



**AN IN-VITRO INVESTIGATION OF THE WEAR EFFECTS OF THE GLAZED
AND UNGLAZED PORCELAIN ON HUMAN ENAMEL AND SILVER
AMALGAM CONSERVATIVE RESTORATIVE MATERIAL IN THE
PRESENCE AND ABSENCE OF SALIVA**

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ABSTRACT

Background and Objectives. This study was conducted to investigate the wear effects of unglazed and glazed porcelain on human enamel and silver amalgam restorative material in the presence and absence of saliva.

Method. Forty enamel and forty silver amalgam plate specimens were prepared. Enamel samples were prepared by embedding the labial surface of freshly extracted permanent incisors in self cure acrylic blocks. Similarly silver amalgam samples were prepared by filling up silver amalgam in the trunch made in self cure acrylic blocks. Eight glazed and eight unglazed porcelain stud specimens of 8mm diameter and 12mm were prepared by using Vita VMK-95 porcelain then all the samples were attached to self cure acrylic stand.

Plate specimens were subjected to abrasion against stud specimens on specially designed abrasive testing machine for 10000 cycles under a load of 453.6 gm. Half of the samples were abraded in the presence of saliva and remaining half in the absence of saliva. All the samples were subjected to weighing and profilometry both before wear and after wear. Data obtained were subjected to statistical analysis.

Results

There was change in surface roughness in all the groups. There was a statistically significant weight loss in all the eight groups due to wear. Maximum mean weight loss was seen in amalgam specimens opposed by unglazed porcelain in the presence of saliva.

Minimum wear was seen in enamel samples opposed by glazed porcelain in the presence of saliva.

Conclusion

1.Overall there was more wear in the absence of saliva than in the presence of saliva in enamel and silver amalgam.

2.There was increase in the surface roughness after wear in enamel samples opposed by glazed porcelain in the absence of saliva and amalgam samples opposed by unglazed porcelain in the absence saliva and in rest all groups there was decrease in surface roughness.

Key Words: Enamel; Silver amalgam; Glazed porcelain; Unglazed porcelain; Saliva; Wear; Surface roughness.