

How to easily perform quick, effective restorations with ACTIVA BioACTIVE

How to use ACTIVA BioACTIVE to complete nine restorations in a single appointment

By Dr Delfin Barquero



“ACTIVA BioACTIVE releases and recharges fluoride, calcium and phosphate ions and contains a rubberised component that resists fracture and chipping...”

Bioactive dental materials are changing the existing paradigms of restorative dentistry. Treatments that would normally require multiple visits can be completed in just one appointment with materials like ACTIVA BioACTIVE-RESTORATIVE. Such was the case for a female cancer patient in her early 60s who was referred to our practice with nine posterior teeth requiring restorations.

The patient had been diagnosed with squamous cell carcinoma, a common form of skin cancer and needed to have all dental restorations completed before undergoing radiation therapy. Xerostomia is a typical side effect of radiation therapy and the lack of saliva can lead to further decay. Root caries resulting from Xerostomia are often visible several months after radiation therapy and materials that promote remineralisation help protect already compromised teeth. It was not clear whether the patient would be able to maintain adequate oral hygiene during her radiation treatment.

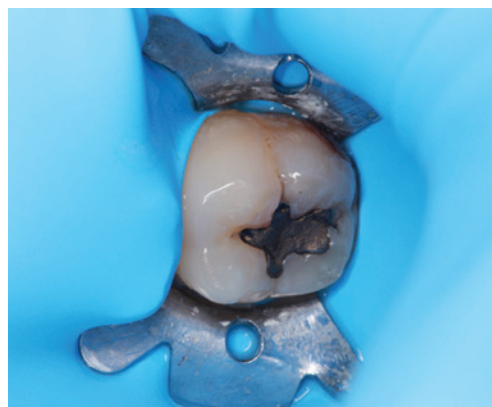


Figure 1. Failed amalgam restoration.

Not wishing to risk the patient's oral health, I chose ACTIVA BioACTIVE-RESTORATIVE because the material supports the natural remineralisation process and keeps the margins intact with apatite formation at the material-tooth interface and a non-soluble seal.

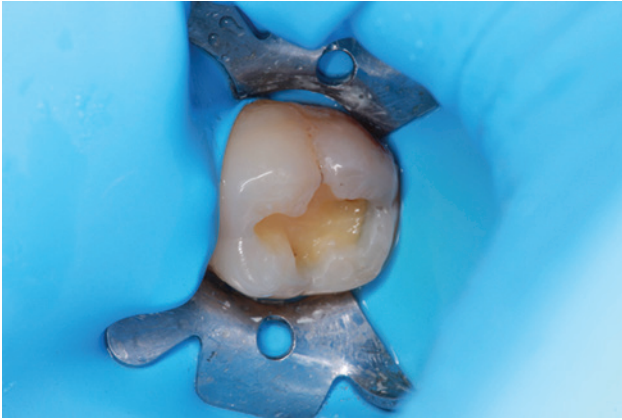


Figure 2. Amalgam and decay are removed and tooth is prepared with ACTIVA BioACTIVE-RESTORATIVE.

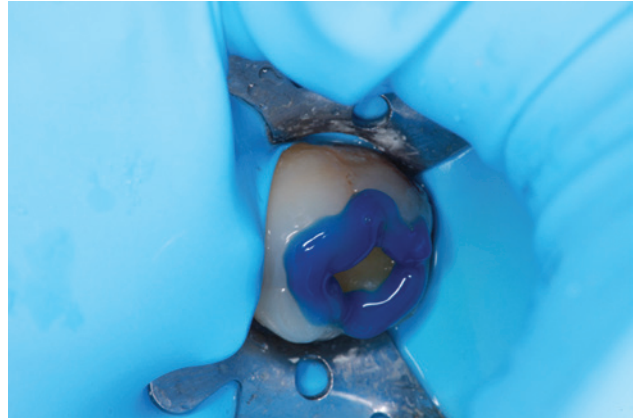


Figure 3. Enamel etched for 20 seconds with Select HV.



Figure 4. ALL-BOND UNIVERSAL applied.

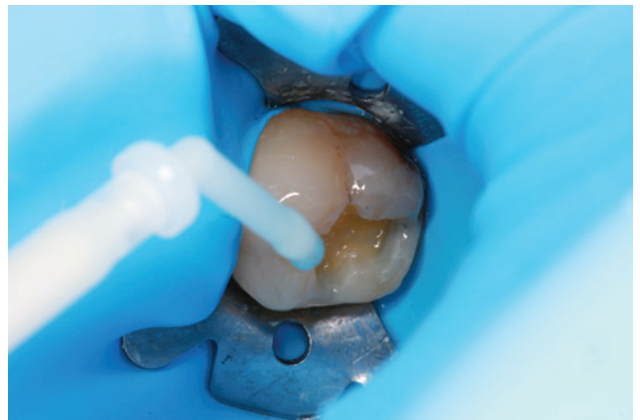


Figure 5. Placement of ACTIVA BioACTIVE-RESTORATIVE.



Figure 6. Final restoration.



Figure 7. Amalgam and decay are removed and tooth is prepared with ACTIVA BioACTIVE-RESTORATIVE.

The flowable characteristics of ACTIVA BioACTIVE, allowed me to complete each posterior restoration in eight minutes after the placement of a rubber dam. The material adapted easily to the tooth and produced no bubbles or voids.

Technically, the procedure was very efficient. After the placement of rubber dam, the amalgam restorations (Figure 1) and any signs of caries were removed (Figure 2).

The enamel was etched for 20 seconds with Select HV from BISCO (Figure 3) and ALL-BOND UNIVERSAL (BISCO) was applied (Figure 4).

ACTIVA BioACTIVE-RESTORATIVE was placed (Figure 5) and, thanks to its dual cure capability, I did not have to worry about depth of cure in deep cavities. Figure 6 shows the completed restoration.



Figure 8. Enamel etched for 20 seconds with Select HV.



Figure 9. Final restoration.

The same procedure was followed for the remaining eight restorations. Figure 7 shows several posterior teeth prepared for restoration and enamel etched with Select HV (BISCO) for 20 seconds (Figure 8). Figure 9 shows the final restorations.

I chose ACTIVA BioACTIVE because the material releases and recharges fluoride, calcium and phosphate ions and contains a rubberised component that resists fracture and chipping. ACTIVA BioACTIVE participates in an ionic exchange that is

pH sensitive and supersaturates the saliva and pellicle during low pH cycles. As the pH rises, these minerals are available to form a layer of apatite on the tooth surface, supporting the natural mineralisation process.

The patient was pleased with the aesthetics and impressed that all nine restorations were placed in a single appointment. She had been concerned about the possibility of infection resulting from untreated dental caries and wanted to complete the restorations before starting radiation therapy.

3 reasons why the best restoration is Bioactive



Bioactive materials are the best option when it comes to restorations - they are strong and aesthetic and they also improve overall oral health. Here's how:

1. Bioactive restorative materials are friendly to tissue and saliva

In our mouths, as in nature, water is the source of life and is the essential requirement for bioactivity. Traditional materials are hydrophobic, repelling water and have no potential for bioactivity. In contrast, bioactive materials are moisture-friendly and respond to pH changes in the mouth to reduce erosion from dietary sugars and fortify our saliva with the calcium, phosphate and fluoride that rebuild and protect our teeth.

2. Bioactive restorative materials promote remineralisation

Bioactive materials support the natural remineralisation process by stimulating the formation of apatite at the material-tooth interface that integrates the restoration with the tooth and seals against microleakage and secondary caries. How? Bioactivity only occurs in the presence of water. The moisture-friendly bioactive ionic resin matrix facilitates the release and recharge of calcium, phosphate and fluoride ions that help rebuild teeth and seal margins against microleakage and failure.



3. Bioactive restoratives solve many problems associated with traditional materials

Traditional composites are brittle and can chip and fracture. Adhesives used with composites degrade and leak over time resulting in microleakage at the material-tooth interface, demineralisation and secondary caries. Glass ionomers have the benefit of releasing a significant amount of fluoride, but they are soluble, have poor aesthetic and physical properties and wash out over time. ACTIVA BioACTIVE is aesthetic and durable, more resistant to fracture and chipping than composites and releases and recharges more calcium, phosphate and fluoride than glass ionomers.