was the follow up of subjects complete enough?**

The International Centre for Allied Health Evidence (*i*CAHE)
For more information on CAHE Journal Clubs email iCAHEjournalclub@unisa.edu.au
To receive CAHE updates register online at www.unisa.edu.au/cahe

				There was no mention of subject follow up – and it was not made clear the reasons for this.
8				**What are the results of this study?** ABR thresholds for the infants with bilateral normal hearing were 23.6,12.9, and 12.6 dB nHL for 500, 2000 and 4000 Hz, respectively. Most (92 to 100%) infants with normal hearing showed ABRs to 30 dB nHL tones. Across all subjects (i.e., those with normal hearing and those with impaired hearing), high (20.94) correlations were found between the ABR and behavioral thresholds. The mean differences between ABR (dB nHL) and behavioral (dB HL) thresholds across all subjects were 8.6, -0.4, and -4.3 dB for 500,2000, and 4000 Hz, respectively. Overall, 98% of the ABR thresholds were within 30 dB of the behavioral thresholds, 93% were within 20 dB, and 80% were within 15 dl3.
9				**How precise are the results?** P < 0.001, no CI of 95%
10	Discuss this in your Journal Club			**Do you believe the results?**
11				**Can the results be applied to the local population?**
12				**Do the results of this study fit with other available evidence?**
10				**What do the study findings mean to practice (i.e. clinical practice, systems or processes)?**
11				**What are your next steps? (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)**
12				**What is required to implement these next steps?**