

Early Exposure & Responses to Music

in young listeners with and without cochlear implants

Prelude

Early exposure to music is especially important for education, social interaction and parent-child bonding.

Development of auditory receptive skills and spoken language are often delayed in children who use a cochlear implant, which may affect their appreciation of and responses to music.

Parents of children with a cochlear implant may also be less confident about using music for nurture and interaction.

Orchestration

A questionnaire was developed by a multi-disciplinary team at the South of England Cochlear Implant Centre (SOECIC) to determine preschool children's

- exposure and responses to recorded music
- exposure and responses to parental singing
- willingness and ability to sing*
- exposure to musical instruments at home
- involvement in musical activities away from home*
- perceived enjoyment of music*

The questionnaire was distributed at nurseries, preschools, schools, playgroups and at SOECIC.

Ensemble

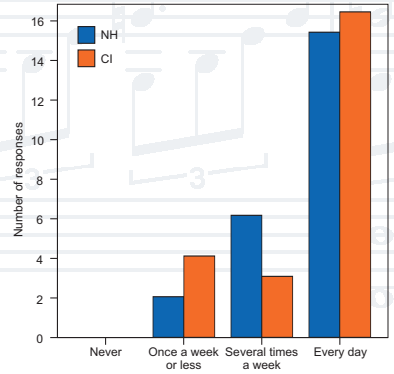
Normal Hearing (NH) Group
23 Children (13 females, 10 males)
Mean age 44.87 months (± 9.19 SD)
No known additional special needs

Cochlear Implant (CI) Group
23 Children (13 females, 10 males)
Mean age 44.78 months (± 9.35 SD)
Mean duration CI use 20.78 months (± 8.37 SD)
Mean age at implantation 24.09 months (± 7.42 SD)
1 x Nucleus 24 Contour, 22 x Nucleus Freedom
15 x Unilateral, 8 x Bilateral
17 x Congenitally deaf, 6 x Prelingually deaf
No known additional special needs

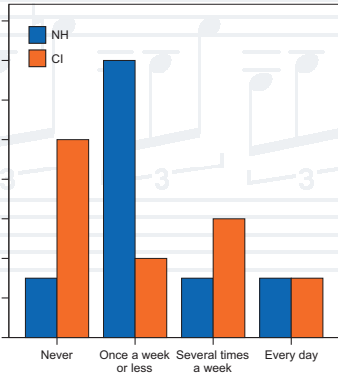
Composer: Rachel M. van Besouw
First Violin: Mary L. Grasmeder
Second Violin: Mary E. Hamilton
Flute: Sarah E. Baumann
Percussion: Kirsty V. Carey

Finale

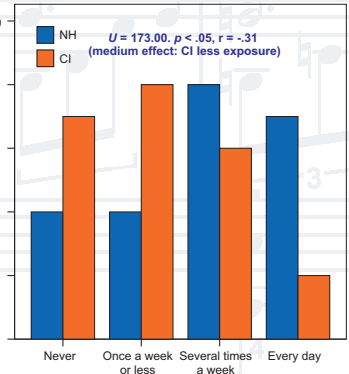
Exposure to children's tv programmes, videos or DVDs, which include songs and other music



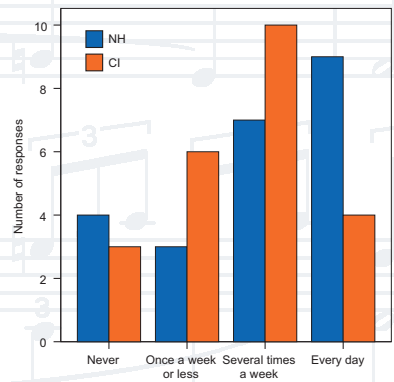
Exposure to children's music videos or DVDs



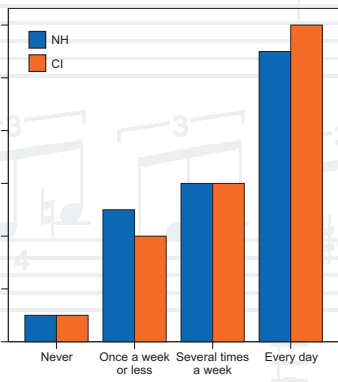
Exposure to children's music on tape/CD/MP3 (no visual stimuli)



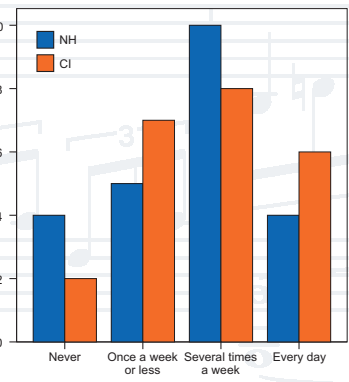
Exposure to adult music on tape/CD/MP3/radio (no visual stimuli)



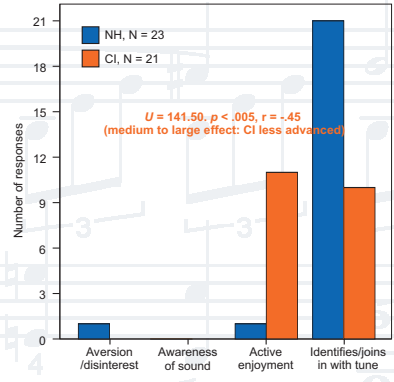
Exposure to parental singing



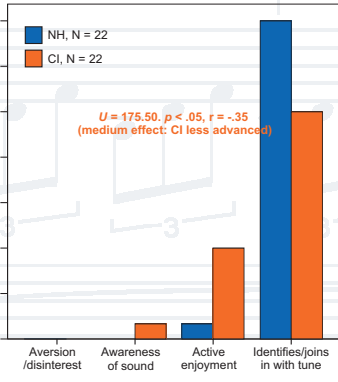
Exposure to musical instruments



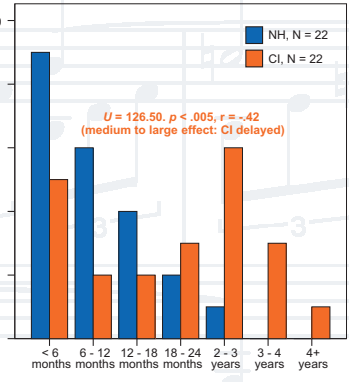
Response to recorded music (no visual stimuli)



Response to parental singing



Age of first response to parental singing



Interpretation

Exposure to musical activities which are visual or interactive is similar between the groups and indicates that they are well matched.

The CI group receive less exposure to children's music without a visual stimulus. This may be due to difficulties in comprehending music (as indicated by the lower response scores) resulting in a lack of interest in listening to music. Parents of children with a CI may also consciously decide not to use media where there is no visual stimuli; however, there is no observed increase in exposure to audio-visual media (such as children's music videos and DVDs) for the CI group. Exposure to adult music is likely to reflect the listening habits of parents.

Responses to recorded music and parental singing are less advanced for the CI group. The age at which the CI group began to respond to parental singing was also found to be later, and uncorrelated to age of implantation and duration of implant use. The delay in, and types of response for the CI group can therefore be partially attributed to difficulties in understanding music due to insufficient sound quality.

Encore

We would like to thank the parents who took part in this study and the nurseries, pre-schools, schools and playgroups who helped distribute the questionnaire.

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CIAP 2009, Lake Tahoe

* Full results of this study are available as a pre-print. Email Rachel for a copy <rvb@isvr.soton.ac.uk> or visit the SOECIC Music Focus Group webpages for more info: www.isvr.soton.ac.uk/MFG