

## The Differences on the Surface Roughness of Glass Ionomer Cement as the Results of Brushing with Whitening and Conventional Toothpaste

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**Abstract :** Glass ionomer cement is one of the filling material that often used on the field of dentistry because it is relatively less expensive and mostly available. Restoration materials could undergo changes in their clinical properties such as changes in roughness of the restoration's surface. An increase of surface roughness accelerates bacterial colonization and plaque maturation. In the oral cavity, GIC was exposed to various substances, such as toothpaste, an oral care product used during toothbrushing. One of the popular toothpaste is whitening toothpaste. Abrasive and chemical agents such as hydrogen peroxide in whitening toothpaste could increase the surface roughness of restorative materials. Objective: To determine the differences on the surface roughness of glass ionomer cement that was brushed with whitening and conventional toothpaste. Method: This study was done using experimental laboratory method with pre and post test design. There were 36 samples which were divided into 2 groups. The first group was brushed with whitening toothpaste and the second group was brushed with conventional toothpaste, each for 2 minutes. Surface roughness value of the specimens was measured by using Roughness Tester test. Result: The data was analyzed by using independent t-test and the result of this study showed there was a significant difference between the surface of glass ionomer cement which was brushed with whitening and conventional toothpaste ( $p=0,000$ ). Conclusion: Glass ionomer cement that was brushed with whitening toothpaste produced more roughness than conventional toothpaste.

**Keywords :** glass ionomer cement, surface roughness, toothpaste, roughness tester

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