

## DISCUSSION

MTA cement remains the gold standard for direct pulp capping therapy, although CaOH cement achieves outcomes showing no statistically significant differences from those of MTA. Although tricalcium silicate cements can be recommended as well, studies are needed to evaluate the long-term effectiveness of these materials. The use of laser techniques for direct pulp capping appears to be associated with high levels of success, with a positive effect on the prognosis for teeth treated with this method. Pulp tissue may suffer damage when dental adhesive systems are used, so the use of these materials is not advisable. Other materials that are not advised include hydroxyapatite, enamel morphogenetic proteins, and formulas consisting of antibiotics and corticosteroids.

Paula AB, Laranjo M, Marto C-M, et al: Direct pulp capping: What is the most effective therapy?—Systematic review and meta-analysis. *J Evid Base Pract* 1:298-314, 2018

### Clinical Significance

MTA retains its position as the first choice for direct pulp capping therapy. However, CaOH cement runs a close second and laser techniques are promising, with high rates of success and a good prognosis. Further study is needed to reveal the long-term success rates for tricalcium silicate cements, but they appear to offer promise as well. None of the other methods are advised for direct pulp capping.

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## Induction of a hard-tissue barrier



### BACKGROUND

Dentin is a physiological barrier protecting the dental pulp from directly interacting with potentially damaging exogenous stimuli. In direct pulp capping and partial pulpotomy, a material is applied directly over the exposed pulp to protect its vitality and avoid more invasive and expensive interventions, such as root canal therapy. Materials used for this procedure include a wide range of products that are designed to promote hard-tissue barrier formation and protect the pulp. Some promote pulpal healing as well. The ability of various commercially available pulp-capping materials to induce hard tissue barrier formation was investigated in a systematic review and meta-analyses.

### METHODS

Both randomized controlled trials (RCTs) and controlled clinical trials were sought through an electronic search of the PubMed, Cochrane, Embase, and Summon databases. In addition, a manual search was conducted of relevant journals and the reference lists of relevant studies. Twenty-seven articles were eligible for the systematic review, with 22 used in 2 meta-analyses. One meta-analysis used 10 articles comparing mineral trioxide aggregate (MTA) and calcium hydroxide (CH); the second meta-analysis used 12 articles that compared bonding agents and CH.

### RESULTS

The greatest number of studies considered MTA and bonding agents for pulp capping. Emdogain gel (EMD) and

Biodentine are capping materials that were compared to MTA and CH for their ability to produce hard-tissue barrier formation.

### MTA and CH

Ten studies compared the hard-tissue barrier formation after pulp capping associated with MTA and CH. CH was used in either powder or cement form. MTA was significantly better than CH in 2 studies and produced a higher proportion of hard-tissue barriers. Positive results were obtained for MTA in 159 of 190 pulp-capping procedures and for CH in 93 of 142 pulp-capping procedures.

### Bonding Agents and CH

Twelve studies compared hard-tissue barrier formation resulting from treatment with bonding agents or CH. CH in these studies was used as a powder, paste, or cement. CH was significantly better than the bonding agents, having positive results in 73 of 93 procedures, whereas the bonding agents had positive results in 11 of 161 procedures. Smaller studies tended to support the use of CH over bonding agents.

### EMD and CH

EMD had less capacity to induce hard-tissue barrier formation and to protect the pulp than CH. However, immunohistochemical evaluation of teeth capped with EMD gel revealed the presence of odontoblast-like cell differentiation and the production of new hard tissue. Longer follow-up may provide additional information about the efficacy of EMD for vital pulp treatments.

## Clinical Significance

Type of exposure of the pulp can be predictive of success in direct pulp capping. In clinical practice, most vital pulp exposures result from caries. These by definition include bacterial contamination of the pulpal tissues and periapical areas and this contamination contributes to subsequent inflammatory responses. Accurately diagnosing pulp inflammation directly influences how well the capped pulps will fare. The pulp exposures in these studies were obtained in aseptic conditions, so the healing responses may differ from those seen clinically.

## Biodentine and CH

Biodentine has properties similar to those of MTA and CH, with the ability to promote reparative tertiary dentin formation. The results in short-term studies appeared to favor Biodentine over

CH, but insufficient evidence is available regarding the long-term effects of Biodentine.

## DISCUSSION

MTA was confirmed as a better choice for inducing hard-tissue barrier formation than other materials, including CH. Bonding agents were less impressive. Newer materials need to undergo more RCTs with larger sample sizes and longer follow-up times to provide better information about their performance.

Didilescu AC, Cristache CM, Andrei M, et al: The effect of dental pulp-capping materials on hard-tissue barrier formation. *J Am Dent Assoc* 149:903-917, 2018

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# EATING DISORDERS

## Dentists' role with patients who have eating disorders



### BACKGROUND

Eating disorders (EDs) generally fall into the main categories of anorexia nervosa, bulimia nervosa, and binge eating disorder, with some acknowledgement of possible other feeding or eating disorders or atypical anorexia and bulimia. These psychosomatic diseases can be associated with serious psychological and somatic complications. Persons with ED tend to deny or hide their disease and avoid professional help, so it can be difficult to know the exact prevalence of EDs and difficult to recognize patients who require help. Oral complications can be among the early or the only signs of an ED, so the dentist may be the first health care professional to suspect the patient has a disorder. Among the oral complications, the most common is dental erosion, which is caused by gastric acid and is most often seen when self-induced vomiting is practiced. The intake of large quantities of acidic foods and drinks along with decreased salivary secretion contribute to the erosion. Patients with EDs have 5 times the odds of having dental erosion as healthy individuals. Because of the denial and concealment patients with ED practice, it can be difficult for dentists to broach the topic in a dental setting. Part of this difficulty is the fact that dental professionals often lack knowledge about how persons with ED would respond to such a discussion. The knowledge, experiences, and attitudes of persons with

EDs toward their oral health and oral health behaviors were investigated to determine how these individuals would view a dentist's communication with them regarding their ED.

### METHODS

The study participants were a convenience sample of current or former ED patients recruited in a number of treatment facilities either by direct contact or through a bulletin posted in the facility. They completed a semi-structured questionnaire that consisted of 22 questions, 6 of which were open ended. Two hundred ninety persons responded to the electronic questionnaire, with 260 eligible for participation.

### RESULTS

#### Oral Health Knowledge and Concerns

Seventy-three percent of the participants reported having much or some knowledge about how EDs can cause oral complications, but 7% reported no knowledge in this area. Those with present and previous disease showed equal levels of self-reported knowledge. Seventy percent of the subjects obtained their knowledge from the media and 24% from a dentist. Knowledge shared by other health care professionals, friends, relatives, and other people with EDs was also noted.