

Materials and Methods

In order to replicate tooth brush abrasion damage in teeth, four restoration dental materials were considered in this study. Toothbrush heads (Colgate Extra Clean medium) and materials specimens were immersed in a mixture of toothpaste and deionized water in the ratio of 2g of water to 1g of toothpaste (Colgate Max fresh)(ISO/TR 14569-1:2007). Tests were performed under 3.5 N load, 5 Hz frequency and 10 mm stroke length. Test duration is equivalent to 16 years with two toothbrushes per day with a duration of 120 s each.

Material	Brand Name	Manufacturer
Polymer	DD TempMED HI	Dental Direkt GmbH,
Composite	BRILLIANT CRIOS, cerec HT A1 T4	Coltene, CH
Feldspathic Porcelain	VITABLOCS RealLife 1MIC	Vita Zahnfabrik, Bad Säckingen, BRD
MicroZr Veneer™	DD Bio ZW iso color (ZrO ₂ example)	Dental Direkt GmbH

Conclusions

Results show that zirconia (MicroZr™Veneers) is **10 times** more resistant to abrasion than feldspathic porcelain and composite and **100 times** more resistant than polymer.

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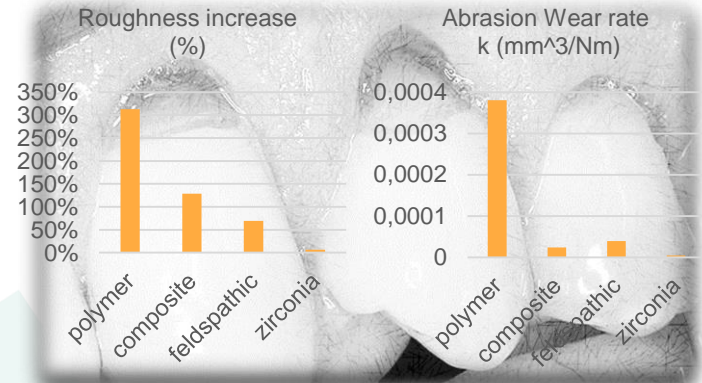
MicroZr™ Veneers

Tooth brush Abrasion Resistance

Abstract

Daily brushing of teeth is essential in tooth hygiene. However it causes degradation in tooth as well as on restorative dental materials, depending on some factors including toothpaste, toothbrush, among others. This study determined the toothbrush abrasion resistance of most common dental restorative materials in the market (polymers, composites and ceramics) with the aim of comparing their behaviour, tested under the same conditions.

Abrasion Resistance



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