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### ТИШЛАРНИНГ ЮҚОРИ СЕЗУВЧАНЛИГИНИ ДАВОЛАШГА ЗАМОНАВИЙ ЁНДАШУВЛАР

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### СОВРЕМЕННЫЕ ПОДХОДЫ К ЛЕЧЕНИЮ ПОВЫШЕННОЙ ЧУВСТВИТЕЛЬНОСТИ ЗУБОВ

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**Резюме.** Тишларнинг юқори сезувчанлиги кенг тарқалган касалликдир. Бу касаллик одамга овқатланишга ноқулайлик туғдиради ва оғриқ ҳиссини ҳам пайдо қилади. Ушбу мақолада тишларнинг юқори сезувчанлиги ҳақида ўрганилган адабиётлар шарҳи келтирилган. Шундай қилиб, замонавий адабиётлар манбаларини таҳлил қилиши шуни кўрсатдики, ҳозирги кунга қадар тишларнинг қаттиқ тўқималарининг гиперестезиясини даволашнинг универсал самарали схемалари мавжуд эмас ва шунинг учун ҳам янги воситалар ва усулларни излаш нафақат долзарб, балки амалий соғлиқни сақлаш учун ҳам зарурдир ҳисобланади.

**Калит сўзлар:** тишларнинг сезувчанлиги, оғриқ, даволаш.

**Abstract.** Hypersensitivity of the teeth is a common disease. The disease causes discomfort in eating and causes pain. This article gives you a brief overview on tooth sensitivity. Thus, the analysis of modern literature sources has shown that to date there are no universal effective treatment regimens for hyperesthesia of hard tissues of teeth, and therefore the search for new means and methods is not only relevant, but also necessary for practical healthcare.

**Key words:** tooth sensitivity, pain, treatment.

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Hypersensitivity of teeth has more than half a century of history. According to the world literature, up to 57% of the planet's population suffers from dentin hypersensitivity [9].

The problem of hypersensitivity requires special attention, since it creates local discomfort and reduces the patient's quality of life [3]. Numerous studies have established that dental hyperesthesia is a serious problem not only medical, but also social [7, 8].

Hypersensitivity is characterized by short-term acute pain resulting from the dentin's response to temperature, tactile, chemical stimuli, and this pain is not associated with any damage to the tooth. If we consider the localization of hypersensitivity, then in the first place according to the predisposition to the disease are the canines and the first premolars, then the incisors, the second premolars and finally the molars. The area of the neck of the tooth is almost always affected. Several theories of the origin of sensitivity have been proposed, but the most generally ac-

cepted is the hydrodynamic theory. The main provisions of this theory are as follows. Stimuli that cause pain increase the flow of fluid from the dentine tubules, which, in turn, contributes to a change in pressure in the dentine, which activates nerve endings at the pulp - dentine border or in the dentine tubules themselves. For the occurrence of hypersensitivity, two reasons are necessary: that the enamel ceases to protect the dentin and its exposure occurs; to increase the degree of opening of the dentine tubule system.

This may be the result of dental caries, non-carious lesions (cracks, erosion, erosion, wedge-shaped defect), complications after treatment and teeth whitening, periodontal diseases, occlusion disorders, improper oral hygiene, etc. The presence of dentin hyperesthesia complicates oral hygiene, which leads to the rejection of patients from it, and subsequently a vicious circle is formed: low hygiene - inflammation - recession-hyperesthesia [1].

This approach is based on a symptomatic approach aimed at eliminating the pain syndrome, while

the dentine tubules remain open. In this regard, in order to achieve a stable result, toothpastes based on potassium salts must be used for a long time [6]. An alternative approach is to reduce the lumen or complete obturation of the dentine tubules, which, according to the hydrodynamic theory, leads to a decrease in dentine hypersensitivity [2]. So fluoride ions, reacting to calcium ions in the intracalcium fluid, form globules of insoluble calcium fluoride deposited in the tubules, either sealing or gradually reducing their diameter, which leads to a decrease in their response to irritation. When strontium salts are applied, the exposed dentine tubules are obturated with the formation of substitutive dentine [5].

Studies by I.N. Kuzmina, L.A. Tsomaeva, A.V. Lapatina (2007) studied and compared Colgate Sensitive toothpastes (5% potassium citrate) and Sensodyne Fluoride (3.75% potassium chloride) to reduce the sensitivity of hard tooth tissues to various types of irritants. The results showed that after 6 weeks of using Colgate Sensitive toothpaste, the temperature sensitivity of teeth decreased by an average of 10.8 times, and in patients who cleaned with Sensodyne Fluoride toothpaste - by 5 times compared to the initial values. A study on the use of Elmex Sensitiveplus toothpaste showed that after one day of using toothpaste, pain disappeared in 5% of respondents, in one week - in 47%, and in two weeks - in 58% [5, 8].

A number of authors believe that the most successful and modern technology is "PRO-ARGIN" based on the formation of the complex "Arginine/Calcium carbonate" [3, 6, 9]. Arginine is an amino acid involved in a number of important metabolic processes of the body. Arginine in saliva plays an important role in ensuring its remineralizing potential due to the formation of positively charged agglomerates "arginine - calcium carbonate", capable of being deposited on negatively charged dentine at neutral pH values, forming a sealing layer not only on the surface, but also in the depth of open dentine tubules.

In early studies [4], it was demonstrated that a single professional application of paste based on "PRO-ARGIN" technology leads to an instant decrease in hypersensitivity of teeth that occurs after professional cleaning, and the achieved result persists for 28 days. Immediately after applying the paste based on the "PRO-ARGIN" technology, there is a decrease in sensitivity to cold in 71.7% of cases, and to probing – 84.2%. The "PRO-ARGIN" technology is part of the Colgate Sensitive Pro-Relief professional paste, the high desensitizing effectiveness of which has been confirmed in a number of experimental and clinical studies. It also has gentle polishing properties its use for professional hygiene does not change the texture of the surface of tooth enamel and dental restoration materials. Colgate Sensitive Pro-Relief paste for home use has great effectiveness in terms of re-

ducing sensitivity, speed of action and duration of effect, unlike paste containing 2% potassium ions. According to the study, the sealing of tubules when using Sensitive Pro-Relief paste was 3.5 times more pronounced than when applying pastes containing Sensodyne original strontium salts and Macleans Sensitive Multi Defense.

Comparative studies of Colgate Sensitive Pro-Relief professional pastes and sodium fluoride-based professional pastes showed that the effectiveness of Colgate paste was 38.5% higher than the other [5, 7, 8, 9]. Recently, there have been many publications in which the use of a dental laser has been declared as a new method of treating hyperesthesia and has become the object of intensive research [2, 3, 4, 6]. To prevent conditions leading to the development of hypersensitivity, it is recommended to use soft and medium-hardness toothbrushes - they have more flexible bristles that can easily penetrate into the interdental spaces, tooth fissures and subgingival zones. In addition, they advise to limit the consumption of acidified foods and beverages that reduce the pH of the oral cavity. It is also important that all patients who intend to resort to teeth whitening are informed about the risk of hypersensitivity after such a procedure. To prevent (or at least reduce) hypersensitivity, it is recommended to use desensitive pastes for several weeks before the bleaching procedure [8, 9].

Today there are many causes of hyperesthesia of hard tissues of teeth and many types of treatment. A dentist should investigate all possibilities, diagnose and apply treatment methods that correspond to all causes and predisposing factors in order to reduce or completely eliminate hyperesthesia of hard dental tissues. Thus, the analysis of modern literature sources has shown that to date there are no universal effective treatment regimens for hyperesthesia of hard tissues of teeth, and therefore the search for new means and methods is not only relevant, but also necessary for practical healthcare.

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**Резюме.** Повышенная чувствительность зубов является распространенным заболеванием. Заболевание вызывает дискомфорт при приеме пищи и вызывает боль. В этой статье дается краткий обзор чувствительности зубов. Таким образом, анализ современных литературных источников показал, что на сегодняшний день не существует универсальных эффективных схем лечения гиперестезии твердых тканей зубов, в связи с чем поиск новых средств и методов является не только актуальным, но и необходимым для практического здравоохранения.

**Ключевые слова:** чувствительность зубов, боль, лечение.