

Musical Activities of Young Listeners

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A questionnaire study was undertaken by the South of England Cochlear Implant Centre (SOECIC) to investigate the extent to which young deaf children with cochlear implants (CIs) are able to appreciate music in comparison with their normally hearing (NH) peers. Here we present the results which relate to their singing appreciation and production abilities.

Introduction & Objectives

- There is currently only a very small amount of literature relating to music perception and participation in children with CIs. Mostly this relates to school age children.
- Participation in musical activities can be highly beneficial for children (Forgeard et al., 2008).

Our questionnaire sought to determine the following:

1. Do parents of children with CIs view music as important for their children?
2. Are young children with CIs exposed to parental singing as often as their NH peers? (See graphs 2a and 2b).
3. Do young children with CIs (a) sing and (b) respond to singing at the same age as their NH peers?
4. Do young children with CIs respond to singing in the same way as their NH peers?
5. Is there a difference in the singing accuracy of children with NH and CIs? (See graphs 5a, 5b & 5c).

Materials & Methods

The questionnaire was developed by a multi-disciplinary team and explores various aspects of music exposure and appreciation. It was distributed to the parents of:

- children with normal hearing (screened by an additional questionnaire) at local playgroups and nurseries.
- children with CIs who had been implanted for at least one year and are patients at the SOECIC.

All children were aged at least 1 year but less than 5 years old with no known additional special needs.

NH Group

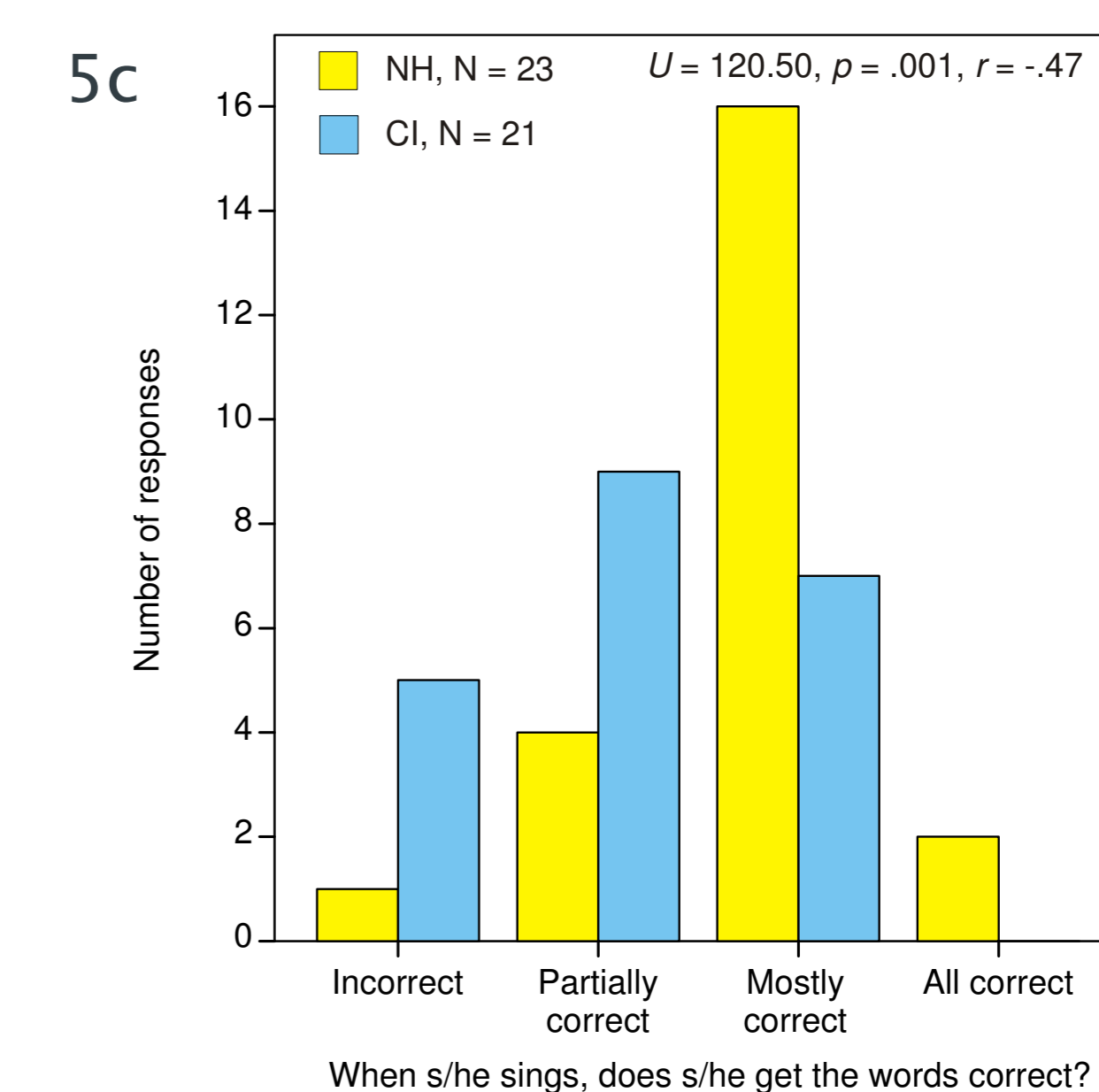
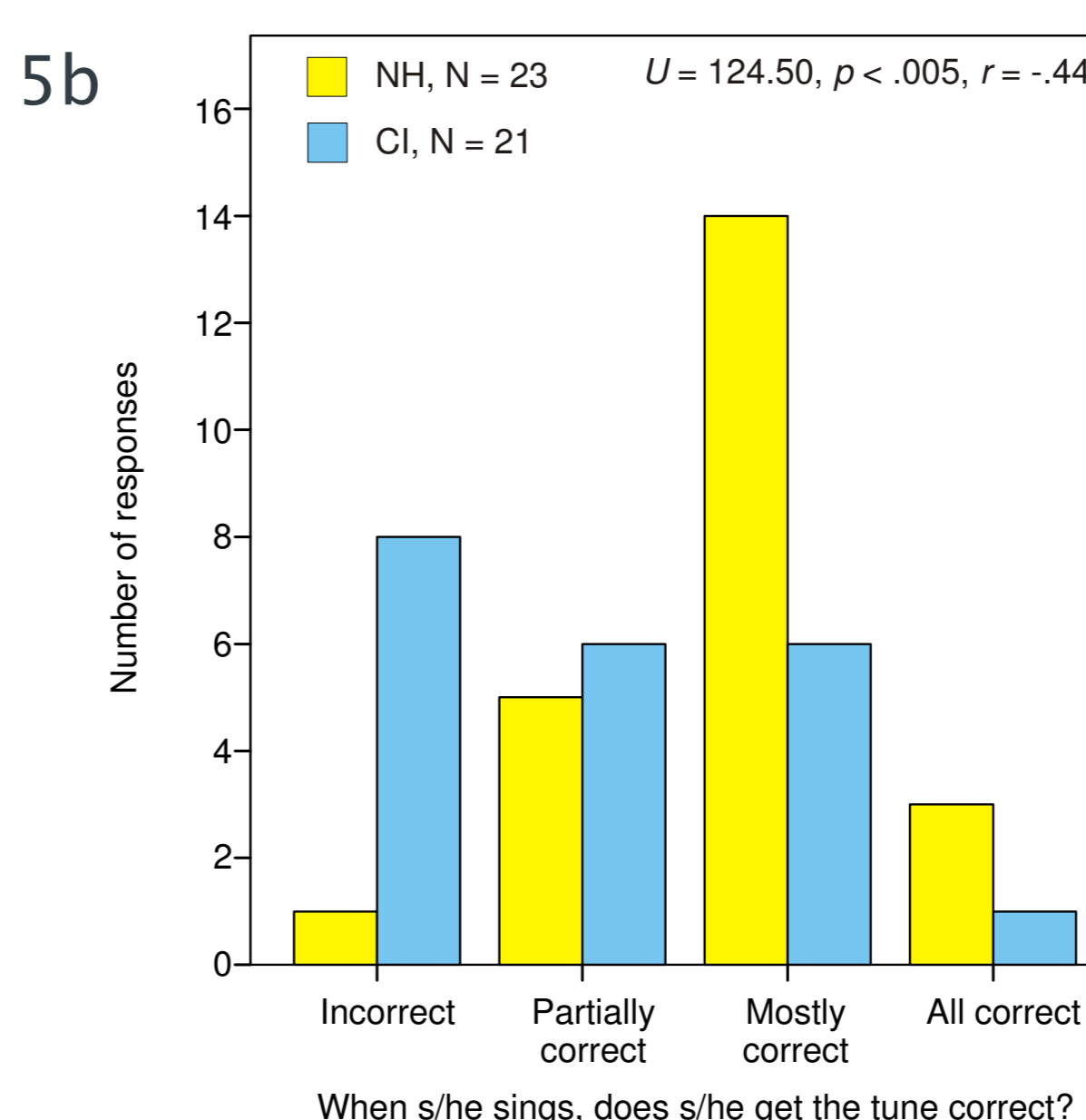
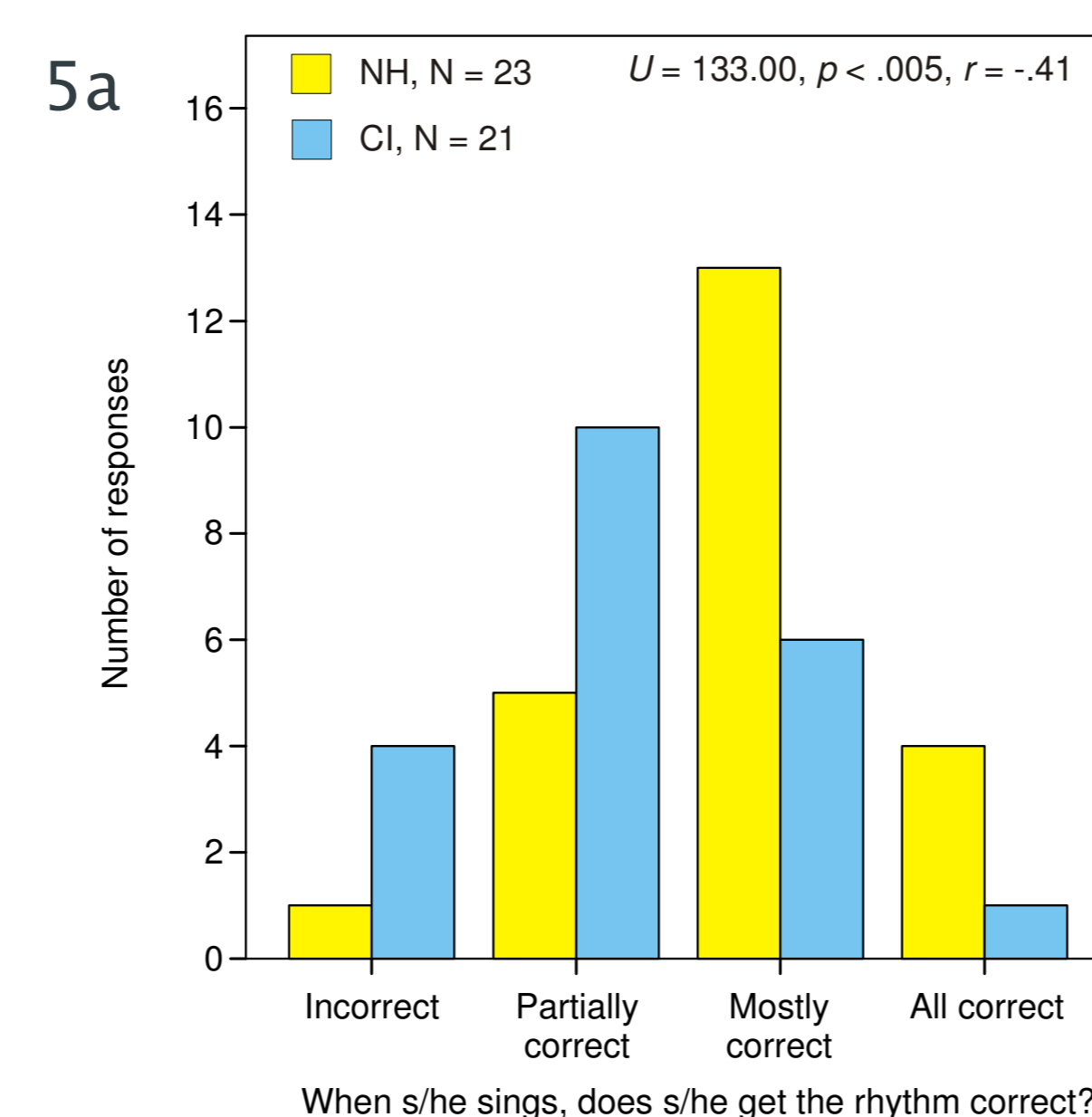
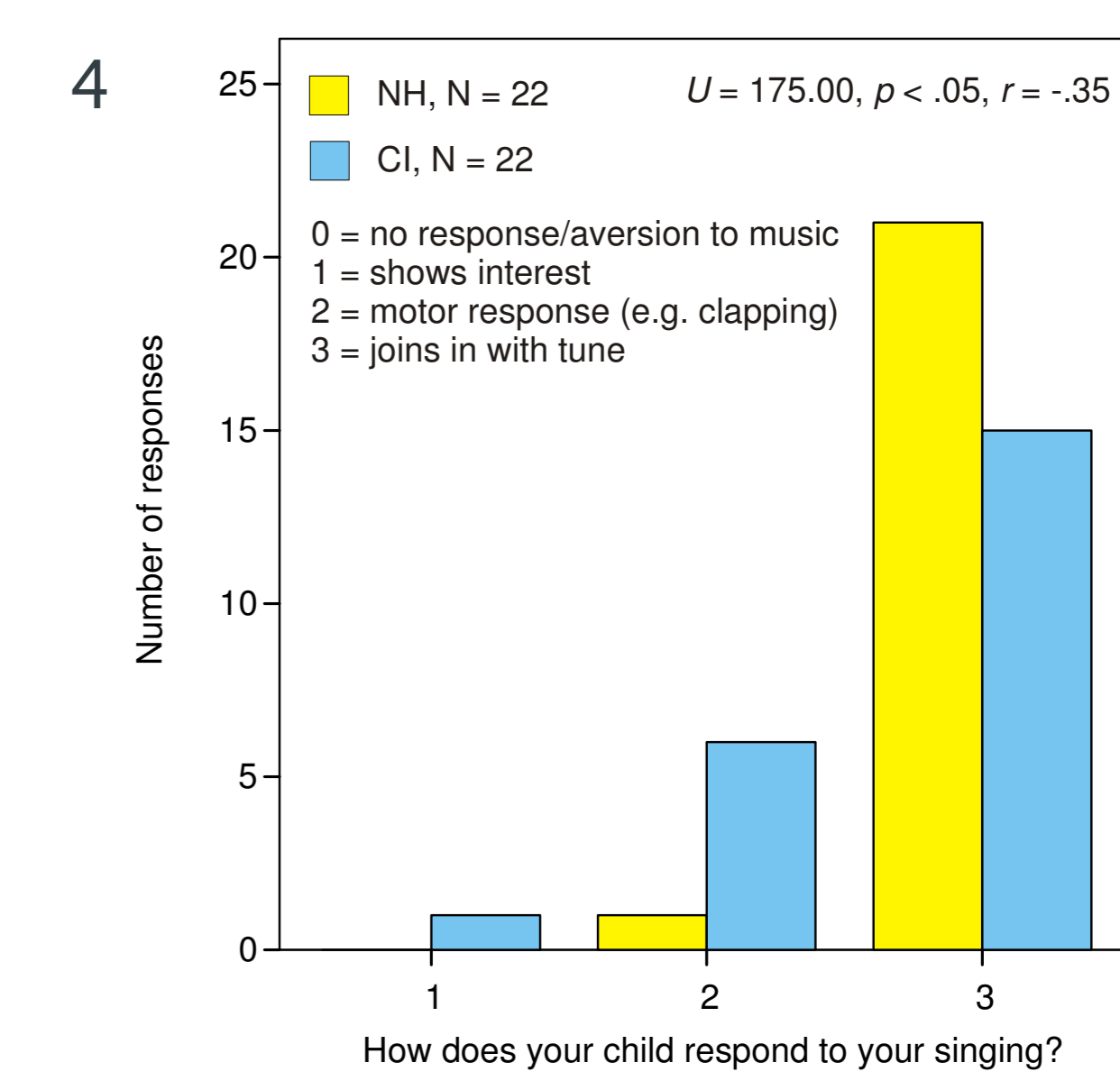
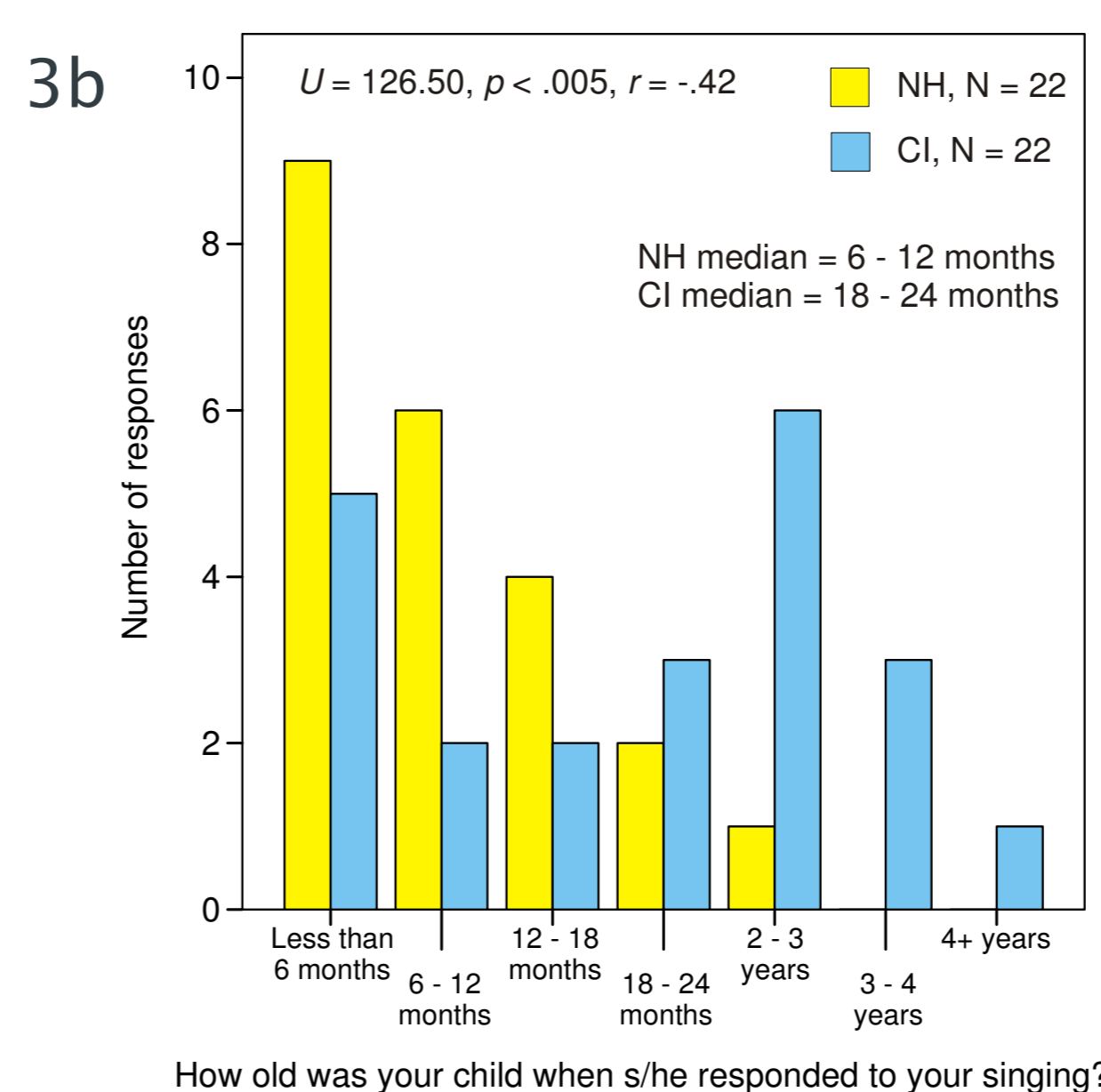
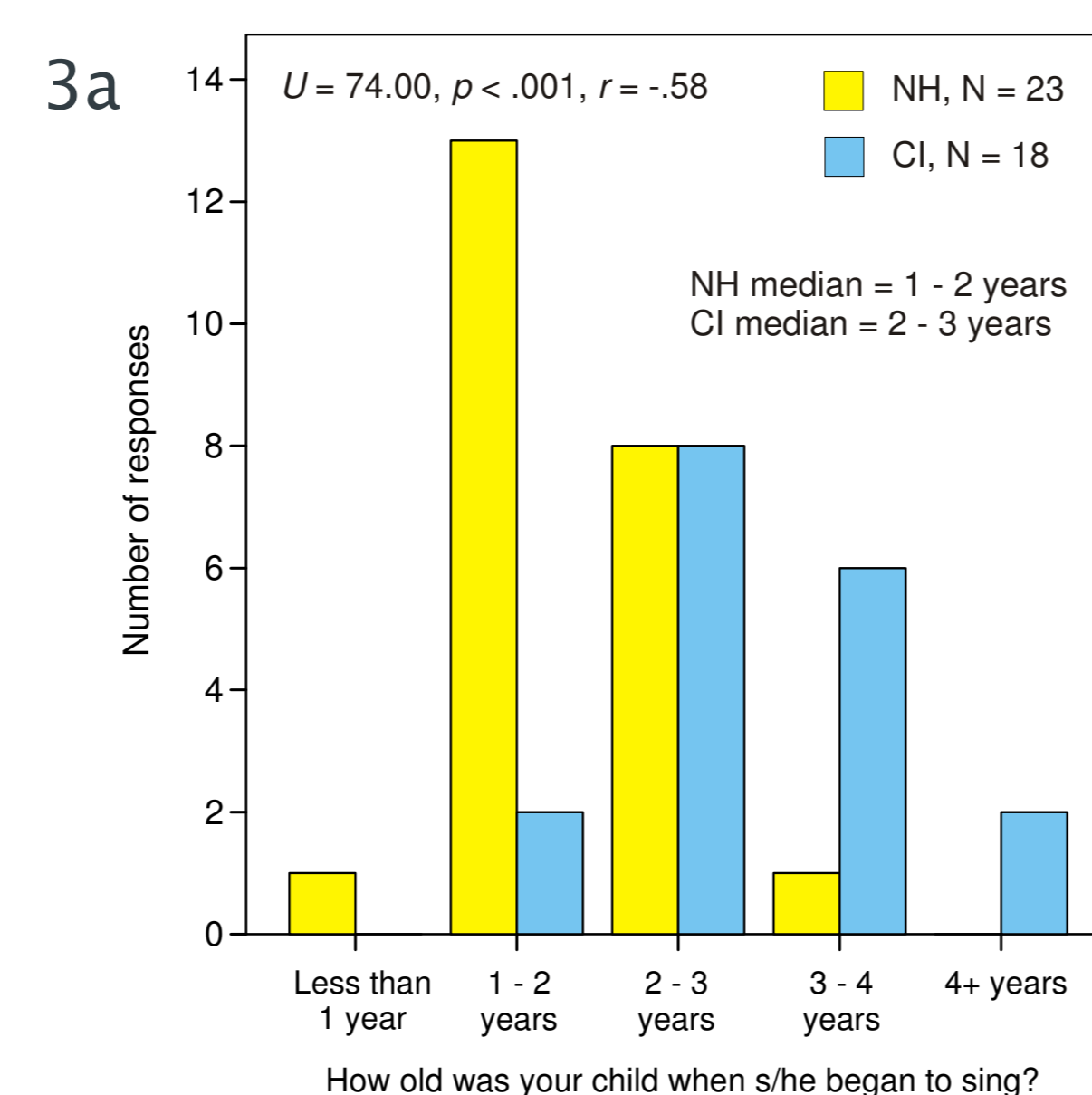
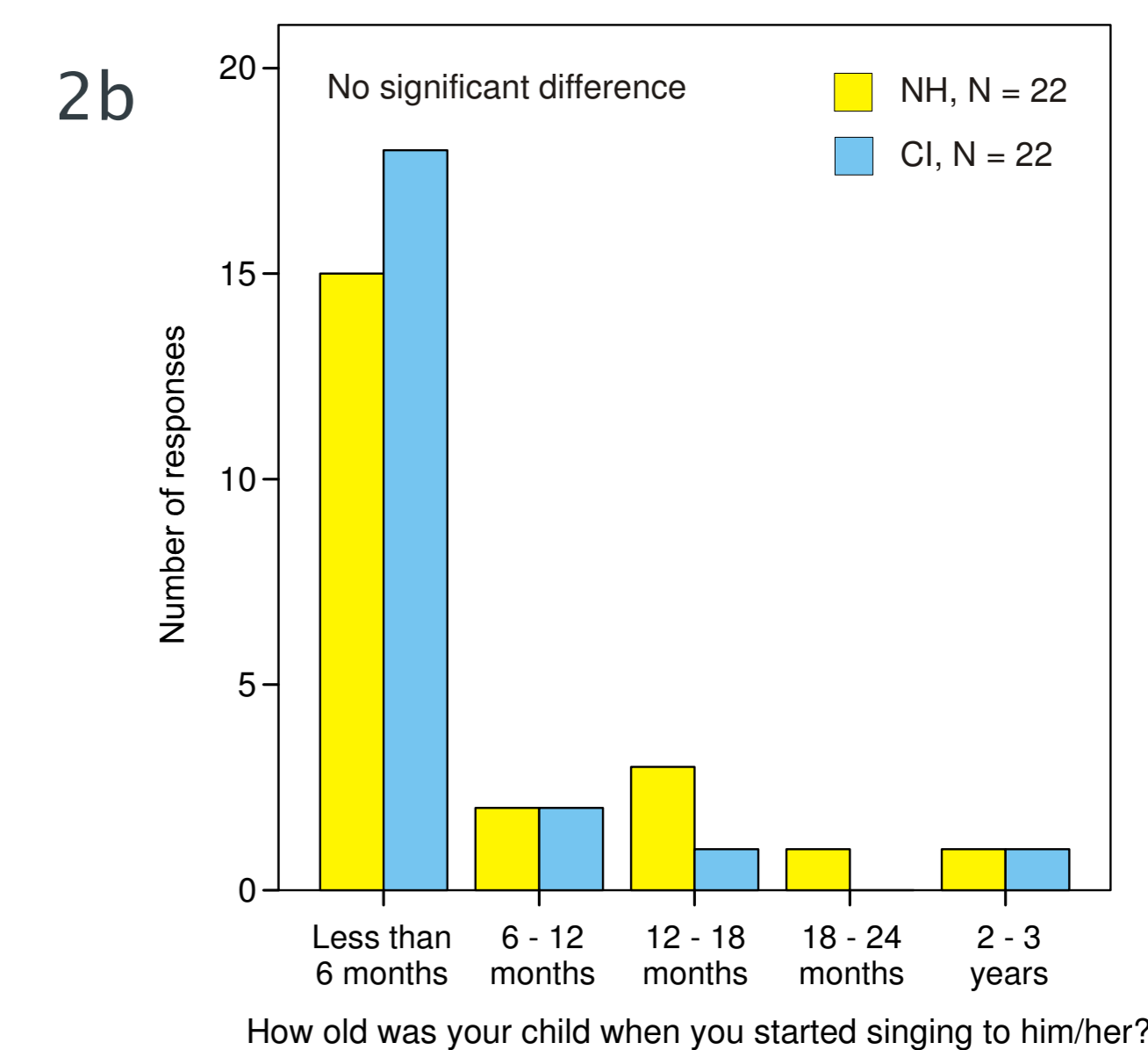
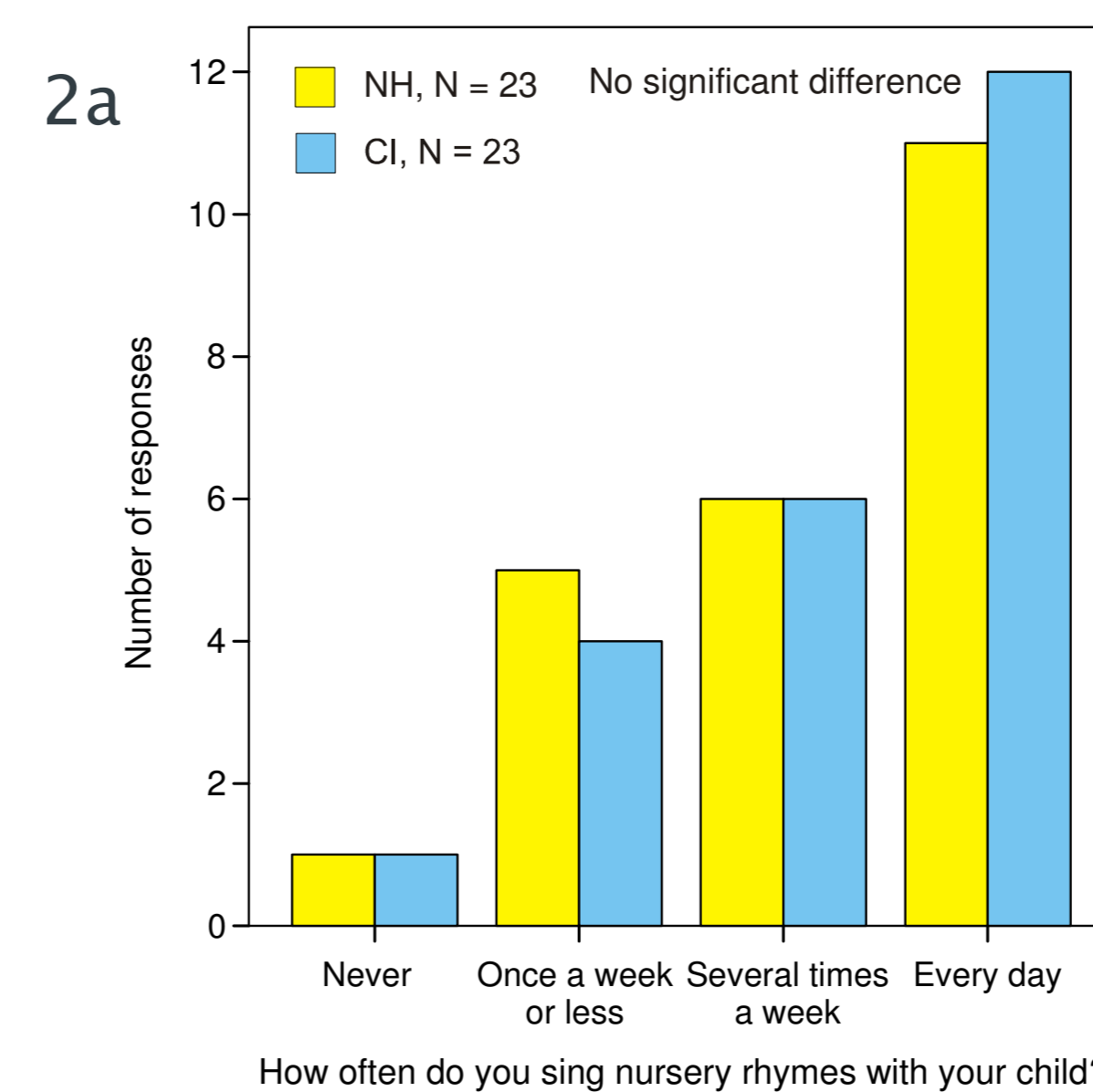
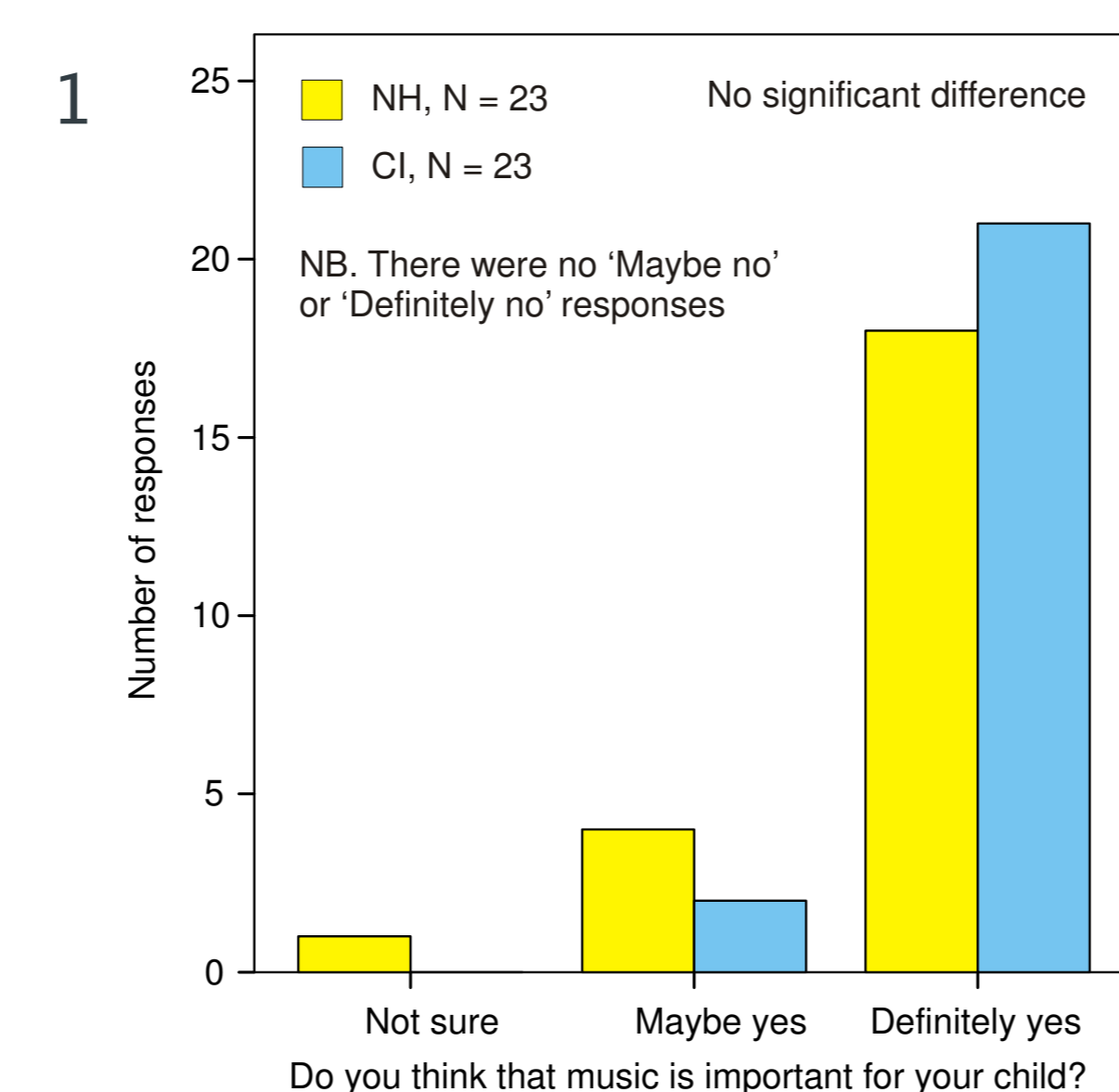
23 children (13 female, 10 male)
Mean age 44.87 months (\pm 9.19 SD)

CI Group

23 children (13 female, 10 male)
Mean age 44.78 months (\pm 9.35 SD)
Mean duration CI use 20.78 months (\pm 8.37 SD)
Mean duration pre-implant 24.09 months (\pm 7.42 SD)

1 Nucleus 24 Contour
22 Nucleus Freedom
15 unilateral
8 bilateral
17 congenitally deaf
6 pre-lingually deaf

Results



Discussion & Conclusions

- The results of this study indicate that parents of children with NH and CIs view music as important for their children similarly.
- Most parents sing to their children from a young age.
- Children with CIs tend to respond to their parents' singing in a less sophisticated way than NH children and at an older age.
- Encouragingly the average delay in the age at which children with CIs sing and respond to singing is similar to or less than the duration of deafness pre-implant.
- The singing of children with CIs is less accurate than that of children with NH for rhythm, pitch and words.
- Previous studies indicate that pitch discrimination is less accurate in adults with CIs than in NH adults. However rhythm perception is reported as being similar (Gfeller & Lansing, 1991). It is interesting to note that in the age group studied here, rhythm accuracy within singing production is perceived by parents as being less accurate for the CI group.

Acknowledgements

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References

- Forgeard, M., Winner, E., Norton, A. & Schlaug, G. (2008) Practising a musical instrument in childhood is associated with enhanced verbal ability and nonverbal reasoning. *PLoS ONE* 3(10): e3566. doi:10.1371/journal.pone.0003566
- Gfeller, K. & Lansing, C. (1991) Melodic, rhythmic, and timbral perception of adult cochlear implant users. *J Speech Hear Res*, 34:916-920

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