

# PRESCHOOL HEARING SCREENING

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Could Otoacoustic Emission screening reduce rescreen rates and allow earlier identification of hearing impairment?

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# BACKGROUND

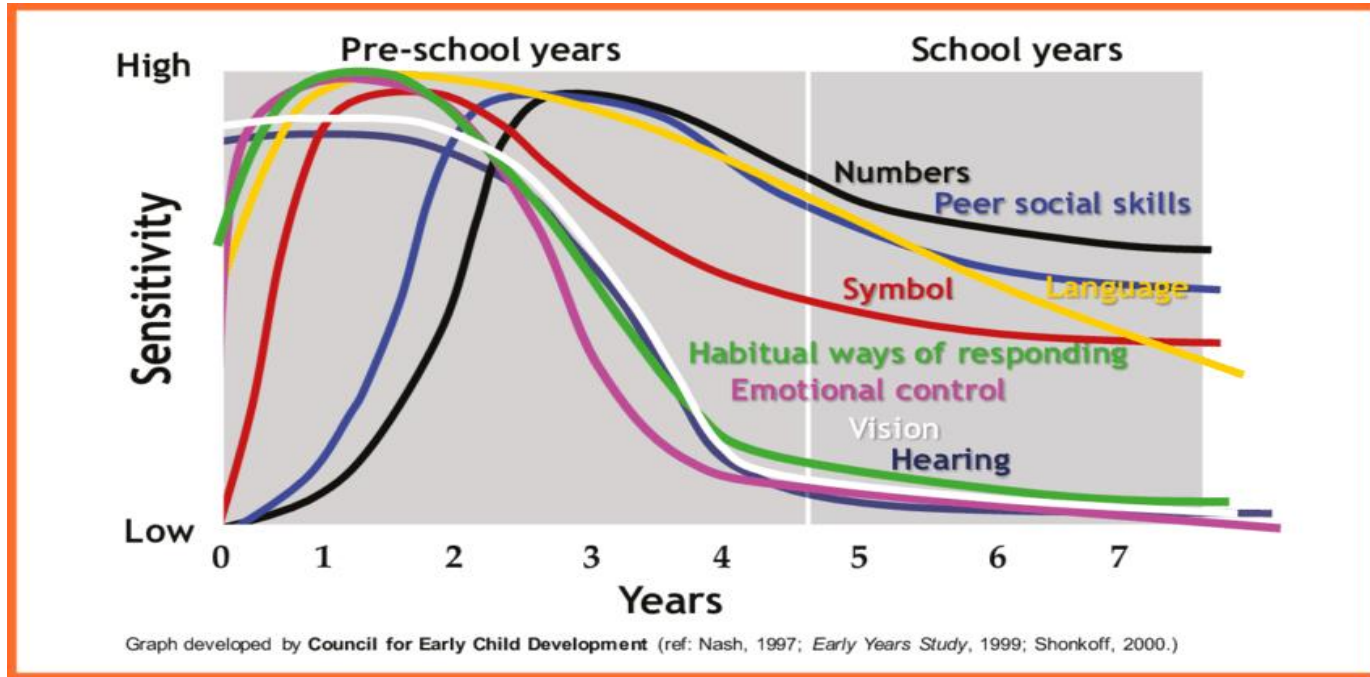
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# New Zealand Hearing Screening Program

1. Newborn Hearing Screen
2. Screen at risk children at 18 months
3. Preschool Hearing Screen at 4 years



# Hearing Screening



# Why Preschool Hearing Screening?

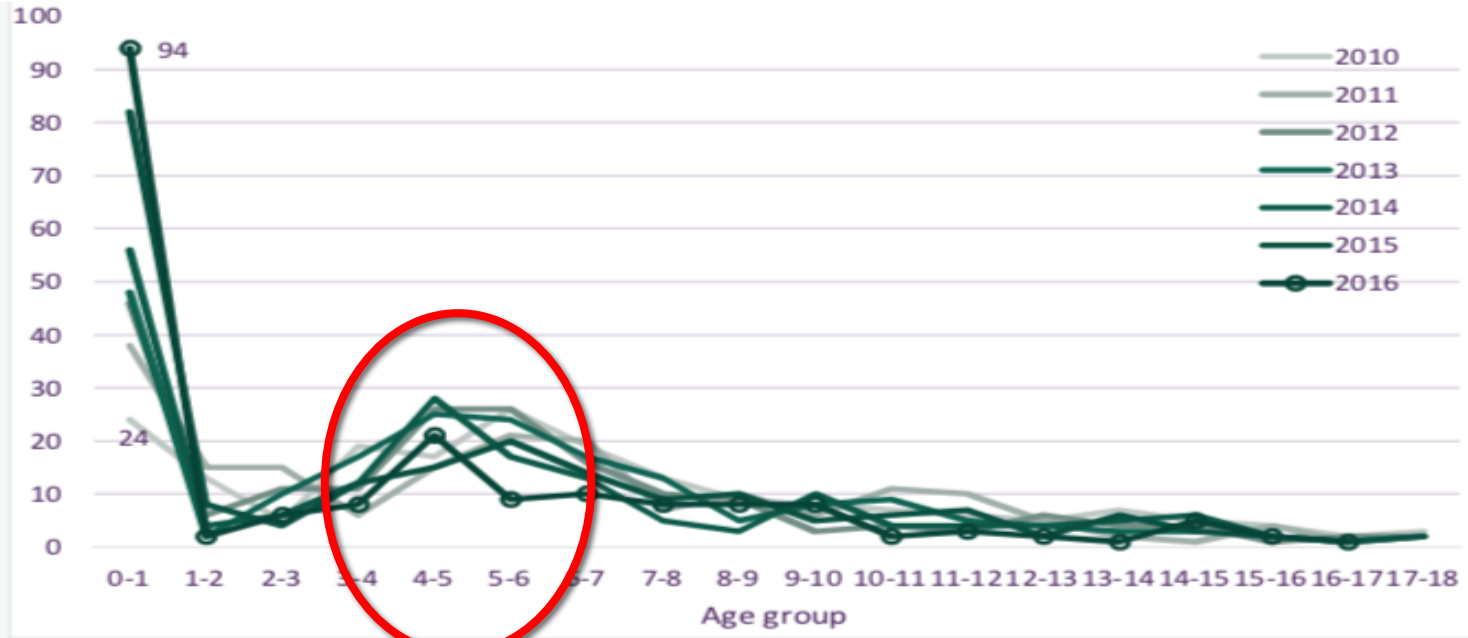
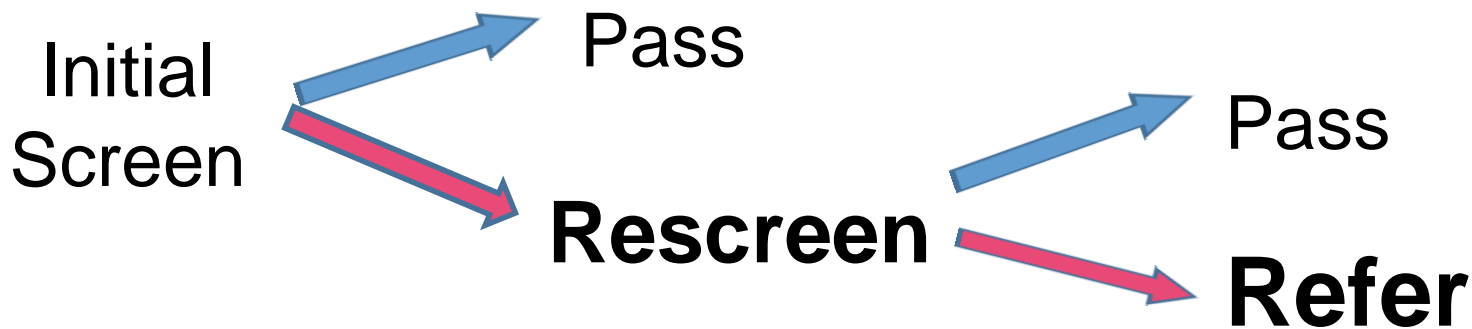


Figure 12: Number of children diagnosed by age (2010-2016)

# New Zealand Preschool Hearing Screening



# Limitations of current screening protocol

- High referral rates – around 5%
- High numbers unable to test
- Delayed identification of hearing impairment



# Pure Tone Screening - Limitations

- Time consuming
- Variable accuracy
- Dependent on development and compliance

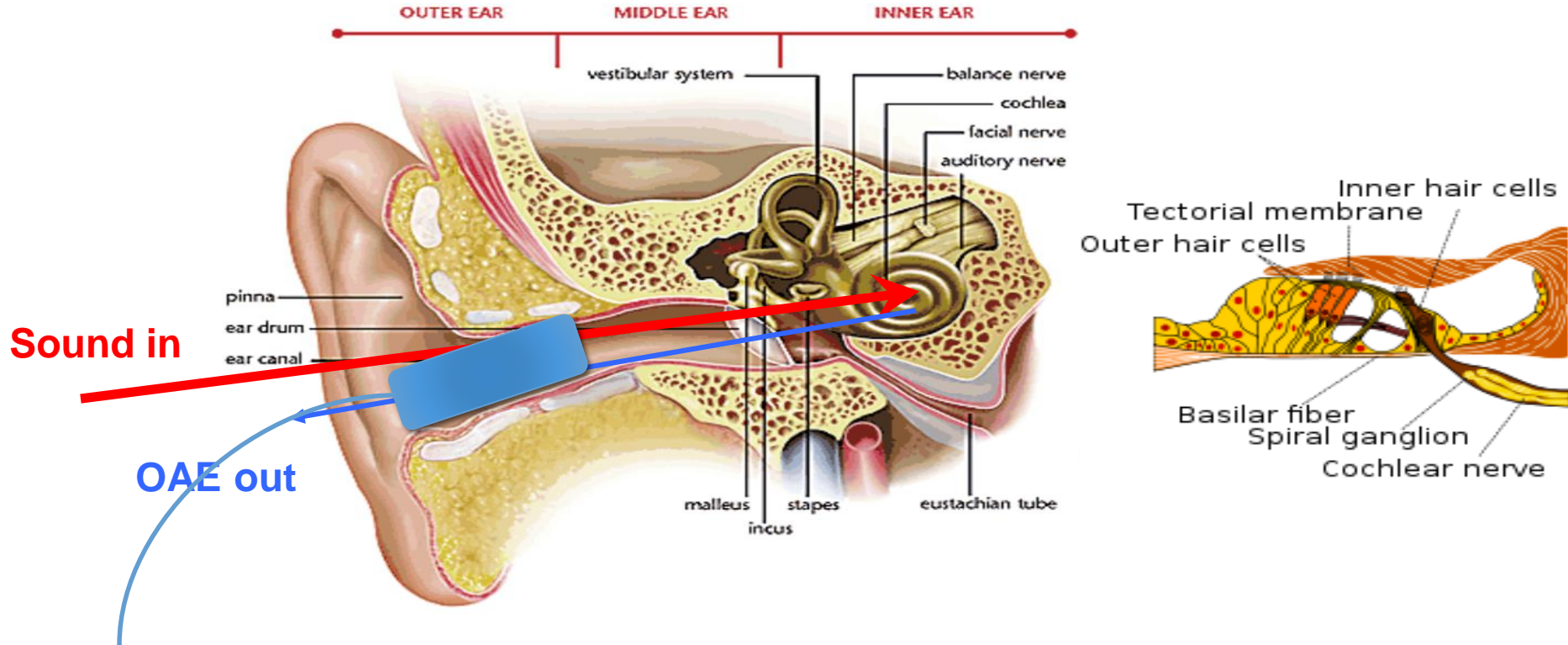




# OAE testing as an alternative



# Otoacoustic Emissions (OAEs)



# OUR STUDY

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# Aims

Could OAE screening...

Provide a non-inferior alternative to Pure Tone?

Reduce rescreen/referral rates?

Allow earlier identification of hearing impairment?

# Method

- 152 children recruited at B4 School Check
- Average age 4y3m (SD 3.3 months)
- All children had PT then OAE screen



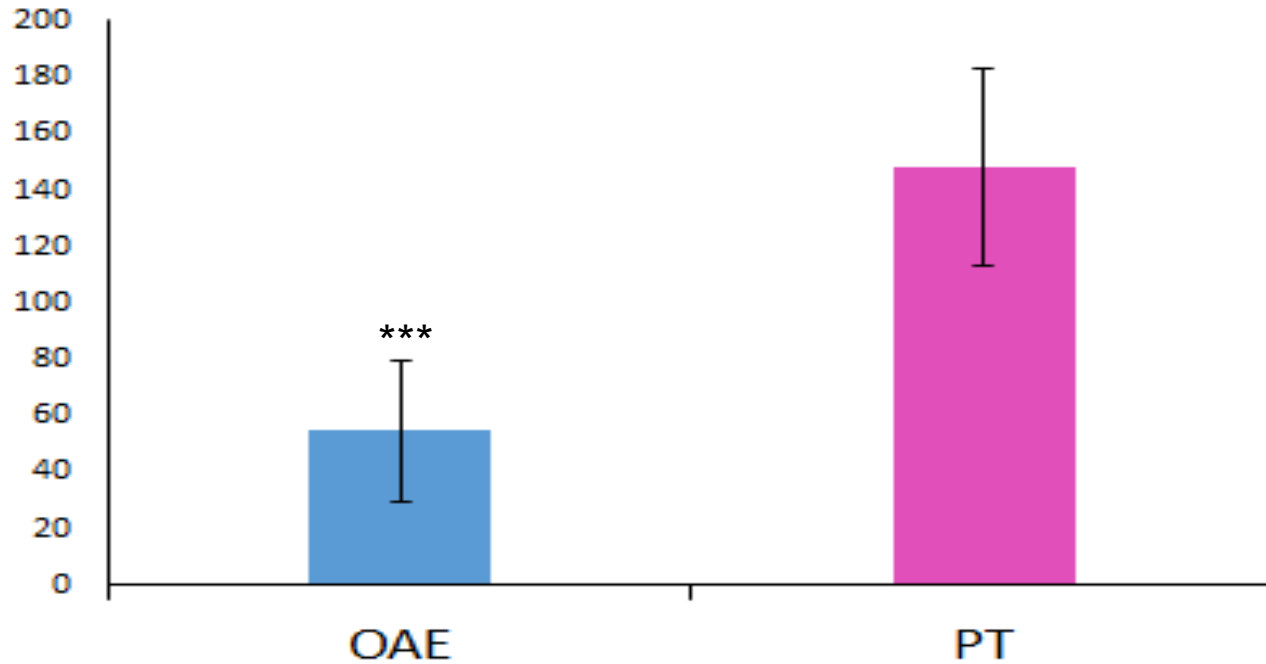
# RESULTS

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# OAE testing is feasible

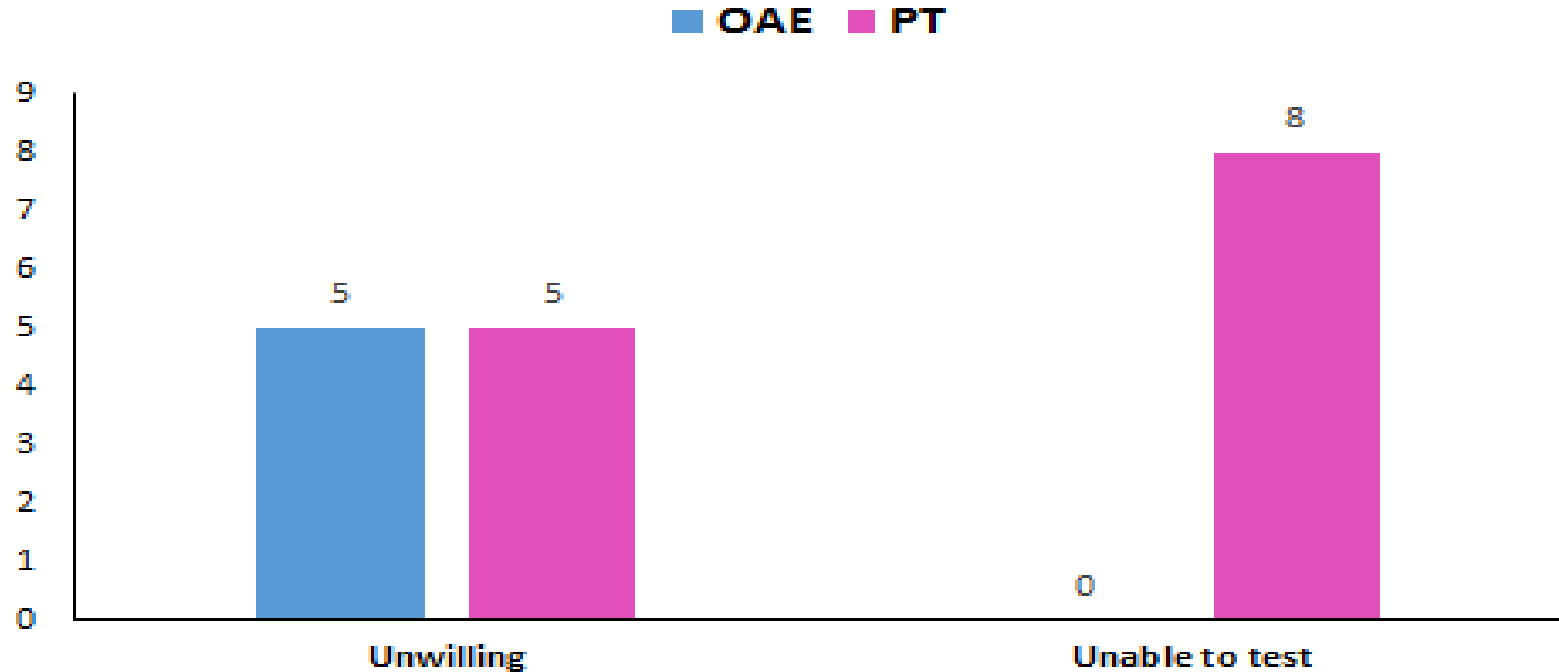


# OAE testing is faster than PT

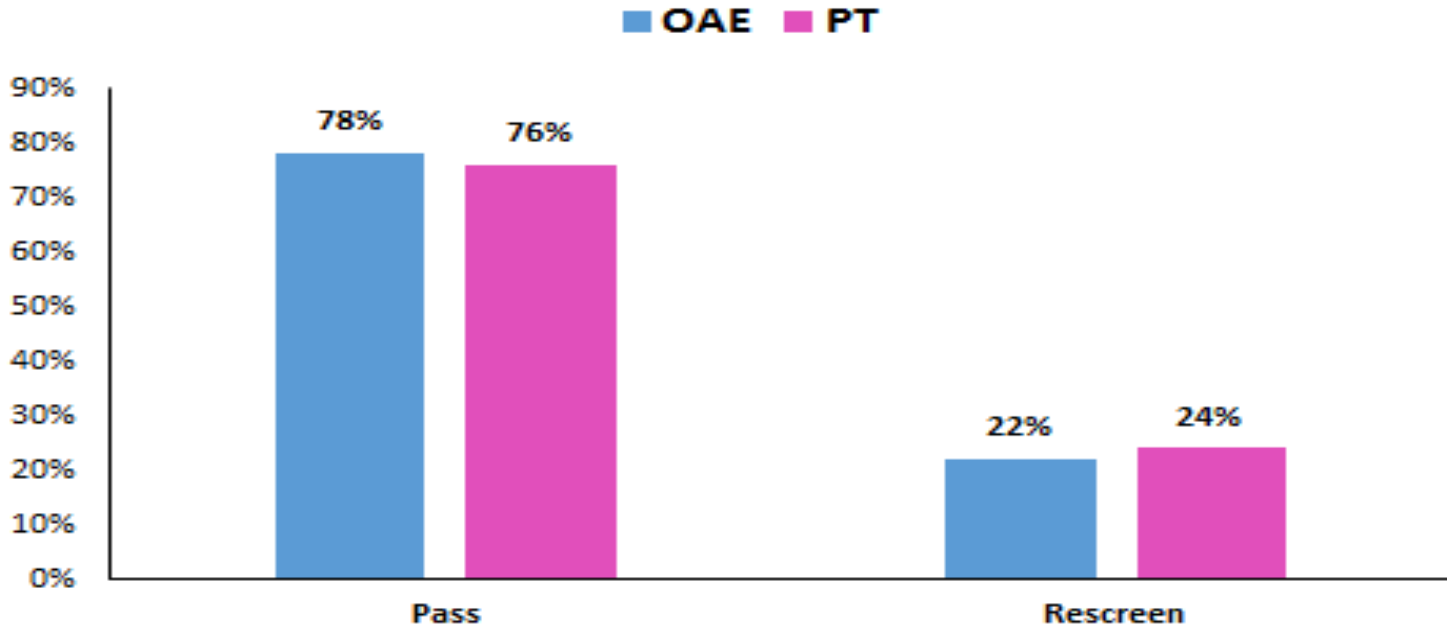




# OAE testing is well tolerated

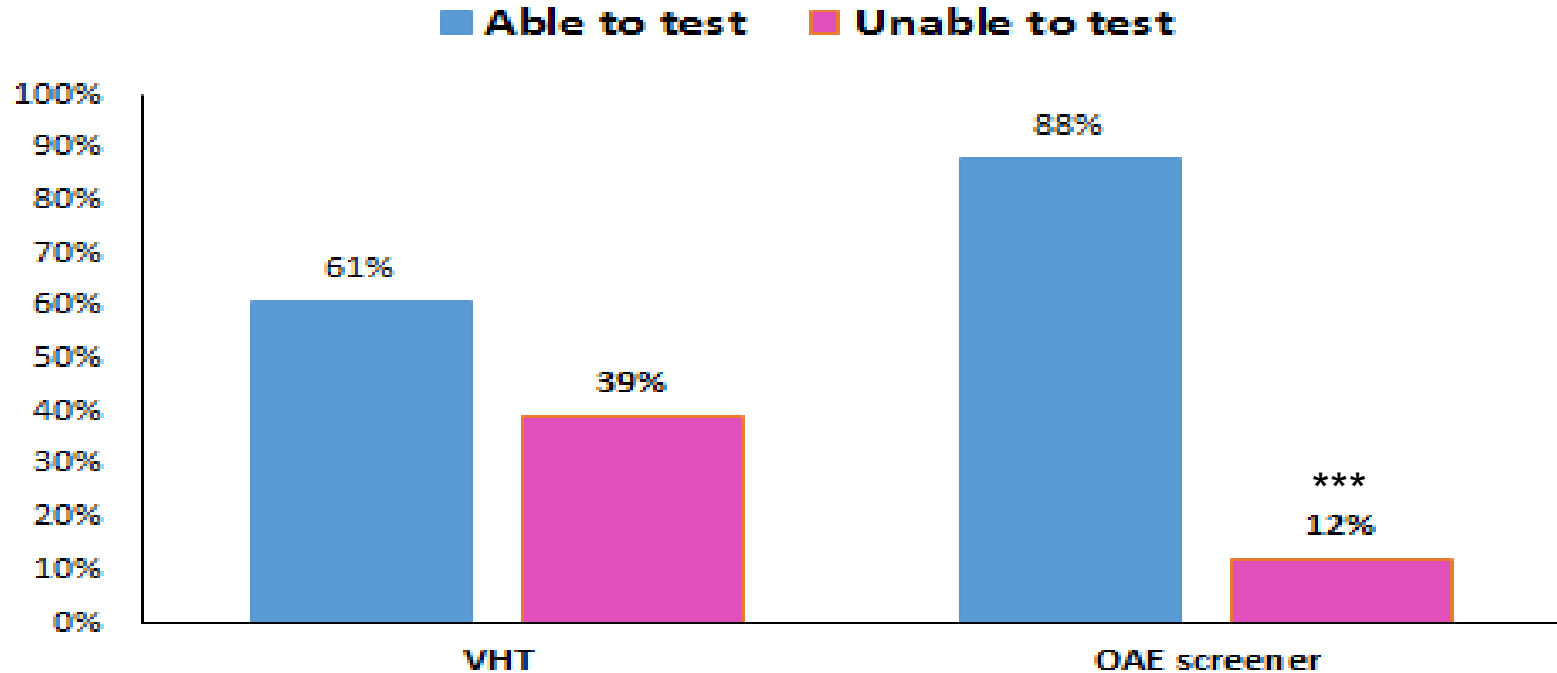


# OAE Outcomes are comparable to PT

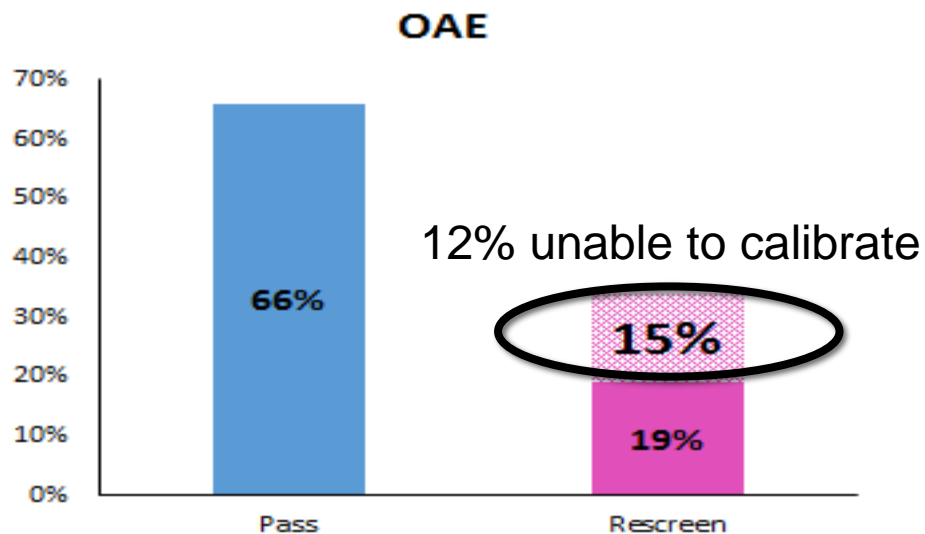
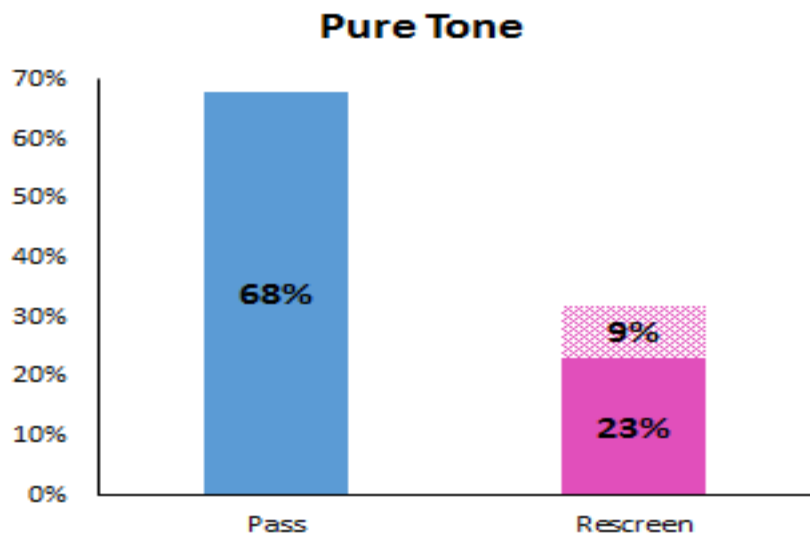


Concordance 88%

# OAE testing is limited by calibration errors



# OAE Screening Does Not Reduce Rescreen Rates



# IMPLICATIONS

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# OAE Screening is..

- Feasible
  - Fast
- Non-inferior
- Independent of development

## **However it is limited by....**

- Compliance
- Calibration difficulties

**OAE Screening did not change rescreen rates**

# Implications for future practice

- Adjunct or alternative?
  - Earlier screening?
  - Developmental Delay?
- Opportunistic community screening?

# With thanks to







Any Questions?