

Infrared Therapy Is the Most Effective Treatment for Tinnitus Among Those Tested: Study

By Megan Redshaw, J.D. (July 8 2023 – The Epoch Times)

Tinnitus, or “ringing in the ears,” is an often debilitating condition with no approved treatment or cure. Yet millions of people could soon find relief from low-level infrared light therapy, according to a new peer-reviewed, first-of-its-kind study published in the [Journal of Personalized Medicine](#).

Over four weeks, researchers evaluated treatment for tinnitus in more than 100 men and women aged 18 to 65 divided randomly into 10 groups whose condition either had an unknown cause or had been unresponsive to treatment. Researchers sought to investigate and propose personalized treatment options involving low-level laser therapy (LLLT) using red and infrared light in the inner ear or cochlea where tinnitus often occurs, or LLLT combined with other treatments like vacuum therapy or drug therapy.

LLLT uses a narrow spectral width of light in the near-infrared spectrum to promote tissue regeneration, reduce inflammation, and relieve pain. Whereas a high-powered laser is used to cut and destroy tissues, [low-level near-infrared light](#) penetrates more deeply than ultraviolet or visible light and does not harm living tissue, according to a study published in Medical Lasers.

The study assessed both red light and infrared light laser therapy. Red light is visible and uses wavelengths of 630 to 700 nanometers (nm). Infrared light is invisible and penetrates further into the body at 800 to 1,000 nm.

Treatments evaluated included the following:

- LLLT modalities using only light
- LLLT combined with vacuum therapy, ultrasound, Ginkgo biloba tablets—an herb commonly used for vertigo and tinnitus caused by circulatory disorders and lack of blood flow to the brain—or a drug used to treat dizziness, vertigo, and migraines called flunarizine dihydrochloride
- [Laser acupuncture](#) (LP)—a specific type of LLLT that uses nonthermal, low-intensity laser irradiation to stimulate traditional acupuncture points
- Treatment with only flunarizine dihydrochloride
- Ginkgo biloba

Not only was LLLT using infrared wavelengths superior to the placebo, but lasting therapeutic effectiveness was also observed 15 days post-treatment with LLLT, LP, and light therapy combined with other treatments. Researchers also observed increased effectiveness when light therapy sessions focused on the cochlea and middle ear were increased from six to 15 minutes. These findings could be instrumental in developing new treatment protocols for tinnitus.

Since there are currently no recommended treatments or approved drugs to treat tinnitus, medicines such as sedatives, antihistamines, antidepressants, local anesthetics, and antipsychotics are commonly prescribed for treatment. These drugs can cause short- and long-term systemic side effects. This is the first study that shows treatment with LLLT to the middle ear and cochlear area is superior to placebos and the first to investigate the effects of LLLT combined with other therapies, to monitor short-term effects of nine treatment modalities during and 15 days after treatment, and to suggest protocols for tinnitus patients.

What Causes Tinnitus?

The National Institute on Deafness and Other Communication Disorders estimates that [10 to 25 percent](#) of U.S. adults experience some form of tinnitus—making it one of the country’s most common health conditions.

People experiencing tinnitus often hear ringing, roaring, whooshing, hissing, humming, or buzzing in one or both ears that can be soft or loud, low or high pitched, can come and go or be constantly present. Symptoms can [recover spontaneously](#) or become chronic, [resulting in sleep deprivation](#), loss of concentration, psychological distress, and depression.

Scientists theorize tinnitus results from [damage to the inner ear](#) that changes the signals carried by the nerves to the parts of the brain that process sound. Other evidence suggests abnormal interactions between the auditory cortex and neural circuits could contribute to the condition.

Tinnitus can also be caused by underlying conditions, such as circulatory problems, hearing loss, an infection, tumors, diabetes, autoimmune conditions, Ménière’s disease, heavy metal toxicity, or medications. More than [25,000 people](#) have reported [developing tinnitus](#) after receiving a COVID-19 vaccine—an adverse event U.S. regulatory agencies have seemingly ignored but is commonly associated with other vaccines.

Because it’s hard to determine the underlying cause of tinnitus, it’s challenging to treat and determine if or when it might resolve.

Using Infrared Light Therapy to Treat Tinnitus

Scientists discovered in the 1960s that LLLT could [enhance tissue repair](#), but it has only been used during the past two decades to reduce tinnitus severity. Previous studies have yielded inconsistent results, but the authors of the recently published study say this could be due to not using the appropriate power for wavelengths, not having the proper sessions over a long enough duration of treatment, or not focusing the light on the correct part of the ear.

To perform LLLT, a device is used to apply red or infrared laser wavelengths at a particular setting to various parts of the ear for a set duration. The therapy is not painful or associated with adverse events. The [British Medical Journal](#) describes LLLT as “harmless.”

According to the Medical Lasers paper, the exact mechanisms of LLLT are not fully understood. Still, it is believed that once the light is absorbed, it can “modulate cell biochemical reactions and stimulate mitochondrial respiration, enhancing the production of molecular oxygen, ATP synthesis, and collagen deposition.”

Natural Treatments for Tinnitus

With no approved medical treatments in the United States or Europe, many turn to alternative and complementary medicine to address tinnitus’s underlying causes and alleviate their symptoms. In addition to infrared light therapy, the following natural remedies have been shown to be effective for some people.

Gushen Pian

In a randomized controlled trial published in [Cell Biochemistry and Biophysics](#), Gushen Pian showed significant therapeutic results for tinnitus compared to a placebo after four weeks of treatment, with an overall effective rate of 89.2 percent versus 30.8 percent for the placebo and a symptom relief rate of 59.5 percent versus 5.1 percent for the placebo.

Ginkgo Biloba

Ginkgo biloba has been used as a medicinal herb for over 2,000 years and is derived from the oldest living tree. Ginkgo biloba extract, EGb 761, is the [most widely tested drug](#) in nonclinical tinnitus models and clinical trials, according to a review published in *Frontiers in Pharmacology*. Bioflavonoids and flavonoids in Ginkgo biloba, [terpene trilactones](#), such as ginkgolides and bilobalide, polyphenols, and organic acids are thought to have a vasodilatory effect and may play a role in alleviating tinnitus symptoms.

Although the herb may not work for everyone, [preclinical and clinical studies](#) have shown that apart from its antioxidant and vasodilatory effects, Ginkgo biloba extract may improve cochlear microcirculation, protect against ototoxicities—medications that damage the ear, resulting in hearing loss, ringing in the ear, or balance disorders—and alleviate aging-associated degeneration.

Korean Red Ginseng

Studies mentioned in the *Frontiers in Pharmacology* review show that Korean red ginseng can protect against ototoxic medications, attenuate noise-induced hearing loss, and improve cochlear damage. In a study published in the [Journal of Audiology & Otology](#), patients with chronic tinnitus received 1,500 mg/day or 3,000 mg/day of Korean red ginseng or 160 mg/day of Ginkgo biloba extract over four weeks. The authors found patients receiving 3,000 mg/day of Korean ginseng showed significant improvement in their scores and improved emotional and mental health.

Zinc

Research suggests as many as 31 percent of patients with tinnitus may be deficient in zinc. In a study published in the [Journal of Otology and Neurotology](#), 46.4 percent of patients given zinc reported clinically favorable progress, and 82 percent of patients experiencing subjective tinnitus experienced an improvement in symptoms compared to no significant decrease in tinnitus for patients receiving a placebo.

Melatonin

Supplementing with melatonin—a hormone your brain produces in response to darkness that helps regulate your circadian rhythm—at 3 milligrams per day for 30 days was associated with a [“statistically significant decrease](#) in tinnitus intensity and improved sleep quality in patients with chronic tinnitus.” Melatonin therapy is most effective in men without a history of depression, those with severe and bilateral tinnitus, and those with a history of noise exposure.

Dietary Therapy

Diet may play a role in the susceptibility of the inner ear to noise and age-related effects that cause tinnitus and hearing loss.

A [2020 study](#) found associations between single nutrients and dietary patterns in those with tinnitus and hearing difficulties. A higher intake of vitamin B12 was associated with a reduced chance of developing tinnitus, while calcium and iron increased the chances of developing tinnitus. Vitamin D intake was associated with a reduced risk of hearing difficulties, as was a diet higher in protein, vegetables, and fruit and lower in fat.

Other Therapies

Other natural therapies that may prove helpful for people experiencing tinnitus include biofeedback, heavy metal chelation, acupuncture, stress management, or wearing a mouth guard if tinnitus is related to dental grinding or temporomandibular joint dysfunction.

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