



Clinical Update

3M™ Z100™ Restorative

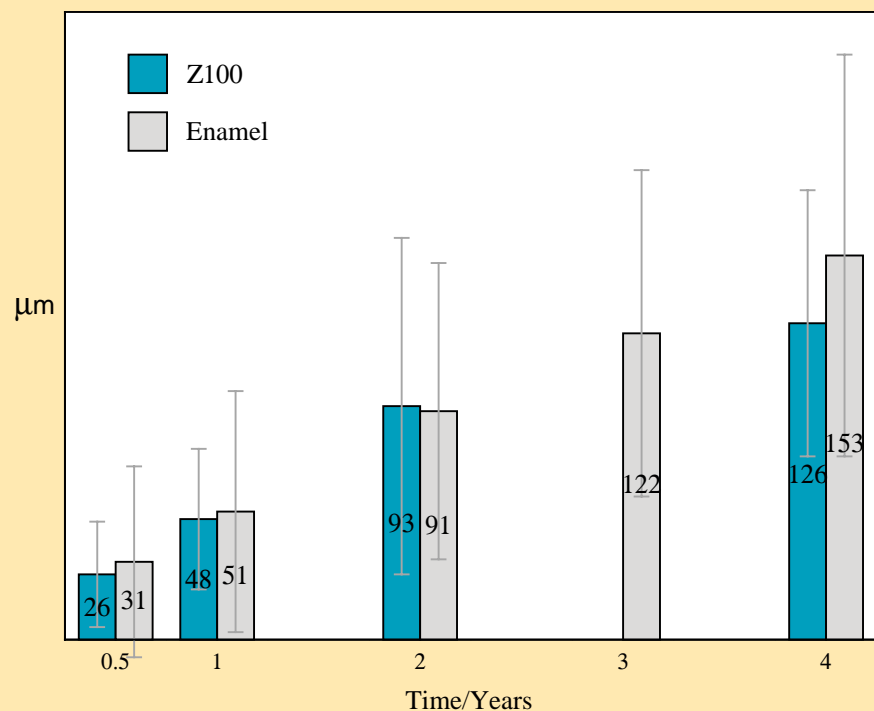
Catholic
University
Leuven

Leuven,
Belgium

Four Year
Quantitative
Wear

The wear of 3M™ Z100™ Restorative was measured in first and second molars using a three-dimensional computerized microscopic measuring technique accurate to within one-micron.¹ The values presented below represent vertical wear in microns measured at occlusal contact areas (OCA) through four years. Previously reported values for the occlusal contact area wear of enamel on enamel measured using the same technique are given for comparison.² On the following page the occlusal contact area wear and contact free occlusal area wear (CFOA) of 3M Z100 Restorative measured at the four year recall are shown in comparison to the results from a previous study with amalgam.

Occlusal Contact Area Wear
3M Z100 Restorative and Enamel



...the wear rate of 3M Z100 Restorative in occlusal contact areas is comparable to the occlusal contact wear for enamel on enamel.

Ideally, the vertical wear of material from a composite restorative should match that of enamel. Through four years, it can be seen that the wear rate of 3M Z100 Restorative in occlusal contact areas is comparable to the occlusal contact wear for enamel on enamel.

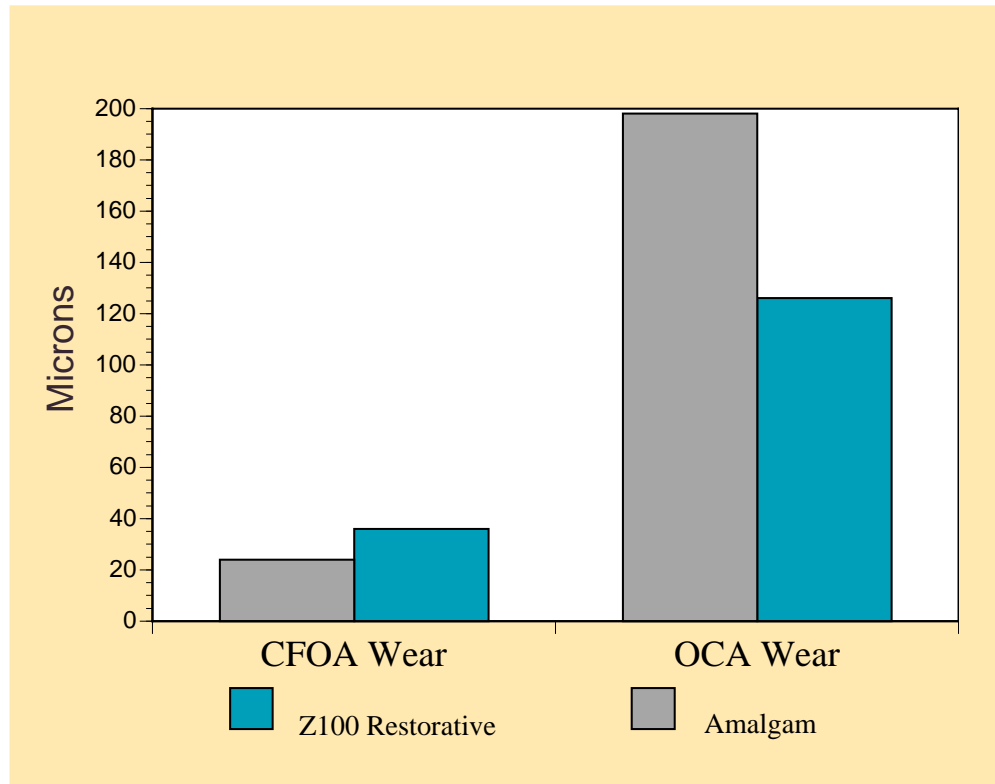
1. Lambrechts P., Vanherle G., Vuylsteke M., Davidson C.L., Quantitative evaluation of the wear resistance of posterior dental restorations: a new three-dimensional measuring technique. *Journal of Dentistry*, 12, No3, pp. 252-267, 1984.

2. Lambrechts P., Braem M., Vuylsteke-Wauters M., Vanherle G., Quantitative in vivo Wear of Human Enamel. *Journal of Dental Research*, 68(12):1752-1754, Dec. 1989.

CFOA and OCA Wear 3M™ Z100™ Restorative and Amalgam³

Four Year
Clinical Wear
Results

Total Wear
Measured at
the Four Year
Recall



The wear of amalgam has previously been characterized by the same computerized measuring technique that was used for 3M™ Z100™ Restorative. A comparison of the CFOA wear and the OCA wear measured after four years of clinical service is shown in the graph above.

The variability between patients with respect to forces contributing to wear accounts for high standard deviations in these types of studies. While seemingly large differences exist in the OCA wear depicted above, this difference was not found to be significant. A statistical analysis of the data reveals no difference in either the CFOA or OCA wear between the two materials.

3. Lambrechts P., et al, Evaluation of Clinical Performance For Posterior Composite Resins and Dentin Adhesives. *Operative Dentistry*, (12) 1987.

3M Technical Hotline 1-800-634-2249

Dental Products

3M Center, Building 275-2SE-03
St. Paul, MN 55144-1000

**Dental Products
3M Canada**

Post office Box 5757
London, Ontario, Canada N6A4T1



Recycled paper
40% pre-consumer
10% post-consumer

Printed in U.S.A.

© 3M 1997 70-2008-7961-0