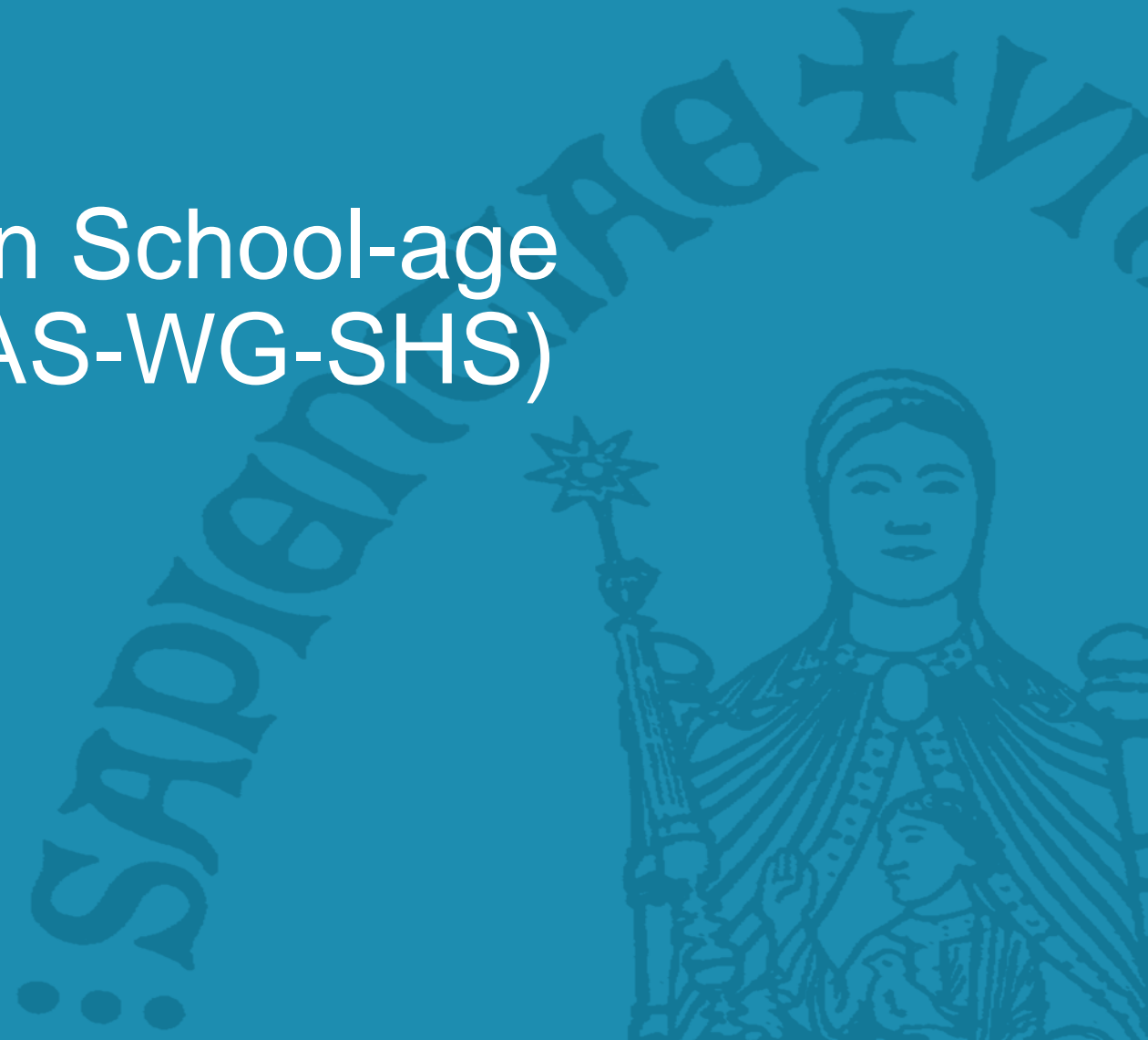


# EFAS Working Group on School-age Hearing Screening (EFAS-WG-SHS)

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Drs. S. Denys

September 28th, 2018 - Palavas



# Introduction

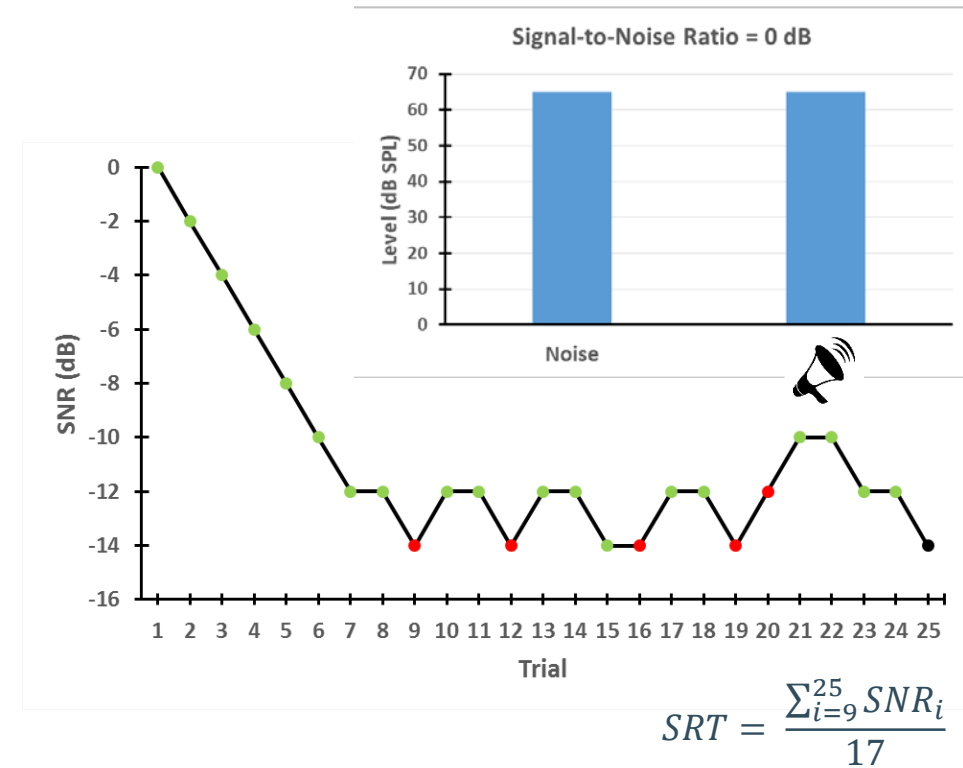
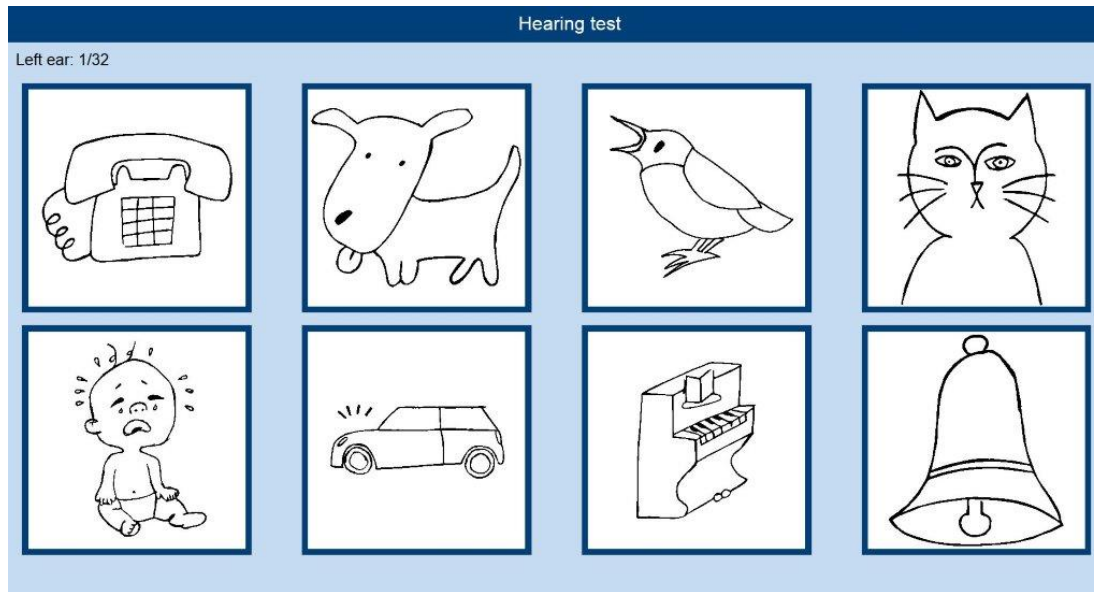
## Objectives of the working group

- 2 research questions
  - **Q1: investigation of more efficient methodologies for SHS (at school-entry, 5-6 yrs)**
    - => Sound Ear Check (SEC): language independent reference test
  - **Q2: investigation of incidence of HI at post-neonatal age**
    - => Evidence base for SHS
- Pilot projects covered with own resources, but possibly stimulant for EU-project

# Introduction

## Sound Ear Check

Adaptive self-test based on sound perception in noise on tablet



Acclimatization – bilateral training – test

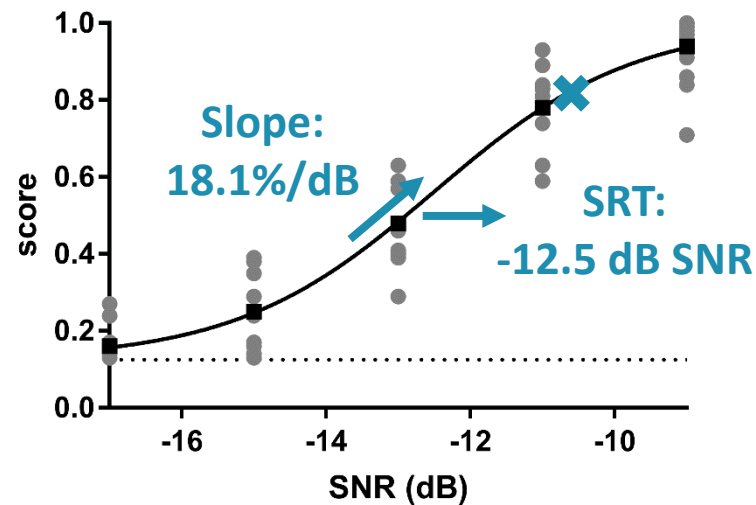
# What has been done?

- Development and validation of SEC in adults
  - *In close collaboration with partners from the Netherlands*
- Preparations of pilot project Q1
  - Meeting Leuven – November 15th, 2017
    - Inventory of country-specific NHS and SHS methods + referral rates
    - Agreements about protocol: cfr local ethical approvals
    - Agreements about data/publication
    - Agreements about use of materials
  - Preparation of measurement sets (2/partner): a.o. implementation of test in different languages, calibration,...

# What has been done?

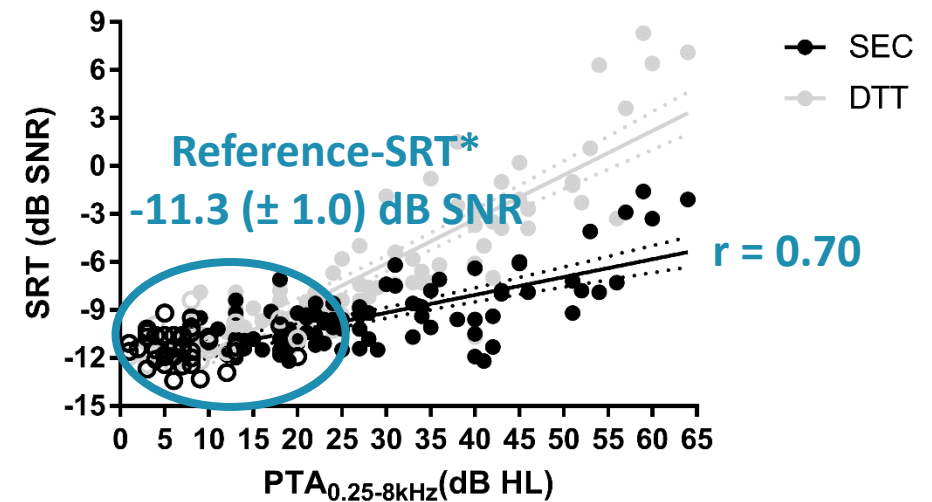
## Development and validation of SEC in adults

### Reference curve



N = 10 NH

### SRT-PTA relation

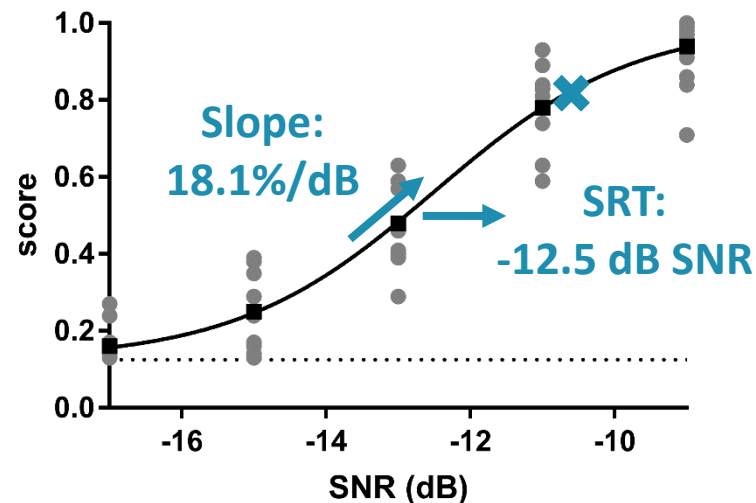


N = 40 NH + 88 HI

# What has been done?

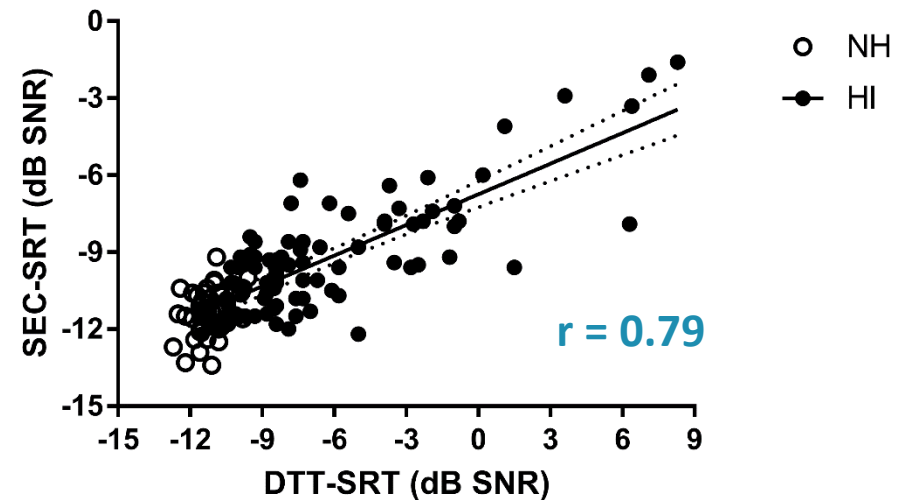
## Development and validation of SEC in adults

### Reference curve



N = 10 NH

### Relation with DTT-SRT



N = 40 NH + 88 HI

# What has been done?

## Development and validation of SEC in adults

- **Sensitivity and specificity**

HL criterion	Pass/fail criterion SEC (dB SNR)	Sensitivity (%)	Specificity (%)
$PTA_{1-4\text{kHz}} \geq 20 \text{ dB HL}$	-10.6	74	73
$PTA_{1-4\text{kHz}} \geq 40 \text{ dB HL}$	-9.6	77	79
DTT-SRT $\geq -9.5 \text{ dB SNR}$	-10.6	78	78

# What is planned?

- 2 pilot studies: currently focus on **Pilot 1**
  - Pilot 1: Feasibility and validation of SEC in children:
  - Pilot 2: SEC-test vs country-specific SHS-test



# What is planned?

## Pilot 1

- 4 partners: Flanders/Belgium, Netherlands, Slovenia, Romania
- SEC in 3 groups of children aged 5-6 yrs (N=20-25/group)
  - NH
  - (mild) conductive HL
  - (mild) sensorineural HL
  - => reference values & pass/fail criteria
  - => test precision
  - => power calculations for pilot 2
- Protocol is being finalized + measurement sets ready to be distributed

# Project partners

Country	Q1: pilot 1	Q1: pilot 2	Q2
Finland*			X
Israel*		X	
Turkey*		X	X
Romania	X	X	
Slovenia*	X	X	
Norway*		X	
Czech Republic*			
Ireland		X	X
Germany*			
Netherlands*	X	X	
Belgium/Flanders*	X	X	

\*present at Leuven meeting