

Health

# Tor Vergata University study presented for the treatment of «tinnitus»



May 26, 2023

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Do you suffer from tinnitus? Well you are certainly not the only ones, don't worry. The disease of the **ghost sound**», recognized as a «primary and growing cause of disability», is of interest **749 million people**. Tinnitus (or 'tinnitus') is as frequent as it is difficult to treat. Patients hear "sounds that don't exist" described as buzzing, whistling, hissing, or throbbing. It is one of the most common disorders with over 200 possible causes, as declared by the American Tinnitus Institute: organic and anatomical,

viral and environmental but also vascular, oncological or linked to aging.

## **FURTHER INFORMATION**

It was Jama Network in 2022 that published a study funded by the European Community on the global prevalence and incidence of tinnitus, with impressive numbers: 749 million people suffer from it, with an incidence of 14% of the [world](#) population and 120 million of serious cases.

Tinnitus should be considered a primary cause of long-term disability on a par with deafness, the experts write.

The greatest prevalence is found among the elderly, due to the inevitable senescence of the auditory system, or among those who have suffered damage due to exposure to high-intensity sounds or due to states of anxiety or trauma.

The treatments currently available aim to reduce the most serious effects of the disease, with however temporary and/or reduced results, which justify the sad reputation of “incurable” of this pathology.

At the 109th SIO National Congress, the annual official event of the Italian Society of Otolaryngology and Head and Neck Surgery underway in Milan, the data of the experimentation carried out at the ENT Department of the Policlinico di Tor Vergata based on a new medical device were presented called Acufree.

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“Tinnitus is not an exclusively cochlear pathology since it involves all the auditory pathways, including at the level of the CNS (Central Nervous System) and it is for this reason that we tested the synchronous multimodal therapy”, underlines Professor Di Girolamo, director of the ENT operating unit of the Tor Vergata University Hospital and first author of the study. “It is an innovative and non-invasive system which, with the use of a specifically developed and patented device, acts on several levels: Acufree is based on a specific sound stimulation customized to each individual patient, which is

associated with low and high frequency”.

The trial was conducted at the University of Tor Vergata on 50 patients with a history of chronic tinnitus over the age of 18, an average age of 56 years and a medium or mild hearing loss. Patients underwent a comprehensive audiological protocol at enrollment and intensive monitoring throughout therapy, with a total duration of 14 weeks and two treatment sessions per day for 18 minutes each.

The results of the clinical testing applied to the two main international measurement benchmarks showed a significant improvement in 72% of patients for the TFI (Tinnitus Functional Index) and 68% for the THI (Tinnitus Handicap Index).

“Therapies based on neuromodulation assist a readjustment of brain plasticity to obtain a reduction in the perception of tinnitus and interrupt the altered levels of cortical oscillatory activity, favoring normal neuronal activity” underlines Dr. Beatrice Francavilla, from the Tor Vergata team who participated in the study.

Electromagnetic stimulation interferes with the signals that trigger the perception of tinnitus. This can be achieved with non-invasive techniques such as the Acufree method used in this study, which adds high-frequency signals emitted with the capacitive method to the low-frequency inductive emission.

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The non-invasiveness, harmlessness and ability to personalize the treatment have allowed a high adherence to the study, with no adverse effects correlated to the use of the device. Added to this is the convenience and continuity of home use, an important novelty compared to other methods which imply the difficulty of numerous sessions and medical visits for prolonged periods (typically no less than 6-12 months).

Tinnitus is a rapidly growing condition around the [world](#), with a debilitating impact on people's lives people. In some cases they may be mild and transient, but in many cases the tinnitus is intense and constant; they cause problems such as anxiety and

depression, difficulty concentrating, working or socializing, and the ability to enjoy music or other sounds can be severely impaired. Furthermore, this pathology is among the primary causes of sleep disorders.

Treatment with Acufree represents a very promising therapeutic innovation to reduce the discomfort caused by tinnitus, improving the quality of life of patients whose number continues to grow, becoming a “first-order clinical problem”, as recognized by various countries (eg. Germany or UK) where the treatments are already evaluated by the national [health](#) system.

The prospect of a possible tinnitus treatment is a source of pride for all the researchers and experts involved in this clinical study, the results of which place this therapy among the most promising internationally in terms of the “medical significance” of the remedy. A result obtained in Italy by an innovative start-up in a virtuous alliance with a public hospital and university structure. Exactly the type of public-private “matching” on which our country aims to make the most of its research and its entrepreneurship.

**[See also How to make them bloom](#)**

The applied protocol was certified by LNAge, the CRO (Clinical Research Organization) chosen for this project: 6 different phases of control, verification and measurement of the data then interpreted and aggregated with an advanced eCRF technique (electronic Case Report Form).