

Editorial

The Evolution of Tooth Whitening

It is through careful observations and efforts of many pioneers that enabled the dental profession to offer tooth whitening as a conservative alternative treatment, to whiten and lighten discolored teeth that otherwise had to be treated with veneers or full coverage restorations with concomitant removal of sound tooth structure.

The innovative technique of nightguard vital bleaching using 10% carbamide peroxide in a custom made tray worn at night was first published by Haywood and Heymann in 1989.¹ This technique not only met the expectations of the new generation conscientious of outer appearance and thriving to improve their esthetic smile but also offered the possibility of whiter vital teeth at a lower cost, with much less danger and fewer side effects.² This technique also demarcates the striking evolution of tooth whitening before and after this event.

Dentistry emphasizing esthetics was a popular topic in the 1800s too; however, during this time, the chemistry of numerous bleaching agents was still in the experimental phase with direct or indirect oxidizers being employed for the bleaching mainly of nonvital teeth.³ Although most of the early dental literature focused on nonvital bleaching, oxalic acid was employed for bleaching of vital teeth as early as 1868.⁴ In 1884, Harlan published what is believed to be the first report of hydrogen peroxide, which he called hydrogen dioxide.⁵ Since there were few chemical manufacturing companies in the 1800s, most dentists mixed a variety of solutions in their office.² Attempts to speed up the bleaching process in the office were performed by using an electric current, ultraviolet rays, other heating instruments and lights.⁶⁻⁸

Innovative advances in whitening materials and delivery methods were introduced as manufacturers realized that they could reach the general public directly by the introduction of over-the-counter products. Among those products, the strip technology using hydrogen peroxide on a clear strip of tape, which was applied to the teeth, brought about innovative advances in materials and delivery methods reaching out directly to the public. The major drawback of these products seems to be the lack of proper supervision by the dental profession ensuring the efficacy and safety of the procedure.

The changes and continuous progresses of the materials and techniques on tooth whitening reflect the efforts of the dental profession toward preservation of tooth structure, enhancing esthetics and restoration of smiles. The future will likely bring about even more innovative systems that are aimed to benefit the general public.

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