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Clinical Trial of DSP Hearing
Instruments

1 – Dept. of Audiology, Aarhus

2 – Delta, Odense

Test Subjects

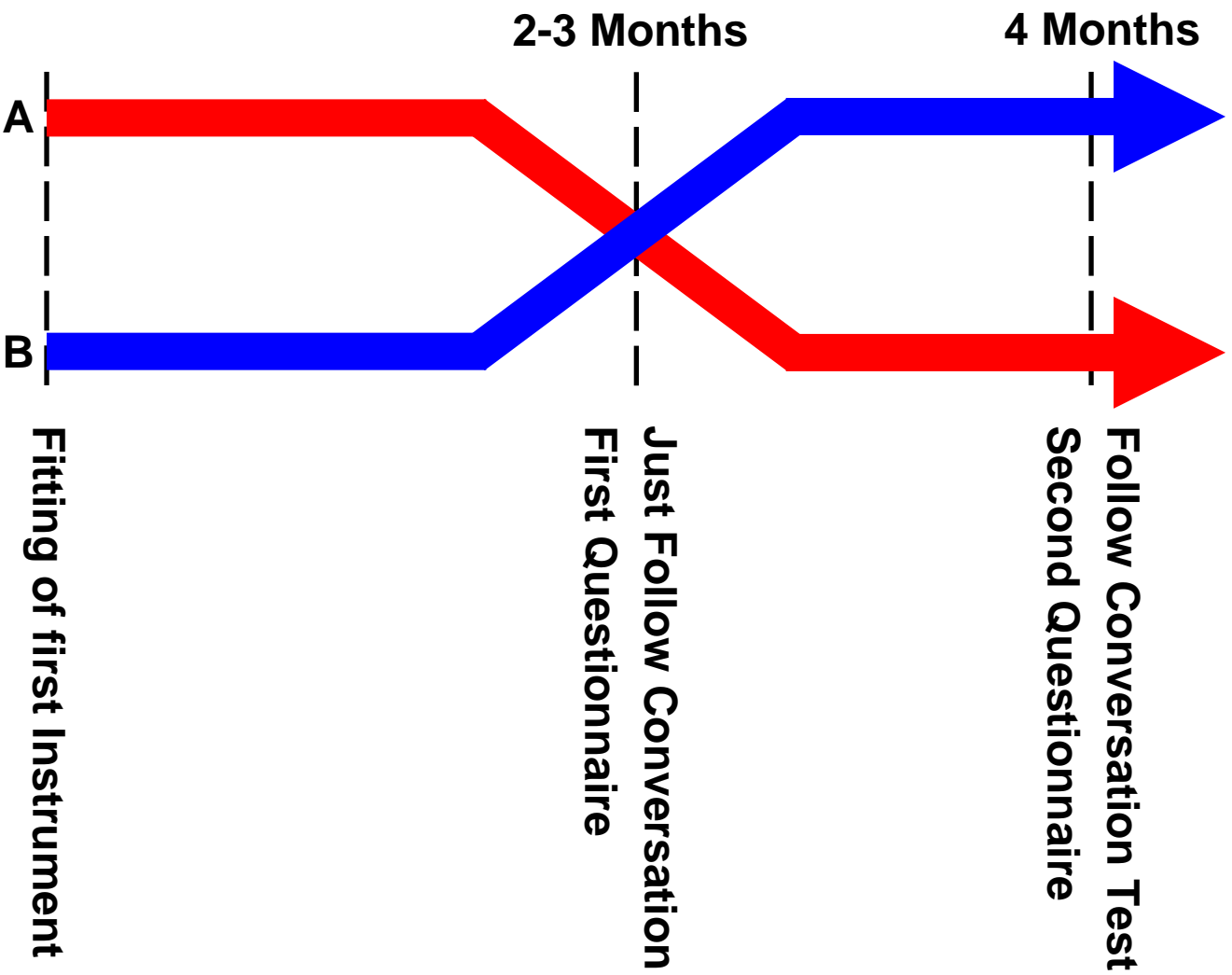
- Adapto CIC : high-end digital hearing aid
- Sonic Natura 2SE : middle range digital hearing aid

Objective

- To evaluate the users subjective opinion regarding advantages and disadvantages with
- Sonic Natura2 SE CIC and Adapto CIC
- To evaluate occlusion problems with Adapto CIC and Sonic Natura 2SE CIC
- To compare Adapto's VoiceFinderSystem to the noise reduction system in Sonic Natura 2SE

MATERIALS

- 25 experienced hearing aid users
- 12 men
- 13 women
- Median age 57 years (range 26 –69 years)
- Mild to moderately severe sensorineural hearing loss



Method

- Questionnaire: Minimum Nordic requirements for clinical testing of hearing aids (Hagermann)
- Quality of performance in different listening situations on a scale from 1-10

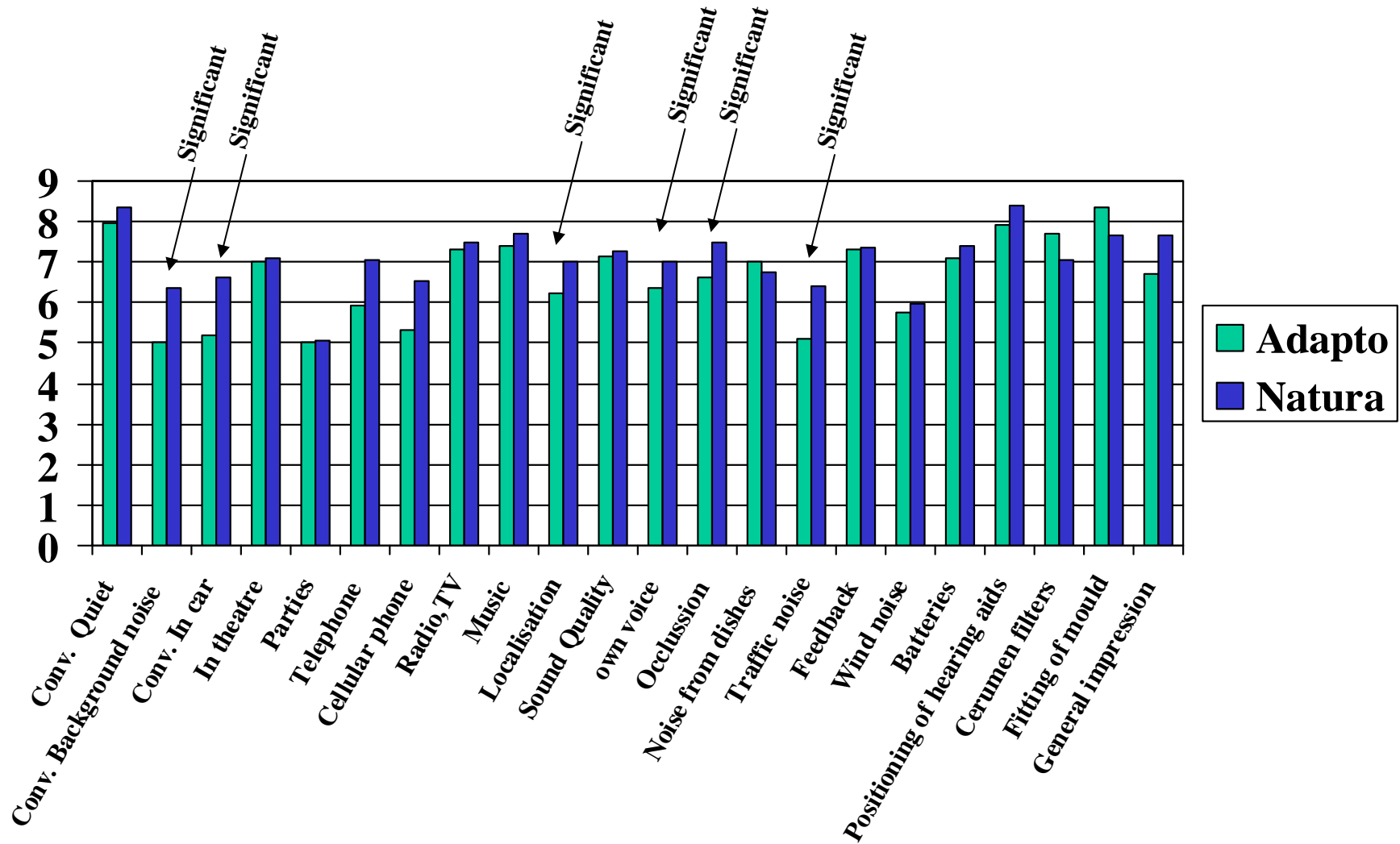
Results

- 1 patient left the trial early (occlusion)
- 24 completed the study
- 1 excluded (change of diagnosis)

Results

- 17 preferred Sonic Natura
- 6 preferred Adapto

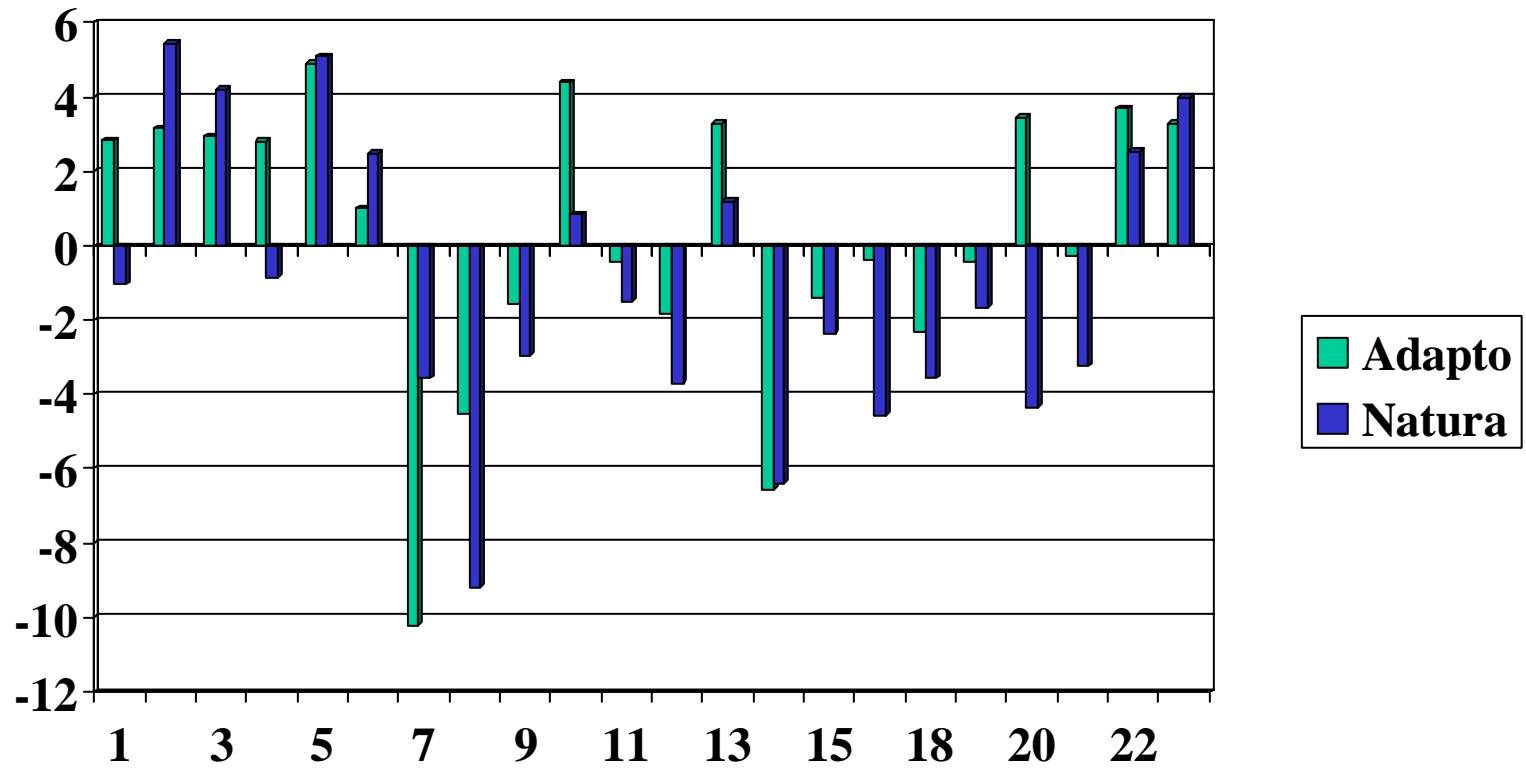
Results: Preference score



Just Follow Conversation Test

- Noise input: 60 and 70 dB SPL
- S/N ratio (average of 20 measures)
- 5 practice measures were made before each session

JFC



JFC

- Patient 17 was excluded (change of diagnosis)
- Patient 24 refused to participate in JFC
- Average JFC S/N for Adapto is $-0,14$ dB and for Natura $-1,5$ dB
- Statistical significant at confidence interval of 95%.

Conclusions

- Natura 2SE's individual noise reduction system gave significantly better speech understanding for conversation in background noise with one person and in a car or bus than the VoiceFinder in Adapto

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Conclusions

- The OpenEarAcoustics in Adapto CIC did not reduce occlusion. Sonic Natura CIC had significantly less occlusion and the sound of one's own voice was more comfortable with Sonic Natura 2SE CIC

Conclusions

- Adapto has automatic feedback reduction
- Sonic Natura 2SE has no feedback reduction
- There was no significant difference in feedback between the two hearing aids

Conclusion

- New expensive high-end digital hearing aids are not necessarily better than older cheaper middle-range digital hearing aids

Statistics

- Questions regarding statistics can be sent to engineer Carsten Daugaard, DELTA, Denmark
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