

TINTING IN THE EAR - CAUSES, DEVELOPMENT, TREATMENT AND PREVENTION OF NOISE IN THE EAR

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Abstract. *One can often hear such a question: "Which tinnitus bothers you?" But what to do if the ear is ringing both day and night? Those who have this problem are embarrassed to talk about it openly. After all, the rattling sound is not coming from outside, but from inside. How can you explain to others that you are hearing a voice that is not there? In fact, we are talking about a condition called tinnitus in medicine.*

Keywords: *about tinnitus, prevalence of tinnitus, classification of tinnitus, causes of tinnitus, theories of tinnitus, symptoms of tinnitus, treatment of tinnitus, prevention.*

ТОНИРОВАНИЕ В УХЕ - ПРИЧИНЫ, РАЗВИТИЕ, ЛЕЧЕНИЕ И ПРОФИЛАКТИКА ШУМА В УШЕ

Аннотация. *Часто можно услышать такой вопрос: «Какой шум в ушах вас беспокоит?» Но что делать, если в ухе звенит и днем, и ночью? Те, у кого есть эта проблема, стесняются говорить об этом открыто. Ведь стук идет не снаружи, а изнутри. Как вы можете объяснить другим, что слышите голос, которого нет? На самом деле речь идет о состоянии, называемом в медицине шумом в ушах.*

Ключевые слова: *шум в ушах, распространенность шума в ушах, классификация шума в ушах, причины шума в ушах, теории шума в ушах, симптомы шума в ушах, лечение шума в ушах, профилактика.*

CLASSIFICATION OF NOISE IN THE EAR

Academician of the Russian Soviet of the Russian Academy of Sciences I.B. Soldatov developed a classification for clinical medicine according to the level of tinnitus, which differs in four levels:

Level 1 - noise does not reduce work ability, it is possible to get used to it;

2 degree — significant ringing in the ears, especially in the evening;

Level 3 — noise is always disturbing, the patient is distracted by noise. Sleep is disturbed, restlessness appears.

4th degree - the noise is very difficult to tolerate, it constantly disturbs the patient. There is almost no ability to work.

In German clinics, the following classification of tinnitus is used:

— by time:

Acute (topical): felt for less than 3 months;

Not acute (moderate): felt from 3 months to 1 year;

Chronic: if felt for more than 1 year.

- according to secondary symptoms:

Compensated: the patient has tinnitus, but can overcome it, so no additional symptoms appear. The patient suffers very little, the noise does not affect the quality of life.

Decompensated: tinnitus significantly affects all areas of life and leads to the development of secondary symptoms: anxiety, insomnia, difficulty concentrating, depression. The quality of life is significantly impaired.

CAUSES OF TINNING IN THE EAR

Tinnitus is not an independent disease. On the contrary, it is a symptom that can be caused by various pathological conditions. It has been proven that the causes of tinnitus are as follows:

Arterial hypertension;

Neck osteochondrosis;

Inflammatory diseases of the ear (otitis);

Sensorineural ear heaviness;

Meniere's disease;

Atherosclerosis of blood vessels;

Stress;

Endocrine diseases (thyroid pathology, diabetes);

Neuroma of auditory nerves;

Multiple sclerosis;

Taking some medications;

Barotrauma and acoustic injuries (explosion of pyrotechnics at close range, very loud sound at rock concerts).

TINNITUS AND DRUGS

Tinnitus can be caused by taking a number of medications or drug interactions. Such preparations include:

Aminoglycoside antibiotics (streptomycin, gentamicin, etc.), erythromycin, vancomycin;

Chemotherapy using cisplatin;

Some anticancer drugs, for example "Methotrexate" and "Vincristine";

Nonsteroidal anti-inflammatory drugs (aspirin (in high doses), ibuprofen, ketoprofen, indomethacin, paracetamol, baralgin, naproxen, etc.);

Diuretics such as bumetanide, ethacrynic acid and furosemide;

quinine;

Drugs used in psychiatry (sertraline, amitriptyline, anafranil, etc.), as well as sleeping pills.

In order to reduce tinnitus, studies have been conducted to study the effects of many groups of drugs: antidepressants, antiepileptic drugs, tranquilizers, betaserk group. None of the drugs have a strong effect on reducing tinnitus.

THEORIES OF THE OCCURRENCE OF TINNING

THE PERIPHERAL THEORY OF TINNING

Currently, there are two main theories of the origin of tinnitus. First, according to the peripheral (or cochlear) theory, tinnitus occurs in response to the death of inner ear cells (cells that convert sound into nerve impulses). This happens due to the large strong constant sound load that we are used to in everyday life and do not care about. Auditory cells do not die immediately, but for a certain period of time they are in a pre-death state - parabiosis, in which their function is severely impaired, and they cannot generate a special impulse for each sound, but instead constantly send information to the brain. and this is perceived by the patient as noise.

Over time, some cells die, and others enter a state of parabiosis. According to this theory, tinnitus originates from the peripheral nervous system and the cochlea.

THE CENTRAL THEORY OF TINNITUS

The second theory describes the mechanism of tinnitus formation as central. The authors of this theory claim that noise in the ears is formed like "phantom pains". Hearing cells are no longer there, but the brain "remembers" that signals about external sounds should come through the auditory pathways. Since the brain cannot create sounds on its own, it begins to search for "information" similar to auditory impulses. Such information comes down through the pathways that pass through the mood center. This pathway becomes active and becomes dominant. That is why it is difficult for patients to emotionally tolerate noise. According to this theory, tinnitus is the result of "incorrect" central adaptation. Due to the fact that the disturbance occurred in the central nervous system and required "reorganization", psychotherapeutic treatment is indicated. It is considered that the origin of central tinnitus is related to the auditory zone of the cerebral cortex.

SYMPTOMS OF TINNITING

It should be noted that normally any person can hear a certain background noise in absolute silence. Many people have experienced tinnitus, for example, after attending a noisy concert. But the next day, the noises in the ears disappear.

Patients suffering from tinnitus note that the ringing in the ears is most clearly heard before going to sleep, when there is silence around. Focusing on noise can cause insomnia. If tinnitus continues to develop, the ringing in the ears can be bothersome even during the day, in a noisy environment. People start paying more and more attention to sound. It affects the psycho-emotional state of a person. His mood worsens, depressive reactions may develop. In some cases, a gradual decrease in hearing ability is noted.

TREATMENT OF TINNING IN THE EAR

There is still no cure for tinnitus. However, in practice, the following conservative methods are used to treat tinnitus:

Medicinal therapy;

Physiotherapy;

Reflexotherapy;

Hearing aids;

Hydrotherapy;

Psychotherapeutic training, in particular, cognitive-behavioral therapy.

First of all, it is necessary to conduct studies that will help to determine the cause of tinnitus. If the cause is found, then the treatment of tinnitus is directed to the treatment of the main diseases. Unfortunately, in many cases, the causes of the disease are not identified. In such cases, the doctor applies the following treatment methods:

Treatment with drugs (group B vitamins, ginkgo-biloba, zinc preparations, drugs that improve blood circulation in the brain);

Using a special implant that creates "white noise" that overrides tinnitus. Sound therapy can also be used. For this, the patient listens to music with the sounds of nature or the environment. Such sounds allow to shift a person's attention to the source of external noise. This helps to relax and fall asleep.

Psychotherapy. Cognitive-behavioral therapy is often used in the treatment of tinnitus. When working with a psychotherapist, the patient is taught meditation techniques. It also helps to change the perception of noise in the ear, to stop focusing on the sound.

Some clinics use hypnosis and hyperbaric oxygenation to treat tinnitus, but their effectiveness is very low.

In 2000, O. A. Golubovsky, an otorhinolaryngology employee of the Moscow Research Institute, published in the journal "Ambassador of Otorhinolaryngology" "Subjective tinnitus and hyperacusis. He published the article "Treatment with fluctuating currents". Treatment with fluctuating current gave a high percentage of positive results both in the case of patients with subjective tinnitus without hearing impairment, and in the case of patients with chronic neurosensory ear heaviness. In 8 out of 36 patients suffering from tinnitus, it completely disappeared, and in 18 it became less intense. According to O. A. Golubovsky, the treatment of subjective tinnitus with fluctuating currents has a future and requires further study.

If ringing in the ears keeps you awake at night, there are special noise masking programs on the Internet. One of the programs developed for mobile devices is presented on the Sound Oasis website and is called "Tinnitus therapy pro". You can download the program "Tinnitus therapy lite" for free, which has 5 types of sounds for familiarization. Also, the free distribution program "Aura. Zvukovaya atmosphere lesa - дживенно и nochnogo" is also suitable.

Currently, the tinnitus retraining therapy (TRT) model developed by Pavel Yastreboff is dominant in the world.

Tinnitus Retraining Therapy

The essence of the TRT method is simple, but it takes time to teach the patient: the person is taught not to listen to the noise, not to be distracted, to relax, and it is explained to him that he is not suffering from a serious disease and that his life is not in danger. Training is conducted in a three-day intensive course. The first part of the course involves giving concrete advice to teach people to think that tinnitus is not a negative thing. The second part of the course is sound therapy. Without medication, tinnitus will decrease by 50% on its own within 6-12 months. With successful psychotherapy, a person stops noticing tinnitus within 3-20 months. Sometimes, in severe depression, antidepressants can be prescribed to reduce nervous tension.

TRT's sound therapy is to recommend frequent listening to "white noise"—the sound of a waterfall, the sea, rustling leaves. The "white noise" emitted by the audiomasker is evaluated as a neutral sound that has no significance in the subcortical auditory pathways. Immediately, its reception is blocked, and the signal does not reach the level of the cortex and does not cause the sensation of noise. At the same time, the noise that disturbs the patient loses its importance and the patient stops perceiving it. "White noise" is not universal, but is selected individually for each person after special tests. In addition, the method of treatment includes psychotherapy, which teaches the person not to pay attention to the noise that disturbs him. If the patient is diagnosed with hearing loss, a hearing aid is selected, because the increase in external sounds also "reduces" the internal noise.

PREVENTION

It is easier to prevent any disease than to cure it. You can save yourself from tinnitus by following these simple recommendations:

If you listen to music on headphones, make sure the music is not too loud. Try not to listen to music while on the subway. The noise of the train together with the music causes a lot of strain on the auditory analyzer.

Do not forget to use earplugs (earplugs) if your professional activity involves noise in the workplace.

Avoid caffeinated and alcoholic beverages. These drinks can cause tinnitus.

Do not use cotton swabs to clean the ears. Their incorrect use causes ear sulfur to be pushed into the auditory canal.

Avoid stressful situations. Learn autogenic training methods. Make sure you get at least seven to eight hours of sleep a day.

REFERENCES

1. Tohirova J., Shernazarov F. ATHEROSCLEROSIS: CAUSES, SYMPTOMS, DIAGNOSIS, TREATMENT AND PREVENTION //Science and innovation. – 2022. – Т. 1. – №. D5. – С. 7-12.
2. Farhod o'g'li S. F. GASTRIT—SABABLARI, ALOMATLARI, TASHXISLASH, DAVOLASH, DORILAR, ASORATLARI, OLDINI OLISH //Лучший инноватор в области науки. – 2022. – Т. 1. – №. 1. – С. 103-107.
3. Tohirova J., Shernazarov F. ATHEROSCLEROSIS: CAUSES, SYMPTOMS, DIAGNOSIS, TREATMENT AND PREVENTION //Science and innovation. – 2022. – Т. 1. – №. D5. – С. 7-12.
4. F. Shernazarov ATHEROSCLEROSIS: CAUSES, SYMPTOMS, DIAGNOSIS, TREATMENT AND PREVENTION // SAI. 2022. №D5. URL: <https://cyberleninka.ru/article/n/atherosclerosis-causes-symptoms-diagnosis-treatment-and-prevention> (дата обращения: 20.10.2022).
5. F. Shernazarov, J. Tohirova, D. Jalalova TYPES OF HEMORRHAGIC DISEASES, CHANGES IN NEWBOENS, THEIR EARLY DIAGNOSIS // SAI. 2022. №D5. URL: <https://cyberleninka.ru/article/n/types-of-hemorrhagic-diseases-changes-in-newboens-their-early-diagnosis> (дата обращения: 20.10.2022).
6. Qizi T. J. I., Farrukh S. TREATMENT OF MYOCARDIAL INFARCTION AND FIRST AID //Science and innovation. – 2022. – Т. 1. – №. D3. – С. 317-320.
7. Shernazarov F., Azimov A. INCREASED BRAIN PRESSURE-CAUSES, SYMPTOMS, COMPLICATIONS, TREATMENT //Современная медицина: новые подходы и актуальные исследования. – 2021. – С. 73-77.
8. qizi Tohirova J. I., og'li Ibragimov B. I., og'li Shernazarov F. F. CONGENITAL HEART DISEASE-CAUSES, CLASSIFICATION, DIAGNOSIS, TREATMENT, COMPLICATIONS, CONSEQUENCES //Eurasian Journal of Medical and Natural Sciences. – 2022. – Т. 2. – №. 3. – С. 84-89.
9. Mratbaevna W. N., Farrux S. The Structure of the Heart and its Physiology in Regular Athletes //Eurasian Scientific Herald. – 2022. – Т. 8. – С. 102-105.
10. Farhod o'g'li S. F. GASTRIT—SABABLARI, ALOMATLARI, TASHXISLASH, DAVOLASH, DORILAR, ASORATLARI, OLDINI OLISH //Лучший инноватор в области науки. – 2022. – Т. 1. – №. 1. – С. 103-107.

11. Фаррух Ш. и др. ПУТИ УСТРАНЕНИЯ САХАРНОГО ДИАБЕТА //Science and innovation. – 2022. – Т. 1. – №. D3. – С. 313-316.
12. ПУТИ УСТРАНЕНИЯ САХАРНОГО ДИАБЕТА. Тоҳирова Жайрона Иззатилло Қизи, Шерназаров Фаррух «Science and innovation» 2022 yil 3-sonida 313-316 bet
13. <https://doi.org/10.5281/zenodo.6803520>
14. Shernazarov Farrukh. (2022). TREATMENT OF MYOCARDIAL INFARCTION AND FIRST AID. "science and Innovation" International Scientific Journal. ISSN: 2181-3337, 1(3), 317–320. <https://doi.org/10.5281/zenodo.6803550>
15. Shernazarov Farrux. Eurasian Scientific Herald