

Deep caries removal strategies: Findings from The National Dental Practice-Based Research Network



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The nation's network

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INTRODUCTION

The International Caries Consensus Collaboration (ICCC) has published recommendations on carious tissue removal to treat cavitated carious lesions in a manner that preserves hard tissue and retains teeth long term. This study quantifies The National Dental Practice-Based Research Network dentists' use of selective caries removal.

METHODS

This cross-sectional questionnaire study assessed reported use of selective caries removal when treating deep caries in asymptomatic and symptomatic teeth in response to clinical case scenarios. Statistical methods included the proportion of respondents concordant with ICCC guidelines at various thresholds and logistic regression to model factors associated with concordance.

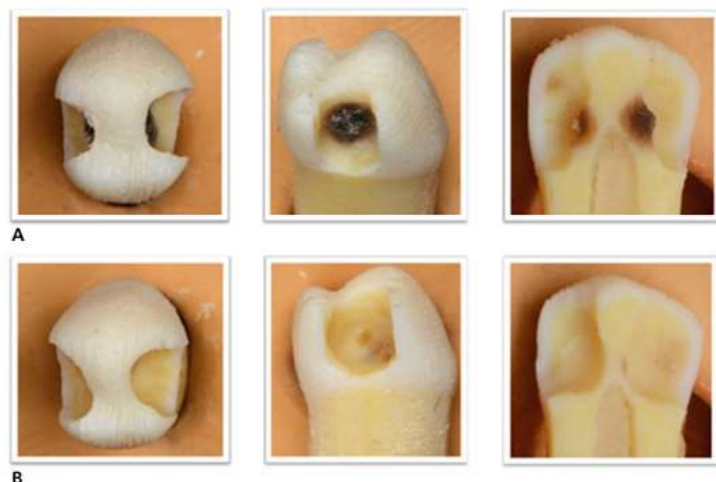


Figure 2. Three-dimensional printed teeth showing selective and nonselective caries removal. **A.** Selective caries removal: the periphery of the cavity is cleaned to hard dentin, and pulpally as much carious tissue as possible is removed while avoiding pulp exposure (leaving softened dentin if necessary) and removing enough tissue to place a durable restoration. **B.** Nonselective caries removal (previously known as complete caries removal): both at the periphery of the cavity and pulpally; all carious tissue is removed to reach hard dentin, leaving no softened dentin. Photographs courtesy of the Selective Caries Removal in Permanent Teeth study team, National Institute for Health and Care Research-Health Technology Assessment, Selective Caries Removal in Permanent Teeth study, University of Dundee, United Kingdom.¹⁰

RESULTS

A total of 500 dentists responded. The study sample was 57% male, mean (SD) age was 50.9 (12.6) years, and 60% worked in private practice settings. Higher levels of concordance for choosing selective caries removal 50% or greater of the time were found for asymptomatic (62.4%; 95% CI, 57.6 to 67.2) than for symptomatic caries (49.3%; 95% CI, 44.4 to 54.2). These differences were significantly associated with type of practice setting.

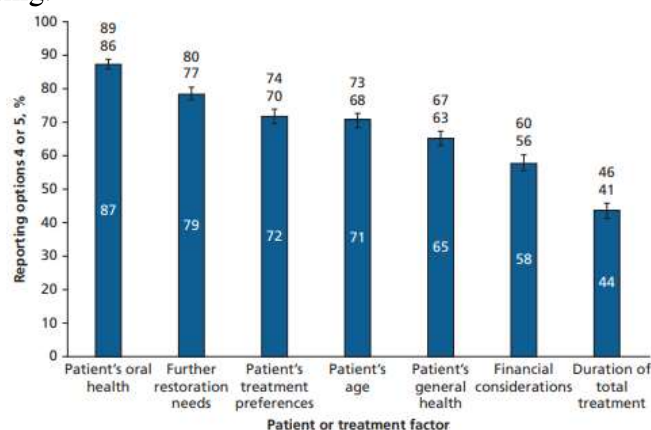


Figure 3. Importance of patient or treatment factors when making a clinical decision regarding deep caries removal strategies (n = 467). All data are weighted to reflect the stratified nature of the sampling. Response options ranged from 1 (not at all important) through 5 (extremely important). The values at the tops of the bars are the 95% CIs.

DISCUSSION & CONCLUSION

The National Dental Practice-Based Research Network dentists reported using selective caries removal strategies when managing deep carious lesions more often than in previous US and Japanese practice-based research network studies and from results of a systematic review and meta-analysis. Nonetheless, substantive discordance with the ICCC guidelines was seen by the authors of this study. More dissemination and continuing education activities, as well as implementation studies, may further encourage use of selective caries removal to soft or firm dentin when indicated.