



# Newsletter for members of the DENTAL TRAUMA GUIDE

April 2017

## Welcome to our first newsletter

We are proud to introduce our first newsletter for members of the Dental Trauma Guide (DTG).

In this and future newsletters we will inform you about the status of various projects related to the DTG as well as the status of members worldwide. Furthermore, we will keep you updated on clinical research on dental trauma from the world literature which may have the potential of being included in future treatment guidelines.

The literature cited will consist of the conclusions from individual studies with links to abstracts.

**DTG projects:** We are working on including long-term studies of the fate of traumatized primary teeth and possible sequelae affecting permanent successors.

**Worldwide DTG memberships:** Presently we have about 9,000 DTG members in 13 countries.

*Jens Ove Andreasen (JOA) & Eva Lauridsen (EL)*



## Is revascularization of immature permanent teeth an effective and reproducible technique?

Chen YP, Jovani-Sancho Mdel M, Sheth CC

*Clinical revascularization cases conducted on human subjects were selected, reviewed and organized into two charts including patient information, diagnostic information, treatment and results in follow-up visits.*

**Results:** Ninety-seven of 101 teeth (96.0%) were successfully treated with the revascularization technique. The range of technique variations available

*for irrigation, disinfection and blood clot induction have a negligible impact on the clinical outcome variables tested in our analysis. During the follow-up visits, apical closure was detected in fewer cases (55.4%) as compared to the other apexogenesis phenomena (increased root length, 76.2%; increased root width, 79.2%).* **Conclusions:** The review shows that the revascularization technique showed marked increase in the root length, width and apical closure in the cases that were reported independently of clinical variables such as operator and material selection and individual differences in protocols. [See full abstract.](#)

**JOA & EL:** The authors should be complimented on a very detailed review of the present literature on pulpal revascularization. This review is to a large extent based on case reports and only three studies with more than 10 cases included. The great variety in methodology and follow-up plus various healing criteria strongly indicate that larger studies are urgently needed.

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## A systematic review of outcome measures used in clinical trials of treatment interventions following traumatic dental injuries

Sharif MO, Tejani-Sharif A, Kenny K, Day PF

*There is significant heterogeneity in outcomes reported for TDI in the literature. These findings preclude meaningful meta-analysis between studies. Future clinical studies need to consider collecting a more consistent and wider range of outcomes, which should include one or more from each of the following domains: health resources utilisation, adverse effects and quality of life and family outcome. There is a clear need for the development of a Core Outcome Set for Traumatic Dental Injuries (TDI) using robust and established methodology, thus optimizing the value of future research. [See full abstract.](#)*

**JOA:** After final editing of the 5<sup>th</sup> edition of the Textbook and Color Atlas of Traumatic Injuries to the Teeth I fully agree that many clinical studies in dental traumatology very often lack important information about the material collection, definition of healing outcomes and they often have statistical shortcomings. This article should serve as a model for future clinical studies.

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## Pulse oximetry: a useful test for evaluating pulp vitality in traumatized teeth

Caldeira CL, Barletta FB, Ilha MC, Abrão CV, Gavini G

*Pulse oximetry consists of a diode light source which emits both infrared and red light both of which are received by a photodetector diode. **Subjects and methods:** Fifty-nine permanent teeth that had undergone lateral luxation, and which were unresponsive to a cold spray test and were free from signs of necrosis, were selected and tested with pulse oximetry (PO) at 7, 30 and 60 days after trauma. **Results:** Fifty-nine teeth were tested. At 7 days after trauma, 8 teeth had low rates of oxygenation, compared to 10 at 30 and 60 days. Low rates were defined as a saturation reading  $\leq 77\%$  SpO<sub>2</sub>. These teeth were assigned to the pulp necrosis (PN) group. The other 49 teeth were either considered to have healthy pulps (HP) (saturation  $\geq 90\%$  SpO<sub>2</sub>) or were*

*assigned to a pulpitis (PP) group (saturation  $\geq 78$  to  $\leq 89\%$  SpO<sub>2</sub>). The 10 non-responsive teeth were followed up for 1 year and all exhibited indications for endodontic treatment. The other 49 teeth (HP or PP) began to show positive responses to the cold spray (after 3-9 months of follow up). No significant differences ( $P < 0.05$ ) were detected between the three periods analyzed, but %SpO<sub>2</sub> rates were significantly different ( $P < 0.01$ ) between the groups (HP vs PP, HP vs PN and PP vs PN). **Conclusions:** PO can be extremely useful for the assessment of dental pulp status in traumatized teeth, particularly when these teeth do not show signs of PN and do not respond to cold tests. [See full abstract.](#)*

**JOA & EL:** Evaluation of pulp status after tooth luxation has been a significant problem. Electrometric vitality status lacks significantly behind the actual pulp healing status. This phenomenon has led to a development of a laser Doppler instrument which has shown to be rather time consuming and technique sensitive to use. The result of this study is interesting. It would have been very interesting to compare at a larger time scale whether HP and PP groups differ in a final pulp healing.

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## Cvek pulpotomy – revisited

Bimstein E, Rotstein I

*Evidence in the literature suggests to treat a permanent tooth with a complicated crown fracture as soon as possible to diminish the possibility of pain and prevent necrosis and infection of the pulp. Delay of treatment by 9 days or less may have minimal effect on the outcome of Cvek pulpotomies. While the literature indicates that pulp exposures of 4 mm or less may have a good prognosis after a Cvek pulpotomy, the prognosis in teeth with pulp exposures of more than 4 mm has not yet been clarified. Although the literature is not conclusive regarding a difference in the outcomes of Cvek pulpotomies in teeth with open or closed apices, it appears that teeth with open apices have a better prognosis. The outcome of a Cvek pulpotomy may be compromised by a luxation injury that diminishes the tooth's blood supply and innervation. A good restoration that prevents bacterial penetration into the tooth is essential for the success of a Cvek pulpotomy. [See full abstract.](#)*

**JOA & EL:** The calcium hydroxide partial pulpotomy developed and analyzed by the late Dr. M. Cvek has been the standard procedure for crown fractures with pulp exposures for decades. Lately this status has been challenged by other techniques such as MTA and other materials. This review article represents a very informative reference when future pulp capping or pulpotomy materials are challenged against calcium hydroxide.