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Can holding magnets against your head end the agony of tinnitus?

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Magnetic stimulation of the brain is being used to tackle ringing in the ears.

Doctors have already treated a small group of patients with a treatment known as repetitive transcranial magnetic stimulation, or rTMS.

Now, a larger clinical trial has started in which patients will receive four weeks of therapy.

Tinnitus is the sensation of a sound in the ear, usually a ringing noise. Although it can be triggered by underlying problems, from earwax to high blood pressure, in many cases the cause is unknown.

The noise heard in the ear can be a high-pitched whistling or buzzing, ringing, or hissing sound which may be there all the time, or comes and goes.

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In some cases, anxiety is thought to play a part.

Researchers say that using magnets to stimulate specific parts of the brain which show a higher rate of blood flow than would usually be expected - something that is associated with tinnitus - may help to alleviate the condition.

According to deaf charity the RNID, a third of all adults report tinnitus at some time. It is estimated that 7 per cent of men and women will visit their GP about the problem, 4 per cent have tinnitus that bothers them moderately or severely, and that the quality of life of one in 100 sufferers is severely affected.

Although tinnitus can be linked to exposure to loud noise, hearing loss, ear or head injuries, some diseases of the ear, ear infections or emotional stress, just why it occurs in some people and not others is unclear.

Human hearing has a complicated filtering system which allows the removal of unimportant sounds. The brain also has systems that help separate sounds.

That's why, for example, you tend to hear your name above all the other noise at a party.

This sound filtering is thought to be involved in tinnitus.

One theory is that the tinnitus sound is present in many people, but that their filtering system ignores it.

Some research suggests that when sufferers become anxious or annoyed at the sounds, the filtering system homes in even more on them and the perceived volume increases.

Although there have been many treatments suggested and tried for the condition, including masking noise, magnets, antidepressants and behaviour therapy, a cure remains elusive.

In the new clinical trial using rTMS, an electromagnet is placed on the scalp to generate mild magnetic field pulses which pass through the skull and stimulate the cerebral cortex - the outer portion of the brain where thought processes take place.

Sessions last between five and 30 minutes. During rTMS, the brain is stimulated for a few minutes using either a hand-held magnetic coil encased in plastic, or with a device that sits over the head.

The procedure is painless and does not require anaesthesia, and the patient has little or no sensation.

When rTMS is applied to areas of the brain which display increased activity and blood flow, it can reduce or suppress symptoms for a short time.

Researchers at the University of Tuebingen in Germany and at the University of Arkansas have shown it can be highly effective.

In the American study, all the patients responded to the treatment. For some, symptoms were suppressed for up to four weeks after the treatment.

"It is a promising treatment that can transiently diminish tinnitus in some individuals," the researchers say.

Similar results were obtained by the team in Germany, but it also found that the longer and the more intensive the therapy, the longer the relief from symptoms lasted.

The same kind of technology has been used to treat anxiety, migraines and epilepsy.

Commenting on the research, Dr Ralph Holme, head of biomedical research at the RNID, said: "Tinnitus can be a debilitating condition. It affects seven million people in the UK, according to RNID estimates, yet there is no known cure.

"Though the research into new treatments is at a very early stage, RNID welcomes any advancement in our understanding of tinnitus."

- *For more information, go to www.tuneouttinnitus.org.uk*

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