



TWO-YEAR PERFORMANCE OF RESTORATIONS PLACED WITH A SELF-ADHESIVE LUTING MATERIAL

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INTRODUCTION

- In 1993 a group of practicing UK dental practitioners, interested in research and prepared to complete evaluations of new materials and techniques in the practice environment, were formed into the PREP (Product Research and Evaluation by Practitioners) Panel¹
- To date, over 40 evaluations, including handling evaluations and clinical trials have been completed. The PREP panel presently has 29 members with an average time since graduation of 21 years and 61% of the panel hold post-graduate qualifications. The Panel has a UK-wide distribution and a wide range of dental interests facilitating the assessment of a full range of products and techniques.
- The results of a PREP panel evaluation of the handling properties of the self-adhesive universal resin cement, RelyX Unicem (3M ESPE, Seefeld, Germany) in clinical use in 13 UK dental practices were reported in 2003². 144 restorations were placed in this evaluation and the new material was rated higher for 'ease of use', by the participating general dental practitioners (GDPs) than previously used 'conventional' and resin-based luting materials.
- The clinical performance of these restorations has been reviewed at 2-years (in terms of retention of the restorations, marginal adaptation and staining, and post-operative sensitivity) and a preliminary report of a small sample was presented in 2005³. The final report is now presented.

METHOD

- A questionnaire was designed for completion by the GDPs involved in the original evaluation for completion when the patients with the restorations cemented with the self-adhesive luting material returned for their routine recall examinations.
- Modified Ryge criteria (Fig. 1) were used for the scoring of marginal adaptation and marginal staining. Notation, age of restoration and pain at cementation, with any subsequent pain and duration, and the presence of any porcelain cracks were also recorded.

Marginal adaptation
 0 = Restoration is contiguous with existing anatomic form, sharp explorer does not catch
 1 = Explorer catches, no crevice is visible into which the explorer will penetrate
 2* = Crevice at margin, enamel margin exposed.
 3* = Obvious crevice at margin, dentine or lute exposed

Marginal discolouration
 0 = No discoloration present
 1 = Slight staining present, can be polished away.
 2 = Obvious staining, cannot be polished away
 3* = Gross staining

* = unacceptable rating

Fig. 1: The modified Ryge criteria

CRITERIA	SCORE (%) * = unacceptable			
	0	1	2	3
Marginal Adaptation	83	16	1*	0*
Marginal Staining	87	12	1	0*

Fig. 2: Summary of Results

MATERIAL

- RelyX Unicem is an encapsulated, self-adhesive, dual cure resin-based material indicated for the luting of all inlays (porcelain, composite & metal), onlays, crowns and bridges as well as cast and fibre posts.

RESULTS

- 90 restorations (in 82 patients) of the original 144 restorations placed using RelyX Unicem, have been reviewed. The mean age of the restorations was 21.4 months.

- Four restorations (4%), all in patients of one operator, were reported to have failed at the time of this report. The reasons for these failures were unconnected with the use of the resin cement under investigation (root fracture, porcelain fracture, and unrelated enamel chipping).
 - The results from the remaining 96% (n=86) of the restorations are summarised in Fig. 2. These restorations comprised of:
 22 All-ceramic restorations (6 veneers*, 11 porcelain jacket crowns, 4 ceramic inlays & 1 ceramic bridge)
 27 All-metal restorations (1onlay, 5 posts & 21 crowns)
 36 Metal/ceramic restorations (34crowns & 2 bridges)
 1 Fibre post.
- (* Use of RelyX Unicem for veneers not indicated by 3M ESPE)
- A porcelain crack was detected in one metal/ceramic restoration (1%). Two patients (2%) complained of transient pain at cementation and one other patient (who had generalised dentine hypersensitivity) complained of transient pain six months after cementation.

CONCLUSION

Eighty-six restorations were examined and one (1%) Grade 2 score (for marginal adaptation) was recorded. The remaining restorations were providing good clinical service.
This report suggests the material under investigation is performing well in UK general dental practice after 21 months. A longer evaluation period is needed to assess continued performance.

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