

METHODS OF TEETH WHITENING

Khaled Abed

Student, Volgograd State University, Russia, Volgograd

Ashjda Yasaman

Student, Volgograd State University, Russia, Volgograd

Ayad Hussein

Student, Volgograd State University, Russia, Volgograd

Hadur Jamal

Student, Volgograd State University, Russia, Volgograd

Haider Ziyad

Student, Volgograd State University, Russia, Volgograd

Shemshat Orazmyradova

Student, Volgograd State University, Russia, Volgograd

Lahbal Ikram

Student, Volgograd State University, Russia, Volgograd

Denisenko Larisa

научный руководитель, Scientific director Associate professor, Volgograd State University, Russia, Volgograd

Abstract. This article reviews the main teeth whitening methods used in modern dentistry, including in-office procedures, home use kits. The discussion focuses on the mechanisms, advantages, and disadvantages of each method. Particular attention is paid to the safety and effectiveness of whitening products and their effect on tooth enamel and overall oral health.

Keywords: teeth whitening, bleaching agents, in-office whitening, take-home kits, over-the-counter whitening products, dental aesthetics.

Relevance. The pursuit of a brighter smile has led to the rapid growth of teeth whitening techniques in aesthetic dentistry. With advancements in bleaching agents and application methods, patients can now choose from various options to enhance the appearance of their teeth. This article examines these methods, weighing their benefits and potential risks. Teeth whitening can be categorized into professional and non-professional methods. Professional whitening, performed in a

dental office, often uses high-concentration hydrogen peroxide or carbamide peroxide. These agents penetrate the enamel and break down stains caused by food, beverages, and smoking. Advanced technologies, such as laser or LED activation, enhance the process by accelerating the bleaching reaction, achieving noticeable results within a single session [1, p. 45].

Take-home whitening kits, provided by dental professionals, are another effective option. These kits include custom-made trays and lower-concentration bleaching gels, allowing patients to whiten their teeth gradually over one to two weeks. This method balances convenience with safety, as it is supervised by a dentist [2, p. 68].

Strips, gels, and toothpaste, are the most accessible option. While these products are cost-effective and easy to use, they generally have lower concentrations of active ingredients, resulting in less dramatic and slower results compared to professional treatments [3, p. 25].

Advantages of Whitening Methods

- Professional whitening: achieves immediate and dramatic results with minimal effort.
- Take-home kits: offer flexibility and control over the whitening process.

Limitations and Safety Concerns

Teeth whitening, particularly with high-concentration bleaching agents, can cause temporary tooth sensitivity and gum irritation [4, p. 54].

Recent advancements in whitening technology have focused on enhancing both the safety and effectiveness of treatments. For example, non-peroxide-based whitening agents, such as PAP (phthalimido peroxyacetic acid), are gaining popularity for their ability to minimize sensitivity while providing comparable results. Additionally, light-activated whitening systems with adjustable intensity ensure precise application tailored to individual needs [5, p. 89]. A brighter smile significantly enhances a patient's confidence and overall appearance. Professional whitening methods, in particular, allow dentists to achieve consistent, natural-looking results by customizing treatments based on the patient's dental condition and aesthetic goals. The psychological benefits of improved self-esteem often outweigh the temporary discomfort associated with the procedure [6, p. 120]. The future of teeth whitening lies in eco-friendly and sustainable practices. Innovations such as biodegradable trays and plant-derived whitening agents aim to reduce environmental impact while maintaining effectiveness. These developments align with the growing demand for environmentally conscious dental care solutions [7, p. 32]. Modern teeth whitening methods increasingly focus on not only removing stains but also preserving and strengthening enamel. The incorporation of remineralizing agents, such as hydroxyapatite and fluoride, into whitening gels helps counteract potential enamel erosion caused by bleaching agents. These substances restore mineral density and create a protective barrier, reducing sensitivity and enhancing overall dental health. This dual-action approach ensures that whitening treatments provide aesthetic benefits without compromising tooth integrity, making them a safer and more sustainable choice for patients seeking long-term results. In conclusion, teeth whitening is a highly sought-after cosmetic procedure with diverse methods catering to different patient preferences and needs. While professional treatments provide the most effective and immediate results.

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