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**Evaluation of hardness and wear of surface treated Zirconia on enamel wear.  
An In-vitro study**

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**Abstract**

**Objective:** The present study aimed to examine the effect of aged and polished surface treated full anatomical zirconia and veneered zirconia on wear of opposing natural human enamel surface, and investigate the surface hardness **of different zirconia**

**Methods:** Two types of zirconia blocks were used in this study (Incoris ZI and Incoris TZI), Stainless Steel dies with dimensions of maxillary molars were used, duplicated using addition silicon impression material to form twenty four epoxy dies, then dies were scanned by the OmniCam. Software designing of crowns and copings was performed, then milling of the presintered blocks was done followed by separation of crowns and copings from the blocks and finishing. Sintering of zirconia blocks was done afterwards, regarding the copings feldspathic porcelain was used with the layering technique to veneer the copings to produce full anatomic crowns. All samples were then polished using special polishing kit for zirconia and glass ceramics and thermal ageing was done for two group using an autoclave at 135°C and 2 atmospheric pressure for 5 hours. The twenty-four specimens were weighed before wear testing using a sensitive electronic balance then inserted in a custom made wear machine that simulated the wear mechanism that occurs in the oral cavity with natural mandibular molars as antagonists under a weight of 5kg (49 N) and the rotation was of 240 cycles/min, the total time of wear was 8 hours, so the total cycles performed were 120,000 cycles. The twenty-four specimens were weighed again after wear testing for the weight loss measurements

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