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Lived experiences of Children with Single-Sided Deafness Using a Cochlear Implant

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Single sided deafness – SSD



Estimated incidence of SNHI (> 40 dBHL) at birth is

- 1.86/1000 newborns
- of whom 30-40% have unilateral HI
- one-third of these have profound HI!

- disorder of binaural auditory processing
  - impairment in sound localization
  - decreased ability to discriminate speech from noise Ruscetta et al., 2005; Priwin et al., 2007; Lieu et al., 2013, Reeder, Cadieux & Firszt, 2015
  - increased risk for problems re language and cognition
- No management of SSD!

- In 2014, a longitudinal study was initiated in Belgium to identify which aspects of development are especially at risk in children with SSD + to investigate whether a CI at an early age may support development
- In 2024: health care policy in Belgium changed!

The science behind it



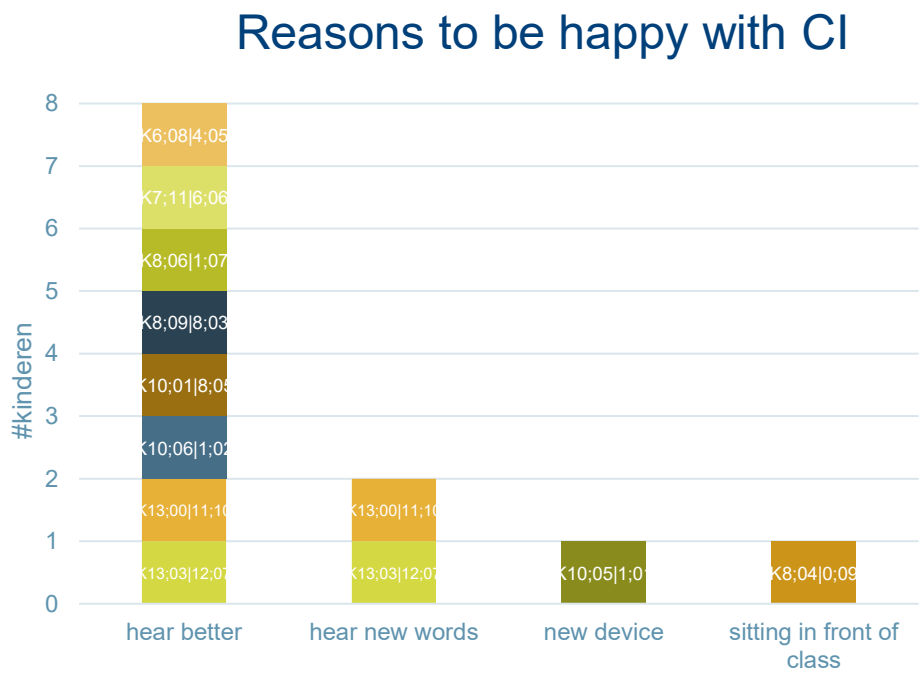
The longitudinal analysis showed that

- Children with SSD – **with CI** were
  - on par with the NH children on the cognitive tests.
  - outperformed SSD-no CI on tests for speech perception in noise (up to 11.1 dB lower mean SRT, depending on spatial condition) and sound localization (9.5 degrees smaller mean error)
- Children with SSD – **no CI** had
  - higher speech perception thresholds (1.6 to 16.8 dB, depending on the spatial condition),
  - larger localization errors (35.4 degrees),
  - lower verbal IQ scores (difference of 0.78 standard deviations).

Since 2024: more children with SSD implanted, also with acquired deafness. Understand their experiences in an interview.

Understanding Lived Experiences of Children with Single-Sided Deafness Using a Cochlear Implant

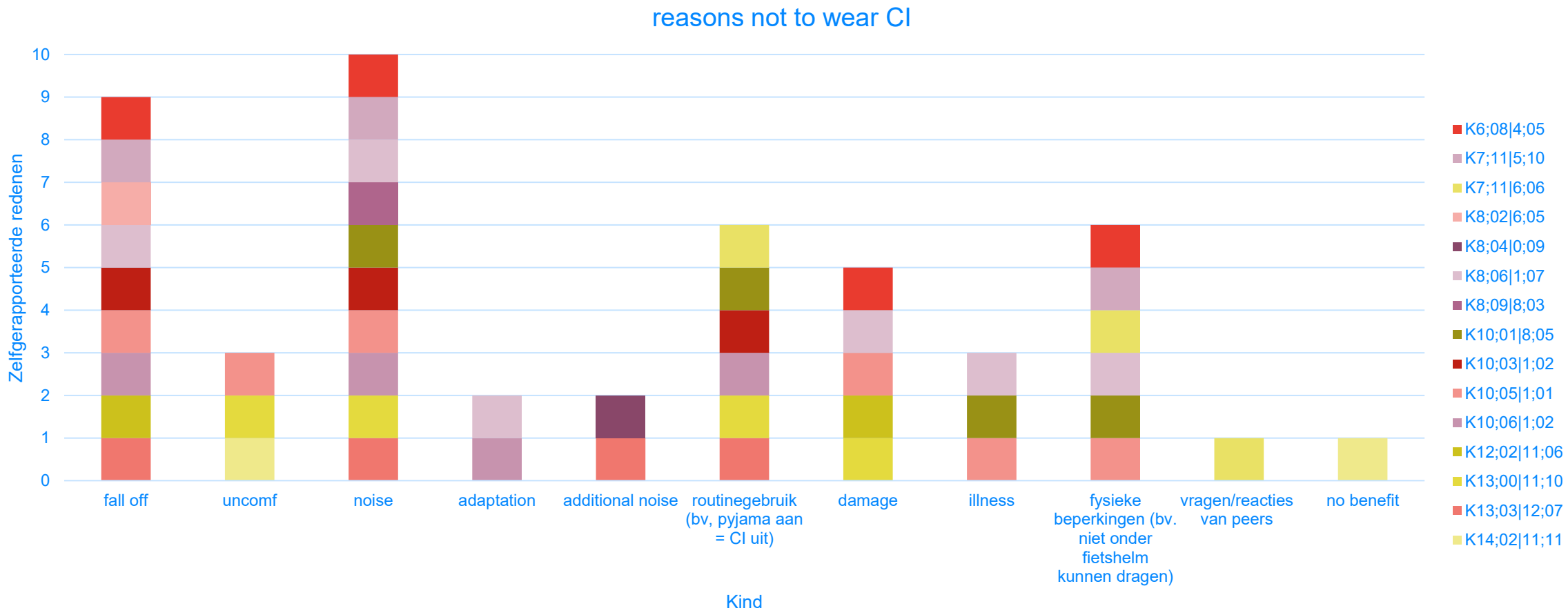
- 18 children with SSD now with CI at UZ Leuven
- 16 were interviewed; 1 non-user, aged between 6 and 14 yrs
- Themes: CI use, Experience, Attitude, Emotion



Key take-aways

- **Overall satisfaction is high:** Most children with SSD o received a cochlear implant (CI) are satisfied with their device and would choose implantation again.
- **Age at implantation is not decisive:** Survey results suggest no clear difference between children implanted early versus later; very early implantation does not automatically lead to better outcomes.
- **Older children may view implantation differently:** Children implanted at an older age are more aware of the surgery itself and may experience more anxiety about the procedure
- **Reasons for non-use:** The CI is often not worn during sports, in noisy environments, or in situations where there is concern about damaging the device.
- **Challenges remain in everyday listening:** Benefits for sound localization and speech perception in noise appear limited, although localization may improve over time or at least not deteriorate.
- **Limited stimulation of the implanted ear:** Many children do not use streaming or other activities that stimulate the deaf ear in isolation. **The hearing ear remains dominant:** The key clinical question is understanding the additional benefit provided by the CI ear beyond the normal-hearing ear.
- **Audiologists have an important role:** Rehabilitation should focus on maximizing use of the CI ear, promoting streaming, and helping families understand how and when to stimulate the implanted ear.

Reasons not to wear CI



Thank you for listening

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