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# Keys to Clinical Success with Pulp Capping: A Review of the Literature



*PEAK (Practice Enhancement and Knowledge) is a College service for members, whose goal is to regularly provide Ontario dentists with copies of key articles on a wide range of clinical and non-clinical topics from the dental literature around the world.*

*It is important to note that PEAK articles may contain opinions, views or statements that are not necessarily endorsed by the College. However, PEAK is committed to providing quality material to enhance the knowledge and skills of member dentists.*

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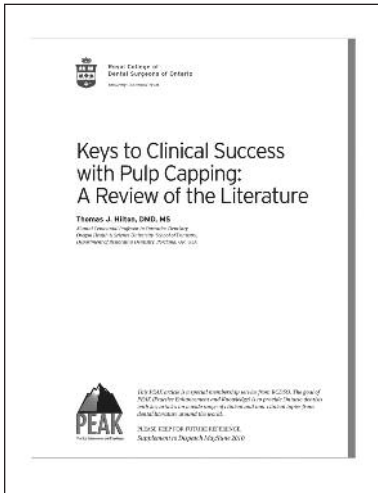
Over the years, PEAK has provided members with several articles related to the assessment and management of caries. In 2002, for example, PEAK provided members with an article from Quintessence International, entitled “Minimal Intervention: A New Concept for Operative Dentistry.” This article advocated a shift in philosophy toward minimal intervention in restorative dentistry and, among the key observations, pointed out that affected (lightly demineralized) dentin at the base of a cavity is relatively sterile and can be remineralized. This fact is particularly relevant in proximity to the pulp.

The consequences of pulp exposure from caries, trauma or operative misadventure can be significant, often requiring either root canal therapy or extraction of the tooth. An alternative to these procedures is pulp capping, which involves the placement of a medicament over an exposed pulp (direct pulp cap) or residual caries (indirect pulp cap), with the intention of maintaining pulp vitality.

With the current issue of Dispatch, PEAK is pleased to offer members the following article: “Keys to Clinical Success with Pulp Capping: A Review of the Literature” from the September/October 2009 issue of Operative Dentistry. The article begins by reviewing the basic principles of pulp capping and emphasizes that the key to pulp survival following such procedures is the placement of a well-sealed restoration. It then describes both indirect and direct pulp capping procedures, along with an evaluation of specific direct pulp capping materials.



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## key points to consider

- ◆ Avoid exposing the pulp. The chances for tooth survival are excellent if the tooth is asymptomatic and well sealed, even if residual caries remain.
- ◆ If the pulp is exposed, control hemorrhage with water, saline or sodium hypochlorite. Water and saline are the most benign to the pulp, while sodium hypochlorite is the best at controlling hemorrhage and has antibacterial properties.
- ◆ Calcium hydroxide remains the “gold standard” for direct pulp capping. It has the longest track record of clinical success and is the most cost-effective of all materials.
- ◆ MTA demonstrates comparable results to calcium hydroxide as a direct pulp capping agent in short-term data.
- ◆ Zinc oxide and eugenol formulations, glass ionomers, resin-modified glass ionomers and adhesives are poor direct pulp capping agents and should be avoided for this use.
- ◆ Provide a well-sealed restoration immediately after pulp capping. This will provide protection against ongoing leakage and bacterial contamination that can compromise the success of the pulp cap.