3M Science. Applied to Life.™

Clinical Evaluation of 3M™ Scotchbond™ Universal Adhesive

in Class V Restorations in Self-Etch and Total-Etch Modes

5-Year Recall

3M℠ Health Care Academy

Principal Investigator
Nathaniel Lawson, DMD, PhD
University of Alabama at Birmingham School of Dentistry

Aim of the Study

Evaluate the clinical performance of 3M™ Scotchbond™ Universal Adhesive in self-etch vs. total-etch modes in non-carious Class V restorations compared to a two-component, total-etch control—3M™ Adper™ Scotchbond™ Multi-Purpose Adhesive system.

Study Design at a Glance

Design: Randomised, controlled, longitudinal study. 37 patients, age 19 or older, received one or two restorations of each treatment at baseline (42 restorations per group). Restorations were reviewed at 6, 12, 24, 36 and 60 months.

Test Groups:

- 3M™ Scotchbond™ Universal Adhesive/3M™ Scotchbond™ Universal Etchant; Total-Etch (TE) restorations
- Scotchbond™ Universal Adhesive; Self-Etch (SE) restorations

Control: 3M™ Adper™ Scotchbond™ Multi-Purpose Adhesive (MP)

Composite: 3M™ Filtek™ Supreme XTE Universal Restorative

Operative: Lesion depth at least 1.5 mm. Cleaned with oil-free pumice. Short bevel placed on occlusal enamel

Distribution: 22% maxillary, 48% mandibular; 45% premolar, 15% incisor, 13% cuspid, 6% first molar

Evaluation Criteria: Modified USPHS criteria; sensitivity: 0 to 10 visual analog scale

Results

Sample number per group evaluated at recall: 42 at 6 months (100%), 41 at 12 months (95%), 38 at 24 months (90%), 34 at 36 months (81%), 23 at 60 months (55%).

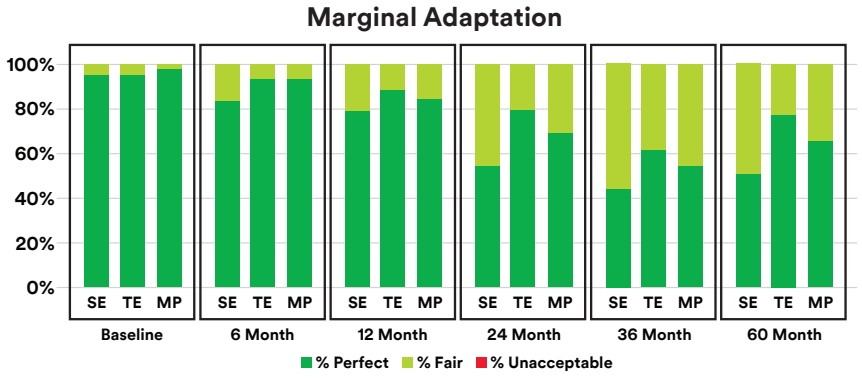
Number of restorations examined against USPHS criteria at 5 years (factoring retentive loss): TE-22, SE-20, MP-17

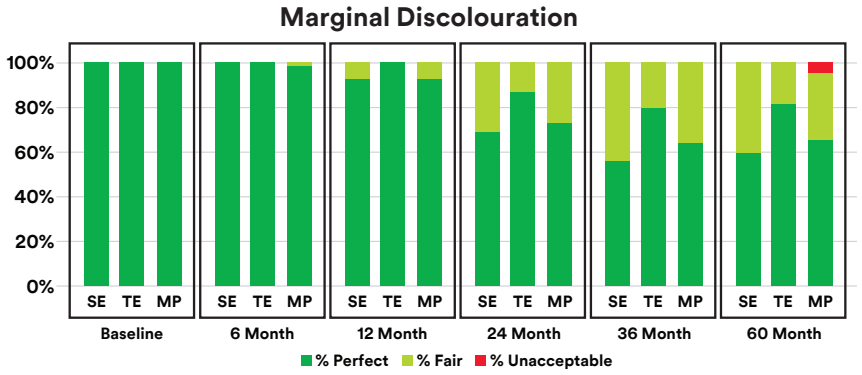
Marginal Adaptation: No significant differences among groups were observed at each recall. All retained restorations were rated clinically acceptable.

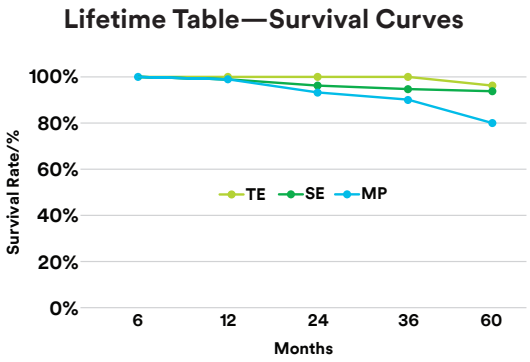
Marginal Discoloration: Difference among the groups was statistically significant at 2 and 3 years (p = 0.03 and 0.045, respectively) but not at the 5-year recall. All retained 3M™ Scotchbond™ Universal Adhesive restorations were rated clinically acceptable.

Retention: 6 restorations in the control group, 3 from SE and 1 from TE failed retention over 60 months. There was no statistical difference in survivability over this time frame.

Sensitivity: Mean sensitivity to cold was relatively low and not significantly different across all groups and time points. Average sensitivity to cold across all time points: MP 2.2±0.3; SE 2.5±0.4; TE 2.7±0.3







SE = 3M™ Scotchbond™ Universal Adhesive/ Self-Etch

TE = 3M™ Scotchbond™ Universal Adhesive/ Total-Etch

MP = 3M™ Adper™ Scotchbond™ Multi-Purpose Adhesive/Total-Etch (Control)

Conclusion:

For over five years, the performance of Scotchbond Universal Adhesive in both total-etch and self-etch modes was comparable to the performance of the control, the latter having a long-standing clinical record. Scotchbond Universal Adhesive in total-etch mode yielded numerically higher perfect values as compared to its use in self-etch mode for marginal adaptation and marginal discolouration at all recalls. However, this observation was statistically significant only for marginal discolouration at the 2- and 3-year recalls. In self-etch mode, the observed defects were more commonly associated with enamel rather than dentine margins. Additional investigation with higher sample numbers would be needed to understand if the trends observed for marginal adaptation, marginal discolouration and retention are resolvable into significant differences between groups.

Discover more at:
3M.com.au/Scotchbond
3M.co.nz/Scotchbond

3M Oral Care

3M Australia Pty Limited
Building A, 1 Rivett Road
North Ryde, NSW 2113
1300 363 454
3M.com.au

3M New Zealand Limited
94 Apollo Drive
Rosedale, Auckland 0632
0800 80 81 82
3M.co.nz

Find us on Facebook

3M, "3M Science. Applied to Life.", Adper and Scotchbond are trademarks of 3M. 3M Health Care Academy is a service mark of 3M. ©3M 2019. All rights reserved. Printed in Australia. Please Recycle. AV011477153

FLAME_3M4752 01/19