

[Influence of the buffer capacity of **amine fluoride**-containing toothpastes and gels in enamel erosion]

[Article in German]

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The aim of the study was to evaluate the abrasion resistance of eroded enamel brushed with experimental toothpastes and fluoride gels of varying buffering capacities. 50 Specimens were prepared from extracted human molars and cycled through three alternating de- and remineralizations including brushing abrasion in a brushing machine. Demineralization was accomplished by immersing the samples in 1% citric acid (5 min), remineralization occurred during immersing the samples in artificial saliva (1 min). Groups of ten samples were brushed with either one of the toothpaste (A-C) or one of the fluoridated gels (D-E). Toothpastes and gels were produced on the basis of elmex toothpaste or elmex-gelée (GABA International AG, Switzerland). Amount of titrable acid was defined as amount (mg) of 1 N KOH needed for neutralization of 1 g toothpaste or gel (A: 6 mg, B: 12 mg, C: 24 mg, D: 3.1 mg, E: 10 mg KOH). The following abrasion values (mean + S.D. [micron]) were obtained profilometrically: A: 6.76 +/- 2.05, B: 6.84 +/- 1.19, C: 8.28 +/- 2.89, D: 4.19 +/- 1.09 and E: 0.83 +/- 0.61. No significant difference in abrasion between the toothpastes was found. The fluoride gel with the higher buffering capacity (E) exhibited significantly less abrasion than the gel with the lower buffering capacity (D). It is concluded that in eroded enamel buffering capacity of the tested fluoridated toothpastes has no effect on abrasion, whereas use of fluoride gel with a higher buffering capacity leads to reduced abrasion values.

PMID: 14699949 [PubMed - indexed for MEDLINE]