



University of Dundee

Don't Know, Can't Do, Won't Change

Innes, Nicola; Frencken, J. E.; Schwendicke, F.

Published in:
Journal of Dental Research

DOI:
[10.1177/0022034516638512](https://doi.org/10.1177/0022034516638512)

Publication date:
2016

Document Version
Accepted author manuscript

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):

Innes, N. P. T., Frencken, J. E., & Schwendicke, F. (2016). Don't Know, Can't Do, Won't Change: Barriers to Moving Knowledge to Action in Managing the Carious Lesion. *Journal of Dental Research*, 95(5), 485-486. DOI: 10.1177/0022034516638512

General rights

Copyright and moral rights for the publications made accessible in Discovery Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from Discovery Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Don't Know, Can't Do, Wont Change; Barriers to Moving Knowledge to Action in Managing the Carious Lesion

N.P.T. Innes, J.E. Frencken, F. Schwendicke

- ¹ Paediatric Dentistry, Dundee Dental Hospital and School, University of Dundee, Dundee, UK
- ² Department of Oral Function and Prosthetic Dentistry, College of Dental Sciences, Radboud University Medical Centre, Nijmegen, The Netherlands
- ³ Department of Operative and Preventive Dentistry, Charité - Universitätsmedizin Berlin, Germany

In this special issue of *Advances in Dental Research* we present the International Caries Consensus Collaboration (ICCC) recommendations for carious lesion management (Schwendicke et al. 2016) and related terminology (Innes et al. 2016), developed from evidence-led consensus. During a lecture 130 years ago, GV Black stated that *"The day is surely coming and perhaps within the lifetime of you young men before me when we will be engaged in practicing preventive rather than reparative dentistry"* (Joseph 2005). This aspiration has been reinforced by consistent and growing evidence supporting less invasive management strategies. However, creating evidence is only the beginning of the story; the next challenge is to translate that evidence into clinical practice (Elouafkaoui et al. 2015). One clear example of our failure to meet this challenge can be seen in the treatment patterns for carious lesions confined to enamel. The invasive (operative) management of enamel lesions is not supported by evidence (Ricketts et al. 2013; Schwendicke et al. 2013a; Schwendicke et al. 2014; Dorri et al, 2015). It is considered too invasive and is no longer recommended (Kidd and Fejerskov 2013; Tyas et al. 2000). Despite this, 40 to 80% of dentists worldwide would still chose to lift a rotary instrument, remove tooth tissue and restore these lesions instead of managing them preventively or micro-invasively (Barbara et al. 2010; Domejean et al. 2015, Gordan et al. 2009, Kakudate et al. 2014). A similar story can be told for the management of cavitated carious lesions. Although there is increasing evidence supporting less invasive carious tissue removal strategies, especially in deep carious lesions, (Ricketts et al. 2013, Schwendicke et al. 2013a), they are still treated over invasively, with complete removal of carious tissue compromising tooth structure and the health of the dental pulp (Oen et al. 2007, Schwendicke et al. 2013b, Weber et al. 2011). This failure to follow new evidence is not limited to dentists who are "out of touch", do not undertake continuing professional development or who have been practicing for many years; in some countries and some schools, new dentists are still taught to remove all infected carious tissue and it is actually not possible to pass professional exams without demonstrating this. The reasons underlying this failure to translate evidence into clinical practice are many, and complex.

It cannot be assumed that newly generated evidence, however compelling, will immediately produce a significant change in clinical practice. The transition of new, evidence-based treatments from the scientific literature into general clinical practice can be slow, and sporadic (Schwendicke et al. 2015). Translational research has shown that this process is complex, with the majority of problems falling into one or more of three areas, loosely summarized as; Don't Know, Can't Do, or Wont Change. These individual areas are also, in turn multifaceted (Grol and Grimshaw 2003), involving a complex interplay of human-, organizational- and policy/system-level influencing factors. Our two consensus documents aim to reduce the "Don't knows". The "Don't know", could be due to general ignorance (perhaps remedied with an appropriate educational intervention), or the more problematic willful ignorance, where the subject chooses not to learn more about a topic (perhaps because it challenges their current beliefs). So, although changing clinicians' behaviors is not a straightforward process, it is accepted that an essential starting point of managing the problem of "Don't know", is the availability of high quality, evidence-based guidance on best clinical practice. The guidance should synthesize the best evidence from the literature into clear, unambiguous recommendations (Schünemann et al. 2014). It is essential that these recommendations use a clear and widely agreed terminology to allow transparent discussion and debate without breakdown due to misunderstanding.

Can such recommendations around less invasive and more contemporaneous management of carious lesions be drawn up, and could these be applicable to all types of patients, countries, healthcare remuneration settings, dental care professionals, and dental education systems? We think yes; and the ICC's recommendations and terminology publications in the special issue of *Advances in Dental Research* (Innes et al. 2016 and Schwendicke et al. 2016) address the lack of international guidance on caries lesion management. This was the first goal of the group. The consensus achieved has been built on a foundation of evidence assimilation. However, it only acts as a starting point for accessible, formal evidence to recommendation production. Beyond "Don't know", further barriers to implementing that knowledge base ("Can't Do", or "Wont Change"), will be addressed as part of the next steps.

Acknowledgments

The authors received no financial support and declare no potential conflicts of interest with respect to the authorship and/or publication of this article.

References

- Baraba A, Doméjean-Orliaguet S, Espelid I, Tveit A, Miletic I. 2010. Survey of Croatian dentists' restorative treatment decisions on approximal caries lesions. *Croat Med J.* 51(6):509-514.
- Doméjean S, Léger S, Maltrait M, Espelid I, Tveit AB, Tubert-Jeannin S. 2015. Changes in occlusal caries lesion management in France from 2002 to 2012: A persistent gap between evidence and clinical practice. *Caries Res.* 49(4):408-416.
- Dorri M, Dunne SM, Walsh T, Schwendicke F. 2015. 'Micro-invasive interventions for managing proximal dental decay in primary and permanent teeth'. *Cochrane Database of Systematic Reviews*, 11:CD010431.
- Elouafkaoui P, Bonetti DL, Clarkson JE, Stirling D, Young L, Cassie H. 2015. Is further intervention required to translate caries prevention and management recommendations into practice? *Br Dent J.* 218 (E1):7.

- Gordan VV, Garvan CW, Heft MW, Fellows JL, Qvist V, Rindal DB, et al. 2009. Restorative treatment thresholds for interproximal primary caries based on radiographic images: findings from the Dental Practice-Based Research Network. *Gen Dent.* 57(6):654–663.
- Grol R, Grimshaw J. 2003. From best evidence to best practice: Effective implementation of change in patients' care. *Lancet.* 362(9391):1225-1230.
- Innes NPT, Frencken JE, Bjørndal L, Maltz M, Manton D, Ricketts D et al. 2016. Managing carious lesions: Consensus recommendations on terminology. *Adv Dent Res.* 2016.
- Joseph R. 2005. The Father of Modern Dentistry - Dr. Greene Vardiman Black (1836-1915). *J Conserv Dent.* 8(2):5-6.
- Kakudate N, Sumida F, Matsumoto Y, Yokoyama Y, Gilbert GH, Gordan VV. 2014. Patient age and dentists' decisions about occlusal caries treatment thresholds. *Oper Dent.* 39(5): 473-480.
- Kidd E, Fejerskov, O. 2013. Changing concepts in cariology: Forty years on. *Dental Update.* 40(4): 277-286.
- Oen KT, Thompson VP, Vena D, Caufield PW, Curro F, Dasanayake A, Ship JA, Lindblad A. 2007. Attitudes and expectations of treating deep caries: a PEARL Network survey. *Gen Dent.* 55(3):197-203.
- Ricketts D, Lamont T, Innes NP, Kidd E, Clarkson JE. 2013. Operative caries management in adults and children. *Cochrane Database Syst Rev.* 28:CD003808.
- Schünemann HJ, Wiercioch W, Etzeandia I, Falavigna M, Santesso N, Mustafa R et al. 2014. Guidelines 2.0: Systematic development of a comprehensive checklist for a successful guideline enterprise. *CMAJ,* 186(3), E123-E142.
- Schwendicke F, Meyer-Lückel H, Dorfer C, Paris S. 2013a. Failure of incompletely excavated teeth - a systematic review. *J Dent.* 41(7):569-580.
- Schwendicke F, Meyer-Lueckel H, Dorfer C, Paris S. 2013b. Attitudes and behaviour regarding deep dentin caries removal: a survey among German dentists. *Caries Res.* 47(6):566-573.
- Schwendicke F, Paris S, Tu Y. 2014. Effects of using different criteria and methods for caries removal: A systematic review and network meta-analysis. *J Dent.* 43(1):1-15.
- Schwendicke F, Doméjean S, Ricketts D, Peters M. 2015. Managing caries: The need to close the gap between the evidence base and current practice. *Br Dent J.* 219(9):433-438.
- Schwendicke F, Frencken JE, Bjørndal L, Maltz M, Manton D, Ricketts D et al. 2016. Managing carious lesions: Consensus recommendations on carious tissue removal. *Adv Dent Res.*
- Tyas MJ, Anusavice KJ, Frencken JE, Mount GJ. 2000. Minimal intervention dentistry—a review. FDI Commission Project 1-97. *Int Dent J.* 50(1):1–12.
- Weber CM, Alves LS, Maltz M. 2011. Treatment decisions for deep carious lesions in the Public Health Service in Southern Brazil. *J Public Health Dent.* 71(4):265-270.