

Stainability of Clear Overlay Retainers After Immersion in Different Drinks

**A thesis submitted to the Council of the
College of Dentistry, University of Baghdad
in partial fulfillment of the requirements
for the Degree of Master of Science
in Orthodontics**

**By
Haider Falih Kalhan
B.D.S.**

**Supervised by
Akram Faisal Al-Huwaizi
Assist. Prof. of Orthodontics
B.D.S., M.Sc., Ph.D.**

Baghdad-Iraq

May 2007

Rabe Althanee 1428

Abstract

Clear overlay retainer have become popular because of their ease of manufacturing and superior esthetics. This study evaluated the effect of four different drinks (tea, coffee, Coca Cola and Miranda) on the stainability of three types of clear overlay retainer materials.

For each material (Duran, Clear and Comfort) 25 clear overlay retainers were fabricated and cut in half to make 50 pieces. These were divided into 5 equal subgroups of 10 pieces each. Four groups immersed into the staining drinks (tea, coffee, Coca Cola and Miranda) and the fifth group was stored in artificial saliva as a control group. Each 10 retainers (subgroup) were kept in a container filled with artificial saliva so the total sample was kept in 15 separate containers stored in the water bath at 37°C. Every 6 hours the retainers of every subgroup were immersed in the respective drink for 15 minutes and then returned to the artificial saliva. The degree of light absorption by the material was measured for each sample at 5 instances using a computerized spectrophotometer (baseline reading before immersing in the drinks and then after immersing the retainer in the staining drink for 15, 30, 45 and 60 cycles).

It was found that tea is the most powerful staining drink, followed by coffee, Coca Cola and finally Miranda. Duran is the most type of material affected by staining drinks, then followed by Clear and finally Comfort. Comfort material is the least affected by coffee, Coca Cola and Miranda. Clear material stains significantly less than Duran by tea and coffee but the difference is insignificant for Coca Cola and Miranda.

In conclusion, retainers made from Clear or Comfort materials should be prescribed for tea drinkers, but the use of slight cloudy color of Comfort may be a limiting factor for its use. Retainers made from either Clear or Duran materials can be prescribed for non-tea or coffee drinkers who consume Coca Cola or Miranda soft drinks.