

# Summary of: A retrospective, practice-based, clinical evaluation of Fuji IX restorations aged over five years placed in load-bearing cavities

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## FULL PAPER DETAILS

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**Objective** To evaluate reinforced glass-ionomer restorations which had been placed in a general dental practice more than five years previously. **Method** Patients who were identified as having received reinforced one or more reinforced glass-ionomer restorations were invited to attend for an examination of their restorations using scientific evaluation criteria, by one independent examiner and the dentist who owned the practice. **Results** Forty-two restorations were assessed, their mean age being 7 years and 9 months, in patients of mean age 57 years: 86% achieved an A rating for anatomic form, 69% an A rating for marginal integrity, 81% an A for surface roughness and 2% an A for colour match. **Conclusions** The restorations which were assessed were found to be performing satisfactorily at periods of over five years. However, the proportion of the total number of reinforced glass-ionomer restorations placed in the participating dental practice which this represents is not known.

## EDITOR'S SUMMARY

I like the pragmatism of this paper. As Dr Lynch points out in his Commentary the study has taken place in the real world environment of dental practice which has both pluses and minuses from the research viewpoint but which does mean that it harbours the core experience of what actually happened to the material in daily use.

For me the essence of this paper is contained in the remarks 'general dental practitioners are constantly faced with requests from their patients [for] tooth-coloured restorations in posterior teeth at low cost...using reinforced glass ionomers...results in a restoration which is less expensive than the equivalent posterior composite.'

An *in-vitro* investigation in a laboratory could well have come up with answers as to the chemistry, strength, setting characteristics, storage capability and so forth of reinforced glass ionomers but could not possibly have

anticipated that 'Mr Smith' had a restoration of this type because it was cheaper and tooth coloured.

Whilst this is not the whole story it is an important point of departure for a research project which does then arrive at the useful conclusion that although not designed for load-bearing situations, reinforced glass ionomers can perform satisfactorily for periods of five years or more. It provides an example of what I think of as a type of evidence-based practice with which many practitioners can identify. Some cynically call it 'evidence-based anecdote' whilst others more generously ascribe the term 'it works in my hands.'

Whatever the purist viewpoint there can be no denying that for the patient who makes the above request of their dentist, a five-year-plus white filling in a back tooth at a lower price than they anticipated is good enough evidence for them. That's why I like the pragmatism of this paper.

The full paper can be accessed from the *BDJ* website ([www.bdj.co.uk](http://www.bdj.co.uk)), under 'Research' in the table of contents for Volume 215 issue 6.

Stephen Hancocks  
Editor-in-Chief

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**IN BRIEF**

- This study describes the assessment of 42 reinforced glass-ionomer restorations which were placed in a general dental practice over five years previously.

**COMMENTARY**

Evolving patient expectations, along with a desire to practice a more minimally invasive form of dental treatment – achieved via adhesive dental techniques – have much to offer the dental profession, as well as patients, in the future. Placement of fillings remains a cornerstone of dental practice for dentists and dental therapists with an estimated 7.2 million fillings placed annually in primary care setting in dental practices in England and Wales. Recent international policy changes (ie United Nations Environmental Programme – 'Minamata Convention') places an increased demand to develop predictable amalgam alternative materials and techniques for the restoration of teeth. As such, this paper, by Burke and Bardha, is a welcome addition to the evidence-base relating to amalgam alternatives, specifically the placement of glass-ionomer cement restorations in load-bearing cavities in posterior teeth.

As well as this, it is noted that the study is conducted in the 'real world' environment of a primary care setting. Such studies are to be commended as they are sited within the environment in which such restorations will be placed as well as in patient profiles encountered on a day-to-day basis. It is also noted that this study has an excellent follow-up time (average seven years and nine months, range five to ten years), which is significantly more than that observed, or achievable for cost reasons, in many clinical trials in dentistry.

Notwithstanding these positive considerations, this study does exhibit some (acknowledged) limitations – including the representativeness of the patient group studied, the involvement of one dental practice only, the inclusion of one form of glass-ionomer cement only, the small sample size and the retrospective nature of the study. The results of this study, therefore, should be interpreted with some caution.

However, from within the data presented, a positive picture emerges. In appropriately placed load-bearing glass-ionomer restorations in posterior teeth, within appropriate patients, Fuji IX glass-ionomer cement restorations can offer decent longevity rates, in excess of five years. This is a very positive development when glass-ionomer restorations have traditionally been viewed with some scepticism, in particular in relation to their longevity, wear resistance and strength. Overall, the authors are to be commended for their study. The study highlights the need for further good quality operative dentistry research within primary care environments.

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**AUTHOR QUESTIONS AND ANSWERS****1. Why did you undertake this research?**

An earlier study assessed Fuji IX restorations in three dental practices at two years. It became apparent, four to five years on, that patients with a number of these restorations were still attending one of the practices regularly and would be available to attend to have their restorations examined using scientific criteria. Ethical approval was therefore sought and received.

**2. What would you like to do next in this area to follow on from this work?**

The present work examined restorations that were present, but we have no details of the status of other restorations that were placed during the same time span (which may or may not have failed). There is therefore a great need for a randomised controlled trial, or well-controlled cohort study with a minimum duration of five years, to more fully ascertain the clinical performance restorations formed in reinforced glass ionomer materials in load-bearing situations in posterior teeth.