

LONG-TERM CLINICAL PERFORMANCE

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Description

Bioactive restorative materials are a relatively new concept in dentistry. They are restoratives that reportedly release more fluoride than glass ionomers. In addition, these resins react to pH changes in the mouth by uptaking calcium, phosphate, and fluoride ions ultimately helping to maintain the chemical integrity of tooth structure. This class of composites can be placed with or without a bonding agent, and is delivered via a dual-barrel automix syringe.

"I was surprised how good the esthetics looked at one year, especially for anterior restorations."



ACTIVA BioActive-Restorative
PULPDENT®

*The product received a
**98% clinical
performance rating
at the 1-year recall.***

Clinical Evaluation Protocol

A total of **183 restorations** were originally placed (both anterior and posterior) and **96 of these restorations** were recalled at one year. These restorations were placed with and without the use of a bonding agent after etching (*Figure 1*), and with one, two, three or four surfaces (*Figure 2*).

Fig. 1: Etch and Bond vs. Etch Only.

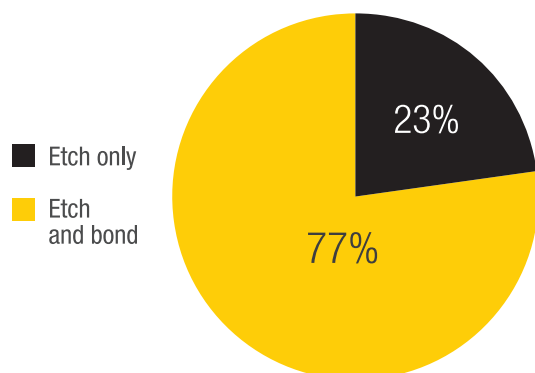
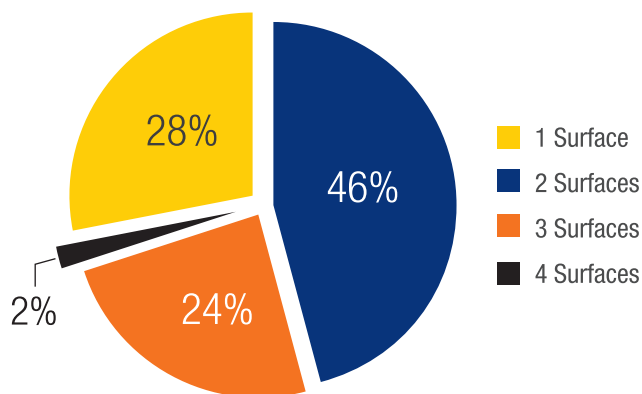


Fig. 2: Surfaces of Restorations at Recall.



Results at One Year

Lack of Postoperative Sensitivity

Patients reported some level of sensitivity associated with 5% of the 96 restorations recalled at one year. In three of these cases, patients experienced a moderate level of sensitivity immediately after placement and a decrease in sensitivity over time until they were asymptomatic. Two of these patients had restorations placed with bonding agent. One restoration was replaced due to an air bubble which was detected in a subsequent radiograph, and one was a very deep restoration which eventually needed root canal therapy. These conditions do not appear to be associated with the restorative material selected. No sensitivity was reported by patients at one year recall.

Esthetics

The esthetics of the restorations was excellent (Figure 3). Ninety-six percent of recalled restorations received a rating of 5, whereas 2% received a rating of 4, and 2% received a rating of 3.

Resistance to Fracture/Chipping

Resistance to fracture and chipping were excellent. None of the recalled restorations exhibited any fracture or chipping.

Resistance to Marginal Discoloration

Resistance to marginal discoloration was rated as excellent (Figure 3). There were no observations of marginal staining at one year.

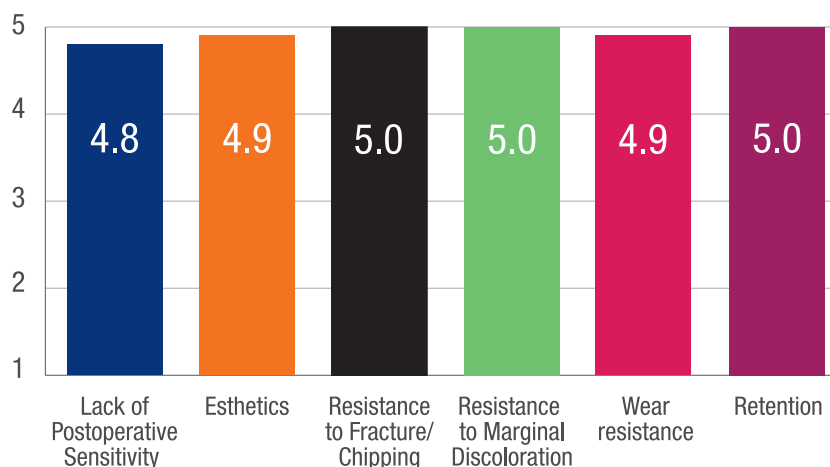
Wear Resistance

Ninety-nine percent of the restorations exhibited no signs of wear (Figure 3). Only one of the recalled restorations exhibited some wear and received a rating of 3.

Retention

Retention was excellent (Figure 3) - there were no debonds at the one-year recall.

Fig. 3: Results of **ACTIVA BioActive-Restorative** at 1 Year.



Each category was rated on a 1 to 5 scale:
1=poor, 2=fair, 3=good, 4=very good and 5=excellent.

“Very nice delivery system.”

“Having good uptake of calcium, phosphate and fluoride ions is a huge plus.”

“No bonding agent is a desirable property especially with pediatric patients.”



Tooth #19^o at one-year recall

Summary

The ease of placement, finishing, polishing and final esthetics of **ACTIVA BioActive-Restorative** was rated excellent. The material performed extremely well at one year. Every category that was evaluated received a 96% or better rating. **ACTIVA BioActive-Restorative** received a clinical performance rating of 98% at one year.

“Excellent material to use for restorations and cores.”