Phonak solutions for children with unilateral hearing loss
Hearing instruments, Roger Focus and CROS
Understanding the UHL challenge

Unilateral hearing loss (UHL) affects 3 out of 100 school-aged children.¹ Researchers have also found that up to 40% of children with UHL fail one or more grades and/or require additional assistance in the classroom, despite having normal cognitive abilities.² Since such kids have to make a constant effort to listen, yet still cannot always hear the teacher, they can become withdrawn and therefore be at greater risk of social and emotional difficulties.³

UHL is defined as normal hearing in one ear and a hearing loss in the other, which can range from mild to profound. Meanwhile single sided deafness (SSD), a subset of UHL, is defined as a condition where a child has unaidable hearing in one ear and receives no clinical benefit from amplification in that ear, and normal hearing in the other ear.¹ “Unaidable” is defined as profound sensorineural hearing loss, very poor word recognition, and/or marked intolerance for amplified sounds. UHL can result from of a number of different conditions, from physical ear damage, mumps, head trauma, and inner ear problems.

Youngsters affected by UHL or SSD experience difficulties hearing in noise and localizing sounds around them, impacting their safety. And the greater the hearing loss and the more challenging the listening situation, the more difficulties a child with UHL can experience - the effects being most detrimental in challenging environments such as noisy classrooms.

This guide explores the Phonak solutions available for children diagnosed with UHL.

“My daughter Halie recently got the Phonak CROS and it has truly been life changing! The day she received them was amazing. Her doctor placed them in her ear and I then whispered in her left ear “I love you”. She turned her head and said “I love you too, mom”. This aid has given her confidence back.”

Angie Kitchens
Current solutions for the management of UHL

**Hearing instrument solutions**
According to the American Academy of Audiology’s (AAA) Clinical Practice Guidelines on Pediatric Amplification,4 “children with aidable unilateral hearing loss should be considered candidates for hearing instrument amplification in the impaired ear due to evidence for potential developmental and academic delays.”

**CROS**
For children with SSD the AAA guidelines recommend the use of Contralateral Routing of Signal (CROS) or bone conduction devices, “depending on the child’s age and ability to control their environment.”

**Roger or FM technology**
The AAA’s guidelines recommend a wireless microphone system such as Roger or FM technology, “may be preferable in classroom situations to the CROS arrangement.” This solution can provide even more benefit than a CROS in classroom situations where an increased signal to noise ratio is required.

These recommendations are described in more detail in separate UHL-related studies.5-8
It is recommended that children with an aidable UHL should be considered candidates for hearing instrument amplification.

Exclusively designed for children, Phonak Sky Q offers a solution for every hearing loss. Phonak Sky Q comes in four different models and three performance levels (Premium 90, Advanced 70, and Standard 50).

Driven by the processing power of Phonak Quest technology, Phonak Sky Q also features SoundRecover. This proprietary non-linear frequency compression algorithm is proven to provide children with maximum access to high-frequency speech sounds, essential for developing speech and language. Another key challenge for children with UHL is hearing in noise. Features such as UltraZoom and WindBlock enable improved hearing in difficult listening situations. Then simply add a Roger receiver to a Phonak Sky Q hearing aid and you have the ultimate listening performance in a noisy classroom.

All Phonak Sky Q models are resistant to water, sweat and dust (IP67*), making them the perfect companions for active explorers. They can also be used in combination with Phonak CROS for children with more significant UHL losses.

"Concerning hearing instrument acceptance, traditional amplification may be successful with UHL children if the hearing sensitivity between the two ears is not significantly large."


* IP67 indicates that the hearing aid is water resistant and dust tight. It survived immersion in 1 m of water for 30 minutes and 8 hours in a dust chamber as per the IEC60529 standard. No traces of dust were evident within the housing.
CROS technology

The AAA recommends Contralateral Routing of Signal (CROS) or bone conduction devices for children with severe or profound unilateral hearing losses and normal hearing in the other ear, or Single Sided Deafness.

The Phonak CROS portfolio consists of cosmetically attractive wireless transmitters that are suitable for children with an unaidable hearing loss on one side. These transmitters can be combined with any Phonak Quest or Spice+ wireless hearing instrument, including Phonak Sky Q, to create a comfortable and effective CROS system.

- Cable-free – 100% wireless audio transmission
- Risk-free – no surgery needed
- Versatile – compatible with a large range of wireless Phonak hearing instruments and accessories
- Flexible – range of styles, retention options and attractive colors
- Convenient – quick and easy fitting
The audio signal is sent wirelessly to the receiver, a wireless Phonak hearing instrument, worn on the better ear. The robust transmission protocol ensures that the signal remains stable at all times, free from disturbing interference and without the need of cables or audio shoes.

“Following a trial period, the digital CROS hearing instruments provided significant improvements in fixed-intensity speech recognition in noise performance and subjective ratings of participants relative to an unaided condition.”

Style meets substance

The Phonak CROS portfolio offers discreet and cosmetically appealing models in a variety of styles and colors.

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<th>Phonak CROS BTE</th>
<th>Phonak CROS(^a) the smallest option</th>
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<td><strong>CROS Retention</strong> – perfect for quick and easy demonstration during fitting</td>
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<td><strong>CROS SlimTube</strong> – offers a secure fit while keeping the ear canal completely open</td>
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<td><strong>CROS Tip</strong> – custom made solution designed specifically for Phonak CROS BTEs</td>
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\(^a\) IP57 indicates that the device is water resistant and dust protected. It survived immersion in 1m of water for 30 minutes and 8 hours in a dust chamber as per the IEC60529 standard.

\(^b\) IP67 indicates that the device is water resistant and dust tight. It survived immersion in 1m of water for 30 minutes and 8 hours in a dust chamber as per the IEC60529 standard. No traces of dust were evident within the housing.
Wireless microphone technology

According to the AAA’s pediatric guidelines, children with unilateral deafness may be better served by a wireless microphone system – such as Roger or FM – than a CROS arrangement when listening in class. This is due to the increased signal-to-noise ratio a wireless microphone system can achieve.

Focus on performance

Roger Focus is a discreet and highly comfortable behind-the-ear receiver, which the AAA recommends should be fitted to the normal hearing ear of children with UHL or SSD.

It features a SlimTube, a volume control, and uses a 312 battery. The perfect companion for active explorers, it is also resistant to water, sweat and dust.

- Highly discreet
- Extremely light
- Usable out of the box (no programming required)
- One-click microphone connection
- Volume control
- Water, sweat & dust resistant (IP57*)
- 17 color options
- Customizable with 4 SlimTubes & 3 open dome sizes

Roger digital technology surpasses all of today’s existing FM and digital systems, offering a breakthrough in signal-to-noise ratio and eliminating technical complexity once and for all.

Zero hassle
Nothing is easier to use than Roger. There are no frequencies to program and manage, and devices are connected with a single click.

* IP57 indicates that the device is water resistant and dust protected. It survived immersion in 1 m of water for 30 minutes and 8 hours in a dust chamber as per the IEC60529 standard.
“Because we know children with UHL have the greatest difficulty in noisy situations and at a distance, increasing the signal-to-noise ratio is clearly an advantage for them in academic situations and may be beneficial in listening environments outside of school.”


Speech-in-noise results for 15 children using Roger Focus vs no device

**Maximum performance**
Speech-in-noise testing revealed an average improvement of 53% with Roger Focus compared to no Roger (see graph), using BKB-SIN word lists, with speech presented at 60 dBSPL and noise at 65 dBSPL. Note that participants 2, 4, 12 and 14 achieved almost perfect scores when Roger Focus was introduced versus 0% with ‘no device’.

**Wearable comfort**
Even the best hearing technology is useless if a child does not wear it. Roger Focus is light and comfortable, plus with four SlimTubes and three dome options available, you can customize this solution to suit every young listener.

**Full compatibility**
Roger Focus can easily be used alongside other types of classroom technology. It has been designed such that it will not interfere with any systems running on 2.4 GHz. It is also fully compatible with the Roger inspiro teacher microphone, meaning a teacher can use Roger inspiro to transmit speech simultaneously to all Roger, FM and soundfield listeners.

Phonak solutions for children with unilateral hearing loss
Roger compatible microphones

Whatever a child’s particular listening needs are, there is a Roger microphone to match, whether used with Roger Focus, or a receiver attached to a Phonak Quest hearing aid such as Phonak Sky Q.

**Roger inspiro**
Roger inspiro is a durable teacher microphone that is already used in thousands of classrooms around the world. It offers a one-click connection to receivers, simplified menus, and programmable shortcut keys.

*Used by: teachers, parents of young children.*

**Roger Pen**
The inconspicuous Roger Pen enables young listeners to hear and understand speech in loud noise and over distance. It features fully automated microphone settings and can be used alone or alongside other Roger Clip-On Mics and Roger Pens for communication between multiple speakers. It also features wideband audio Bluetooth for cell phone calling, an audio input for listening to multimedia, and TV connectivity.

*Used by: children, teenagers, and young adults who use Bluetooth devices.*

**Roger Clip-On Mic**
The Roger Clip-On Mic packs industry-leading Roger speech-in-noise performance into a discreet shirt-worn device. It can be used as a standalone microphone or alongside other Roger Clip-On Mics and Roger Pens. It also includes an audio input for listening to multimedia, and TV connectivity.

*Used by: parents, family, friends (not recommended for classroom use).*
Focus on fun

When it comes to bringing a smile to a child’s face, there’s nothing quite like color. It’s with this in mind that Roger Focus is offered in no less than 17 colors.

Meet Leo

Introducing Leo the lion, our friendly new pediatric mascot. This adorable lion cub is the perfect way to introduce hearing solutions to children. Learn more at www.phonakpro.com/leo
Evidence

Your full guide to the evidence referenced in this brochure


9 PARC-SEDOL Experimental Roger Laboratory (2014). Roger Focus Validation, Phonak Field Study News.
We are sensitive to the needs of everyone who depends on our knowledge, ideas and care. And by creatively challenging the limits of technology, we develop innovations that help people hear, understand and experience more of life's rich soundscapes.

Interact freely. Communicate with confidence. Live without limit. Life is on.

www.phonakpro.com