



# Characteristics and Outcomes of Infants and Toddlers with Unilateral Hearing Loss

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References & Contact



## Background

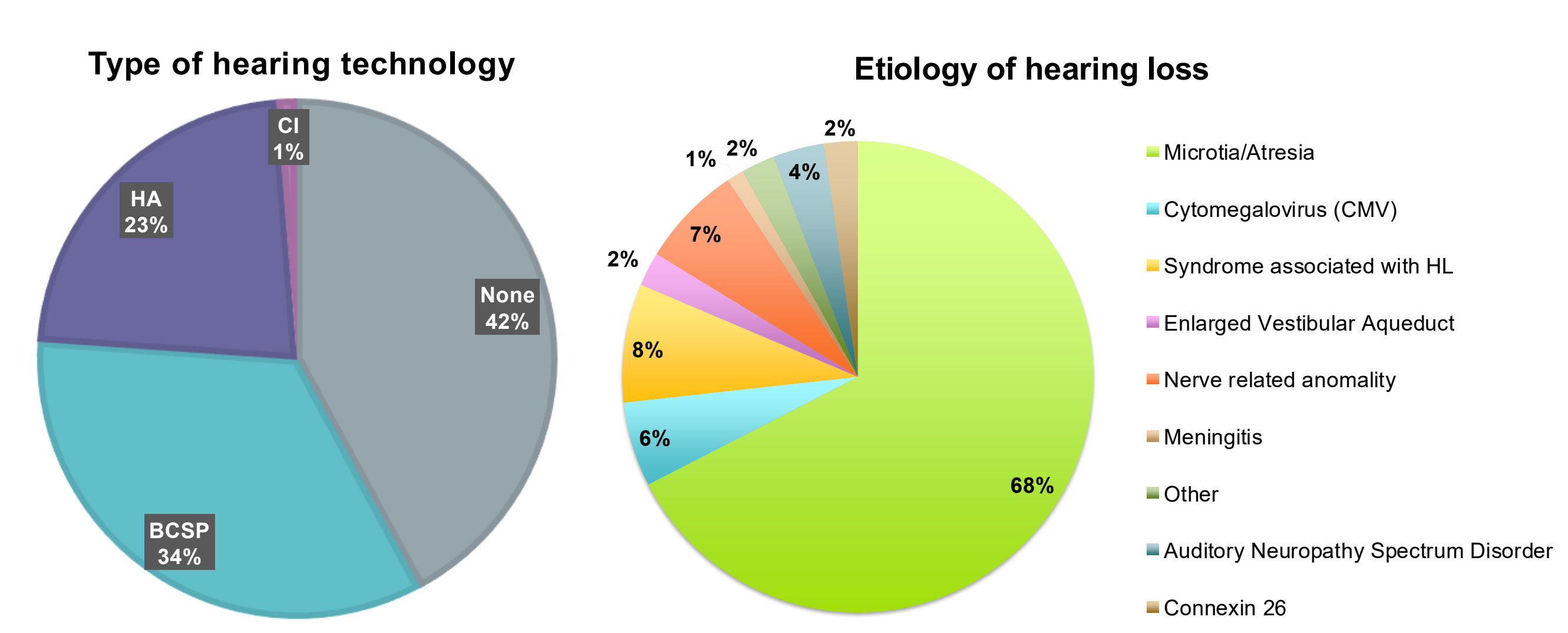
Unilateral hearing loss (UHL) affects approximately 3 in 1000 school-aged children <sup>1</sup>, leading to difficulties with sound localization and speech comprehension in noise <sup>2</sup>. These challenges significantly impact academic learning and psychosocial adjustment <sup>3</sup>. Additionally, about half of children with UHL will experience a decline in hearing in the years immediately following diagnosis, necessitating careful and frequent monitoring <sup>4</sup>. Thus, early identification and enrollment in Early Hearing Detection and Intervention (EHDI) programs are crucial. However, a significant gap exists in the literature regarding EHDI enrollment and outcomes in infants and toddlers with UHL. This gap challenges improvement of EHDI systems for children with UHL. This presentation addresses this gap by examining demographic and audiological characteristics, age at early intervention enrollment, and language outcomes in infants and toddlers with UHL who were enrolled in an early intervention program in Washington state between 2017 and 2025.

## Methods

For this retrospective analysis, data were obtained from the educational and clinical records of 167 children with UHL aged 1 to 36 months. Language outcomes were obtained for 86 children from English-speaking homes and were measured through the LENA Developmental Snapshot <sup>5</sup>.

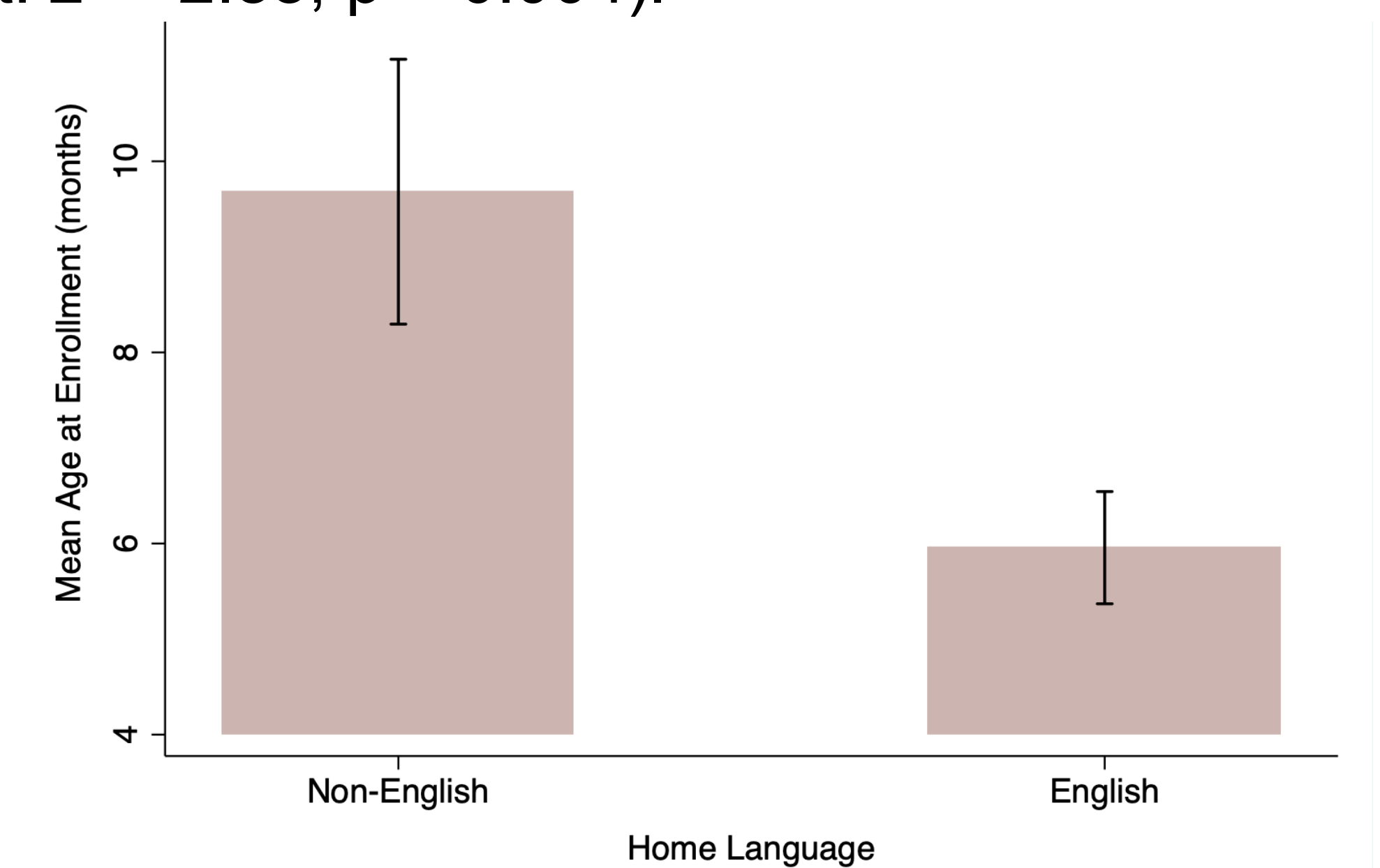
## Description of Sample

- The majority of children (n = 115, 72.33%) were from English speaking homes
- Average age of hearing loss diagnosis was 2 months (SD = 2.74); there was no effect of home language on age at hearing loss diagnosis.
- Hearing loss severity ranged from minimal to profound
- 92 children used hearing technology, and the etiology of hearing loss was known for 95 children (see below)
- 19 children in this sample (12%) had an additional diagnosed disability or health condition (e.g. ADHD, Failure to Thrive).

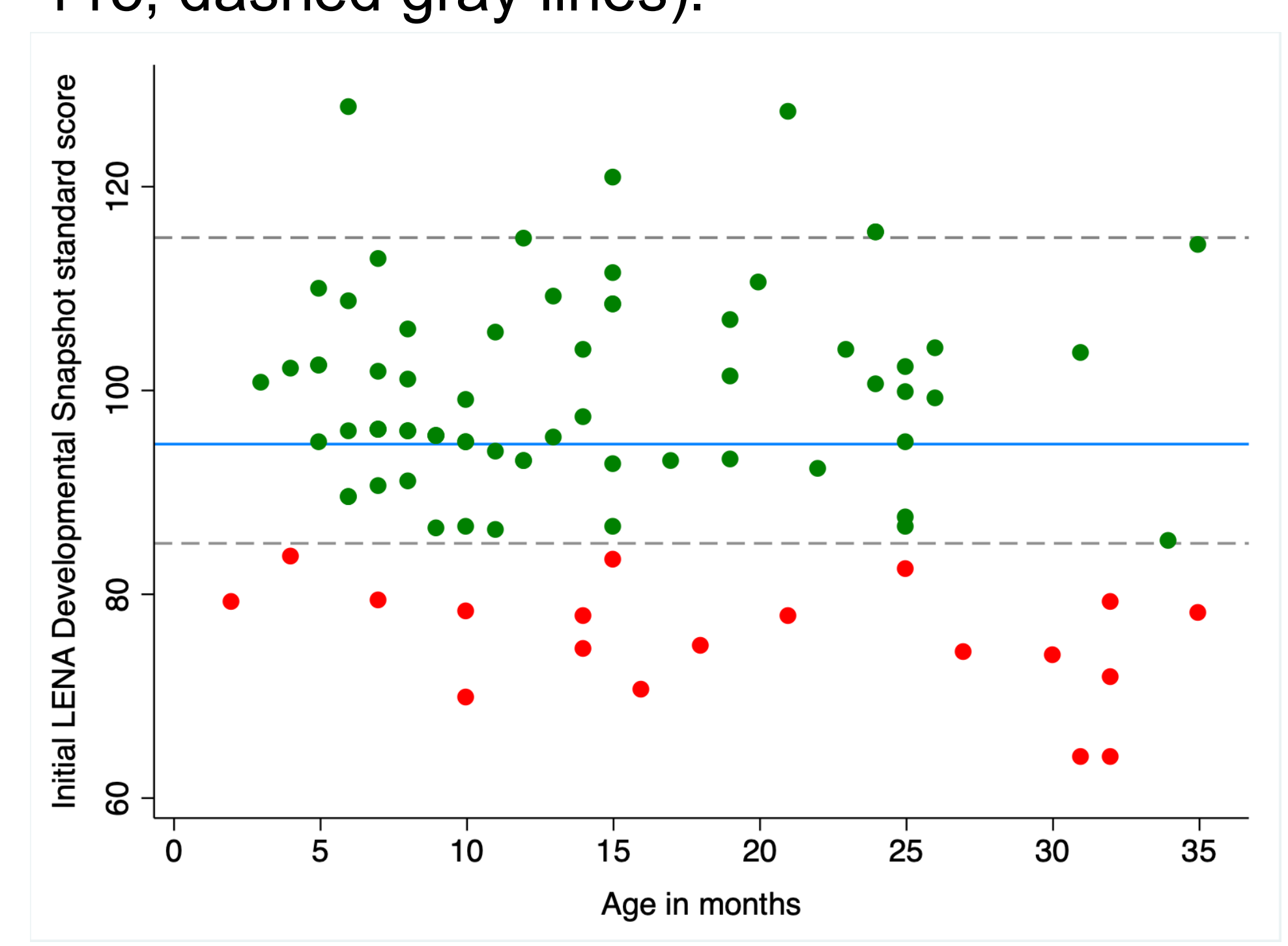


## Results

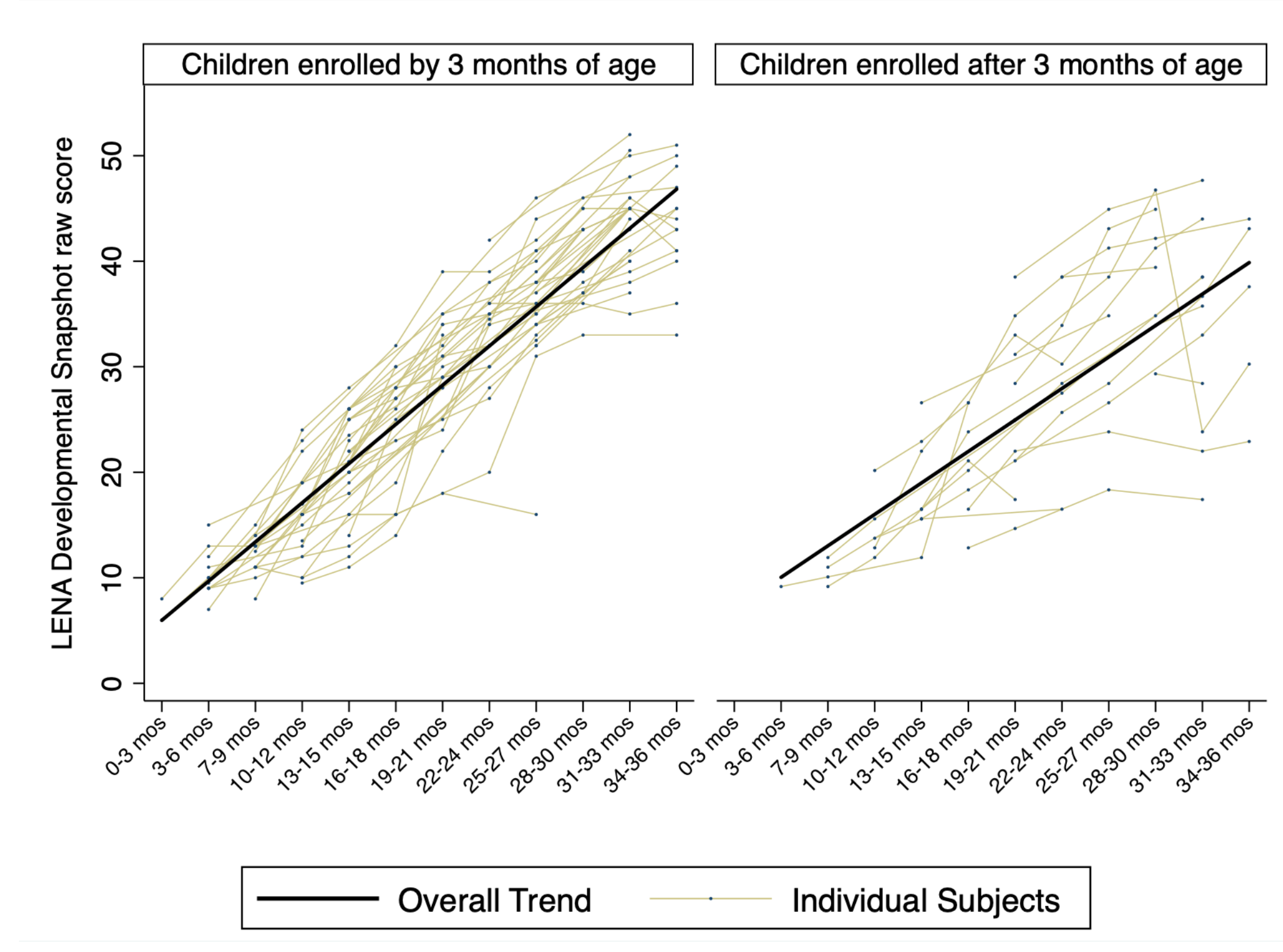
Overall, the average age at enrollment was 7 months (SD = 7.38). Enrollment age was significantly lower for children from English speaking homes (n = 115; M = 6 mos.; SD = 6.30) compared to children from non-English speaking homes (n = 52; M = 10 mos.; SD = 9.19) (Mann-Whitney U test: z = 2.88, p = 0.004).



At initial language assessment, the mean standard score of 94.74 (SD = 13.58, blue line) fell within the normative range (85 -115, dashed gray lines).



The average rate of language growth was 3.71 for children enrolled into early intervention by 3 months of age (median age); it was 3.25 for children enrolled after 3 months of age.



## Summary and Conclusions

- Within this sample, the average age of hearing loss diagnosis was aligned with the 1-3-6 recommendations <sup>6</sup>. However, age of enrollment into early intervention was slightly higher, due to the late enrollment by children from non-English speaking homes.
  - Next steps: Investigation of barriers to enrollment into early intervention for children with UHL.**
- For children from English-speaking homes, initial language standard scores fell within the range expected for children with typical hearing & development. However, 19 children (22%) scored below the average range at initial assessment.
- Children with UHL who were enrolled into early intervention by 3 months of age appeared to demonstrate accelerated growth compared to both children with TH (expected rate = 0.94/month <sup>5</sup>) and children with UHL who were enrolled after 3 months of age.
  - Next steps: Exploration of demographic and child characteristics that explain differences in language growth in young children with UHL.**
- Regardless of initial language assessment results, frequent and ongoing language monitoring is essential, particularly with assessments that allow for comparison with TH peers (via standard scores). This allows clinicians to identify
  - children who, despite gaining skills, do not develop at a rate that allows them to keep up or catch up with their TH peers (see green circle and blue diamond markers below)
  - children who close the gap (see red-27 triangles below)

