

## Orthodontic bonded retainers

Drs Jonathan Butler and Paul Dowling review of the use of bonded retainers following orthodontic treatment and provide a guide to their maintenance and repair.

### Introduction

The objectives of this paper are to review the rationale for the use of retention following orthodontic treatment, and to describe the types of bonded retainers currently in use for this purpose. The clinical reliability and efficacy of these retainers is discussed and their impact on the oral tissues considered. The implications for oral hygiene and maintenance are noted and an account of how these appliances may be repaired in the case of failure is included.

### Abstract

Retention is usually necessary following orthodontic treatment to overcome the elastic recoil of the periodontal supporting fibres and to allow remodelling of the alveolar bone. The degree of change is variable and largely unpredictable. Bonded lingual retainers have been shown to be an effective means of retaining aligned anterior teeth in the post-treatment position in the long term.

Two basic designs of lingual bonded retainers are currently in use.

- Rigid mandibular canine-to-canine retainers are attached to the canines only. They are effective in maintaining intercanine width but less so in preventing individual tooth rotations.
- Flexible spiral wire retainers are bonded to each tooth in the segment, their flexibility allowing for physiological movement of the teeth. This design is more effective at preventing rotation of the bonded teeth.

Failure of bonded retainers may occur at the wire-composite interface, at the adhesive-enamel interface or as a stress fracture of the wire. Failure of a retainer may lead to unwanted tooth movement. In many cases it will be possible to repair the appliance in the mouth. However, in some instances it will be necessary to replace the retainer.

A disadvantage of fixed retainers is that they complicate oral hygiene procedures, and favour the accumulation of plaque and calculus. Despite this, the presence of a bonded retainer appears to cause no increase in incidence of caries or periodontal disease. Use of interdental cleaning aids is required to ensure adequate oral hygiene.

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