



CONNECT

Hearing contact lenses: the new hearing aid generation

Background

Vibrosonic GmbH is an emerging German start-up that focuses on hearing solutions for impaired people. The origin of the company lies in a research collaboration to analyse and develop implantable hearing aids. As a result, the idea of a hearing contact lens was born to continuously improve the lives of hearing-impaired individuals.

Hearing aids on course for innovation

In medicine, people affected by hearing loss are divided into the two subcategories of hearing impaired and deaf people. Hearing impairment is usually the result of age, disease, or accidents. Deaf people, on the other hand, are born with the impairment. Deafness is thought to affect 0.1% of the world's population. Experts estimate that the group of people affected by hearing impairment currently amounts to 1.6 million people worldwide and could rise to 2.5 billion by 2050.

Hearing loss is classified as a disability because it permanently restricts affected persons in their way of communicating. In Germany, the number of people affected is around 16 million, making it one of the largest groups among people with disabilities. Around 16% of adults in Germany are hard of hearing, which means that this group of people suffers a hearing loss of at least 20% up to complete deafness and correspondingly a hearing loss of 100%. It is striking that only half of the hearing-impaired persons wear a hearing aid. There is an acute need for action because hearing loss without therapy can lead to social isolation, depression, and dementia.

The company Vibrosonic has a try at a new type of hearing solution and has thus unleashed an innovation. While the loudspeaker in conventional hearing aids is located in the ear canal, the loudspeaker in the hearing contact lens is placed directly on the eardrum. This is intended to eliminate acoustic distortion and the associated reduced sound quality. The development of the hearing contact lens promises the wearer optimized sounds in a frequency range from 80 Hz to 12 kHz. But how is this even possible?

In general, the hearing contact lens from Vibrosonic consists of three components: the hearing contact lens and the auditory canal module remain permanently in the auditory canal and are connected to each other by a wafer-thin cable. The behind-the-ear module, on the other hand, can be flexibly removed and contains the battery and electronics. The medical advance for patients is that vibrations are transmitted directly to the ossicles, resulting in high-quality sound



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transmission through direct mechanical stimulation of the auditory system, enabling natural hearing.

Since each person is different in the conditions of the eardrum, the hearing contact lens is custom-made. For the fabrication, a flat piezoelectric micro-speaker is embedded in a silicone mold specially adapted to the patient. Advantages include optimization and amplification of hearing of both low and high tones without feedback problems. Feedback as well as distortion effects are avoided by the use of a hearing aid loudspeaker aka vibrosonic actuator, which was applied in this form for the first time worldwide and whose individual structures are a thousand times smaller compared to the thickness of a human hair. Another innovation is the development of a special micro-battery made of delicate silicon wafers with a glass carrier that does not require battery replacement.

Vibrosonic's next goal, in addition to the approval of the alpha model in the fall of 2021, is to miniaturize the individual components so that they become completely invisible and disappear completely in the ear canal. As a result, patients would only need to visit a trained ENT physician regularly to check the ear canal and the device.

Has the modern hearing contact lens or the topic around innovative hearing solutions aroused your interest? Do you need more information material? We have already researched and compiled a selection of innovative, future-oriented international companies for you. arcoro CONNECT not only links people and companies, but also helps to understand tomorrow's knowledge today.

COMPANY	LOCATION	WEBSITE	FIELD OF EXPERTISE
Vibrosonic GmbH	Germany	https://vibrosonic.de/	Hearing contact lens
OHRWERK Hörgeräte GmbH	Germany	https://www.ohrwerk-gmbh.info/	Hearing aid
Widex Hörgeräte GmbH	Germany	https://www.widex.com/de-de/	Hearing aid
Bernafon Hörgeräte GmbH	Germany	https://www.bernafon.de/hearing-aid-users	Hearing aid
Earlens Corporation	USA (CA)	https://www.earlens.com/patients/	Hearing contact lens
GN Hearing A/S	Denmark	https://www.resound.com/de-de	Hearing aid
Sonova Holding AG	Swiss	https://www.sonova.com/en	Hearing aid
Oticon A/S	Denmark	https://www.oticon.de/professionals	Hearing aid
Olive Union	South Korea	https://us.oliveunion.com/	Hearing aid
Amplifon Corporate	Italy	https://www.amplifon.com/de/	Hearing aid



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Visionary personalities, scientists with years of experience and strong opinion leaders - we have done the research for you. Find experts in the field of innovative, advanced hearing solutions below. Would you like more information? We will be happy to connect you!

INDUSTRY EXPERT	JOB POSITION	FIELD OF EXPERTISE
Hans-Dieter Borowsky	CEO at Auric Hörsysteme	Hearing aids
Abram Bailey	CEO at Hearing Tracker Inc	Hearing aids
Brandon Sawalich	President & CEO at Starkey Hearing Technologies	Hearing aids

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