Spoken Language Outcomes:
Age at Cochlear Implantation compared to Age at Full-Time Use

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THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

The Cochlear Implant Team at UNC

Our mission…

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To maximize hearing access for optimal communication potential.

- *Provide quality services to children and their families regardless of their ability to pay*
- *Empower parents and families to be primary teachers and advocates*
- *Coach professionals in the skills and knowledge to serve children with hearing loss*
- *Improving outcomes of cochlear implantation through research and cutting edge science*

Our Need…

- To determine how to continue to improve language outcomes for children who are deaf or hard of hearing.
- Empower caregivers as primary advocates. This is a mission and a need!

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The Cotreat Model

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Collaboration

Collecting Information

Caregiver Support

Communication

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When it comes to age of implantation, we already know….

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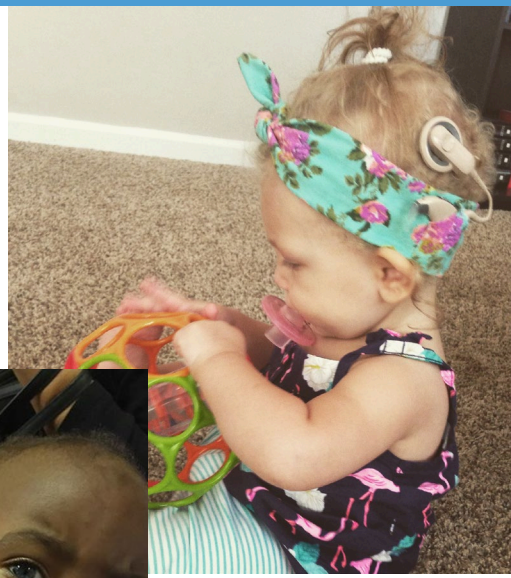
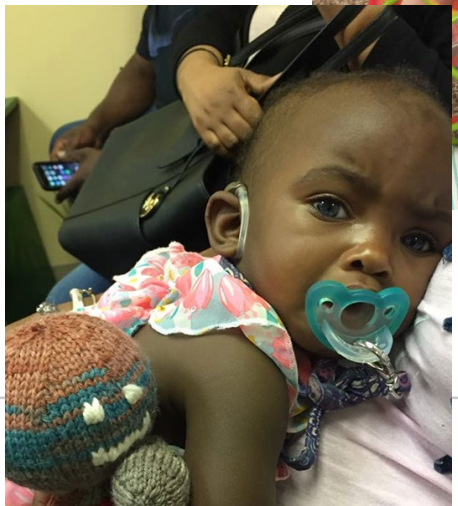
Younger is better.





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RETENTION!

The Mighty Sound of Little Miracles

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So we started asking ourselves:

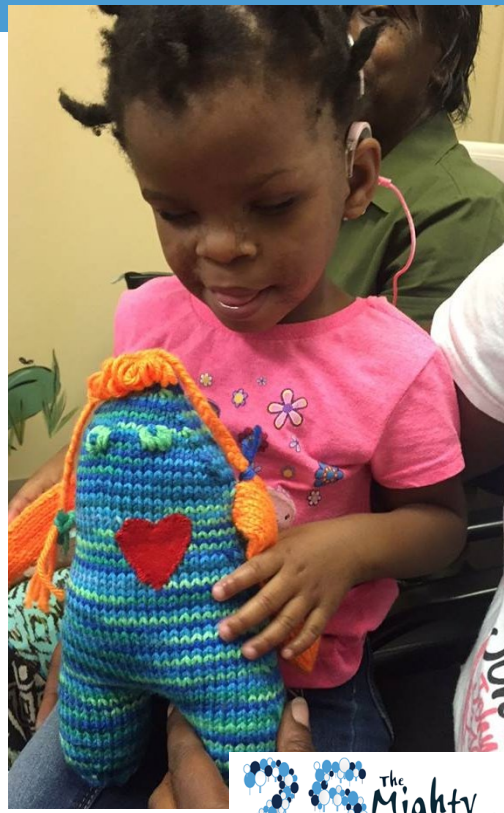
What impact is wear time having on receptive and expressive language outcomes?

We decided to take a look:

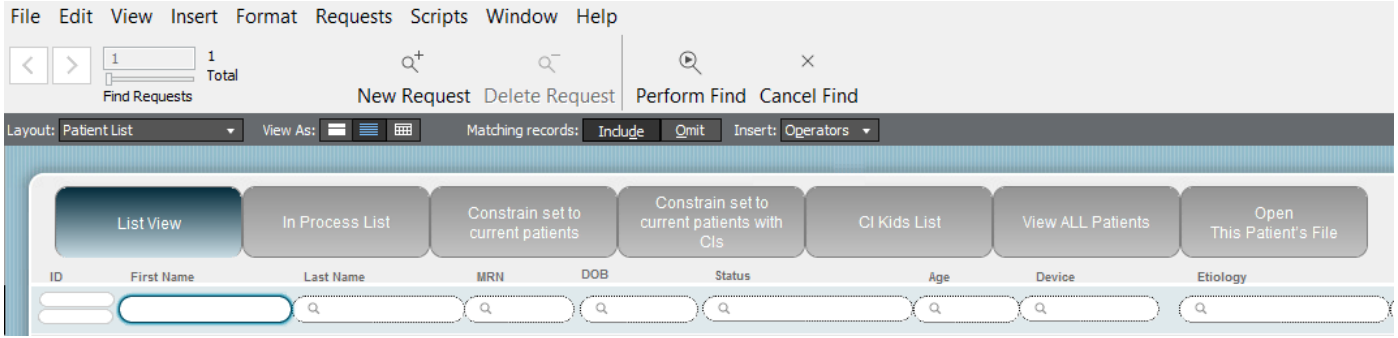
Age of cochlear implantation

compared to

Age at full time-use of cochlear implants



The Method:



- Multiple Regression Analysis
- Expressive and receptive language scores one year post-cochlear implant
- Devices with data logging capabilities: Cochlear or Med-El
- Data logging showing full-time* cochlear implant use
- Thirty-eight children

Data Logging Details:

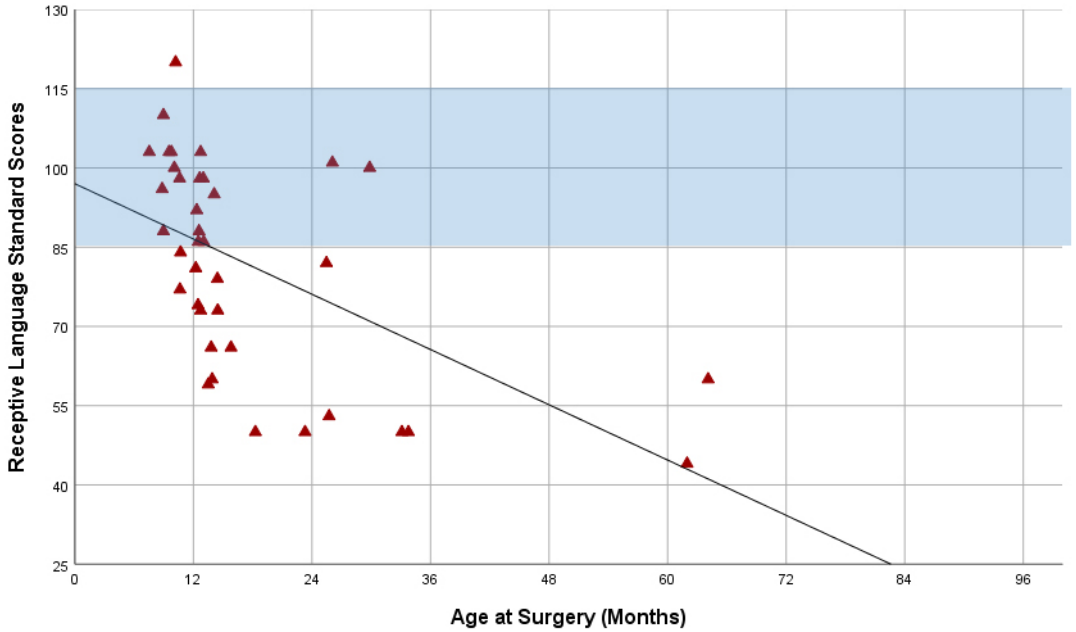
- How did we determine “full-time use”?
- American Academy of Pediatrics Recommendations on sleep:

Age (M)	Low	High	Median sleep time	Median Awake Time
4-12	12	16	14	10
13-35	11	14	12.5	11.5
36-71	10	13	11.5	12.5
72-[illegible]	[illegible]	12	[illegible]	[illegible]
289 and up	8	10	9	15

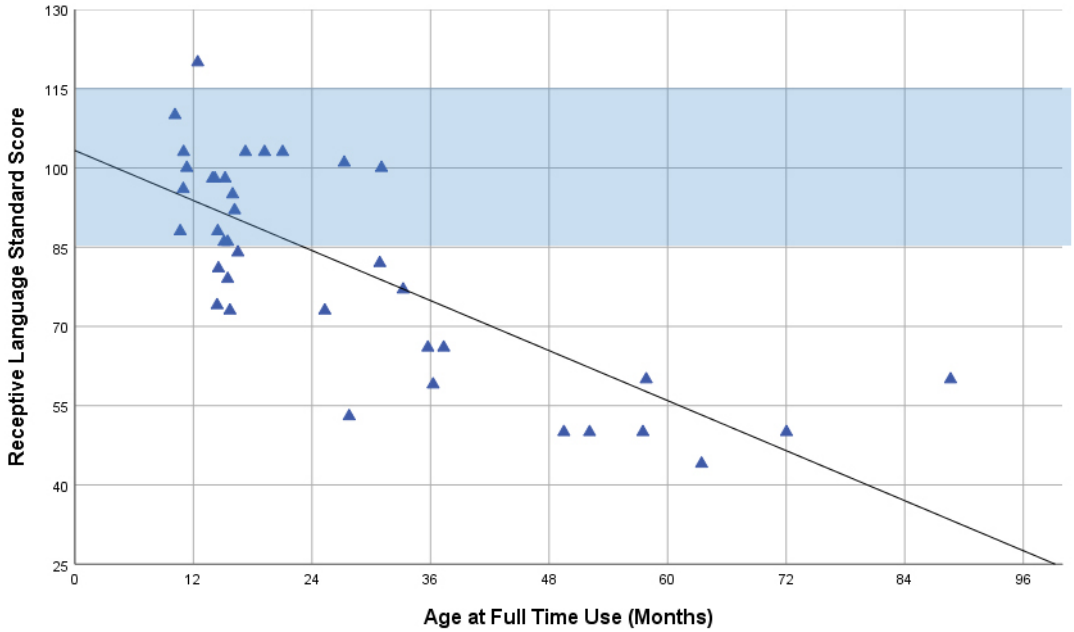
7 is not enough

…But we had to start somewhere.

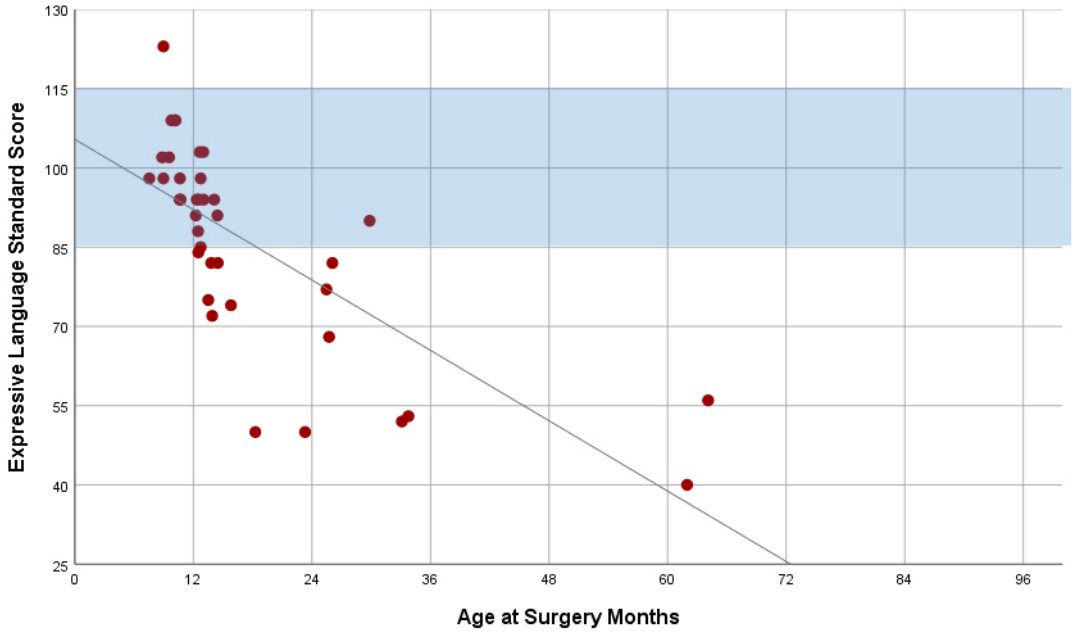
Receptive Language & Age of CI



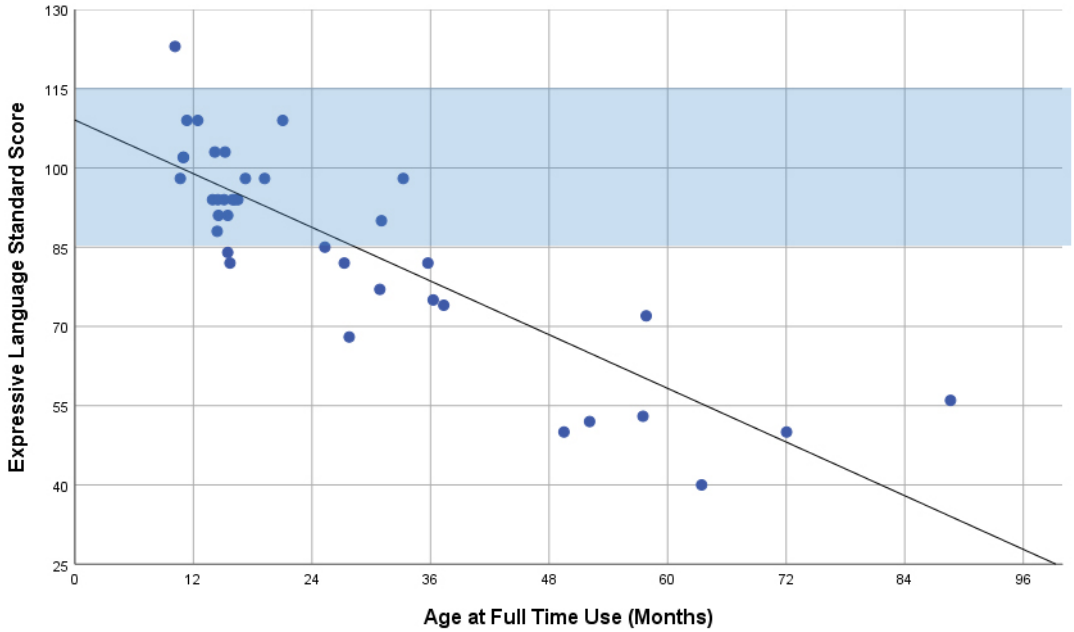
Receptive Language & Age at Full-Time Use



Expressive Language & Age of CI



Expressive Language & Age at Full-Time Use



While we know that early age of full-time use would not be possible without early implantation, the actual early full-time use of the device is much more predictive of outcomes at one year than just placing the device early. Both need to be done in tandem.

Other factors?

- Cotreating?
- Socioeconomic Status?
- Communication mode?
- Unilateral vs bilateral?

Implications for EHDI?

- How do we use this information going forward?
- How does this change how we support families?
- How does this change how we counsel families?
- Do we all invest in an Etsy shop?
- How do you take this to your local EHDI program to help further improve outcomes for the children you see?

It's time for us to counsel beyond <u>early</u> access to sound, and toward <u>full-time</u> access to sound.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Thank You
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Resources

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