

DIGISONIC® SP COCHLEAR IMPLANT SYSTEM

SOUND PROCESSOR

saphyr®

neo collection



AN INDIVIDUAL DECISION

WHO IS SUITABLE FOR COCHLEAR IMPLANTS?

Hearing is one of the body's most complex processes. It involves the inner ear, the outer ear and a variety of nerves that process the sound and transform it into signals sent to the brain. When there is a problem with any part of this process, it results in some degree of deafness.

While traditional hearing aids are designed for people who suffer from mild to severe perceptive hearing loss*, a cochlear implant is recommended for those suffering more severe or profound perceptive deafness, or even total deafness. Very often, people who cannot communicate using traditional hearing aids can benefit from a cochlear implant.

Unlike traditional hearing aids, cochlear implants bypass the damaged areas of the ear. They capture the sound, process it and electrically stimulate the auditory nerve. In comparison, a traditional hearing aid amplifies the sound, which can then be detected by the ear – even if it is damaged. However, if the ear damage is too severe, amplifying sound with a traditional hearing aid will have no effect. The cochlear implant overcomes this by sending the signal directly to the auditory nerve.

HOW DO I GET A COCHLEAR IMPLANT?

Most people start by seeing an ENT doctor, who makes a referral to a hearing centre with a cochlear implant unit. The implantation team, including a surgeon and a fitting audiologist, conduct a thorough assessment of your hearing to find out if a cochlear implant system is the right solution for you.

Research and clinical experience in the field of cochlear implantation have made remarkable progress over the past thirty years. Today a cochlear implant is a safe and proven procedure that has helped to improve hearing and quality of life for thousands of people around the world.

Discover more on how a cochlear implant system functions





HOW DOES A COCHLEAR IMPLANT WORK?

A cochlear implant consists of two parts: the external sound processor and the internal implant.

- 1 The sound processor captures and digitises sound.
- 2 The antenna connects the sound processor to the implant receiver and transmits the digitised sound. It is magnetically attached to the skin.
- 3 The implant receiver is also magnetic and is fitted under the skin directly under the antenna. It transforms the digital information into an electronic signal that is sent on to the cochlea.
- 4 The electrode array is inserted in the cochlea. Each electrode on the array corresponds to a signal frequency.
- 5 The auditory nerve is stimulated when a captured signal frequency passes through the corresponding electrode.
- 6 The brain receives the sound transmitted via the auditory nerve.

WHAT CAN I EXPECT FROM A COCHLEAR IMPLANT?

A cochlear implant has been shown to improve the quality of life for people suffering from severe to total deafness**. It enables better speech understanding in all types of sound environments, which helps users to better manage the challenges of daily life.

With a cochlear implant, users say they can once again speak on the phone, make a doctor's appointment, watch television, take part in conversation during a meal, hear an alarm, share secrets, enjoy being with children or simply enjoy the sounds of nature – and all without having to guess what is being said or happening. People with an implant also say that they feel safer because they can hear and react to what is going on around them.

***Perceptive deafness (or sensorineural hearing loss):** Perceptive deafness is caused by problems with the inner ear or nerve pathways. Although sound information transmitted by the eardrum and the ossicles to the inner ear is normal, this information transmitted by neural pulses cannot be sent to the brain.

**Data from Neurelec 2009.

INTRODUCING saphyr® neo collection SOUND PROCESSOR

The Saphyr® neo collection sound processor is designed to provide clear and comfortable speech understanding.

New features of the Saphyr® neo collection include

- Two new **Sound Processing Systems**
Crystalis^{XDP} sound processing system
Voice TrackTM noise reduction technology.
- **Wireless Capabilities** – use of modern transmission technologies to provide extra help in very difficult listening situations, such as the phone and the television.
- Functional **Design** – improved user comfort and a range of colours to match every personality.



Watch Saphyr® neo collection video:





CRYSTALIS^{XDP} DESIGNED FOR A CLEAR AND COMFORTABLE SOUND

The new Crystalis^{XDP} sound processing system is designed to preserve speech in all sound environments and transmit the best possible speech signal to the user.

Compared to existing sound processing systems, Crystalis^{XDP} has been proven to provide better speech understanding in both quiet and noisy* environments. But Crystalis^{XDP} goes further by also aiming to make hearing as comfortable and effortless as possible.

Crystalis^{XDP} amplifies quiet sounds so that they become clearer and more audible. This enables softer sounds like the wind rustling through the trees to be

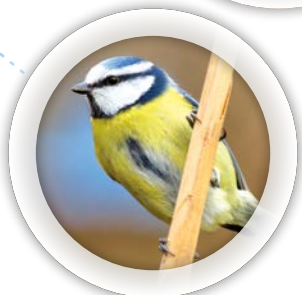
heard more easily. At the same time Crystalis^{XDP} compresses loud sounds, so that these are softened and more pleasant to hear. This type of sound can include noisy traffic from the street or high heels walking down a corridor.

The ultimate aim of Crystalis^{XDP} is for users to enjoy a clearer, crisper and more comfortable impressions of the sound picture with increased tolerance to the variations of sound levels and listening environments. In other words, Crystalis^{XDP} strives to make listening easier and more effortless.

*Segovia-Martinez, M., Philippon, B., Gnansia, D. (2013). Design and effects of post-spectral output compression in cochlear implant coding strategy. Conference on Implantable Auditory Prosthesis, July 14-19, Lake Tahoe CA, USA.

130
120
110
100
90
80
70
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30
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0

AUDIBLE SOUND LEVELS WITH Saphyr[®] neo collection, IN DECIBELS



BETTER COMPREHENSION OF SPEECH IN NOISE*

A number of studies have been conducted into the performance of Crystalis^{XDP}. These have shown a better comprehension of speech with background noise.

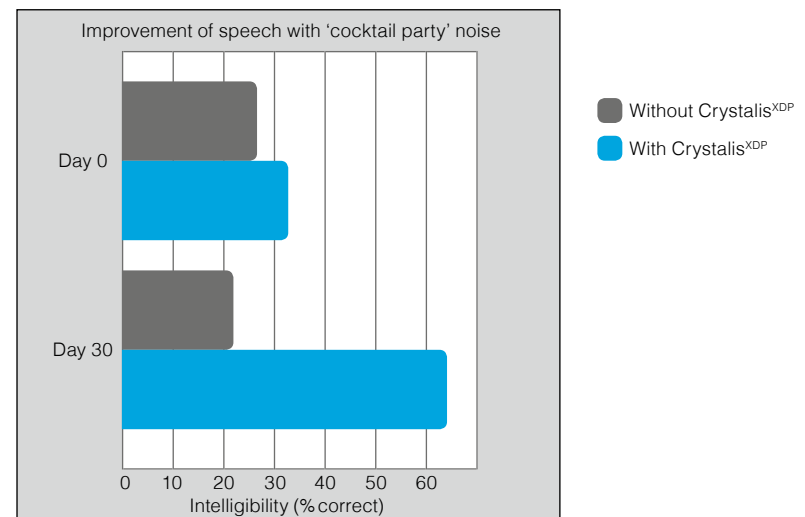
PREFERRED BY USERS

In user tests, the majority of users of Saphyr[®] neo collection indicated a preference for the Crystalis^{XDP} sound processing system compared to their previous system. These tests included both objective audiometric measurements and subjective evaluations.

OBJECTIVE MEASUREMENTS

The objective measurements were conducted in a setting that tested speech recognition with background noise. The background noise in the test situation was similar to a social gathering or cocktail party and was referred to as "cocktail noise". Testing was carried out immediately after activating Crystalis^{XDP} and again 30 days later.

These objective measurements showed an immediate improvement with Crystalis^{XDP} and a **significant** improvement of speech with cocktail noise (close to 20% better) measured 30 days later.



SUBJECTIVE EVALUATION

In the subjective evaluations, users tried the Crystalis^{xDP} sound processing system for 30 days. At the end of this period, they reported experiencing a better sound quality in quiet situations, improved speech understanding in noisy situations and that they felt less tired at the end of the day.

Your fitting audiologist can adapt the Crystalis^{xDP} sound processing system to meet your specific listening needs in different sound environments.

USERS OF CRYSTALIS^{xDP} REPORTED THE FOLLOWING BENEFITS:*

30% Improvement in speech understanding in noisy situations

43% Improvement in sound quality in noisy situations

30% Improvement listening to music

14% Reduction in tiredness at the end of the day

15% Improvement watching TV

15% Improvement speaking on the phone

11% Improvement in the quality of quiet sounds

10.7% Improvement in social life

* White paper - Design and effects of post-spectral output compression in cochlear implant coding strategy, Oticon Medical/Neurelec, 2013.

SUBJECTIVE EVALUATION

1	IMPROVEMENT IN SPEECH UNDERSTANDING IN NOISY SITUATIONS ① ② ③ ④ ⑤ ⑥ ⑦
2	IMPROVEMENT IN SOUND QUALITY IN NOISY SITUATIONS ① ② ③ ④ ⑤ ⑥ ⑦
3	IMPROVEMENT LISTENING TO MUSIC ① ② ③ ④ ⑤ ⑥ ⑦
4	REDUCTION IN TIREDNESS AT THE END OF THE DAY ① ② ③ ④ ⑤ ⑥ ⑦
5	IMPROVEMENT WATCHING TV ① ② ③ ④ ⑤ ⑥ ⑦
	IMPROVEMENT SPEAKING ON THE PHONE ① ② ③ ④ ⑤ ⑥ ⑦

06-07

VOICE TRACK™ IS DESIGNED
TO HELP YOU HEAR BETTER
IN NOISY SITUATIONS!



“Voice Track™ works by detecting the steady background noise and lowering its volume. This protects the important speech signal and shields the listener from other noise thereby making conversation easier.”

VOICE TRACK™

VOICE TRACK™

In addition to the Crystalis^{xDP} sound processing system, Saphyr[®] neo collection sound processor also offers a noise reduction technology, Voice Track™.

Voice Track™ has been proven to provide better speech understanding in difficult listening situations* with background noise. These situations can include a conversation in a busy restaurant with loud background music or a conversation on a busy street.

Voice Track™ works by detecting the steady background noise and lowering its volume. This protects the important speech signal and shields the listener from other noise thereby making conversation easier.

Gnansia, D., Laudanski, J., Segovia-Martinez, M., Philippon, B., Romanet, P., Lavielle, J.P. (2013) Noise-reduction algorithm in cochlear implants: design, and outcomes. Conference on Implantable Auditory Prosthesis, July 14-19, Lake Tahoe CA, USA.

REDUCING THE RIGHT SOUNDS

However, to ensure that the listener does not miss important sounds, such as an alarm going off or a car passing by, Voice Track™ waits for the sound to become repetitive and constant before reducing its volume. This means you remain aware of what is going on around you.

Your fitting audiologist can set Voice Track™ to suit your individual listening needs during the fitting session. It can either be set to work on your main program or it can be set as a solution on a dedicated program that you can use as needed.



Without Voice Track™



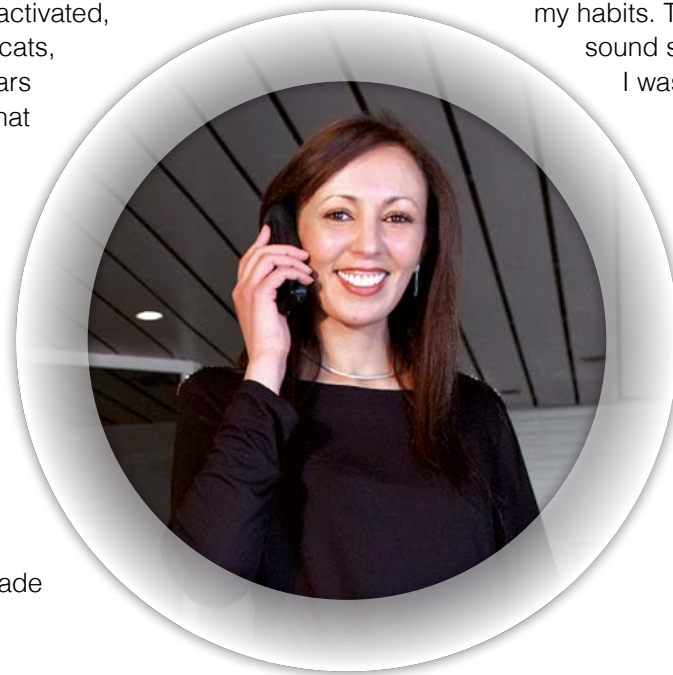
With Voice Track™

WHAT DO USERS SAY?

“MY FIRST EXPERIENCES WITH MY NEW SOUND PROCESSOR”

“I usually switch my sound processor off when I'm at home. But after my new sound processor was activated, I returned home, got into the lift, fed my cats, opened the windows... and heard the cars driving by on the busy street below. At that moment, I realized I hadn't switched off my processor.”

“My new Saphyr® neo collection has made me change my habits. The new design is so soft and the sound so comfortable that I didn't notice I was already wearing it!”



“Yesterday, I received a phone call from a person I didn't know. I didn't want to pick up the phone, as I wasn't sure I would understand what was being said. But I gave it a try and managed. It just made me so happy!”

“I love my Saphyr® neo collection. It's my ear! I can't live without it!”

SAMIA



MYRIAM

“I REALLY APPRECIATE THE DIFFERENCE,
ESPECIALLY WHEN I’M AT WORK.”

“I’ve been benefiting for some months now from the new XDP sound processing system.”

“I really appreciate the difference, especially when I’m at work. My office is situated 30 metres away from a busy road. With the new system, I can now leave the window open and speak on the phone at the same time. Before, this was impossible. I had to close the window before answering the phone. Somehow loud sounds have become less imposing.”

“It’s also easier now in supermarkets. To tell you the truth, if I was on my own I used to turn off my sound processor when shopping. Today I don’t. I only turn it off when I’m feeling really tired. I can’t see myself coping without it.”

ENTER THE WORLD OF WIRELESS CONNECTIVITY

HEARIT MEDIA - THE WIRELESS AMPLIFIER FOR TV AND MOBILES

Saphyr® neo collection is compatible with the new wireless amplifier, HearIt Media. The HearIt Media system provides you with a better and clearer sound when watching television, listening to music and having conversations on your mobile phone*.

EASY TO USE YOUR MOBILE

Using Bluetooth® technology, the HearIt Media neck loop wirelessly transmits to and receives sound from your mobile phone. The microphone on the HearIt Media neck loop captures and transmits your side of the conversation while you hear the other person via your sound processor. This means you can use your mobile phone with the hands-free option and talk on the phone with no unwanted background noise**.



Wireless HearIt Media Neck Loop



A BUILT-IN TELECOIL

Saphyr® neo collection has a built-in telecoil (T-coil) that lets you access the sound systems installed in theatres, lecture halls and religious places of worship without plugging an additional device into the sound processor.

FM SYSTEMS

With an auxiliary socket, Saphyr® neo collection can also receive the most advanced FM systems on the market. It picks up the speech signal and clears it of acoustic background noise before transmitting it directly to the sound processor. This provides better speech intelligibility and makes challenging situations, such as classroom learning, much easier.

* The HearIt Media system from Phonic Ear works with any Bluetooth® enabled phone.

** The sound processor must be set on the T-Coil program.



A FLEXIBLE AND USER-FRIENDLY SOLUTION

CRISP AND CLEAR SOUND FOR THE TELEVISION

By plugging the HearIt Media TV adapter into your television or music system, you can enjoy the sound directly in your Saphyr® neo collection sound processor thanks to the wireless HearIt Media neck loop. Simply set your Saphyr® sound processor to the T-coil program and you can turn the volume up as loud as you want without having to worry about disturbing your household or neighbours.



Bluetooth® system



Wireless HearIt Media Neck Loop



HearIt Media TV adapter

THE RIGHT COMBINATION OF HIGH FUNCTIONALITY AND DESIGN

IMMEDIATE COMFORT

Translucent and discreet, the Easy Snap hook is made of an extra-soft material that is comfortable to wear while keeping the sound processor securely in place. To make it easy to change, the hook system can be clicked on or off quickly and effortlessly. It is available in a variety of lengths to provide the best fit with your ears.

We understand that comfort and aesthetics are important for people wearing a sound processor every day.

That is why the Saphyr® neo collection sound processor combines a lightweight and comfortable design with robustness and ease of use.





BLEND IN OR MAKE A STATEMENT

The Saphyr® neo collection comes in seven different colours to suit your mood and personality. Make a statement with the bold purple or opt for the high-tech modern look of a white glossy sound processor. And if you don't want to draw attention to your sound processor, select one of the colours that blends in discreetly with your hair or skin tone.

AN ERGONOMIC FIT

Users of sound processors need to feel confident that their sound processor will stay in place. The Saphyr® neo collection has a new rounded shape that offers a better and more discreet fit behind the ear.

NEW DESIGN FOR IMPROVED RELIABILITY AND PERFORMANCE

RELIABILITY

The design of the Saphyr® neo collection has been updated to offer a more modern, reliable and robust sound processor.

- High quality components result in 25% more reliability than the previous generation.
- New accessories ensure more comfort, greater performance and improved design.

NEW ANTENNA AND ANTENNA LEAD

Antenna

Streamlined, ultra-thin and lightweight, the new antenna is not only discreet, it is also reliable and robust. It is available in three colours and six magnetic strengths. However, regardless of the magnetic strength you choose, it can still be easily unscrewed without any tools.

Antenna Lead

Designed to stand up to the wear and tear of daily life, the new antenna lead is available in three different lengths (6cm, 10cm and 25cm) and three different colours.





Silhouette
Teleloop



SILHOUETTE

EXPERIENCE HANDS-FREE PHONE COMMUNICATION AND MUSIC

The Silhouette system is included in every Saphyr® neo collection sound processor pack. This discreet hands-free solution provides you with clear inductive transmission from your mobile phone* or MP3 player.

Simply connect Silhouette directly to your mobile phone or MP3 player and place its ear hook behind your ear next to the ear hook of your sound processor. Via induction, you can hear your conversation or music directly in your Saphyr® neo collection sound processor with no background noise. To use Silhouette, switch your sound processor to the telecoil program.

Silhouette is small, light and designed for ease of use – whether at home, in the car or on the go. It is available in two versions: with a single ear hook and with two ear hooks for users who wear two sound processors (bilateral implantation).

* with some mobile phones, you may need an adapter.

CONVENIENT AND USER-FRIENDLY

The Saphyr® neo collection has been created to offer users the options and programs they need for clear and comfortable listening – but without compromising ease of use.

The sound processor can memorise up to four different programs and the intuitive program selector lets you easily switch between them.

BATTERY REMINDER

When the batteries are low or the sound processor is going to stop, the Saphyr® neo collection can be programmed to emit private warning beeps. Your audiologist can set these warning beeps during a fitting session.

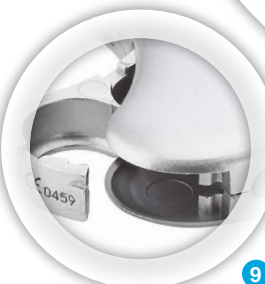
INDICATOR LIGHT

The status of the Saphyr® neo collection processor is shown on the indicator light. This is green during a start-up test or when the microphone is picking up sounds, and red when batteries are low. This is a useful feature for children and others dependent on help. Your audiologist can set the indicator light.



FEATURES

- 1 2 omnidirectional microphones with a wide input dynamic range.
- 2 Easy to use on/off selector wheel.
- 3 Easy access 4-position program selector.
- 4 Antenna lead available in three colours and in three lengths.
- 5 Lightweight and discreet antenna.
- 6 Magnet available in six strengths for optimal individual comfort.
- 7 Easy Snap soft hook system.
- 8 Robust auxiliary socket compatible with a number of accessories. (FM systems)
- 9 Tab for easy opening of battery compartment.



DIMENSIONS*

10.6 mm

50 mm

50.5 mm



* Dimensions when the processor is placed behind the ear and fitted with a short Easy Snap hook.

COMPATIBLE
WITH DIGISONIC® SP IMPLANT RANGE

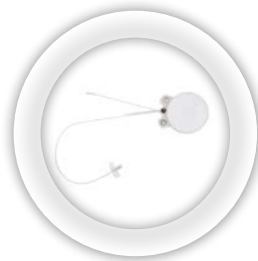






Digisonic® SP EVO



Digisonic® SP Binaural



Digisonic® SP ABI

SOUND PROCESSOR & IMPLANT COMPATIBILITY	
Saphyr® CX neo collection 	Saphyr® SP neo collection 
Digisonic® DX 10	Digisonic® SP
Digisonic® Convex	Digisonic® SP Binaural
Digisonic® ABI	Digisonic® SP ABI
	Digisonic® SP EVO

SAFE AND PROVEN PROCEDURE

The Digisonic® SP implant is renowned for being robust, reliable and easy to insert. When combined with the Saphyr® neo collection sound processor, it represents a unique combination of hearing know-how and implant technology.

RELIABLE AND RESISTANT

The Digisonic® SP implant is the most compact implant on the market thanks to the encapsulation of the magnet and the receiver in the same ceramic casing. For over 30 years, ceramic materials have demonstrated their strength and high shock resistance in the medical field. Combining this robust material with a titanium base requires state of the art expertise and technology possessed only by Neurelec.

MINIMALLY INVASIVE

Thanks to its compact size, the Digisonic® SP implant can be fitted using minimally invasive surgery that requires only a small incision and no drilling in the temporal bone. Studies* have shown that the surgical technique used to fit the Digisonic® SP implant significantly reduces operating time.

COMPATIBLE WITH VARIOUS ELECTRODE ARRAYS

The Digisonic® SP implant is also compatible with different types of platinum electrode arrays. These preserve the cochlea and ensure the process is as atraumatic as possible.

* Guevara Nicolas M.D., Sterkers Olivier M.D., Ph.D, Bébéar Jean-Pierre M.D., Meller Renaud M.D., Magnan Jacques M.D., Mosnier Isabelle M.D., Amstutz Isabelle M.D., Lerosey Yannick M.D., Triglia Jean-Michel M.D., Roman Stéphane M.D., Gahide Ivan M.D., Multi Center evaluation of the Digisonic® SP cochlear implant fixation system with titanium screws on 156 patients, Annals of Otolaryngology, Rhinology & Laryngology, 2010, 1009-030-D.

Discover more



COCHLEAR IMPLANT EXPERTISE JOINS FORCES WITH MORE THAN 100 YEARS OF HEARING CARE

Neurelec is known worldwide for the integrity of its cochlear implants and its commitment to patients.

Now part of Oticon Medical, this new alliance combines more than a century of experience in audiology and sound processing with decades of pioneering experience in hearing implant technology.

As a business within the William Demant Group, Oticon Medical enjoys valuable resources to invest in further development of hearing implant systems. With a strong connection to Oticon, the leading hearing solution manufacturer, Oticon Medical has unique access to cutting-edge know-how and technology.

Oticon Medical's "People First" philosophy means that every product Oticon Medical creates – from sound processors and surgical components to fitting, counselling and support tools – is designed with user needs in mind.

With a strong focus on creating lifelong user outcomes, Oticon Medical's starting point will always be the user's everyday challenges and how to overcome them.

Oticon Medical aims to empower all users of hearing implant systems to realize their full potential and live life to the fullest.



- Better speech understanding in noise, Voice Track™ & Crystalis^{XDP}
- Comfortable and intuitive
- Wireless capabilities



n e o c o l l e c t i o n

This brochure is interactive. Scan the QR codes on the pages to learn more.



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