

**The Effect of Different Bleaching Techniques
on the Physical Properties of Intentionally
Discolored Teeth
(An in vitro study)**

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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Dedication

***To my mum that is always encouraging me and
pushing me forward***

***To my father with his endless love, support and
knowledge***

To my younger sister for her kind support

To my beautiful son and daughter

***To my beloved husband for his great assistance and
endless support. Without his help I would have never
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INTRODUCTION

INTRODUCTION

The new philosophy of dental therapy, greatly, focuses on esthetics. Discoloration of permanent anterior teeth impairs the esthetic appearance and causes emotional trauma to patients. By obtaining white teeth, a person becomes much more confident in his smile, which in turn, will positively affect his attitude and behavior.

Dental stains can either be intrinsic or extrinsic. Intrinsic stains refer to color changes of the internal tissues of the teeth. They can either be local (tetracycline and fluorosis) in origin or due to genetics or aging process. While extrinsic stains, refer to color changes of the external tooth surfaces due to deposition of stains or pigments on the teeth surfaces such as tobacco, tea, coffee,...etc.

Dental bleaching contributes significantly to the field of cosmetic dentistry, providing an invaluable resource for clinicians who perform different types of esthetic procedures. Literature suggests that the mechanisms of tooth whitening by peroxide occur by the diffusion of peroxide through enamel to cause oxidation and hence lightening of colored species, particularly within the dentinal regions. The most common oxidizing agents used are hydrogen peroxide or carbamide peroxide.

There has been a dramatic increase in the number of products and procedures over recent years, with a concomitant rise in publications on this topic. A number of approaches are available for evaluating such products.

Bleaching techniques can either be [Take Home or Over the Counter] bleaching or [In-office bleaching]. The key factors that affect tooth whitening efficacy by peroxide containing products are concentration and time. In general, higher concentrations are faster than lower concentrations. However, lower concentrations can approach the efficacy of higher concentrations with extended treatment times. Alternative bleach systems to peroxide have received only minor attention. The mode of activation varies with the bleaching technique. The bleaching material can be activated chemically, by blue light (plasma light), by laser or using the ultrasonic technology called Supersonic tooth whitening system (Soni-white system). The efficacy of light activated systems versus non-light activated controls in clinical studies is limited and conflicting.

Therefore, throwing more light on bleaching materials, procedures and their effect on color changes, surface roughness, and microhardness is recommended to eliminate the drawbacks of the reuse.

REVIEW OF LITERATURE