# LETTERS TO THE EDITOR

### Response to 'Use of hydroxyapatite in tooth replantation radiographically followed up for 14 years'

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#### Dear Editor,

We thank the readers for their criticism and comments on our case report 'Use of hydroxyapatite in tooth replantation radiographically followed up for 14 years', which was published in *Dental Traumatology* (1). The authors (2) express their concerns about the treatment that we reported. We agree with them that the report lacks important technical information. As we stressed several times in the text, the patient (a dental school student when the report was written) was treated by the family's dentist, and we only reported and commented on the information that was available to us. For this reason, our report did not 'justify' the use of either hydroxyapatite (HA) or lincomycin.

In addition, we did not state that ethical issues were not important when considering a treatment choice. We only pointed out that we were not discussing such issues.

We would like to emphasize that our intent was not to prescribe the use of HA in the treatment of external root resorption, but to point to the need for further research, as stated in the conclusion.

Finally, we are sure that readers would keep in mind that a single case report, despite its clinical success, has the lowest power in the construction of evidence-based scientific knowledge.

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### Doubtful new treatment guidelines for luxated permanent teeth proposed

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#### Dear Editor,

In a recent article published by Lin et al. (1), a new set of treatment guidelines are suggested for luxated and avulsed permanent teeth, the premises being that the previous guidelines published by IADT and AAE, and Royal College of Surgeons of England are not suitable for a state like Israel.

Such a re-evaluation of established treatment guidelines by various countries and/or treatment institutions is certainly welcomed; however, the premises for suggesting alternative guidelines should be clearly indicated as the new treatment guidelines refer to a single investigation not relevant for the study.

The most essential deviation from established guidelines appears to be in the treatment advice that all teeth representing extrusive luxation or lateral luxation with complete root formation should without exception be considered candidates for pulp extirpation and root filling, the premises being that a previous study has shown that teeth with closed apices, i.e. with <1 mmapical opening, do not have a chance of pulp healing. Looking up the reference for this statement, this appears to be the study by Kling et al. (2) about the chance of pulp healing of *replanted* permanent teeth, where none of the pulp teeth healed with closed apices. This reference is for obvious reasons not useful in the discussion of pulp healing of *luxated* teeth. An avulsed tooth has suffered damage from various extra-alveolar damage and bacteria contamination which makes its pulp healing completely different from a luxation scenario. It is remarkable that clinical studies of luxation injuries (representing both extrusions and lateral luxation) where pulp healing is analysed in relation to root formation are not discussed (3-5).

A clinical and radiographic study, which is very relevant for the above-mentioned study by Dr Lin and coworkers, has examined the relationship between apical diameters and the chance of pulp healing is surprisingly not mentioned (6). In that study, the pulp healing patterns for extrusions and lateral luxations with varying apical diameters were examined and the following relations were found:

	Percentage of pulp healing after luxation	
Apical diameter (mm)	Extrusive luxation (%)	Lateral luxation (%)
0.1–1.0	39	22
1.1-2.0	71	33
2.1-3.0	93	91
3.1-4.0	100	100
4.1–5.0	100	100

If pulp healing is analysed from Table 1 in the same article diagram for diameters 0.1-5.0 mm in *extrusive luxation injury* (Fig. 2), it appears that apical diameters of 0.1-1.0 mm had a pulp healing chance of 39% and 1.1-2.0 mm had pulp healing of 71%. The similar healing rates for *lateral luxation* (Fig. 3) appears to be 22% and 33%. In conclusion, the apical diameters from 0.1 to 1.0 mm had healing rates of 22–39% respectively (6).

The above-mentioned healing rates should have been mentioned instead of the wrong statement that pulp revascularization is not possible (based on the cited replantation study). As a further premise for advocating prophylactic pulp extirpation, the optimal chances for root filling is cited with 86–96% expected healing. In this regard, the average healing rates of endodontic therapy in many countries should be considered, where on a *population level* about one-third of all endodontic cases showed non-healing, a finding that related to eight clinical studies (7).

In conclusion, the new treatment rules for luxated teeth appear very dubious. The signed author would therefore like to emphasize the treatment guidelines for traumatized permanent teeth published recently in the Dental Traumatology (8, 9) which represent the concentrated efforts by 13 representatives from IADT to evaluate all the pros and cons in the treatment of luxation injuries and a decision in this committee was made to advocate observation for clinical and radiographic signs of non-healing of pulps after extrusive and lateral luxation injuries before pulp extirpation and root filling are undertaken.

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## Response to Doubtful new treatment guidelines for luxated permanent teeth proposed

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Dear Editor,

We read Prof. Andreasen's letter regarding our recently published article with interest (1). We would like to thank him for his remarks and comments. The purpose of the article was to provide suggestions for guidelines and emphasize points with regard to luxated and avulsed teeth, especially appropriate for Israeli demographics. It is important to state that this is an adapted protocol suggestion and, as such, does not replace any previously published guidelines, but highlights some points that are important to this country. There were several points that were addressed, such as tooth re-implantation at the site of the accident, the preferred storing medium, continuing tooth development following trauma, etc.

One of our suggestions was the performance of root canal treatment in mature teeth with completely closed apexes following lateral luxation. There are, in fact, several articles, including one by Andreasen that shows a (rather low) chance for pulp healing in these cases (2). Biologically, we are aware that, with proper follow up and well-trained clinicians in traumatology, there is a chance for pulpal healing in a small percentage of these cases. Unfortunately, in the Israeli population, it is not realistic to expect most traumatized patients to arrive for follow-up sessions due to lack of education and the additional expense. Furthermore, only a small percentage of Israeli practitioners are familiar with diagnosis and therapy of traumatic injuries. In our opinion, as well as others, in cases of lateral luxation with apical displacement, intrusive luxation or severe extrusive luxation of a mature tooth, endodontic therapy should

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