

# Sentiero



## The reliable approach to audiometry for children

Recent epidemiological studies show a significant increase of hearing impairment in children. Depending upon the applied criteria the 'refer' rate varies but it shows to be significantly higher than the 'refer' rate in newborn hearing screening (NHS) programmes.

Speech and language acquisition delay is one of the most common neuro-development difficulties in early childhood. Early detection of hearing disorders is crucial for an early treatment.

Contrary to NHS, preschool hearing screening tests should provide more frequency-specific and quantitative information on hearing loss.

- **Sentiero** – a portable, handheld device offering physiological tests based upon OAE and psycho-acoustical tests such as MAGIC and speech audiometry.
- **Sentiero** – fast and reliable methods for assessing hearing loss based upon audiometric tests and extrapolated DPOAE I/O-functions.
- **Sentiero** – the child enjoys MAGIC. Different animal symbols on the display represent different stimulus frequencies. First the child selects an animal symbol on the screen which will trigger an acoustic stimulus. If the child is able to hear the sound it will touch the smiling animal symbol on the screen.

### The new idea:

Combining physiological (OAE) and psycho-acoustical (MAGIC, speech in noise) testings in a single device



- **Sentiero** – the child directly interacts with the audiometer. The MAGIC test is suited for pre-schoolers and young children from three years on. By using appropriate animal images as visual amplifiers the child's attentiveness is significantly enhanced. The child remains focused on the test by means of direct playful interaction which minimizes the risk of misinterpretation.
- **Sentiero** – short test time. MAGIC: Right after the last animal symbol is selected, Sentiero instantly determines the thresholds and generates the audiogram. Test time per ear on average is less than two minutes. DPOAE thresholds provide frequency specific and quantitative information about the hearing loss within a few minutes.
- **Sentiero** – scientifically approved. Recent studies (age 3 to 15) do confirm a close relationship between the threshold obtained with the Sentiero methods (MAGIC and DP threshold estimation) compared to the behavioral pure-tone threshold (clinical audiometer).





# Sentiero Features



- Handheld, touch-screen, battery operated
- Easy to use
- Multiple language support
- Multiple test methods
- Configurable preset and sort criteria
- Database for at least 1000 tests
- Data transfer to PC via USB or wireless
- Printing via PC
- Light weight and small dimensions

### Physiological test methods:

- Hearing threshold estimation (cochlear) from -10 to 50 dB HL using extrapolated DPOAE I/O-functions (patented)

- Optimized stimulus paradigm and statistical evaluation
- Stimulus level from 0 to 70 dB HL, 1 kHz to 8 kHz
- DPOAE Quick Test for a fast overview of outer hair cell integrity

### Psycho-acoustical tests:

- Multiple-Choice Auditory Graphical Interactive Check (MAGIC)
- Especially designed for children from three years on
- Pure-Tone Audiometer (EN60645-1 Class 4)
- Frequency range: 250 Hz to 8 kHz
- Stimulus level from -10 to 70 dB HL in 5 dB steps
- Standard headphone, ear-phone
- Speech and Speech-In-Noise Test (optional)
- Future extension to AEP (optional)



A comfortable probe-design for children and adults. Easy to place, easy to clean, easy to change. Comprising a wide range of affordable disposables. Built-in memory for calibration data.

## Sentiero is modular:

- DPOAE Hearing Threshold Estimation (patented)
- Multiple-Choice Auditory Graphical Interactive Check (MAGIC)
- Pure-Tone Audiometry (Class 4)
- Speech Test
- DPOAE Quick Test

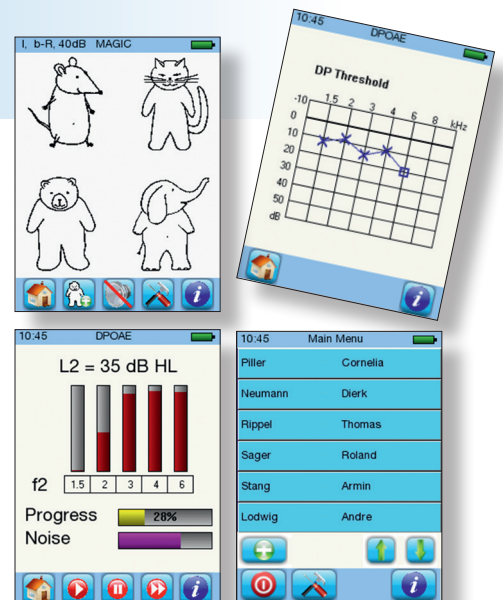
**DPOAE Threshold:** Hearing threshold estimation by means of extrapolated DPOAE I/O-functions provides frequency-specific and quantitative information on the hearing loss due to outer hair cell dysfunction. It is an objective test. No cooperation is needed.

**MAGIC (Multiple-Choice Auditory Graphical Interactive Check)** is a reliable audiometric test especially designed for younger children.

**DPOAE Quick Test** for a frequency specific, fast overview. The test parameters can be programmed to fit your needs.

**Pure Tone Audiometry** is still the gold standard method for assessing hearing loss. In Sentiero, it is available as IEC 60645-1 Class 4 audiometer.

**Speech recognition** in noise is one key skill in preschool and school. Therefore, Sentiero features a simple, game-style speech test, which is as easy to operate as MAGIC.



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### About PATH medical:

PATH medical is dedicated to develop and to use the best technology in order to provide innovative solutions in audiological diagnostics for all age and risk groups. In cooperation with leading universities, PATH medical supports basic research on new strategies and methods in audiology. The company focuses on the field of NHS tracking, objective and subjective audiological diagnostics,

including (pre)school hearing screening, adult hearing screening and consulting services.



We support  
Medecins Sans  
Frontieres on  
a long term basis.

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