RESULTS

The diagnostic criteria used were not well described in the studies, so the heterogeneity of the results did not permit statistical analysis. The outcomes identified included pulp canal obliteration (31.3%), pulp necrosis (17.5%), internal root resorption (0.9%), external surface resorption (3.2%), external inflammatory resorption (5.7%), and external replacement resorption (1.4%). Clinicians need to monitor patients for the development of these complications.

DISCUSSION

Pulp canal obliteration was the most common complication seen in immature teeth suffering lateral luxation injuries. These children need to be followed up carefully to address possible complications.

Clark D, Levin L: Prognosis and complications of immature teeth following lateral luxation: A systematic review. *Dent Traumatology* 34:215-22, 2018

Clinical Significance

In dental trauma, randomized controlled trials focused on specific outcomes can be nearly impossible to conduct. A core outcome set was developed to assess possible outcomes and agree on the inclusion of core or generic outcomes. For dental trauma, these include injury activity, physical consequences of disease, functional status, social outcomes and quality of life, side effects of therapy, and health resource use. The core outcome set is designed to help guide the reporting of traumatic dental injuries and facilitate the accumulation of more accurate evidence regarding the outcomes of these injuries. This can lead to more accurate prognostic and treatment evaluations for traumatic dental injuries.

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Bicycle helmts

BACKGROUND

Cycling can be a popular way to engage in physical fitness activities, get to work, or simply be transported from one place to another. The benefits of cycling are many, but there are also dangers, such as the risk for facial injuries. Cycling is reported to cause 3% to 19.69% of all facial injuries severe enough to prompt a visit to the hospital. Helmets are advised as a way to prevent head injuries, but their role in protecting against facial injuries isn't as clear. The effect of bicycle helmets on the incidence of facial injury was investigated.

METHODS

A literature search was conducted in the PubMed/MEDLINE, Google Scholar, and Cochrane Library databases. The inclusion criteria focused on adult participants and observational studies. Nine studies were included in the analysis.

RESULTS

The 9 studies included 23,461 participants. Five of the studies included a separate analysis of facial fractures. Those who wore helmets were less likely to sustain a facial injury. A high degree of heterogeneity was noted between the studies.

In the 5 studies with the separate facial fracture analysis, there were 19,266 participants. Helmets were found to be protective against facial fractures compared to no helmets. The degree of heterogeneity was less in this analysis than in the previous one.

The protection afforded by helmets is not uniform across the face. The upper and middle facial areas are protected more than other areas.

DISCUSSION

Bicycle helmets were shown to offer a protective benefit against facial fractures. Future studies are needed to investigate the relationship between helmets and facial injury, with special attention to the areas of the face that are being protected and the areas that are not.

Clinical Significance

Further study is needed, but it appears that wearing a bicycle helmet is protective against facial trauma affecting the mid face and upper facial areas. Bicycle helmet wearing should be seen as a protective measure, since there tends to be a high degree of morbidity associated with cycling injuries, with 70% of those injured suffering reduced function for up to 6 months.

Fitzpatrick DG, Goh M, Howlett DC, et al: Bicycle helmets are protective against facial injuries, including facial fractures: A meta-analysis. *Int J Oral Maxillofac Surg* 47:1121-1125, 2018

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DENTIN HYPERSENSITIVITY

Toothpastes to manage hypersensitivity

BACKGROUND

Dentin hypersensitivity (DH) refers to sensitivity of the teeth to external stimuli such as cold, heat, acid, sweetness, friction, and various other mechanical actions. The pain occurs rapidly, is sharp, and lasts for a short time. This symptom is seen in several dental disorders and has a negative effect on patients' health-related quality of life. The pathogenesis proposed for DH includes nerve fiber conduction, dentin fiber conduction, dentin tubule lymphatic conduction, and hydrodynamic changes. The last is most widely accepted at this time. Treatment consists of sodium fluoride protective varnish, Gluma desensitizing agent, resin desensitization agent, laser desensitization, and desensitizing toothpaste, with the toothpaste having the advantages of being convenient, noninvasive, and inexpensive. Some systematic reviews and meta-analyses question the efficacy of toothpastes that contain potassium, strontium, stannous fluoride, arginine, or sodium calcium phosphosilicate for DH. A review of the literature was done to determine if there is sufficient evidence to support the use of desensitizing toothpastes compared to negative controls.

METHODS

The literature was collected from the PubMed, EMBASE, Web of Science, CENTRAL, and Chinese Biomedical Literature databases up to November 27, 2017. Fifty-three randomized controlled clinical trials were selected, covering 4796 participants, with 240 of them being negative control groups. The toothpastes tested included those containing potassium (18 studies), arginine (13 studies), stannous fluoride (9 studies), strontium (7 studies), calcium sodium phosphosilicate (6 studies), potassium and strontium (3 studies), potassium and stannous fluoride (3 studies), nanohydroxyapatite (2 studies), and amorphous calcium phosphate (2 studies). The efficacy of the toothpastes was measured against negative controls based on air-blast test scores.

RESULTS

Most (44) of the studies demonstrated a moderate risk of bias, with 3 at low risk and 6 at high risk. The evidence regarding amorphous calcium phosphate–containing toothpaste was of very low quality, whereas that on strontium-, potassium and strontium–, and potassium and stannous fluoride–containing toothpastes was of low quality. Moderate quality evidence was found regarding the other toothpastes.

All of the toothpastes containing active desensitization ingredients except strontium and amorphous calcium phosphate achieved better desensitization in DH than the negative controls.

DISCUSSION

DH can profoundly affect the quality of life of patients. Compared to negative control groups, better relief of DH was obtained using potassium-, stannous fluoride–, potassium and strontium–, potassium and stannous fluoride–, calcium sodium phosphosilicate–, arginine-, and nanohydroxyapatite-containing toothpastes. Toothpastes containing strontium or amorphous calcium phosphate are not believed to be as effective as the other toothpastes or as the negative controls.

Clinical Significance

Many studies of toothpastes that claim to provide relief from DH are funded by companies, and some researchers are employees of these companies. These facts must be considered as having a major impact on the results and publication of these articles. Future studies should be of high quality and funded by non-company sources. It is hoped that the results and conclusions of these future studies will more accurately reflect the effects of desensitizing toothpastes.

Hu M-L, Zheng G, Zhang Y-D, et al: Effect of desensitizing toothpastes on dentine hypersensitivity: A systematic review and meta-analysis. *J Dent* 75:12-21, 2018

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