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College of Dentistry**



**Color Stability of Different Aesthetic Arch Wires
after Immersion into Different Types of Mouth
Washes
(An in Vitro Study)**

A Thesis

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Abstract

In response to patients demands for better aesthetics in orthodontics, manufacturers have developed different aesthetic materials; among them Teflon and epoxy coated aesthetic arch wires. The color stability of aesthetic arch wires is clinically important, any staining or discoloration will affect patient's acceptance and satisfaction. Proper oral hygiene is an essential factor for successful orthodontic treatment, therefore mouth washes can be used to maintain good oral hygiene.

This in vitro study was designed to evaluate the color stability of different types of aesthetic arch wires after immersion into three types of Listerine mouth washes at different time intervals.

Four brands of nickel-titanium aesthetic coated arch wires were used: epoxy coated (Orthotechnology and G&H) and Teflon coated (Dany and Hubit). Forty-eight strips, each strip contains ten halves of the aesthetic arch wires, were prepared and divided into four groups according to the immersion media (distilled water, Listerine with alcohol, Listerine with fluoride and Listerine with no alcohol and no fluoride) and immersed for 30 seconds twice daily according to manufacturer's instructions to measure the color change value after 1 week, 3 weeks and 6 weeks. The samples were incubated at 37C° for the entire testing time, spectrophotometer VITA Easyshade Compact was used to measure the color change according to Commission Internationale de l'Eclairage L*a*b* color space system. ANOVA and HSD tests were used to statistically analyze the results.

The results of the present study showed that all types of Listerine mouth washes caused color changes in variable degrees for all brands of aesthetic coated arch wires; the Listerine with fluoride mouth wash caused highest color change values followed by Listerine with alcohol mouth wash then Listerine

with no alcohol and no fluoride mouth wash. Additionally, color change value of aesthetic arch wires increases as the time of immersion increases.

In conclusion, the daily use of Listerine mouth washes could affect on the color stability of aesthetic arch wires. Hubit aesthetic arch wires were the least color stable when compared to the other brands in various immersion media at all time intervals while Orthotechnology aesthetic arch wires were the most color stable as compared to the other brands in various immersion media at all time intervals, except that in Listerine with alcohol mouth wash where Dany aesthetic arch wires were the most color stable under this condition.