

Policy on Interim Therapeutic Restorations (ITR)

Review Council

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Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes that unique clinical circumstances can result in challenges in restorative care for infants, children, adolescents, and persons with special health care needs. When circumstances do not permit traditional cavity preparation and/or placement of traditional dental restorations or when caries control is necessary prior to placement of definitive restorations, interim therapeutic restorations (ITR)¹ may be beneficial and are best utilized as part of comprehensive care in the dental home.^{2,3} This policy will differentiate ITR from atraumatic/alternative techniques (ART)⁴ and describe the circumstances for its use.

Methods

This policy was originally developed by the Council on Clinical Affairs and adopted in 2001. This document is a revision of the previous version, revised in 2008. This updated policy is based upon a review of current dental literature. Database searches were performed using key words dental caries, cavity, primary teeth, deciduous teeth, atraumatic restorative treatment, interim therapeutic restoration, and glass ionomer. Search limits used were humans, children 0-12 years, clinical trial, comparative study, controlled clinical trial, meta-analysis, multicenter study, randomized controlled trial, systematic review, and validation studies.

Background

Atraumatic/alternative restorative technique (ART) has been endorsed by the World Health Organization as a means of restoring and preventing caries in populations with little access to traditional dental care.^{4,6} In many countries, practitioners provide treatment in non-traditional settings that restrict restorative care to placement of provisional restorations. Because circumstances do not allow for follow-up care, ART mistakenly has been interpreted as a definitive restoration. ITR utilizes similar techniques but has different therapeutic goals. Interim therapeutic restoration more accurately describes the procedure used in contemporary dental practice in the U.S.

ITR may be used to restore and prevent carious lesions in young patients, uncooperative patients, or patients with special health care needs or when traditional cavity preparation and/or placement of traditional dental restorations are not feasible and need to be postponed.^{7,8} Additionally, ITR may be used for step-wise excavation in children with multiple open carious

lesions prior to definitive restoration of the teeth, in erupting molars when isolation conditions are not optimal for a definitive restoration, or in patients with active lesions prior to treatment performed under general anesthesia.^{9,10} The use of ITR has been shown to reduce the levels of cariogenic oral bacteria (e.g., *Mutans Streptococci*, *lactobacilli*) in the oral cavity immediately following its placement. However, this level may return to pretreatment counts over a period of six months after ITR placement if no other treatment is provided.¹¹⁻¹³

The ITR procedure involves removal of caries using hand or rotary instruments with caution not to expose the pulp. Leakage of the restoration can be minimized with maximum caries removal from the periphery of the lesion. Following preparation, the tooth is restored with an adhesive restorative material such as glass ionomer or resin-modified glass ionomer cement.¹⁴ ITR has the greatest success when applied to single surface or small two surface restorations.^{15,16} Inadequate cavity preparation with subsequent lack of retention and insufficient bulk can lead to failure.^{16,17} Follow-up care with topical fluorides and oral hygiene instruction may improve the treatment outcome in high caries-risk dental populations, especially when glass ionomers (which have fluoride releasing and recharging properties) are used.¹⁸⁻²⁰

Policy statement

The AAPD recognizes ITR as a beneficial provisional technique in contemporary pediatric restorative dentistry. ITR may be used to restore and prevent the progression of dental caries in young patients, uncooperative patients, patients with special health care needs, and situations in which traditional cavity preparation and/or placement of traditional dental restorations are not feasible. ITR may be used for caries control in children with multiple carious lesions prior to definitive restoration of the teeth.

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