Successfully programming young children with the Med-El device without objective measurements

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Introduction

Aim to implant young children before 1 year of age

In the UK we routinely offer children under the age 18 years bilateral implants if both ears fit the NICE criteria (2+4 kHz 90 dBHL or worse)

At our centre we moved from predominantly offering Cochlear and some AB to Med-El for paediatric population since 2011
An Audiologist’s ideal maps

- MAP that a child is happy to wear
- Good level of access to sound
- Good balance between ears
- Good aided results
- Optimal functional benefit for ear individually as well as both together
Development of programming approaches for young children

- Threshold/profile measurement using ‘M-levels’
- Comfort levels
- Soundfield aided levels
- Functional hearing assessment
- ESRT’s/ART

Realised approach is based on experiences with other manufacturers where profile could be important
Back to the drawing board

• Should we allow for listening experience and some listening skills to develop first?

• Med-El devices using monopolar stimulation

• Large spacing between the electrodes results in very consistent spread of current across the contacts and therefore potentially less variation in M-levels

• Flat maps
  • Adjust for comfort, using blink reflex (ARP) to assess loudness comfort for each ear individually and then bilaterally
  • BOA – skilled paediatric Audiologists

• Continuous assessment within multidisciplinary team
Average of 5 NRI based AB maps

![Graph showing the average of 5 NRI based AB maps with channel numbers 1 to 16 and M-levels change per phase in nC. The graph indicates a consistent pattern with channel numbers 1 to 16, each with a value of 12 nC.](image)
Average of 5 Med-El maps

![Graph showing M-levels charge per phase nC vs Channel Number with n=5]
Comparison of M-levels in charge units

![Bar chart showing comparison of M-levels in charge units. Median (EI) group has a higher charge per phase nC compared to the AB group.]

$n=10$
Conclusion

No gold standard for mapping

We have found the use of flat maps that is set using the APR ‘blink reflex’
• effective
• less time consuming in the beginning of switch on
• parents are happier
• more appropriate
• somewhat objective
Thank you