

Restoring a tooth – is that »good medicine«?

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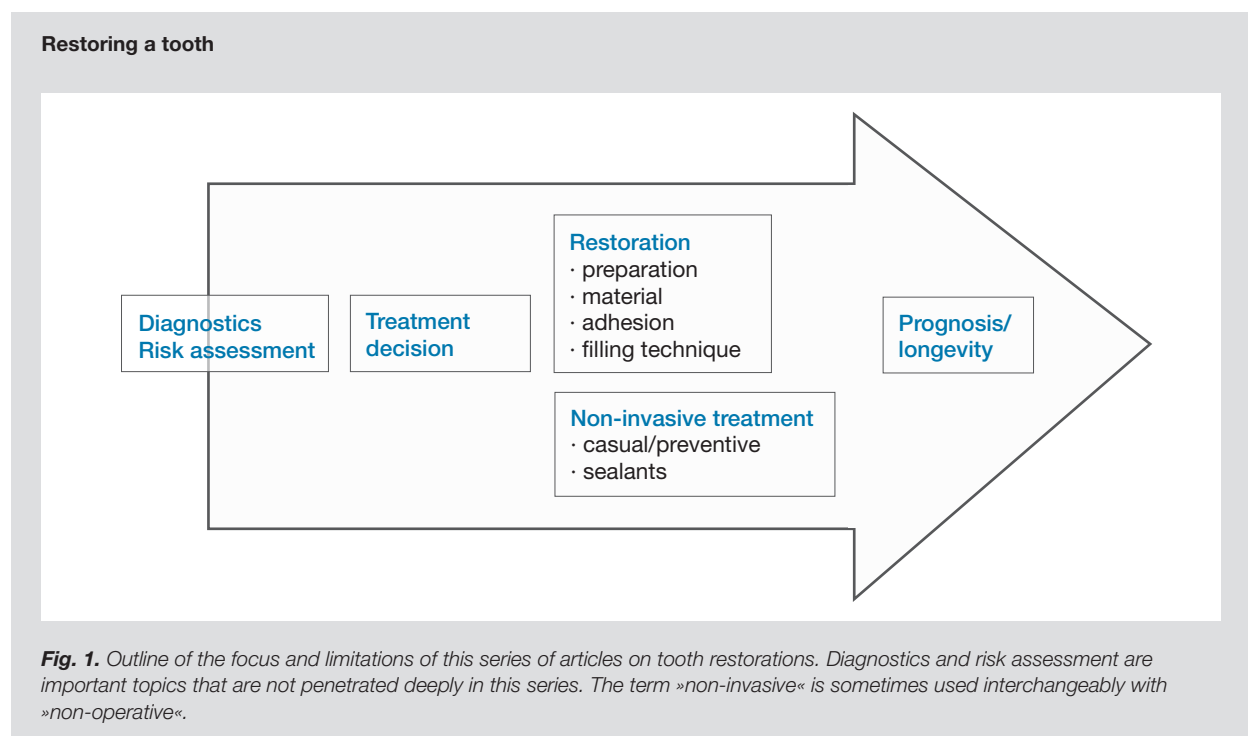
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Restoring a tooth is an everyday procedure in dentistry that has not, almost ever, been critically challenged. Such a challenge would touch upon the very core of dentistry. Our profession seldom critically reflects over »drilling and filling«. Others do: In an editorial in *The Lancet* in 2009 (1), the dental profession was described as follows: »Dentists have also taken little interest in oral health, preferring to treat rather than prevent oral disease«. One month later the *British Dental Journal* provoked its readers by asking if oral health and dentistry were compatible (2). And now we publish a series of articles that focuses particularly on »restoring a tooth«. Is this insane?

No, it is not. Restoring or not restoring is a clinical decision that

we make several times every day, and it has life-long consequences for the patient. Sometimes restoration can be a step in promoting oral health, as an adjunct to causal and preventive treatment. For the Nordic countries today, we do not agree with the statements in the mentioned editorials, since a focus on prevention and a trend not to restore early lesions have lead to a dramatic decline in caries prevalence in our region. Restoration of caries lesions is still an important treatment procedure and non-amalgam materials have made it possible to provide less invasive restorative care that should increase the mechanical durability of the tooth-restoration complex.

The separate papers in this series will follow this line of reasoning.



After diagnosing caries risk or caries lesions in a patient, we arrive at a treatment decision. It may include causal or preventive caries treatment, restoring a tooth or even extractions. A natural starting-point of a series of articles on a tooth restoration topic would be decision-making and analysis of consequences of restoring vs. consequences of not restoring, taking into consideration non-invasive treatment options. When a decision to restore is taken, the focus will be on preparation of a cavity that is suitable for current filling materials, including bonding and material properties. Clinical procedures to achieve optimal restoration qualities, including restorations of root caries in the elderly, will be important topics. Finally, and most relevant, the longevity of restorations will be analysed and discussed. This series of papers do not cover treatment and prevention of dental erosions or dentitions with extensive wear that may require specialized treatment modalities.

We all know that a sound, un-restored tooth is preferable and that methods to maintain oral health are available. We also know that we are not successful in preventing and stopping caries progression in all patients. Restorative therapy is never the first option in treating caries disease. Nevertheless, restorative therapy *per se* is what we have to add to our treatment options when we are convinced that everything else has failed. Once a restorative decision is made, the quality of the restoration influences its longevity.

Some reflections on caries, restorative procedures and longevity of restorations may come in handy when analyzing whether fillings are good medicine in the treatment of caries:

On restorations and their survival:

- The reason for placing the first restoration is caries. The next time it is mostly secondary caries (3-6).
- In class II procedures, when no interproximal protection is used, the adjacent tooth is prone to preparation damage in approximately two-third of the cases, raising the caries risk at least two-fold compared with undamaged surfaces (7).
- A restoration has no influence on the development of new or secondary caries in the patient (8), and higher caries risk patients lose their fillings at a faster rate (6).
- Survival of restorations is limited. Half of the load-bearing composite restorations are replaced after approximately five to seven years (9,10). There is no such thing as a permanent filling.
- Dentists spend a majority of their clinical time to re-treat previously restored teeth (11).

On caries progression rates and non-invasive treatment:

- Caries progression rates can be rather slow (12,13) and non-invasive treatment is an option to stop progression and decrease caries risk, if not for all carious surfaces, then at least for all patients with caries or at risk of caries (14).
- Since caries progression rates can be slow, we have several opportunities to slow or stop progression (14).
- Preventive measures can reduce caries incidence (15).

Reasons for placing a restoration

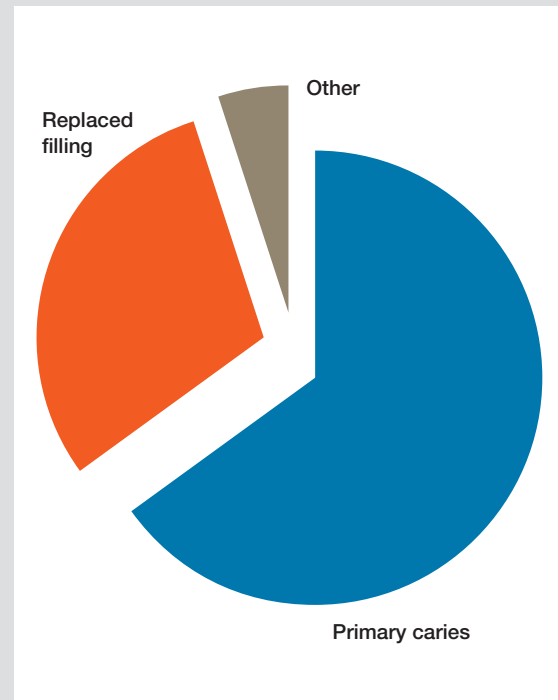


Fig. 2. Generated data from Sunnegårdg-Grönberg & al 2009 (6).

On the importance of the filling material:

- Historic data typically show that amalgam fillings may have significantly better longevity than composite restorations (10). There has been a substantial development for »white« materials and associated techniques. Amalgam use is now very restricted, or formally banned in Denmark, Sweden and Norway.
- The material and bonding techniques have less impact on restoration survival than do patient and operator characteristics (6,16). However, correlation between the durability of bond strength measured in vitro and clinical survival of the bonded restorations has recently been reported (17).

Restoring a tooth is sometimes a necessary procedure and a thus an ingredient of »good medicine«, provided we control disease and make a proper restoration. Now that all this is clear, it is time to enjoy the first paper in under this theme »Restoring a tooth«. Good riddance! ♣

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