

# Minimal Intervention in the Management of Dental Caries

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FDI World Dental Federation supports the principles of minimal intervention dentistry in the management of dental caries. These principles are:

1. **Modification of the oral flora**

Dental caries is an infectious disease, and the primary focus should therefore be on control of the infection, plaque control and reduced carbohydrate intake.

2. **Patient education**

The aetiology of dental caries should be explained to the patient, together with the means of prevention through dietary and oral hygiene measures.

3. **Remineralization of non-cavitated lesions of enamel and dentine**

Saliva plays a critical role in the demineralization/remineralization cycle, and its quantity and quality should therefore be assessed. There is strong evidence that 'white spot' lesions of enamel and non-cavitated lesions of dentine can be arrested or reversed. Such lesions should therefore be managed initially by remineralization techniques.

The extent of the lesion should be objectively recorded such that any progression can be identified at recall.

4. **Minimal operative intervention of cavitated lesions**

An operative ('surgical') approach should only be used when specifically indicated, e.g., when cavitation is such that the lesion cannot be arrested, or when there are aesthetic or functional requirements.

Operative intervention should focus on the preservation of natural tooth structure and be limited to the removal of friable enamel and infected dentine. This can be done with hand, rotary, sonic, ultrasonic, air abrasive or laser instruments, depending on the circumstances. Each prepared cavity is therefore unique, and is primarily dependent on the extent of infected dentine rather than on a predetermined cavity design.

Preparation of minimal cavities enables their restoration with adhesive materials such as glass-ionomer cement and/or resin composite. Some studies suggest that glass-ionomer cement may aid in the remineralization of demineralized, firm, non-infected dentine; however, further clinical studies are needed.

5. **Repair of defective restorations**

Removal of restorations results in an inevitable increase in cavity size as a consequence of removal of sound tooth structure. Depending on the clinical judgement of the dentist, repair could be considered as an alternative to replacement in some circumstances.

## Reference

- Tyas M J, Anusavice K J, Frencken J E, Mount G J. Minimal Intervention Dentistry - A Review. FDI Commission Project 1-97. *Int Dent J* 2000; 50: 1-12