

# Recording in Traumatic Dental Injuries

## Recording Baseline Diagnostic Findings

Recording the traumatized tooth, and neighboring structures such as PDL, bone, soft tissues, and the maturity of the apex at baseline are important in treatment planning and prognosis. The recording should be simple, applicable for both dentitions, and based on standard classifications as Andreasen's classification and ICD-11 codes. 'Dental Trauma Guide' also uses these parameters for estimation of prognosis.

The primary diagnostic indices entitled 'Eden Baysal Dental Trauma Index' and 'Modified Eden Baysal Dental Trauma Index' enables the standardized registry of these baseline parameters on a 5-digit system and extending it with superscript numbers.

'Eden Baysal Dental Trauma Index' is a five-digit index that defines the type of the injury of the hard-dental tissues (crown in relation with the pulp and root), the periodontal ligament, the alveolar process and additionally records the maturity of apex.

FDI tooth code is used in parenthesis to indicate the injured tooth. Following FDI tooth code in parenthesis, the index contains five digits. 'Modified Eden Baysal Dental Trauma Index' is the extension of the index where superscript Arabic numerals are used to record extraoral and intraoral soft tissue injuries divided by commas in a row (see Table 1 on the website).

Examples demonstrating the application of the diagnostic indices:

Case 1:



Figure 1: Intraoral photograph of a patient shows enamel and dentin fractures of central incisors. Periapical radiograph shows middle-third horizontal root fracture of right central incisor and mature apices of both teeth with no accompanying bone injury.

The following illustrates the baseline diagnostic recording appropriate for this patient:

The first digit for (11) records uncomplicated crown fracture with '2', second digit records middle-third root fracture with '2', third digit records luxation injury where 'N' represents none, fourth digit records the mature apex with 'm', and a 'minus sign'

records no accompanying bone injury as the fifth digit.

The generated 'Eden Baysal Dental Trauma Index' codes for both teeth of this patient are as follows:

(11) 2 2 N m –

(21) 2 0 N m –

Case 2:

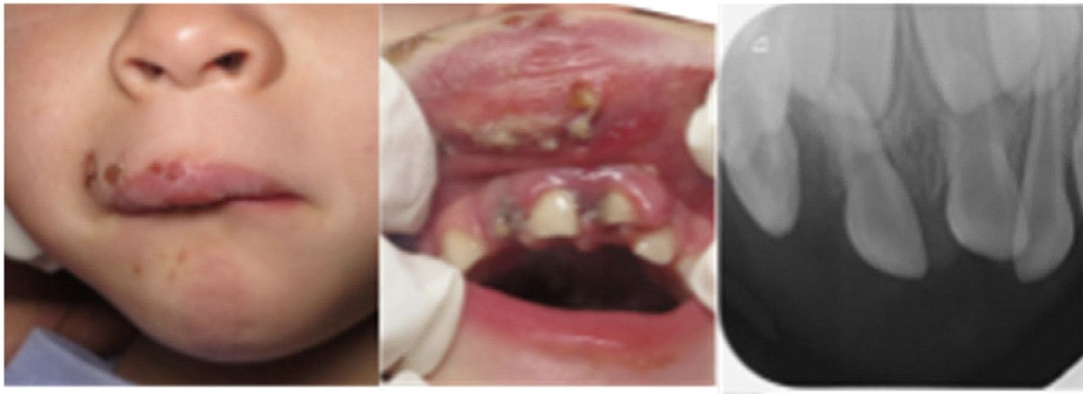


Figure 2: Extraoral photograph of a patient shows abrasions and lip contusion. The intraoral photograph depicts avulsion of 52, intrusion of 51 and 61, and subluxation of 62 with no dental hard tissue injuries. Periapical radiograph shows the findings of the luxation injuries and mature apices with no accompanying bone injury.

The diagnostic findings obtained generated the following 'Modified Eden Baysal Dental Trauma Index' code for this patient:

[(51) 0 0 I m -, (52) 0 0 A m -, (61) 0 0 I m -, (62) 0 0 S m -]<sup>1,3,5</sup>

'Index Generators' for both diagnostic indices are available online for generating codes.

To generate codes with 'Eden Baysal Dental Trauma Index' please click the link below:

[https://disacil.ege.edu.tr/tr-12281/eden\\_baysal\\_dental\\_trauma\\_index\\_generator.html](https://disacil.ege.edu.tr/tr-12281/eden_baysal_dental_trauma_index_generator.html)

To generate codes with 'Modified Eden Baysal Dental Trauma Index' please click the link below:

[https://disacil.ege.edu.tr/tr-12572/modified\\_eden\\_baysal\\_dental\\_trauma\\_index\\_generator.html](https://disacil.ege.edu.tr/tr-12572/modified_eden_baysal_dental_trauma_index_generator.html)

## Recording Follow-up Outcomes

The registry should further include the clinician important outcomes in the follow-up visits. Similar 5-digit system entitled ‘Eden Dental Trauma Outcome Index’ helps in standardized recording of clinician important outcomes in control visits.

The first digit reports the success of the restoration, and the second digit reports the healing type of root fracture using Arabic numerals. The third digit records the external root resorption type with capitalized first letters of the two words describing the type. The fourth digit reports the maturity of the apex with lowercase first letters. The fifth digit records pulp status with Arabic numerals (see Table 2).

Table 2: Eden Dental Trauma Outcome Index

FDI TOOTH NO	CROWN RESTORATION	ROOT FRACTURE HEALING	EXTERNAL ROOT RESORPTION TYPE	ROOT DEVELOPMENT	PULP STATUS
(..)	0= no crown fracture + need for restoration 1= intact fragment reattachment 2= acceptable restoration 3= discoloration of the restoration- no renewal necessary 4= renewal necessary 5= restoration missing 8= not clear 9= tooth missing	0= no root fracture 1= hard tissue healing 2= connective tissue healing with or without bone 3= no healing and infection present 8= not clear 9= tooth missing	NI= No Injury of PDL PH= Proper Healing of PDL IR= Inflammatory Resorption (Infection-related Resorption) RR= Replacement Resorption (Ankylosis-related Resorption) 8= not clear 9= tooth missing	m= mature root i = immature growing root a= arrested root development r= resorbed root (physiological) 8= not clear 9= tooth missing	0= clinically normal pulp 1= partial/ total pulp canal calcification 2= vital endodontic/ regenerative treatment 3= necrotic/ infected pulp 4= root canal treatment performed 8= not clear 9= tooth missing

An example demonstrating the application of the outcome index:

Case 3:

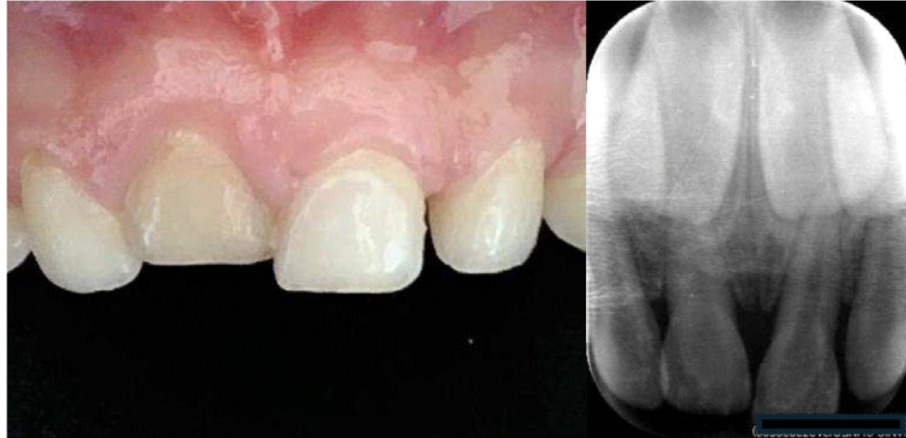


Figure 3: Intraoral photograph shows a two-year follow-up-findings of a right primary first incisor. The clinical and radiographic findings reveal a primary maxillary right central incisor presenting ankylosis with pulp necrosis and no necessary crown restoration or root healing. The tooth has mature apex.

The first digit for (51) records no restoration needed with '0', second digit records no root fracture with '0', third digit records external resorption type where 'RR' represents replacement resorption, fourth digit records the mature apex with 'm', and a '3' is used to record necrotic pulp as the fifth digit.

The generated 'Eden Dental Trauma Outcome Index' code for this patient is as follows:

(51) 0 0 RR m 3

There is an 'Index Generator' for the outcome index available online for generating codes in follow-up visits.

To generate codes with 'Eden Dental Trauma Outcome Index' please click the link below:

[https://disacil.ege.edu.tr/tr-21034/eden\\_dental\\_trauma\\_outcome\\_index.html](https://disacil.ege.edu.tr/tr-21034/eden_dental_trauma_outcome_index.html)

### **Recommended reading**

1. ANDREASEN FM, ANDREASEN JO. Diagnosis of luxation injuries: the importance of standardized clinical, radiographic and photographic techniques in clinical investigations. *Endod Dent Traumatol* 1985;5:160-169.
2. BAKLAND LK, ANDREASEN JO. Examination of the dentally traumatized patient. *Calif Dent Ass J* 1996;24:35-44.
3. ANDREASEN FM, ANDREASEN JO, TSUKIBOSHI M, COHENCA N. Examination and Diagnosis of Dental Injuries. In: Andreasen JO, Andreasen FM, Andersson L, (eds.). *Textbook and Color Atlas of Traumatic Injuries to the Teeth* (5th ed.). Oxford, Blackwell 2019, pp. 295-326
4. EDEN E, BAYSAL M, ANDERSSON L. Eden Baysal Dental Trauma Index: Face and content validation. *Dent Traumatol*. 2020;36:117–123.
5. EDEN E, ONETTO JE, O’CONNELL AC. Extension of a novel diagnostic index to include soft tissue injuries: Modified Eden Baysal Dental Trauma Index. *Dent Traumatol*. 2021;37:749-757.
6. KAVAL ME, ATEŞÇI AA, KURT SSM, BOYACIOĞLU H, EDEN E. Assessment of the validity and reliability of a novel dental trauma index. *Dent Traumatol*. 2023;39:381-385.
7. EDEN E, ONETTO JE, LAURIDSEN E, ANDERSSON L. Simplified Registration of Clinician-Important Traumatic Dental Injury Outcomes Using a New Index. *Dent Traumatol*. 2025 Jul 16. doi: 10.1111/edt.13086. Epub ahead of print. PMID: 40665855.