WIDEX PEDIATRICS
Helping Them Soar.

Speaker Disclosure
Margaret Pikora, AuD

**Relevant Financial Relationships:**
- Is an employee of Widex USA and receive financial compensation.

**Relevant Nonfinancial Relationships:**
- There are no nonfinancial relationships.
Today’s Leaner Objectives

• After this course learners will be able to list three wireless communication options Widex offers that have specific design features for children.

• After this course learners will be able to define specific areas within Widex fitting software designed for pediatric hearing aid wearers.

• After this course learners will be able to identify 3 processing strategies in all Widex hearing aids that meet AAA pediatric guidelines.

AGENDA

1. WHY WIDEX FOR CHILDREN & TWEENS
   Review of WIDEX technology and features that will benefit the pediatric, tween, and teen population.

2. 2013 AAA PEDIATRIC GUIDELINES
   Compare WIDEX Technology to current AAA Pediatric guidelines for alignment of best practices.

3. WIDEX PEDIATRIC PORTFOLIO
   Review WIDEX products and services specifically designed for pediatric/tween and teens.
Prerequisite to Language Acquisition...

Access to Sound

Obstacles to Language Acquisition

- Decreased access to information
- Gaps in the inventory of sounds
- Difficulty producing sounds
Fitting Hearing Aids on Children is DIFFERENT from Fitting Adults

- Smaller, softer and growing ear canals
- Immature auditory system, lack experience of language redundancy
- Children are still developing speech and language
- Hearing is important for auditory self-monitoring

- Amplification is often fit with limited audiometric data
- Otitis media results in fluctuating hearing levels
- Hearing aids must have automatic adjustments
- LTASS at child’s ear will differ from LTASS at adults

REASONS TO CHOOSE WIDEX

1. MOST ACCURATE REPRODUCTION OF SOUND
   - 4 A/D Converters
   - 166 dB Dynamic Range
   - 113 dB SPL Linear Input

pure-link technology
REASONS TO CHOOSE WIDEX

1. MOST ACCURATE REPRODUCTION OF SOUND
   - 4 A/D Converters
   - 108 dB Dynamic Range
   - 113 dB SPL Linear Input

   UPPER INPUT LIMIT BY BEYOND 113dB SPL

   108 dB
   LINEAR INPUT
   DYNAMIC RANGE

   LOWER INPUT LIMIT BY BEYOND 5dB SPL

REASONS TO CHOOSE WIDEX

2. AUDIBILITY FOR SOFT SPEECH
   - Lowest Compression Threshold
   - Variable Speed Compression
   - Mixed & Temporal Cases

   Dynamic Range Compression =
   High threshold (or no threshold)

   Wide Dynamic Range Compression (WDRC) =
   Low threshold

   Enhanced Dynamic Range Compression (EDRC) =
   Really low threshold
REASONS TO CHOOSE WIDEX

Regulation time varies
- slow attack - fast release
- slow attack - slow release
- fast attack - slow release

InterEar Synchronization
- Algorithmic formulas and features
- Coordinated calculations between hearing aids

Sharing and exchanging of acoustical information:
1) IE TruSound Compression
2) IE Speech Enhancer
3) IE Feedback Cancelling
4) IE Zen
5) IE Partner Monitor
6) IE Volume Control
7) IE Program Shift

11/27/17
REASONS TO CHOOSE WIDEX

High Definition Locator

Real-Time InterEar Speech Enhancer

REASONS TO CHOOSE WIDEX

5 INNOVATIVE TOOLS FOR VERIFICATION

Embedded fitting and programming tools.

SENSOGRAM

Utilizes in-situ measurements and takes into account the effect of the earmold/shell, the size of the individual ear canal and the hearing loss.

SOUNDTRACKER

Displays a real-time analysis of the hearing aids by conducting a continual, instantaneous tracking of performance.

SPEECH TRACKER

Displays the hearing aid performance over time by showing the average output for continuous input signals (speech, speech in noise and/or noise only).
REASONS TO CHOOSE WIDEX

FLEXIBLE FITTING AND FINE-TUNING

FINE-TUNING SETTINGS
- Adjust gain in 1dB steps
- Soft, Normal, Loud Inputs
- View Compression Thresholds
- All above in all available channels

FEATURE SETTINGS
- Adjust Directionality, Noise Management, High Freq, Boost, and more additional features
- Binaural or Monaural Options

MORE CONNECTED

WIDEX-LINK™
- T-Coil
- T-Coil
- InterCar

TRANSMISSION TO BLUETOOTH DEVICES
REASONS TO CHOOSE WIDEX

BEYOND APP

- Widex BEYOND™ hearing aids offer direct streaming for the iPhone® and iPad®.
- The ease and flexibility of the BEYOND APP helps teenagers and older children keep up with their non-stop lifestyles.

PEDIATRIC FEATURES

- Find my Hearing Aids
- Sound Direction for the car classroom or at home
- Personal Program flexibility and ease of access
- R/L Volume hearing aids individually
- Equalizer adjust gain in low/medium/high independently
- Sound Mixer adjust ratio while streaming

REASONS TO CHOOSE WIDEX

- Z-Power Rechargeable Option
- Longest Streaming Time in the Industry

BEYOND Battery Life

- Average with 25% Direct Streaming
- Average without Streaming
REASONS TO CHOOSE WIDEX

AUDIBILITY EXTENDER

Frequency Transposition

Frequency Compression

WIDEX PEDIATRICS

REASONS TO CHOOSE WIDEX

Vision to provide perfect hearing

COMMITMENT TO INNOVATION

- Widex’ vision is to give children unlimited access to a world of sounds by providing perfect hearing. To do this, Widex produces some of the best and most advanced digital hearing aids in the industry. Widex values can be captured in five concepts:
  1) to put hearing impaired people first
  2) to be reliable
  3) to develop digital hearing aids with passion
  4) to cherish industry and team spirit
  5) to be pioneers
PRODUCT PORTFOLIO

- RIC / RITE / BTE
- Mild to Profound Hearing Losses
- Audibility Extender
- WidexLink – DEX Accessories
- Low Compression Threshold
- Fully Adaptive Multi-Channel Directionality
- Real-Time Speech Enhancer
- Lowest Battery Consumption
- Variable Speed Compression
- Various Fun Colors

RECEIVER OPTIONS

- RIC S
- RIC M
- RIC P
- RITE HP
- Wired RITE HP
- Passion
- Fusion / Fusion2
- Baby
DEX ACCESSORIES

At WIDEX connectivity doesn’t stop with an App. Our range of DEX communication solutions keeps wearers connected to a world of sound.

AAA PEDIATRIC GUIDELINES

<table>
<thead>
<tr>
<th>LOW DISTORTION</th>
<th>AUDIBILITY</th>
<th>IMPROVING SQ</th>
<th>FREQUENCY LOWERING</th>
<th>CONSISTENT USE</th>
<th>FREQUENCY SHAPING</th>
<th>FEEDBACK MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;The system should avoid unnecessary distortion.&quot;</td>
<td>&quot;The system should employ amplitude compression that affords the flexibility to enhance quality without increasing comfort for low-level inputs.&quot;</td>
<td>&quot;Hearing aids automatically switch between directional and omnidirectional modes depending on which mode produces the signal with the greater signal-to-noise ratio should be considered.&quot;</td>
<td>&quot;There is evidence to support the theory that hearing aids may improve hearing aid and recognition of high frequency consonants for children with high frequency hearing loss.&quot;</td>
<td>&quot;System should allow sufficient frequency shaping to meet normative requirements of the hearing loss configurations.&quot;</td>
<td>&quot;Use feedback cancellation (which does not reduce the gain before the noise that applies in the absence of feedback oscillation) in preference to feedback systems that operate by reducing gain...&quot;</td>
<td>&quot;Use feedback cancellation (which does not reduce the gain before the noise that applies in the absence of feedback oscillation) in preference to feedback systems that operate by reducing gain...&quot;</td>
</tr>
<tr>
<td>- High level linear dynamic range 110 dB SPL (Dynamic range of 100 dB SPL, at least 10 dB difference).</td>
<td>- Noise level is 50 dB SPL at 95 dB SPL.</td>
<td>- Threshold of hearing is defined as 25 dB HL.</td>
<td>- Threshold of hearing is defined as 25 dB HL.</td>
<td>- Threshold of hearing is defined as 25 dB HL.</td>
<td>- Threshold of hearing is defined as 25 dB HL.</td>
<td>- Threshold of hearing is defined as 25 dB HL.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FOCUS DIRECTIONALITY</th>
<th>DIRECTIONALITY IMPROVEMENT</th>
<th>NOISE REDUCTION</th>
<th>COMMUNICATION ATTENUATION</th>
<th>NOISE REDUCTION</th>
<th>COMMUNICATION ATTENUATION</th>
<th>NOISE REDUCTION</th>
<th>COMMUNICATION ATTENUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
<td>&quot;Hearing aids should be designed to enhance directional hearing in quiet and noisy environments.&quot;</td>
</tr>
<tr>
<td>- Directional microphone systems.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
<td>- Noise reduction is expected to be greater than 10 dB.</td>
</tr>
</tbody>
</table>

WIDEX PEDIATRICS