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White-Noise' Therapy Alone Not Enough to Curb Tinnitus

Tinnitus -- what many think of as "ringing in the ears" -- is the perception of sound without any real acoustic stimulation. Sound masking therapy, a common component of tinnitus treatment, is of uncertain benefit when used on its own, a new evidence review finds.

Tinnitus sufferers might hear one sound or multiple ones; they can hear them continuously or intermittently. The sounds are imperceptible to others. For most people, the phantom sounds -- hissing, whooshing and others -- hardly matter.

But for a small minority, tinnitus causes severe problems, such as anxiety, insomnia and even major depression sometimes leading to suicide.

Jonathan Hobson, lead author of the new Cochrane review, said that sound therapy relies on distraction, with an additional noise -- often called white noise -- reducing the contrast between the patient's tinnitus signal and the background noise. This reduces the person's perception of the phantom sounds and the distress they cause.

Hobson and colleagues at the Centre for Hearing and Balance Studies at Bristol University, in England, summarized the results of six studies of 553 adults with persistent tinnitus who underwent sound therapy either alone or combined with other treatments.

People receive sound therapy in several ways: by devices worn in or on the ear, by headphones connected to an MP3-like device or with an under-the-pillow speaker for night use.

Sound masking rarely is a standalone therapy; other treatment methods usually accompany it. Tinnitus therapies include medications, psychological interventions such as cognitive behavioral therapy and holistic approaches such as acupuncture.

Most tinnitus sufferers are adults between about 50 and 70 years of age who also have diminished hearing.

Accordingly, for most, hearing aids represent a first line of treatment, improving the hearing of actual external sounds and diminishing the phantom sounds at the same time.

The review was published by the Cochrane Collaboration, an international organization that evaluates medical research. Systematic reviews draw evidence-based conclusions about medical practice after considering both the content and quality of existing medical trials on a topic.

"[The review] does not provide high-quality evidence that sound therapy devices are better than alternative treatments, but they are probably better than no treatment at all and certainly no harm or adverse effects have been reported with their use," Hobson said. "The six trials included were all very different in nature and compared sound therapy devices to a variety of other interventions: information, counseling, tinnitus retraining therapy, hearing aids or no treatment".

U.S. tinnitus expert, Robert Sweetow, Ph.D., views the use of sound therapy somewhat differently. He said that sound therapy, as used today, does not aim to mask tinnitus. "Rather, it is meant to mingle with the tinnitus and provide acoustic stimulation to the brain to help compensate for the lack of stimulation caused by hearing loss," he said.

Hobson said that one study did report that subjectively patients found the sound therapy devices to be useful with lower levels of 'tinnitus annoyance' with their use.

Sweetow, a professor of otolaryngology at the University of California, San Francisco, has treated patients and studied tinnitus for more than 30 years. He agreed with the reviewers that the weight of evidence does not support sound therapy as a primary treatment.

"Rather they, and I, would consider sound therapy to be adjunctive to counseling," Sweetow said. "The authors acknowledge this, stating that the studies they reviewed used a combination of approaches, making it impossible to properly delineate why effects occurred."

Sweetow also concurred with the authors that there are few good long-term studies supporting sound therapy. Still, he said, "I would not like to see the medical community conclude that sound therapy is not helpful on the basis of this analysis. Rather, I would conclude that sound therapy is useful only when combined with a counseling component to complete a therapeutic process."

"Hearing aids are a part of sound therapy and there is

absolutely no doubt that they help most tinnitus patients." Sweetow added.

He cautioned review readers from concluding that there is no evidence in support of sound therapy: "There is simply no way one can, or should, separate sound therapy from counseling strategies since the ultimate goal must be habituation, or conscious suppression, rather than elimination of the tinnitus."

Journal Reference: 1. Hobson J, Chisholm E, El Refaie A. Sound therapy (masking) in the management of tinnitus in adults (review). Cochrane Database of Systematic Reviews, 2010, Issue 12.