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Author(s)	Poon, CM; Yip, HK; Smales, RJ
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3-Year Clinical Evaluation of Packable and Conventional Posterior Composites

[C.M. POON](#)¹, H.K. YIP¹, and R.J. SMALES², ¹University of Hong Kong, Hong Kong, ²University of Adelaide, Australia

Objectives: Packable resin-based composites and simplified resin adhesive systems are marketed to offer many advantages over conventional resin-based posterior composites and total-etch adhesive systems. Therefore, the authors conducted a study to evaluate the 3-year clinical performances of a packable and a conventional hybrid resin-based composite used with a simplified self-etch adhesive system. Methods: Three dentists placed 57 Class I and 45 Class II restorations in the permanent teeth of 65 adults. Carious lesions were restored with either a packable hybrid composite (SureFil, Dentsply DeTrey GmbH, Konstanz, Germany) or a conventional hybrid composite (SpectrumTPH, Dentsply DeTrey GmbH), using a resin adhesive system (Non-Rinse Conditioner and Prime & Bond NT, both from Dentsply DeTrey GmbH). The authors evaluated the restorations using U.S. Public Health Service-Ryge modified criteria (in which Alfa is the highest rating), and by using color photographs and die stone replicas. Results: After three years, six large SureFil and two SpectrumTPH Class II restorations had failed, usually from either fracture or recurrent marginal caries, resulting in cumulative survivals of 82% and 92%, respectively. The dimensions of the failed SureFil restorations especially, were generally larger than the remaining intact restorations ($p < 0.08$). There were no unsatisfactory ratings given, and no significant differences present between the two composites for any of the restoration parameters evaluated ($p > 0.24$). Alfa ratings for both materials were approximately 80% or greater for marginal discoloration, anatomic form, surface texture and surface staining. Lower percentages of restorations were rated Alfa for color match, marginal integrity and gingival health. No postoperative sensitivity was reported. Conclusions: Spectrum has a better survival rate than SureFil in a 3-year recall. Clinical Implications: Caution is drawn to the use of packable composite as a posterior composite. (The financial assistance from HKU Matching Fund (a/c 20003958) is gratefully acknowledged).

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