

Effect of a carbamide peroxide bleaching gel containing calcium or fluoride on human enamel surface microhardness**Khalid Saad Saleh Almagham**

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This *in vitro* study evaluated the surface microhardness of human enamel submitted to bleaching with 10% carbamide peroxide (CP) containing calcium or fluoride. Ninety-eight dental blocks (5 x 5 mm²) with polished enamel surfaces were randomly assigned to 7 treatment groups (n=14), as follows: without bleaching and storage in artificial saliva (control); 10% CP; 10% CP + 0.05% calcium; 10% CP + 0.1% calcium; 10% CP + 0.2% calcium; 10% CP + 0.2% fluoride; and 10% CP + 0.5% fluoride. During 14 days, enamel surfaces were daily exposed to a 6-h bleaching regimen followed by storage in artificial saliva. Surface microhardness was measured before (baseline), during (7th day), immediately after bleaching (14th day) and 1 week post bleaching. Data were analyzed by two-way ANOVA and Tukey's test (p<0.05). All treatments reduced SM significantly during the bleaching cycle (7th day), immediately after bleaching (14th day) and 1 week post bleaching, compared to baseline and to the unbleached control group. In conclusion, in spite of the addition of calcium and fluoride, all bleaching treatments affected the enamel surface microhardness.

Key Words: bleaching, enamel, microhardness, fluoride, calcium.

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