

OSAC 2021-N-0030 Terminology for A Suspected Pattern of Dental Origin

*Forensic Odontology Subcommittee
Medicine Scientific Area Committee
Organization of Scientific Area Committees (OSAC) for Forensic Science*

Draft OSAC Proposed Standard

OSAC 2021-N-0030 Terminology for A Suspected Patten of Dental Origin

Prepared by
Forensic Odontology Subcommittee
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1 **Foreword**

2 This document is a draft of a standard developed by the Subcommittee of the Organization of
3 Scientific Area Committees (OSAC) for Forensic Science.

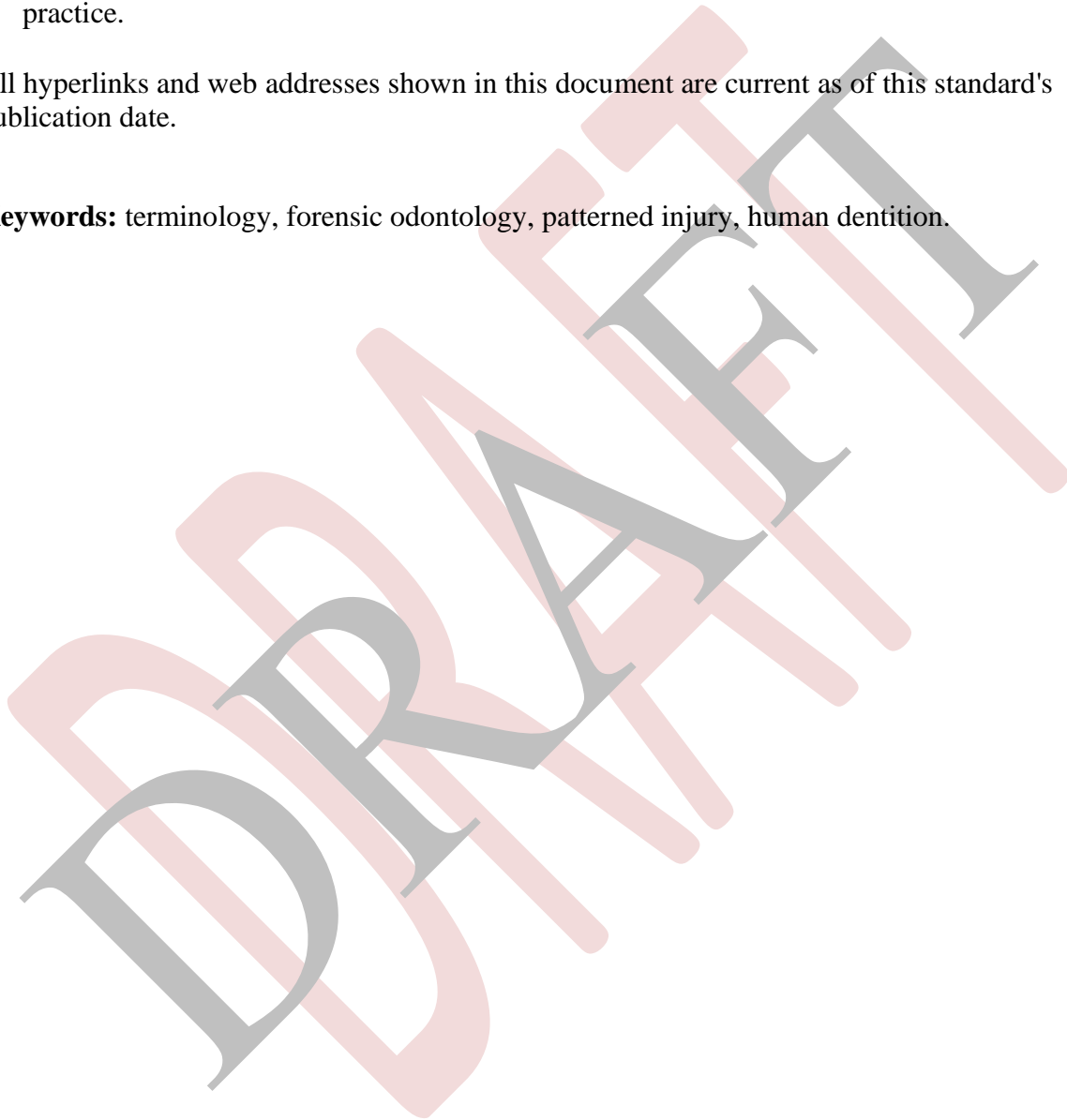
4
5 The following applies to this document:

6 the term '**shall**' indicates that a provision is mandatory and can be audited for compliance
7 the term '**should**' indicates that a provision is not mandatory but recommended as good
8 practice.

9
10 All hyperlinks and web addresses shown in this document are current as of this standard's
11 publication date.

12
13 **Keywords:** terminology, forensic odontology, patterned injury, human dentition.

14



15
16
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57 **1 Scope**

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59 This standard provides terms and definitions for describing a suspected pattern of dental origin

60

61 **Note to Scope:** This document does not provide information on the criteria for applying these terms to a specific
62 suspected pattern of a dental origin

63

64 **2 Normative References**

65

66 There are no normative references. The bibliography contains informative references.

67

68 **3 Terms and definitions**

69 For purposes of this document, the following definitions apply.

70 **Note to Terms and Definitions:** These terms and definitions layout follow *ISO IEC Directives Part 1 And Consolidated*
71 *ISO Supplement 2019 (10th Edition) Section 3. Terms and Definitions* recommendations and are listed according to the
72 hierarchy of the concepts (i.e., systematic order) rather than alphabetical order. An alphabetical listing is available in
73 the index.

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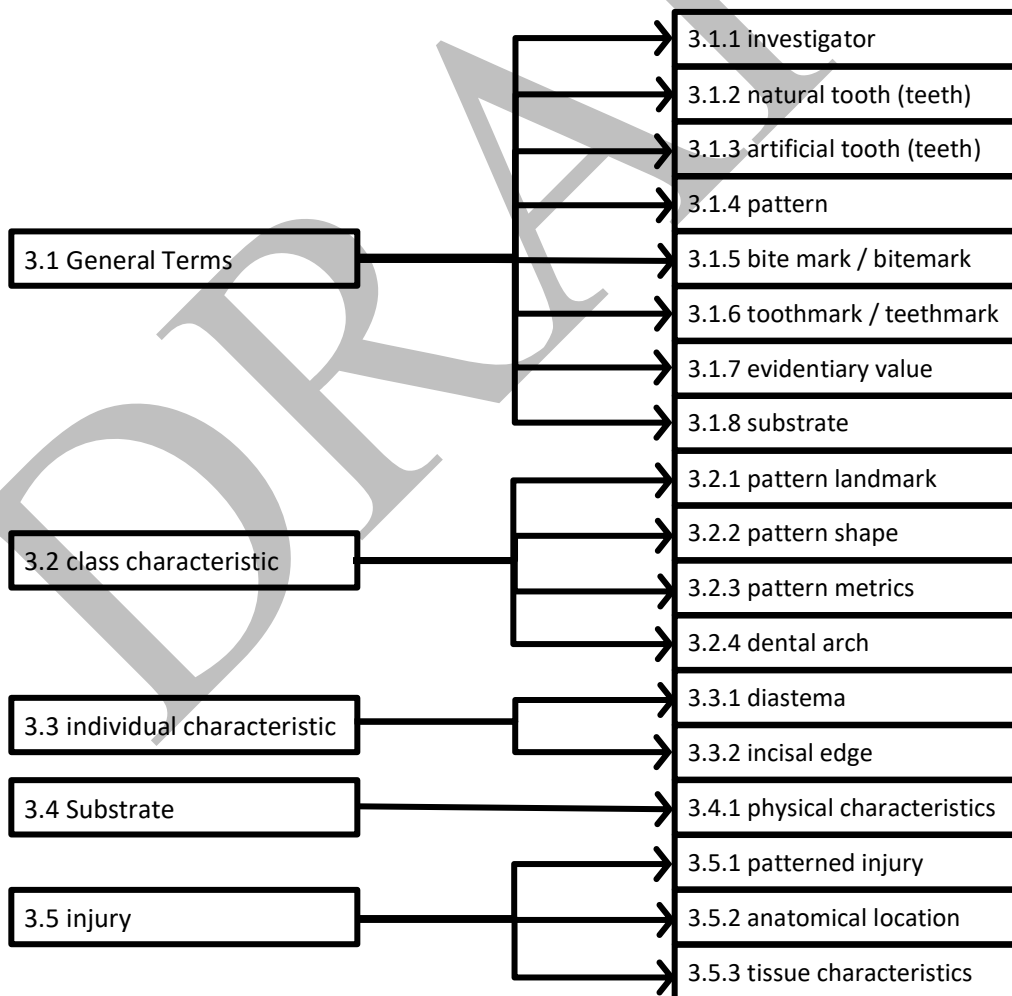
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100 **3.1 General terms**



101
102 **3.1.1**
103 **investigator**
104 person who carries out a formal inquiry
105
106 **3.1.2**
107 **natural tooth (teeth)**
108 oral organ consisting of enamel, dentin, cementum, and pulp
109
110 **Note 1 to entry:** Some elements may be missing due to congenital, developmental, or structural modifications
111
112 **3.1.3**
113 **artificial tooth (teeth)**
114 prosthesis restoring or replacing a natural tooth
115
116 **3.1.4**
117 **pattern**
118 distinctive shape, form, or array appearing in or on a medium
119
120 **3.1.4.1**
121 **patterned injury**
122 injury with a *pattern* reproducing the characteristics of the object causing
123 the injury
124
125 **3.1.5**
126 **bite mark/bitemark**
127 physical alteration in a medium caused by the contact of the biting surfaces of teeth
128 as a result of the closure of the mouth
129
130 **3.1.6**
131 **toothmark / teethmark**
132 physical alteration in a medium caused by contact between the medium and a tooth
133 or teeth
134
135 **3.1.7**
136 **evidentiary value**
137 information of sufficient usefulness to serve as the basis for making a determination
138
139
140
141
142 **3.1.8**
143 **substrate**
144 surface or surfaces on which a pattern appears
145
146 **3.1.9**
147 **artifact**

148 spurious observation not intrinsically present

149

150

3.2

151

class characteristic

152

feature that distinguishes items between categories

153

154

3.2.1

155

pattern landmark

156

reference feature in the pattern

157

158

3.2.1.1.1

159

cuspal eminence

160

occlusal eminence of a tooth used for biting

161

162

3.2.1.1.1.1

163

cuspal eminence

164

most protruding portion of a tooth cusp

165

166

3.2.2

167

pattern shape

168

outline of a pattern

169

170

Note 1 to entry: Suggested terms for shape are included in Annex A - Suggested Terms for Pattern Shape

171

172

3.2.3

173

pattern metrics

174

quantitative measurement of the characteristics of the pattern

175

176

177

3.2.3.1

178

circumferential distance

179

curvilinear measurement between two points

180

181

Note 1 to entry: measurement may need to account that pattern occurred on a curved plane

182

183

184

3.2.3.2

185

linear distance

186

the shortest measurement between two points

187

188

Note 1 to entry: measurement may need to account that pattern occurred on a curved plane

189

190

3.2.3.3

191

intercuspal distance

192

linear measurement between cuspal eminences of the same arch

193

194

3.2.4

195 **dental arch**
196 curved composite structure of the dentition
197
198
199 **3.2.4.1**
200 **arch characteristic (of the dentition)**
201 distinguishing dental features of a jaw
202
203 **3.2.4.1.1**
204 **arch size**
205 defined linear or curvilinear distance between two landmarks on the same jaw
206
207 **3.2.4.1.2**
208 **maximum interarch distance**
209 individual's greatest achievable opening distance between two landmarks on
210 opposing jaws
211
212 **3.2.4.1.3**
213 **dental midline**
214 line drawn between the central incisors of a dental arch
215
216 **3.2.4.1.4**
217 **arch midline**
218 line bisecting an alveolar process, typically passing through the incisive
219 foramen
220
221 **3.3**
222 **individual characteristic**
223 distinguishing feature within a group
224
225 **3.3.1**
226 **diastema**
227 naturally occurring interdental space
228
229 **3.3.2**
230 **incisal edge**
231 biting edge of an anterior tooth
232
233 **3.3.2.1**
234 **incisal edge shape (by tooth)**
235 area outline of the incisal edge of a tooth
236
237 **Note 1 to entry:** Suggested terms are included in Annex B - Suggested Terms for Describing the Incisal Edge
238 Shape
239
240 **3.3.2.2**
241 **incisal edge metrics (by tooth)**

242 quantitative assessment of the incisal edge of a tooth

243

244 **3.3.2.2.1**

245 **incisal edge angulation**

246 "angle formed between the incisal edge of a tooth and a reference

247

248

Note 1 to entry: Commonly, the reference is the incisal edge of an adjacent tooth

249

250

3.3.2.3

251

orientation of the bitemark

252

positional relationship of a bitemark to the substrate

253

254

255

256

257

258

3.4

259

substrate characteristics

260

features or qualities belonging to a substrate

261

262

263

3.4.1

264

physical characteristics

265

measurable features of an entity

266

267

3.4.1.1

268

pattern color (multiple iterations allowed)

269

hue, chroma, and value of a pattern

270

271

272

Note 1 to entry: Suggested terms for color are included in Annex C - Suggested Terms for Describing the Color of a *Patterned Injury*

273

274

3.4.1.2

275

surface

276

external layer of a substrate

277

278

3.4.1.2.1

279

surface contour (multiple iterations allowed)

280

surface topography of the substrate

281

282

283

Note 1 to entry: Suggested Note 1 to entry: terms for surface contour are included in Annex D - Suggested Terms for The Surface Contour of a *Patterned Injury*

284

285

3.5

286

injury

287

damage to a biological organism caused by physical harm (ISO 19434:2017(en), 315)

288

289	
290	3.5.1
291	patterned injury characteristics
292	features or qualities belonging to the <i>patterned injury</i>
293	
294	3.5.1.1
295	abrasion
296	superficial scraping of the substrate
297	
298	
299	3.5.1.2
300	bruise
301	ecchymosis from a tissue injury
302	
303	3.5.1.3
304	contusion
305	bruise from blunt trauma
306	
307	3.5.1.4
308	laceration
309	soft tissue tear or break
310	
311	3.5.1.5
312	petechial hemorrhage
313	pinpoint intradermal hemorrhages beneath the skin
314	
315	3.5.1.6
316	avulsion
317	tearing away of an attached or anchored tissue
318	
319	3.5.1.7
320	incision
321	cut in tissue made with a sharp object
322	
323	3.5.1.8
324	indentation
325	recess on a surface
326	
327	3.5.1.9
328	drag marks
329	abrasion injury induced by motion
330	
331	3.5.1.10
332	unknown
333	undefined pathology
334	
335	

336 **3.5.2**
337 **anatomical location (biological substrates)**
338 site of the pattern

339
340 **3.5.3**
341 **tissue characteristics (biological substrates)**
342 features or qualities belonging to the biological substrate of the pattern

343
344
345 **3.5.3.1**
346 **fixed substrate**
347 substrate that is firmly attached to underlying structures

348
349 **3.5.3.2**
350 **mobile substrate**
351 substrate that is not firmly attached to underlying structures

352
353 **3.5.3.3**
354 **substrate elasticity**
355 substrate ability to resume its resting position

356
357

DRAFT

358

359

360

361

Annex A

362

(informative)

363

Suggested Terms for Pattern Shape

round
ovoid
crescent
diamond
rectangular
irregular
indeterminant

364

365

Note 1 to entry: indeterminant - unable to assign a definitive term to the pattern shape

366

367

368
369
370
371

Annex B
(informative)

Suggested Terms for Describing the Incisal Edge Shape of Anterior Teeth

rectangular
circular
oval
triangular
indeterminant
unknown

372
373
374
375

Note 1 to entry: indeterminant - unable to assign a definitive term to the shape of the incisal edge

Note 2 to entry: unknown - unable to assess incisal edge presence

DRAFT

376

Annex C

377

(informative)

378

Suggested Terms for Describing the Color of a Pattern (Biological)

red
violet
reddish purple
bluish purple
purple
blue
violet
green
dark yellow
pale yellow
brown
black
white
multiple colors
indeterminant
unknown

379

380 **Note 1 to entry:** indeterminant - unable to assign a definitive term to the shape of the incisal edge

381 **Note 2 to entry:** unknown - unable to assess incisal edge presence

382

383
384
385

386
387

Annex D
(informative)

388

389
390
391

Suggested Terms for The Surface Contour of the Substrate (Biological)

flat
curved
irregular
convex
concave
multiple contours
indeterminant
unknown

392
393
394

395 **Note 1 to entry:** indeterminant - unable to assign a definitive term to the surface contour of the substrate

396 **Note 2 to entry:** unknown - unable to assess the surface contour

397

398
399 **4 Bibliography**

400 The following bibliography is not intended to be an all-inclusive list, review, or literature
401 endorsement on this topic. The goal of the bibliography is to provide examples of publications
402 addressed in the standard.

403 American Board of Forensic Odontology, Diplomates Reference Manual. It is available at
404 <http://www.abfo.org/resources/abfo-manual/>.

405 ISO Standards and Terms and Definitions <https://www.iso.org/obp/ui/>.

406
407 Organization of Scientific Area Committees for Forensic Science (OSAC) Lexicon. It is
408 available at <http://lexicon.forensicosac.org/Term/Home/index>

409
410 Forensic Odontology: Principles and Practice, Thomas J. David & James M. Lewis, Editors,
411 Academic Press, London, UK, 2018.

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414
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416 Press, Boca Raton, FL, 2011.

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418 Raton, FL, 2010.

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420 Elsevier, St. Louis, Missouri, 2010.

421 Dental Autopsy, William E. Silver & Richard R. Souvion, CRC Press, Boca Raton, 2009

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425

426

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