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. 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. 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.

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.

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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.