

Fuji VII
Fuji VII EP

For all-round
protection

GC

Fuji VII and Fuji VII EP are **purpose designed for:**



Protection of erupting molars

Increasing rates of enamel hypomineralisation and childhood caries have amplified the need for protection solutions for the occlusal surfaces of permanent molars, especially during the prolonged eruption phase.

Dr J Lucas



Protection of exposed root surfaces

A growing, increasingly medicated, elderly dentate population means more exposed root surfaces at risk of caries. Fuji VII EP will provide the highest level of protection for these surfaces.

Dr. H Ngo



Caries stabilisation and indirect pulp capping for active lesions

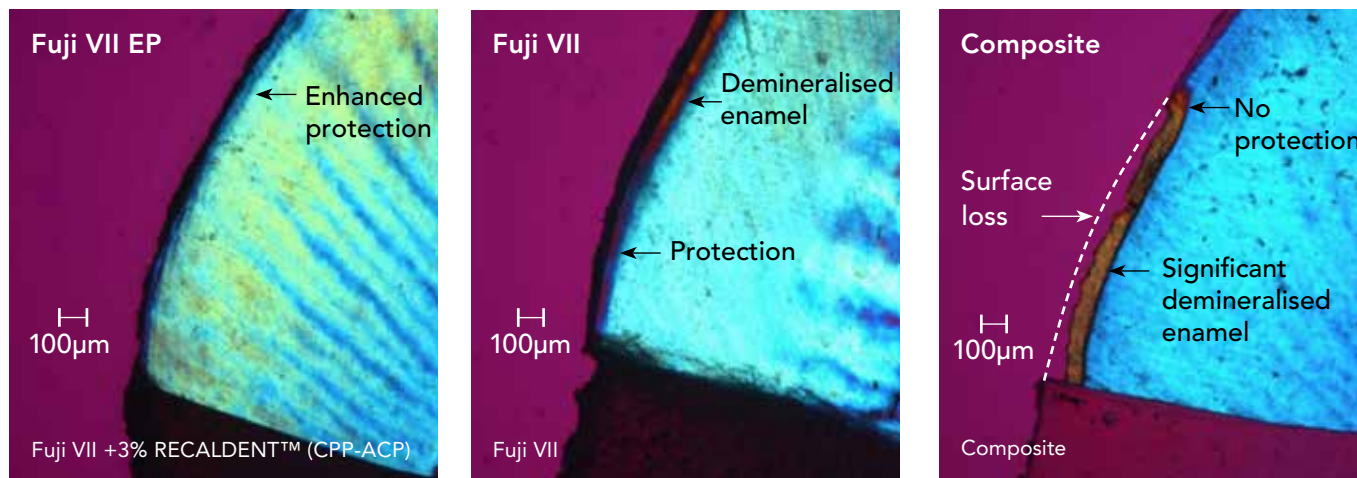
An effective seal, through the use of a superior wetting and high fluoride releasing glass ionomer cement, is beneficial for ensuring success with this technique.

Dr. H Ngo

When patient compliance may not be ideal, choose Fuji VII EP for enhanced protection of surfaces at risk.

Fuji VII EP. Enhanced protection of tooth surfaces

A clinically proven glass ionomer cement formulation, now enhanced with RECALDENT™ (CPP-ACP) for superior protection and remineralisation.



Polarised light micrographs of lactic acid (pH 4.8) demineralised lesions in enamel adjacent to Fuji VII EP, Fuji VII and resin composite

The ability to protect tooth structure from caries, and to remineralise after caries attack, are core benefits of Fuji VII glass ionomer cement that research scientists have sought to enhance. RECALDENT™ (CPP-ACP), casein phosphopeptide amorphous calcium phosphate, has been shown in laboratory, *in situ* and clinical trials to remineralise tooth structure and prevent caries lesions from progressing.

The incorporation of 3% RECALDENT™ (CPP-ACP) into the high fluoride releasing Fuji VII has enhanced the level of protection provided to surrounding and adjacent dentine and enamel surfaces to help shield and protect tooth sites at risk of caries.

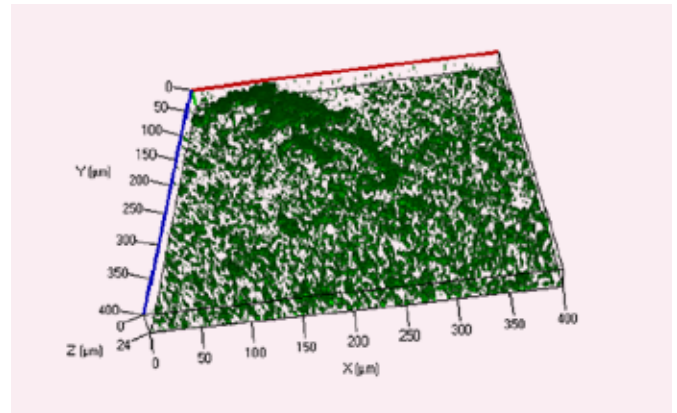


The incorporation of casein phosphopeptide-amorphous calcium phosphate into a glass ionomer cement. H Al Zraikat, JEA Palamara, HM Messer, MF Burrow, EC Reynolds. Dent Mater 27 (2011) 235-243

Fuji VII EP. Enhanced protection through **biofilm inhibition**

The use of Fuji VII EP to protect surfaces at risk means protecting sites that are more susceptible to the formation of cariogenic biofilms. Fuji VII has already shown clinically to have a degree of resistance to surface biofilm formation, however Fuji VII EP, through incorporation of RECALDENT™ (CPP-ACP), shows an enhanced ability to inhibit biofilm formation.

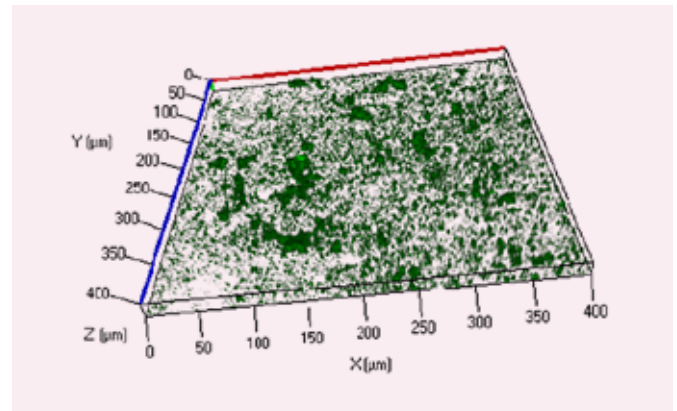
Comparative testing of this characteristic shows that the bacteria are either not able to bind as well to the surface or, once bound, are not able to proliferate.



S. mutans biofilm formation on Fuji VII after 16 hour inoculation at 37°C.

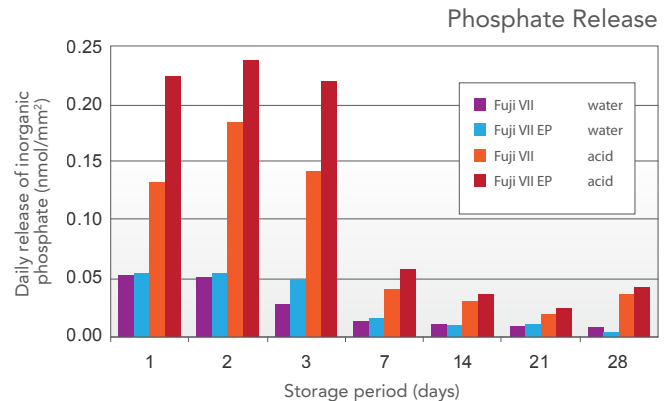
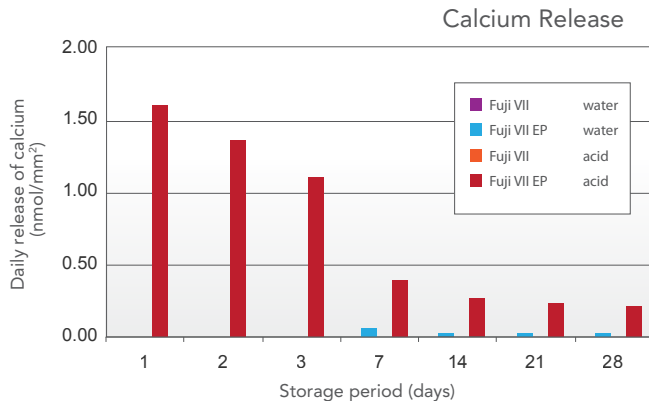
Fuji VII EP reduced the total biofilm biovolume by 50%, average biofilm thickness by 66% and reduced bacterial colonisation of the surface by 66% compared to Fuji VII

Oral Health CRC, Melbourne Dental School,
The University of Melbourne www.oralhealthcrc.org.au



S. mutans biofilm formation on Fuji VII EP containing 3% RECALDENT™ (CPP-ACP) after 16 hour inoculation at 37°C.

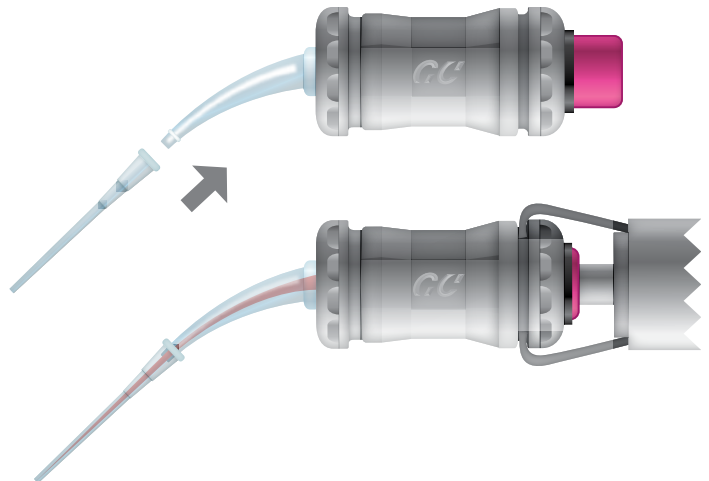
Enhanced protection – calcium/phosphate release



The incorporation of casein phosphopeptide-amorphous calcium phosphate into a glass ionomer cement. H Al Zraikat, JEA Palamara, HM Messer, MF Burrow, EC Reynolds. Dent Mater 27 (2011) 235-243. Note: Calcium and inorganic phosphate release in deionised water (pH 6.9) and lactic acid (pH 4.8).

Superior delivery

Fuji VII EP capsules are designed to take GC Elongation Tips, that offer superior access and fine tip delivery to at-risk surfaces. GC Elongation Tips give greater control over placement so that the cement is applied smoothly and evenly onto the tooth sites needing protection. Placement is faster and the need for additional trimming and finishing is reduced.



What is surface protection?



Dr. H Ngo

Surface protection describes the application of a thin film of glass ionomer (GIC) to tooth surfaces that are at increased risk of caries or erosion. The objective of surface protection is to create a hardened outer surface using the glass ionomer reaction to form a more acid-resistant ion exchange zone (I – shown opposite) which provides additional protection for the tooth.



Dr. J Lucas

A flowable, high fluoride releasing glass ionomer is ideal for this application. Glass ionomer is moisture tolerant during application and is therefore well suited to use as a protection material where saliva control might be compromised – eg erupting molars.



Dr. M Gryst

Once set, the thin layer of glass ionomer also acts as a protective coating, preventing acid contact with the tooth and providing a surface which is difficult for plaque to adhere to.

Root surface protection



Dr. H Ngo*



Dr A Brostek

With an ageing population, root surface caries and cervical erosion have become a daily challenge. Once exposed to the oral environment, root surfaces are at greater risk of demineralisation, especially when patients have reduced saliva flow and diminished buffering capabilities.

Root surface protection describes the application of a thin film of glass ionomer to exposed root surfaces for those patients with an increased risk of caries or erosion. Fuji VII has a free-flowing consistency, well suited to brush application, and Fuji VII EP offers the option of direct application using GC Elongation Tips. The unique pink shade is a useful visual check for you and your patients, confirming that the coated root surfaces remain protected. Root surfaces protected by Fuji VII or Fuji VII EP should be monitored on a regular basis to help establish and maintain a balanced oral environment.

Fuji VII and Fuji VII EP can be used to protect buccal surfaces and act as a fluoride (and calcium/phosphate) reservoir for posterior teeth in high caries-risk patients undergoing chemotherapy.

*Reproduced with permission from Preservation and Restoration of Tooth Structure, 2nd edition, GJ Mount, WR Hume

Fuji VII and Fuji VII EP are ideal for fissure protection

Fissure protection is a non-invasive treatment procedure for children at higher risk of developing caries. It is undertaken as early as possible during the eruption phase of the first and second permanent molars. Posterior teeth are at increased risk of developing caries during eruption due to the increased levels of plaque retention, immaturely formed enamel and the length of time taken to achieve full eruption.

Fuji VII and Fuji VII EP are ideal for fissure protection due to their moisture tolerance during placement and the nature of the ion exchange adhesion between glass ionomer and enamel. Fuji VII and Fuji VII EP create a strong, acid resistant, chemically-fused layer that will continue to give protection to the occlusal surface even when it appears visually 'lost' (eg as a result of attrition from the opposing dentition).

The pink shade is especially useful when moisture control is difficult, as the setting reaction can be accelerated using a halogen curing light. The pink shade is also an excellent visual reminder that protection is in place.

Fuji VII and Fuji VII EP are a key strategy for protecting molars with molar incisor hypomineralisation (MIH).



Dr. H Ngo*



Dr. H Ngo*



Fuji VII on MIH molar 11 years after placement

Dr. G Milcich

*Reproduced with permission – Sharjah and MI2020 Projects School of Dentistry, University of Adelaide

Fuji VII White for fissure protection



An erupting molar. A brush cone is used to remove plaque



Clean and condition using CAVITY CONDITIONER. After rinsing avoid overdrying



Mix and disperse onto a pad



Apply Fuji VII over the occlusal surface using a microbrush



Apply Cocoa Butter immediately following placement



Completed fissure protection

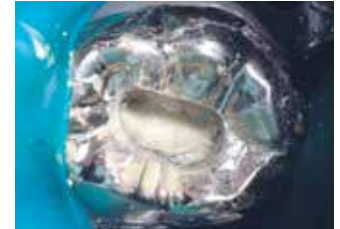
Dr. J Lucas

Fuji VII and Fuji VII EP applications

Temporary endodontic sealing material

Fuji VII and Fuji VII EP are ideal as a temporary seal between endodontic treatments. The ion exchange adhesion will ensure an effective coronal seal which is proof against microleakage and possible further contamination of the operative area.

The contrasting pink shade aids fast removal without compromising aesthetics, and following completion of the root canal therapy it will make an ideal base for lamination with restorative options such as amalgam or composite resin.



Dr. H Ngo

Caries stabilisation

The pink shade of Fuji VII or Fuji VII EP clearly identifies restorations as transitional and its free flowing consistency seals demineralised dentine in both the primary and permanent dentition. Minimally invasive preparation techniques, using an ultra-slow handpiece or hand instruments, enable removal of only the softest dentine; however to optimise the seal, a prepared cavity still requires 2mm of clean margins around its periphery.

Stabilisation techniques are helpful for treatment of the elderly, dental phobic, medically compromised and very young.



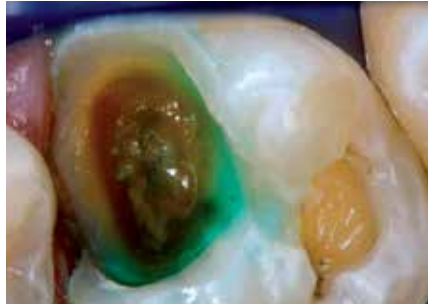
Dr. H Ngo

Indirect pulp capping

Indirect pulp capping describes the process of leaving a thickness of softened demineralised dentine intact on the pulpal floor. This technique is used to remove the risk of mechanical exposure of the pulp during cavity preparation and to provide a seeding site and the potential for internal remineralisation.

Fuji VII and Fuji VII EP are placed with the primary objective of creating an effective seal and to allow time for the pulp to heal.

Providing the patient does not present with symptoms of irreversible pulpitis, this technique is indicated for very deep cavities where further excavation would increase the risk of pulpal exposure, potentially leading to endodontic treatment or even extraction.



Dr. H Ngo



Pre-treatment radiograph



Radiograph at 18 months

Minimal restorations

The increasing use of minimal preparation techniques to remove the first areas of softened tooth structure, or to explore stained fissures, has created a need for a more flowable glass ionomer that will adapt well to micro-prepared cavities. For erupted teeth, Fuji VII or Fuji VII EP White are the preferred glass ionomer solutions due to their ease of access, fast set and smooth surface finish.

Technique tips

- This technique is suitable for restoring fissures that have been prepared using ultra-fine diamonds or air abrasion.
- To maximise adhesion, always condition the prepared fissures with a cavity conditioner for 10 seconds.
- Rinse the conditioner and remove excess moisture with a sponge or cotton pellet to avoid over-drying the tooth.
- To ensure good adaptation into the prepared fissures and surrounding surfaces, place the tip of the Fuji VII nozzle directly onto the prepared surfaces and inject into the fissures. Alternatively use the GC Elongation Tip attached to the Fuji VII EP capsule.



Dr. J Lucas

- A ball burnisher is used to contour the unset glass ionomer. The burnisher can be lubricated with Cocoa Butter to aid manipulation.
- Apply a varnish or light-cured protective coating material immediately following placement.

Lining under composite or amalgam

Fuji VII and Fuji VII EP capsules feature a long fine-tipped nozzle that is suitable for direct placement of lining materials onto the floor of the cavity, ensuring fast application and excellent cavity adaptation without risking air entrapment. For enhanced access in small deep cavities, GC Elongation Tips can be attached to the Fuji VII EP capsules.



Dr. G Knight

Intermediate restorations

Fuji VII and Fuji VII EP are clearly identifiable to the patient as a temporary solution, just one part of a complete treatment strategy. Quick and simple to apply, Fuji VII and Fuji VII EP are a great choice for temporary and intermediate restorations.



Dr. G Knight

Cementing stainless steel crowns

Fuji VII and Fuji VII EP have a free flowing consistency, high fluoride release and sharp set making them well suited for cementation of stainless steel crowns using either the pink or white shades.



Dr. J Lucas

Dentine Hypersensitivity

Fuji VII and Fuji VII EP can also be used for treating dentine hypersensitivity by providing a chemically-fused seal to stop fluid flow in the tubules and provide instant and long lasting relief.



Dr. G Knight

Q&A

Q How different are the handling characteristics of Fuji VII and Fuji VII EP?

A There is minimal difference as we endeavoured to match the handling and setting characteristics of Fuji VII EP with the original Fuji VII formulation.

Q Will application of RECALDENT™ (CPP-ACP) (eg GC Tooth Mousse) help strengthen a glass ionomer cement?

A Recent independent testing reported a significant increase in physical properties when a dehydrated specimen of Fuji IX was exposed to a liquid solution containing RECALDENT™ (CPP-ACP).

Self reparability of glass ionomer cements: an in vitro investigation.
J Abdul M Swain. Eur J Oral Sci 2011; 119: 187-191

Q Is application of Fuji VII a more effective treatment than resin sealing for treatment of dentine hypersensitivity?

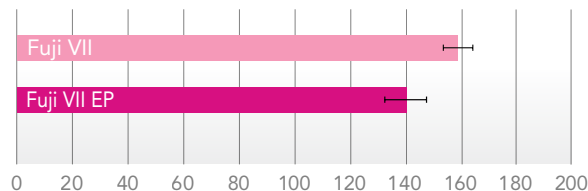
A A clinical trial comparing Fuji VII glass ionomer cement coating and a resin-based coating for treatment of dentine hypersensitivity showed significantly better desensitising with greater clinical longevity by using the glass ionomer cement.

Comparison between effectiveness of a low-viscosity glass ionomer and a resin-based glutaraldehyde containing primer in treating dentine hypersensitivity – a 25.2-month evaluation RN Polderman, JE Frencken J Dent 35 (2007)144-149

Q How do the physical properties compare between Fuji VII and Fuji VII EP?

A The addition of 3% RECALDENT™ (CPP-ACP) results in a slight increase in adhesive bond strengths and a slight decrease in compressive strength, but these differences were not considered clinically significant. The ultimate goal of incorporation of RECALDENT™ (CPP-ACP) was to improve the biological properties of the glass ionomer cement while retaining similar physical properties.

Compressive Strength (Mpa)



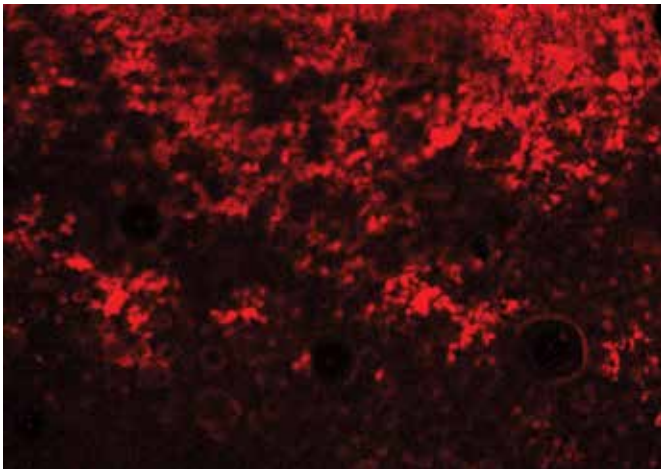
GCC R&D Dept

Q Can we use Fuji VII EP on a patient with a milk protein allergy?

A No. Incorporating RECALDENT™ (CPP-ACP) into Fuji VII EP means its use on patients who have a milk protein allergy is contraindicated.

Q What is the difference between the anti-biofilm effect from Fuji VII EP and the anti-biofilm effect of using GC Tooth Mousse?

A The incorporation of RECALDENT™ (CPP-ACP) in Fuji VII EP has an inhibitory effect on the establishment of biofilms whereas RECALDENT™ (CPP-ACP) in a liquid phase, ie GC Tooth Mousse, introduces a disruptive effect on an established biofilm. The two strategies combined, ie protecting surfaces with Fuji VII EP and regular application of GC Tooth Mousse, create a powerful means to decrease caries risk in a dual site-specific and whole-of-mouth strategy.



A confocal microscope image of a fractured surface of Fuji VII EP showing the presence of CPP (stained red).

Oral Health CRC, Melbourne Dental School,
The University of Melbourne www.oralhealthcrc.org.au

Q Glass ionomer cements set as a result of an acid-base reaction. How do we know the RECALDENT™ (CPP-ACP) is still in the cement after it has been mixed despite the low initial pH?

A The RECALDENT™ (CPP-ACP) peptide can be visualised within Fuji VII EP by mapping it within the cement after tagging the RECALDENT™ (CPP-ACP) with a fluorescent marker.

Low pH won't break down the CPP peptide structure. Low pH will start release of calcium and phosphate but the peptide structure remains intact. As the glass ionomer sets, and the pH becomes neutral, the CPP peptide will start to uptake bio-available calcium, phosphate, fluoride and even strontium ions. In this way it acts as an additional reservoir for apatite building ions within the water-based glass ionomer cement.



GC Fuji VII EP CAPSULE

Box 50 capsules
Shades: Pink or white



GC Fuji VII CAPSULE

Box 50 capsules
Shades: Pink or white



GC Capsule Elongation Tip

50 pieces
Suitable for use with Fuji VII EP only



COCOA BUTTER

10g tube



CAVITY CONDITIONER

6g (5.7ml) bottle



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