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# [Startup Bharat] Made in Hubli: a portable device that makes hearing tests 80 percent cheaper

Uday Raga Kiran and wife Remya's Nautilus Hearing wants to make hearing healthcare affordable and accessible to all.

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Among the six senses, hearing is the one most of us take for granted, says T Uday Raga Kiran. He should know; after all, he is an audiologist. Working in the healthcare system for over 10 years, Uday says many are not even aware how important the sense of hearing, and organs associated with it, are. On the flip side is the cost barrier when it comes to acquiring expensive testing equipment.

To address this gap, **Uday and his wife Remya**, also an audiologist, founded **Nautilus Hearing**. The focus of the Sandbox Hubli-incubated startup is to make hearing healthcare affordable and accessible to all.

**"Hearing loss is an invisible disease, it creeps in slowly without people realising it. Unlike eyesight, the gradual loss of hearing cannot be easily detected. Interestingly, hearing is the first sense a foetus develops in the womb,"** says Uday.

**He says that people often use their hearing aids for short durations, but dissatisfied with its working, would simply stop using them.**

The couple has developed a booth-less, portable audiometer that helps doctors conduct ear tests with ease. It also provides a tele-audiology model that helps patients remotely check their hearing.



NR Narayana Murthy trying the Nautilus device

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## Why a portable device?

"The problem in most rural areas is that there aren't proper diagnosis facilities available. And without proper diagnosis, you don't have proper care and treatment. Hence, many people think hearing aids don't work. It isn't the problem with the device, it is a problem of diagnosis. Getting people to understand the importance of hearing tests is challenging," says Uday.

Conventional audiometers are expensive and bulky. Uday explains these systems need soundproof rooms, and a large space to keep the equipment:

**"Many clinics aren't more than 500 sqft, and these devices are used for 15 minutes a day at the most, so many practitioners don't invest in the equipment."**

Cost is also a limiting factor. The **equipment costs upwards of Rs 10 lakh**, and thus, is rarely acquired by clinics in non-metros and rural areas.

"With a portable device, you can go into any part of a city, town, village, school or industry and use it for testing. It isn't restrictive," says Uday.

## Building the product

Once Uday and Remya had the idea in mind, though they are not engineers, they built a minimal viable product (MVP), and a rough prototype. "We knew what was needed in the device, and environments we required to effectively and efficiently conduct the test," says Uday.

Costing **Rs 2 lakh, which is 80 percent lower than the price for devices currently available, the device tests hearing in 10 minutes**, and creates a digital diagnostic report, based on which different solutions and treatments can be given.

The device is available in two variations - a **diagnostic product for certified healthcare practitioners**, and a **screening device that can be used at schools, colleges, NGOs and industries with loud machinery and devices**.

Uday says that despite the significantly lower cost of the Nautilus Hearing device, convincing people to try it has been a challenge.

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## Need for hearing aids

According to a WHO report, close to five percent of the world population has disabling hearing loss. **By 2050, there are likely to be over 900 million people** with hearing loss in the world, and yet, "even today, our biggest challenge is convincing people the importance of building a device to test hearing," says Uday.

"If hearing loss can be detected early on, the right precautions and treatment can be given, especially with today's advancement in medical science and technology," says Uday. He says many people don't even understand the economic impact that hearing loss can cause. The **WHO report estimates that unaddressed hearing loss costs the global economy around \$750 billion** annually.

**India has its fair share of healthcare equipment startups that cater to different ailments and needs. These include Forus Healthcare, Cyclops Medtech, InnAccel, and Sattva Medtech. The global healthcare industry was pegged to be worth \$160 billion in 2017, and is set to cross \$280 billion by 2020, according to an IBEF report.**

The need for reliable medical devices in the country is also growing. While organisations like GE Healthcare, Phillips, and Davin are building portable healthcare equipment as well, not all of it is available in remote areas. However, startups like **Lifetron Innovations and Nautilus** are changing that.

Nautilus Hearing won the **Karnataka Government's ELEVATE 100 Programme**, through which it raised an undisclosed round of funding. The startup has completed preliminary tests, and will soon start clinical trials. The team tested the device at the All India Institute of Speech and Hearing in Mysore.

Nautilus Hearing is also awaiting medical certifications before it can launch its device in the market.