VIBRANT SOUNDBRIDGE
An Innovative Hearing System
most successful middle ear implant system on the market
Welcome

It is our pleasure to introduce you to the innovative hearing system, the Vibrant Soundbridge.

Hearing loss, of any kind, can reduce quality of life if not treated properly, but this does not have to be the case. A hearing system especially adapted to your type of hearing loss helps you actively experience and enjoy the sounds of daily life.

The Vibrant Soundbridge is an alternative to conventional hearing aids and was developed by someone who knows: Geoffrey Ball, scientist and inventor of the Vibrant Soundbridge is bilaterally implanted with this hearing system. (Read more about Geoff ’s story on page 22).

Thousands of Soundbridge users worldwide are now not only able to hear but also understand conversations, communicate with family and friends and enjoy listening in a wide range of situations. In this brochure, you will find out more about this new possibility of treating your hearing loss.
Ears are extraordinary organs that pick up sound waves and change them into information which the brain can interpret. Knowing how hearing naturally works can help you to understand better the reasons for hearing loss.

The human ear consists of three parts. The outer ear includes the visible parts of the ear and the ear canal. The middle ear contains three small bones, which make up the ossicular chain. The inner ear is the actual hearing organ and is called the cochlea.

1. Sound is collected by the ear and funneled through the ear canal to the eardrum.
2. The eardrum converts incoming sound into vibrations.
3. The three small bones are set into motion by these vibrations, passing them on to the cochlea.
4. The fluid in the cochlea begins to move, stimulating the hair cells.
5. The hair cells create electrical signals which are picked up by the auditory nerve.

The brain interprets the electrical signals as sounds.
Hearing Loss

Hearing loss might be experienced particularly in noisy situations such as in restaurants or among a group of people. Every hearing loss is different and is the result of damage to one or multiple parts of the ear. Hearing loss can be divided primarily into two general categories: conductive and sensorineural hearing loss.

**Conductive Hearing Loss**
Any condition in the outer or middle ear that prevents the ear from conducting sound properly to the cochlea, is known as a conductive hearing loss.

**Sensorineural Hearing Loss**
Sensorineural hearing loss results from missing or damaged hair cells in the cochlea. Hearing loss related to age (presbiacusis) is usually sensorineural.

**Mixed Hearing Loss**
A mixed hearing loss is a combination of sensorineural and conductive hearing loss.

For all three types of hearing loss, the Vibrant Soundbridge is beneficial and may be a possible treatment for you.
Available since 1996, the Vibrant Soundbridge is the most successful middle ear implant system on the market. It directly stimulates middle ear structures in much the same way as normal sound moves them via the ear canal. This “direct drive” stimulation enables excellent sound quality without blocking the ear canal.

The Vibrant Soundbridge consists of an external and an internal part. The external part is an audio processor and is worn on the head, and can be discretely covered by hair. The internal part is an implant which mechanically vibrates middle ear structures. These vibrations can be amplified and adjusted to optimally compensate for different types and degrees of hearing loss.

1. Sounds are picked up by the microphone of the audio processor. The audio processor is held over the implant by magnetic attraction to a magnet in the implanted part.

2. The audio processor converts sounds into electrical signals.

3. These signals are transmitted across the skin to the implant.

4. The implant relays the signal further to the FMT (Floating Mass Transducer). The FMT is the core component of the system and is smaller than a grain of rice.

5. The FMT converts the signal into mechanical vibrations that directly drive a middle ear structure (e.g. the ossicular chain) and cause it to vibrate.

6. These vibrations then conduct sound to the inner ear and to the brain and are perceived as sound.
How is the Vibrant Soundbridge Different from a Hearing Aid?

The Vibrant Soundbridge is a unique middle ear implant system. It opens up new ways to make sound audible and offers an innovative and proven alternative to conventional hearing devices.

It Works Differently
Unlike a hearing aid which amplifies sounds, the Vibrant Soundbridge converts sound into mechanical vibrations. This mechanical energy is used to directly stimulate middle ear structures for exceptional high frequency sound perception. The ear canal remains completely open.

It Sounds Different
Featuring direct drive, the Vibrant Soundbridge offers improved hearing quality and speech understanding, particularly in noisy surroundings. Users describe the sound quality as more natural, including the sound of their own voice. Many users report that they are able to hear softer, high frequency sounds, such as children's voices and birds singing. The transmission of high amplification in the higher pitches improves enjoyment of listening to or playing music.

It Looks Different
The Vibrant Soundbridge consists of a non-visible implant underneath the skin and an audio processor worn on the head in the area behind the ear. The special design of the Vibrant Soundbridge allows the external audio processor to be hidden discreetly and comfortably under the hair. The sleek design of the audio processor is available in different colours, providing you with the best option of matching your hair colour.

It Feels Different
Users rate wearing comfort with the Soundbridge as very high as the audio processor is held over the implant by magnetic attraction. Because of this special design, users wear their device throughout the day, enjoying the best level of comfort to suit their lifestyle. The Vibrant Soundbridge allows the ear canal to remain completely open and sound can be enjoyed without occlusion or irritating whistling.
At the core of MED-EL's philosophy the aim is to preserve any natural hearing ability whilst restoring impaired function. Implantation of a Vibrant Soundbridge system does not interfere with the natural ability of the hearing organ in any way and the residual hearing remains unchanged.

**Safe Implantation**

The Vibrant Soundbridge system is a semi-implantable middle ear hearing system. This means that the internal part of the Vibrant Soundbridge is implanted under the skin in the area behind the ear. The procedure normally takes one to two hours and is performed under either general or local anaesthesia. After that, no further intervention is necessary. All serviceable parts of the Vibrant Soundbridge are located in the external audio processor.

As sound information is transmitted through the intact skin, users have little to no risk of developing infections in the area of the implant. The implantation is a routine procedure for experienced ENT surgeons and is performed in hundreds of clinics around the world. If you wish to have more information, your surgeon will fully counsel you on the details of the implantation. For a list of experienced surgeons and clinics please visit our website (www.medel.com).

The audio processor is activated approximately six weeks following the implantation. From this time on, the superior sound of the Vibrant Soundbridge with all its benefits can be enjoyed.
The externally worn audio processor of the Vibrant Soundbridge is state-of-the-art design and features intelligent technology allowing it to take advantage of future innovations in sound processing. The implant is able to support further developments without needing to be replaced.

The Amadé is the 5th generation of audio processors of the Vibrant Soundbridge. The benefits of the Amadé are available for both new and existing users.

Choose your program
The Amadé allows you to be in control of each listening situation. It offers you the choice of three different programs which can be adapted for your personal preferences.

Hear the important sound
With the Amadé you can focus on sound that comes from someone in front of you. The directional mode provides additional benefit in noisy situations, such as at parties or in restaurants and gives you the freedom to understand the immediate conversation clearly and distinctly.

Choice of colours
The Amadé features a whole new housing design, which is available in four different colours, providing you with the best option of matching your hair colour.
Sound Smoothing
Your Amadé softens loud or unexpected sounds, such as cutlery clattering against plates or a newspaper rustling next to you and provides clear and comfortable listening in all situations.

Wind Noise Reduction
The intelligent technology constantly monitors the environment for wind noise which, when detected, is automatically softened and allows improved hearing comfort.

Speech and Noise Management
The Amadé distinguishes between speech and background noise. It focuses on speech and automatically identifies and reduces background noise.

The Amadé is easy to handle. Simply switch between the programs to best suit your personal needs.
The Vibrant Soundbridge is an alternative to conventional hearing devices and offers an innovative method to overcome hearing loss. It is designed for people who have been diagnosed with mild to severe sensorineural hearing loss or conductive and mixed hearing losses.

If you cannot use conventional hearing aids or if you are dissatisfied with them and do not achieve sufficient benefit, the Vibrant Soundbridge may be a solution for you.

High Quality of Speech and Sound
The Vibrant Soundbridge allows you to hear softer, high frequency sounds such as children’s voices and birds singing. Frequently, users are delighted with the quality of sound, as soon as they listen with the Vibrant Soundbridge for the first time.

A significant improvement in clarity of speech and overall sound quality is noticeable, including your own voice. Hearing in challenging listening environments, particularly with background noise, is described as very good. Enjoy conversations in restaurants, in groups, in public places and within your family.

Open Ear Canal
If you cannot tolerate foreign bodies in the ear canal or if you dislike plugging your ear canal, you may find the Vibrant Soundbridge particularly helpful. Musicians and singers, who wish to hear harmonics undistorted by the occlusion effect and who rely on good perception of high frequency sounds, can benefit from the direct drive of the Vibrant Soundbridge.

Suitable for Children
The Vibrant Soundbridge is the only middle ear implant that is attached only to the structure of the middle ear which it is stimulating. This makes the Vibrant Soundbridge independent of skull growth and therefore suitable for implantation in children. The Vibrant Soundbridge has proven to be an effective and reliable middle ear implant system with a high long-term patient satisfaction rate.

“The audio processor of the Vibrant Soundbridge is light on the head. I must admit, I often forget that I’m wearing a hearing device at all.”

Ramona
(Vibrant Soundbridge user)
Latest Technology
By only having to upgrade the external audio processor of the Vibrant Soundbridge, you can always benefit from the latest technology available. With its semi-implantable design, the Vibrant Soundbridge is able to take advantage of technological advances being developed now and in the future. Even years after implantation, you can undergo a simple fitting and return home benefiting from the latest technology available.
Long-Term Benefits
A decision for a hearing implant is always a long-term decision. Therefore the implant system should offer the best technology and long-term reliable benefits. At MED-EL, providing the highest quality and having the most reliable products is our first and foremost priority. The Vibrant Soundbridge has proven to be an effective and reliable middle ear implant over many years. Technical reliability goes hand in hand with positive long-term clinical experience and high user satisfaction. Thousands of patients have received a Vibrant Soundbridge in over 70 countries worldwide. Leading surgical centres offer the Vibrant Soundbridge as a safe, effective and reliable treatment to optimally compensate for different kinds of hearing loss.

If you are interested in the Vibrant Soundbridge system, simply contact an implanting centre near you. Your type and degree of hearing loss will be assessed by conducting audiological tests. Together with a medical examination it can be determined if the Vibrant Soundbridge is a suitable treatment for you. If you would like to have more information, please visit our website (www.medel.com) or contact us directly. We will be happy to assist you.

“Have you decided to change your life? I can only urge you not to wait any longer. Every minute you remain in a soundless world is a waste of precious time.”

Ilse
(Vibrant Soundbridge user)
Experiences of Vibrant Soundbridge Users

The Amadé audio processor felt immediately familiar to me. The directional mode is excellent in situations where noise comes from behind. Speech understanding is very good, e.g. when driving a car, talking in bars or watching TV with a lot of noise around. My music program is a particularly nice addition.

Ulrich, Germany

I can hear sounds that everyone else hears everyday. With my Vibrant Soundbridge I can now hear people talking more clearly and communicating with my family or with a group of friends is much better than before. I can engage in the world around me so much more than in the past.

Rujira, Thailand

You do not realize what you have lost until you get it back. I was wearing a regular hearing aid and my wife got tired of me saying WHAT. I got the Vibrant Soundbridge in 1998 and I can now hear the birds singing and insects chirping. My ears do not itch anymore from the hearing aid. It is so comfortable, I don’t feel the device. I can hear again!

Pete, USA

It is very pleasant and comfortable to be able to keep the ear canal free. The speed of my recovery was a positive surprise and I could return to my full time job as a headmaster, as soon as one week after implantation. For the first time I can easily use my mobile phone, and listen to music in my ear phones when walking in the outdoors.

Monika, Sweden
Countries where MED-EL Hearing Implant Systems have been implanted (as of 2010).
MED-EL was founded in 1989 with the objective of bringing products that help overcome the burden of hearing loss worldwide.

Today, MED-EL is a fast growing medical device enterprise with presence in all major markets. At its headquarters in Innsbruck, Austria, and in 24 subsidiaries and offices around the globe more than 900 employees develop and market complex implantable solutions for individuals with various degrees of hearing loss.

MED-EL’s founders Profs. Ingeborg and Erwin Hochmair began research projects on the stimulation of auditory nerves and on sound processing technologies in the 1970s. As a result they developed the world’s first multi-channel microelectronic cochlear implant. Based on consistently high investments in research and development and collaborations with leading academic and corporate partners, MED-EL is now in the position to offer the most extensive portfolio of hearing implant systems worldwide.

Following a loss of hearing or following congenital deafness, tens of thousands of adults and children all over the world have experienced the world of sounds with a MED-EL hearing implant.

Quality and reliability
Auditory implants are manufactured in accordance with modern quality and safety standards to guarantee long life and high reliability. MED-EL maintains a quality system fulfilling the highest quality requirements for medical technology.
Geoffrey Ball
Inventor of the Vibrant Soundbridge

Geoffrey Ball has suffered from sensorineural hearing loss following a serious fever attack when he was a child. He was fitted with conventional hearing aids and although those devices increased the loudness level, Geoff was never satisfied with their sound quality.

After graduating from the University of Oregon, Geoff worked as a biomedical engineer in a laboratory in Virginia. Geoff realized that a small transducer could be used to mimic the vibrations of the human ear. He called this concept “direct drive”. He says, “The theoretical advantage of direct drive is that the signal is delivered as close to the cochlea of the inner ear as possible, while leaving the ear canal open.”

In 1992, after spending his evenings in his own electronics laboratory, searching for a signal transducer for direct drive, Geoff suddenly had the solution. He remembers: “The design was so simple and solved so many problems ... I knew, that's it”. Geoff had his invention patented in 1993 and the Floating Mass Transducer (FMT), which is still used today, was developed.

Geoffrey Ball was one of the first patients to receive a Vibrant Soundbridge. Some time later he received a second implant on the other side. Today, Geoff and his wife with their three sons live near Innsbruck, Austria. As Chief Technical Officer at MED-EL he dedicates his time to further improvements helping many people to hear life.

“My dream was a better quality of life for myself, and for anyone forced to cope with a hearing impairment. I can't describe how good it felt to help others who, like me, want simply to enjoy a full lifestyle – communicating with family, friends and at the workplace – that we once found impossible to experience.”

Geoffrey Ball
an innovative hearing solution