



## International Association of Dental Traumatology

### Study Guidelines for Fellowship Examination

#### Recommended literature and other sources of information:

1. Andreasen JO, Andreasen FM, Andersson L. eds, Textbook and Color Atlas of Traumatic Injuries to the Teeth, 5th Edn. Wiley Blackwell, Oxford 2019
2. IADT Dental Trauma guidelines

Levin, L., Day, P., Hicks, L., O'Connell, A., Fouad, A.F., Bourguignon, C. and Abbott, P.V. (2020), International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: General Introduction. Dent Traumatol. 2020; 36: 309-313  
doi:[10.1111/edt.12574](https://doi.org/10.1111/edt.12574)

Bourguignon, C., Cohenca, N., Lauridsen, E., Therese Flores, M., O'Connell, A., Day, P., Tsilingaridis, G., Abbott, P.V., Fouad, A.F., Hicks, L., Ove Andreasen, J., Cehreli, Z.C., Harlamb, S., Kahler, B., Oginni, A., Semper, M. and Levin, L. (2020), International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 1. Fractures and luxations. Dent Traumatol. 2020; 36: 314-330.  
doi:[10.1111/edt.12578](https://doi.org/10.1111/edt.12578)

Fouad, A.F., Abbott, P.V., Tsilingaridis, G., Cohenca, N., Lauridsen, E., Bourguignon, C., O'Connell, A., Flores, M.T., Day, P., Hicks, L., Andreasen, J.O., Cehreli, Z.C., Harlamb, S., Kahler, B., Oginni, A., Semper, M. and Levin, L. (2020), International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 2. Avulsion of permanent teeth. Dent Traumatol. 2020; 36: 331-342. doi:[10.1111/edt.12573](https://doi.org/10.1111/edt.12573)

Day, P., Flores, M.T., O'Connell, A., Abbott, P.V., Tsilingaridis, G., Fouad, A.F., Cohenca, N., Lauridsen, E., Bourguignon, C., Hicks, L., Andreasen, J.O., Cehreli, Z.C., Harlamb, S., Kahler, B., Oginni, A., Semper, M. and Levin, L. (2020), International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 3. Injuries in the Primary Dentition. Dent Traumatol. 2020; 36: 343-359. doi:[10.1111/edt.12576](https://doi.org/10.1111/edt.12576)

3. Dental Trauma Guide ([www.dentaltraumaguide.org](http://www.dentaltraumaguide.org))
4. Glossary of Trauma terms. Available from the Dental Trauma Guide under the Vocabulary heading in the Task Bar

## The candidate for admission to Fellowship of the IADT should fulfill the following objectives:

### Epidemiology of traumatic dental injuries (TDI)

1. Understand trauma incidence and prevalence in the primary and permanent dentition
2. Be able to state the typical causes of trauma

Glendor U. Epidemiology of traumatic dental injuries – a 12-year review of the literature. *Dent Traumatol*, 2008; 24: 603-611. doi:[10.1111/j.1600-9657.2008.00696.x](https://doi.org/10.1111/j.1600-9657.2008.00696.x)

Glendor U. Aetiology and risk factors related to traumatic dental injuries – a review of the literature. *Dent Traumatol*, 2009; 25: 19-31. doi:[10.1111/j.1600-9657.2008.00694.x](https://doi.org/10.1111/j.1600-9657.2008.00694.x)

Lauridsen, E., Hermann, N.V., Gerds, T.A., Kreiborg, S. and Andreasen, J.O., Pattern of traumatic dental injuries in the permanent dentition among children, adolescents, and adults. *Dent Traumatol*, 2012; 28: 358-363. doi:[10.1111/j.1600-9657.2012.01133.x](https://doi.org/10.1111/j.1600-9657.2012.01133.x)

Petti S, Glendor U, Andersson L. World traumatic dental injury prevalence and incidence, a meta-analysis—One billion living people have had traumatic dental injuries. *Dent Traumatol*. 2018; 34: 71– 86. <https://doi.org/10.1111/edt.12389>

### Examination of a traumatized patient

1. Understand the information that is required before examining a patient
2. Understand the clinical and radiographic information that is required in order to reach the correct diagnosis after a traumatic injury
3. Understand the limitations of pulp sensibility testing in the traumatized dentition
4. Understand what other imaging is available for assessing the traumatized dentition and when this should be used
5. Understand the special considerations in the examination of children
6. Understand the signs of possible child abuse

Myers, GL. Evaluation and diagnosis of the traumatized dentition. *Dent Traumatol*. 2019; 35: 302– 308. <https://doi.org/10.1111/edt.12498>

Andreasen, F.M. and Kahler, B. Diagnosis of acute dental trauma: the importance of standardized documentation: a review. *Dent Traumatol*. 2015; 31: 340-349. doi:[10.1111/edt.12187](https://doi.org/10.1111/edt.12187)

Cohenca, N, Silberman, A. Contemporary imaging for the diagnosis and treatment of traumatic dental injuries: A review. *Dent Traumatol*. 2017; 33: 321– 328. <https://doi.org/10.1111/edt.12339>

Bastos, J.V., Goulart, E.M.A. and de Souza Côrtes, M.I. Pulpal response to sensibility tests after traumatic dental injuries in permanent teeth. *Dent Traumatol*, 2014; 30: 188-192. doi:[10.1111/edt.12074](https://doi.org/10.1111/edt.12074)

Ghouth, N, Duggal, MS, BaniHani, A, Nazzal, H. The diagnostic accuracy of laser Doppler flowmetry in assessing pulp blood flow in permanent teeth: A systematic review. *Dent Traumatol*. 2018; 34: 311– 319. <https://doi.org/10.1111/edt.12424>

Holan, G. Pulp aspects of traumatic dental injuries in primary incisors: Dark coronal discoloration. *Dent Traumatol.* 2019; 35: 309– 311. <https://doi.org/10.1111/edt.12483>

Cavalcanti, A.L. (2010), Prevalence and characteristics of injuries to the head and orofacial region in physically abused children and adolescents – a retrospective study in a city of the Northeast of Brazil. *Dental Traumatology*, 26: 149-153. doi:[10.1111/j.1600-9657.2009.00859.x](https://doi.org/10.1111/j.1600-9657.2009.00859.x)

### **Classification of TDI**

1. Be able to define the following injury types: enamel infraction, enamel fracture, enamel-dentin fracture, enamel-dentin-pulp fracture (complicated crown fracture), crown-root fracture with or without involvement of the pulp, root fracture, fracture of the alveolar process, concussion, subluxation, extrusion, lateral luxation, intrusion, avulsion.

Feliciano, K.M.P.d.C. and Caldas, A.d.F., Jr (2006), A systematic review of the diagnostic classifications of traumatic dental injuries. *Dental Traumatology*, 22: 71-76. doi:[10.1111/j.1600-9657.2006.00342.x](https://doi.org/10.1111/j.1600-9657.2006.00342.x)

### **Acute treatment of TDI**

1. Understand the recommended treatment of TDI in the primary dentition according to the latest version of the IADT guidelines and account for special considerations in the treatment of minor children
2. Understand the recommended treatment of TDI in the permanent dentition according to the latest version of the IADT guidelines
3. Be able to recommend treatment priority (acute, sub-acute, delayed) for the various types of injury
4. Be able to design a suitable follow-up program (review regime) for each different type of injury
5. Understand treatment priorities when planning treatment for the acutely traumatized dentition

Flores, M.T. Traumatic injuries in the primary dentition. *Dent Traumatol*, 2002; 18: 287-298. doi:[10.1034/j.1600-9657.2002.00153.x](https://doi.org/10.1034/j.1600-9657.2002.00153.x)

Needleman, H.L. The art and science of managing traumatic injuries to primary teeth. *Dent Traumatol*, 2011;27: 295-299. doi:[10.1111/j.1600-9657.2011.01005.x](https://doi.org/10.1111/j.1600-9657.2011.01005.x)

Lauridsen, E, Blanche, P, Yousaf, N, Andreasen, JO. The risk of healing complications in primary teeth with intrusive luxation: A retrospective cohort study. *Dent Traumatol.* 2017; 33: 329– 336. <https://doi.org/10.1111/edt.12341>

Lauridsen, E, Blanche, P, Yousaf, N, Andreasen, JO. The risk of healing complications in primary teeth with extrusive or lateral luxation—A retrospective cohort study. *Dent Traumatol.* 2017; 33: 307– 316. <https://doi.org/10.1111/edt.12340>

Lauridsen E, Blanche P, Amaloo C, Andreasen JO. The risk of healing complications in primary teeth with concussion or subluxation injury-A retrospective cohort study. *Dent Traumatol.* 2017 ;33:337-344. <https://doi.org/10.1111/edt.12342>

Olsburgh, S., Jacoby, T. and Krejci, I. Crown fractures in the permanent dentition: pulpal and restorative considerations. *Dent Traumatol*, 2002; 18: 103-115. doi:[10.1034/j.1600-9657.2002.00004.x](https://doi.org/10.1034/j.1600-9657.2002.00004.x)

Güngör, H.C. Management of crown-related fractures in children: an update review. *Dent Traumatol*, 2014; 30: 88-99. doi:[10.1111/edt.12079](https://doi.org/10.1111/edt.12079)

Poubel, DLN, Rezende, LVML, Almeida, JCF, et al. Tooth fragment reattachment techniques—A systematic review. *Dent Traumatol*. 2018; 34: 135– 143. <https://doi.org/10.1111/edt.12392>

Abuelniel, GM, Duggal, MS, Kabel, N. A comparison of MTA and Biodentine as medicaments for pulpotomy in traumatized anterior immature permanent teeth: A randomized clinical trial. *Dent Traumatol*. 2020; 00: 1– 11. <https://doi.org/10.1111/edt.12553>

Lauridsen, E., Hermann, N.V., Gerds, T.A., Ahrensburg, S.S., Kreiborg, S, Andreasen, J.O. (2012), Combination injuries 1. The risk of pulp necrosis in permanent teeth with concussion injuries and concomitant crown fractures. *Dental Traumatology*, 28: 364-370. doi:[10.1111/j.1600-9657.2011.01102.x](https://doi.org/10.1111/j.1600-9657.2011.01102.x)

Lauridsen, E., Hermann, N.V., Gerds, T.A., Ahrensburg, S.S., Kreiborg, S, Andreasen, J.O. (2012), Combination injuries 2. The risk of pulp necrosis in permanent teeth with subluxation injuries and concomitant crown fractures. *Dental Traumatology*, 28: 371-378. doi:[10.1111/j.1600-9657.2011.01101.x](https://doi.org/10.1111/j.1600-9657.2011.01101.x)

Lauridsen, E., Hermann, N.V., Gerds, T.A., Ahrensburg, S.S., Kreiborg, S. and Andreasen, J.O. Combination injuries 3. The risk of pulp necrosis in permanent teeth with extrusion or lateral luxation and concomitant crown fractures without pulp exposure. *Dent Traumatol*, 2012; 28: 379-385. doi:[10.1111/j.1600-9657.2011.01100.x](https://doi.org/10.1111/j.1600-9657.2011.01100.x)

Das, B. and Muthu, M.S. (2013), Surgical extrusion as a treatment option for crown–root fracture in permanent anterior teeth: a systematic review. *Dent Traumatol*, 29: 423-431. doi:[10.1111/edt.12054](https://doi.org/10.1111/edt.12054)

Elkhadem, A., Mickan, S. and Richards, D. Adverse events of surgical extrusion in treatment for crown–root and cervical root fractures: a systematic review of case series/reports. *Dent Traumatol*, 2014; 30: 1-14. doi:[10.1111/edt.12051](https://doi.org/10.1111/edt.12051)

Ben Hassan, M.W., Andersson, L. and Lucas, P.W. (2016), Stiffness characteristics of splints for fixation of traumatized teeth. *Dent Traumatol*, 32: 140-145. doi:[10.1111/edt.12234](https://doi.org/10.1111/edt.12234)

Cvek, M., Andreasen, J.O. and Borum, M.K. Healing of 208 intraalveolar root fractures in patients aged 7–17 years. *Dent Traumatol*, 2001; 17: 53-62. doi:[10.1034/j.1600-9657.2001.017002053.x](https://doi.org/10.1034/j.1600-9657.2001.017002053.x)

Andreasen, J.O., Andreasen, F.M., Mejåre, I. and Cvek, M. Healing of 400 intra-alveolar root fractures. 2. Effect of treatment factors such as treatment delay, repositioning, splinting type and period and antibiotics. *Dent Traumatol*, 2004; 20: 203-211. doi:[10.1111/j.1600-9657.2004.00278.x](https://doi.org/10.1111/j.1600-9657.2004.00278.x)

Andreasen, J.O., Ahrensburg, S.S. and Tsilingaridis, G. (2012), Root fractures: the influence of type of healing and location of fracture on tooth survival rates – an analysis of 492 cases. *Dental Traumatology*, 28: 404-409. doi:[10.1111/j.1600-9657.2012.01132.x](https://doi.org/10.1111/j.1600-9657.2012.01132.x)

Abbott, P.V. Diagnosis and management of transverse root fractures. *Dent Traumatol.* 2019; 35: 333– 347. <https://doi.org/10.1111/edt.12482>

Kahler, B., Heithersay, G.S. (2008), An evidence-based appraisal of splinting luxated, avulsed and root-fractured teeth. *Dental Traumatology*, 24: 2-10. doi:[10.1111/j.1600-9657.2006.00480.x](https://doi.org/10.1111/j.1600-9657.2006.00480.x)

Andreasen, J.O., Borum, M.K., Jacobsen, H.L. and Andreasen, F.M. (1995), Replantation of 400 avulsed permanent incisors. 1. Diagnosis of healing complications. *Dental Traumatology*, 11: 51-58. doi:[10.1111/j.1600-9657.1995.tb00461.x](https://doi.org/10.1111/j.1600-9657.1995.tb00461.x)

Andreasen, J.O., Borum, M.K., Jacobsen, H.L. and Andreasen, F.M. (1995), Replantation of 400 avulsed permanent incisors. 2. Factors related to pulpal healing. *Dental Traumatology*, 11: 59-68. doi:[10.1111/j.1600-9657.1995.tb00462.x](https://doi.org/10.1111/j.1600-9657.1995.tb00462.x)

Andreasen, J.O., Borum, M.K. and Andreasen, F.M. (1995), Replantation of 400 avulsed permanent incisors. 3. Factors related to root growth. *Dental Traumatology*, 11: 69-75. doi:[10.1111/j.1600-9657.1995.tb00463.x](https://doi.org/10.1111/j.1600-9657.1995.tb00463.x)

Lauridsen, E, Andreasen, JO, Bouaziz, O, Andersson, L. Risk of ankylosis of 400 avulsed and replanted human teeth in relation to length of dry storage: A re-evaluation of a long-term clinical study. *Dent Traumatol.* 2020; 36: 108– 116. <https://doi.org/10.1111/edt.12520>

Lauridsen, E., Gerds, T. and Ove Andreasen, J. (2016), Alveolar process fractures in the permanent dentition. Part 2. The risk of healing complications in teeth involved in an alveolar process fracture. *Dent Traumatol*, 32: 128-139. doi:[10.1111/edt.12229](https://doi.org/10.1111/edt.12229)

Andreasen, J.O. and Lauridsen, E. (2015), Alveolar process fractures in the permanent dentition. Part 1. Etiology and clinical characteristics. A retrospective analysis of 299 cases involving 815 teeth. *Dent Traumatol*, 31: 442-447. doi:[10.1111/edt.12221](https://doi.org/10.1111/edt.12221)

### **Soft tissue injuries**

1. Understand various types of soft tissue injuries (contusion, abrasion and laceration (superficial or penetrating))
2. Understand suitable treatment for these injuries
3. Be able to describe the indication for antibiotic treatment for soft tissue injuries

Soares, T.R.C., Barbosa, A.C.U., de Oliveira, S.N.S., Oliveira, E.M., Risso, P.d.A. and Maia, L.C. (2016), Prevalence of soft tissue injuries in pediatric patients and its relationship with the quest for treatment. *Dent Traumatol*, 32: 48-51. doi:[10.1111/edt.12216](https://doi.org/10.1111/edt.12216)

### **Pathophysiology and consequences of dental trauma**

1. Understand healing events after traumatic injuries to the pulp
2. Understand healing events after traumatic injuries to the periodontium
3. Understand the following dental healing complications: pulp canal obliteration, pulp necrosis, repair-related resorption (surface resorption), infection-related resorption (inflammatory resorption), ankylosis-related resorption, marginal breakdown of bone (transient and permanent)
4. Understand the clinical and radiographic findings in relation to the above mentioned complications
5. Be able to evaluate the risk of healing complications and tooth loss for the various types of TDI

6. Understand the possible sequelae in the permanent dentition after trauma in the primary dentition

Fouad, AF. Microbiological aspects of traumatic injuries. *Dent Traumatol.* 2019; 35: 324– 332. <https://doi.org/10.1111/edt.12494>

Holan, G. (2013), Replantation of avulsed primary incisors: a critical review of a controversial treatment. *Dent Traumatol*, 29: 178-184. doi:[10.1111/edt.12038](https://doi.org/10.1111/edt.12038)

Flores, MT, Onetto, JE. How does orofacial trauma in children affect the developing dentition? Long-term treatment and associated complications. *Dent Traumatol.* 2019; 35: 312– 323. <https://doi.org/10.1111/edt.12496>

Bimstein, E. and Rotstein, I. (2016), Cvek pulpotomy – revisited. *Dent Traumatol*, 32: 438-442. doi:[10.1111/edt.12297](https://doi.org/10.1111/edt.12297)

Andreasen, F.M., Zhjie, Y., Thomsen, B.L. and Andersen, P.K. (1987), Occurrence of pulp canal obliteration after luxation injuries in the permanent dentition. *Dental Traumatology*, 3: 103-115. doi:[10.1111/j.1600-9657.1987.tb00611.x](https://doi.org/10.1111/j.1600-9657.1987.tb00611.x)

Abd-Elmeguid, A., ElSalhy, M. and Yu, D.C. (2015), Pulp canal obliteration after replantation of avulsed immature teeth: a systematic review. *Dent Traumatol*, 31: 437-441. doi:[10.1111/edt.12199](https://doi.org/10.1111/edt.12199)

Lee R, Barrett FJ, Kenny DJ (2003) Clinical outcomes for permanent incisor luxations in a pediatric population. II. Extrusions. *Dental Traumatol* 19:274-27. <https://doi.org/10.1034/j.1600-9657.2003.00208.x>

Nikoui M, Kenny DJ, Barrett FJ, (2003) Clinical outcomes for permanent incisor luxations in a pediatric population. III. Lateral luxations. *Dental Traumatol* 19:280-285. <https://doi.org/10.1034/j.1600-9657.2003.00209.x>

Levin GL, Pulp and Periradicular Testing. Injuries to Permanent Dentition Symposium (J Endod 2013;39:S13–S19). <https://doi.org/10.1016/j.joen.2012.11.047>

Andreasen, F.M. (1989), Pulpal healing after luxation injuries and root fracture in the permanent dentition. *Dental Traumatology*, 5: 111-131. doi:[10.1111/j.1600-9657.1989.tb00348.x](https://doi.org/10.1111/j.1600-9657.1989.tb00348.x)

Hermann, N.V., Lauridsen, E., Ahrensburg, S.S., Gerds, T.A. and Andreasen, J.O. (2012), Periodontal healing complications following concussion and subluxation injuries in the permanent dentition: a longitudinal cohort study. *Dent Traumatol*, 28: 386-393. doi:[10.1111/j.1600-9657.2012.01165.x](https://doi.org/10.1111/j.1600-9657.2012.01165.x)

Andreasen, J., Andreasen, F., Skeie, A., Hjørting-Hansen, E. and Schwartz, O. (2002), Effect of treatment delay upon pulp and periodontal healing of traumatic dental injuries – a review article. *Dental Traumatology*, 18: 116-128. doi:[10.1034/j.1600-9657.2002.00079.x](https://doi.org/10.1034/j.1600-9657.2002.00079.x)

Andreasen, F.M. (1986), Transient apical breakdown and its relation to color and sensibility changes after luxation injuries to teeth. *Dental Traumatology*, 2: 9-19. doi:[10.1111/j.1600-9657.1986.tb00118.x](https://doi.org/10.1111/j.1600-9657.1986.tb00118.x)

Clark, D, Levin, L. Prognosis and complications of immature teeth following lateral luxation: A systematic review. *Dent Traumatol.* 2018; 34: 215– 220. <https://doi.org/10.1111/edt.12407>

Tsilingaridis, G., Malmgren, B., Andreasen, J.O., Wigen, T.I., Maseng Aas, A.-L. and Malmgren, O. (2016), Scandinavian multicenter study on the treatment of 168 patients with 230 intruded permanent teeth – a retrospective cohort study. *Dent Traumatol*, 32: 353-360. doi:[10.1111/edt.12266](https://doi.org/10.1111/edt.12266)

Day, P.F., Gregg, T.A., Ashley, P., Welbury, R.R., Cole, B.O., High, A.S. and Duggal, M.S. (2012), Periodontal healing following avulsion and replantation of teeth: a multi-centre randomized controlled trial to compare two root canal medicaments. *Dental Traumatology*, 28: 55-64. doi:[10.1111/j.1600-9657.2011.01053.x](https://doi.org/10.1111/j.1600-9657.2011.01053.x)

De Brier, N., Dorien, O., Borra, V., Singletary, E.M., Zideman, D.A., De Buck, E. and (2020), Storage of an avulsed tooth prior to replantation: a systematic review and meta-analysis. *Dent Traumatol*. Accepted Author Manuscript. doi:[10.1111/edt.12564](https://doi.org/10.1111/edt.12564)

Adnan, S, Lone, MM, Khan, FR, Hussain, SM, Nagi, SE. Which is the most recommended medium for the storage and transport of avulsed teeth? A systematic review. *Dent Traumatol*. 2018; 34: 59– 70. <https://doi.org/10.1111/edt.12382>

Lenzi, M.M., Alexandria, A.K., Ferreira, D.M.T.P. and Maia, L.C. (2015), Does trauma in the primary dentition cause sequelae in permanent successors? A systematic review. *Dent Traumatol*, 31: 79-88. doi:[10.1111/edt.12149](https://doi.org/10.1111/edt.12149)

Tewari, N, Mathur, VP, Singh, N, Singh, S, Pandey, RK. Long-term effects of traumatic dental injuries of primary dentition on permanent successors: A retrospective study of 596 teeth. *Dent Traumatol*. 2018; 34: 129– 134. <https://doi.org/10.1111/edt.12391>

### **Predictors for healing complications**

1. Understand the most important predictors for pulp necrosis and root resorption

### **Endodontic considerations**

1. Understand the treatment of infection related resorption
2. Understand the treatment and discuss possible challenges in the treatment of pulp necrosis in teeth with immature root development and in root fractured teeth

Barnett, F. (2002), The role of endodontics in the treatment of luxated permanent teeth. *Dental Traumatology*, 18: 47-56. doi:[10.1034/j.1600-9657.2002.00098.x](https://doi.org/10.1034/j.1600-9657.2002.00098.x)

Andreasen, J.O., Bakland, L.K. (2012), Pulp regeneration after non-infected and infected necrosis, what type of tissue do we want? A review. *Dental Traumatology*, 28: 13-18. doi:[10.1111/j.1600-9657.2011.01057.x](https://doi.org/10.1111/j.1600-9657.2011.01057.x)

European Society of Endodontology developed by: Galler, KM, Krastl, G, Simon, S, Van Gorp, G, Meschi, N, Vahedi, B, Lambrechts, P. European Society of Endodontology position statement: Revitalization procedures. *International Endodontic Journal*, 49, 717– 723, 2016.

Duggal, M., Tong, HJ., Al-Ansary, M., Twati, W., Day, PF., Nazzal, H. Interventions for the endodontic management of non-vital traumatised immature permanent anterior teeth in children and adolescents: a systematic review of the evidence and guidelines of the European Academy of Paediatric Dentistry. *Eur Arch Paediatr Dent*, 2017; 18: 139-151. doi:[10.1007/s40368-017-0289-5](https://doi.org/10.1007/s40368-017-0289-5)

Kim, SG, Malek, M, Sigurdsson, A, Lin, LM, Kahler, B. Regenerative endodontics: a comprehensive review. *International Endodontic Journal*, 51, 1367– 1388, 2018.

Tong HJ, Rajan S, Bhujel N et al. Regenerative Endodontic Therapy in the Management of Nonvital Immature Permanent Teeth: A Systematic Review—Outcome Evaluation and Meta-analysis. *J Endod*, 43 (9). pp. 1453-1464. <https://doi.org/10.1016/j.joen.2017.04.018>

Palma PJ, Martins J, Diogo P, Sequeira D, Ramos JC, Diogenes A, Santos JM. Does Apical Papilla Survive and Develop in Apical Periodontitis Presence after Regenerative Endodontic Procedures? *Appl. Sci.* 2019, 9, 3942; doi:10.3390/app9193942

Sonoyama W, Liu Y, Yamaza T, Tuan RS, Wang S, Shi S, Huang GTH. Characterization of Apical Papilla and its Residing Stem Cells from Human Immature Permanent Teeth –A Pilot Study *J Endod.* 2008 February ; 34(2): 166–171. doi:10.1016/j.joen.2007.11.021.

Radovan Žižka, Jiří Šedý, Ladislav Gregor, Iva Voborná. Discoloration after Regenerative Endodontic Procedures: A Critical Review Doi:0.22037/iej.v13i3.21271

Scope of Endodontics. Regenerative Endodontics. AAE Position Statement [https://f3f142zs0k2w1kg84k5p9i1o-wpengine.netdna-ssl.com/specialty/wp-content/uploads/sites/2/2018/07/2018AAE\\_Scope\\_of\\_Endo\\_Regenerative\\_Endodontics.pdf](https://f3f142zs0k2w1kg84k5p9i1o-wpengine.netdna-ssl.com/specialty/wp-content/uploads/sites/2/2018/07/2018AAE_Scope_of_Endo_Regenerative_Endodontics.pdf)

The American Association of Endodontists “Clinical Consideration for a Regenerative procedure”. [https://f3f142zs0k2w1kg84k5p9i1o-wpengine.netdna-ssl.com/specialty/wp-content/uploads/sites/2/2018/06/ConsiderationsForRegEndo\\_AsOfApril2018.pdf](https://f3f142zs0k2w1kg84k5p9i1o-wpengine.netdna-ssl.com/specialty/wp-content/uploads/sites/2/2018/06/ConsiderationsForRegEndo_AsOfApril2018.pdf)

### **Long term consequences of early tooth loss**

1. Understand the mechanism for infra-occlusion of ankylosed teeth in adolescents
2. Understand the treatments available for treating the submerging tooth.

Malmgren, B., Tsilingaridis, G. and Malmgren, O. (2015), Long-term follow up of 103 ankylosed permanent incisors surgically treated with decoronation – a retrospective cohort study. *Dent Traumatol*, 31: 184-189. doi:10.1111/edt.12166

Mohadeb, J.V.N., Somar, M. and He, H. (2016), Effectiveness of decoronation technique in the treatment of ankylosis: A systematic review. *Dent Traumatol*, 32: 255-263. doi:10.1111/edt.12247

Einy, S, Kridin, K, Kaufman, AY, Cohenca, N. Immediate post-operative rehabilitation after decoronation. A systematic review. *Dent Traumatol.* 2020; 36: 141– 150. <https://doi.org/10.1111/edt.12513>

Kafourou, V, Tong, HJ, Day, P, Houghton, N, James Spencer, R, Duggal, M. Outcomes and prognostic factors that influence the success of tooth autotransplantation in children and adolescents. *Dent Traumatol.* 2017; 33: 393– 399. <https://doi.org/10.1111/edt.12353>

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### **Information to the public**

1. Be able to recommend appropriate emergency measures to be taken immediately following dental trauma

Kenny, KP, Day, PF, Sharif, MO, et al. What are the important outcomes in traumatic dental injuries? An international approach to the development of a core outcome set. *Dent Traumatol.* 2017; 00: 1– 11. <https://doi.org/10.1111/edt.12367>

### **Prevention of TDI**

1. Be able to identify high risk sports
2. Understand measures (e.g. mouth guards) that can be used to prevent these injuries

Sigurdsson A. Evidence-based review of prevention of dental injuries. *J Endod.* 2013 Mar;39(3 Suppl):S88-93. doi: 10.1016/j.joen.2012.11.035.

Lloyd, JD, Nakamura, WS, Maeda, Y, et al. Mouthguards and their use in sports: Report of the 1st International Sports Dentistry Workshop, 2016. *Dent Traumatol.* 2017; 33: 421– 426. <https://doi.org/10.1111/edt.12375>

Fernandes, LM, Neto, JCL, Lima, TFR, et al. The use of mouthguards and prevalence of dento-alveolar trauma among athletes: A systematic review and meta-analysis. *Dent Traumatol.* 2019; 35: 54– 72. <https://doi.org/10.1111/edt.12441>