

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*





OSAC Proposed Standard

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

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Foreword

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

The following applies to this document:

the term '**shall**' indicates that a provision is mandatory and can be audited for compliance

the term '**should**' indicates that a provision is not mandatory but recommended as good practice.

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

Keywords: terminology, forensic odontology, patterned injury, human dentition.

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1 Scope

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

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

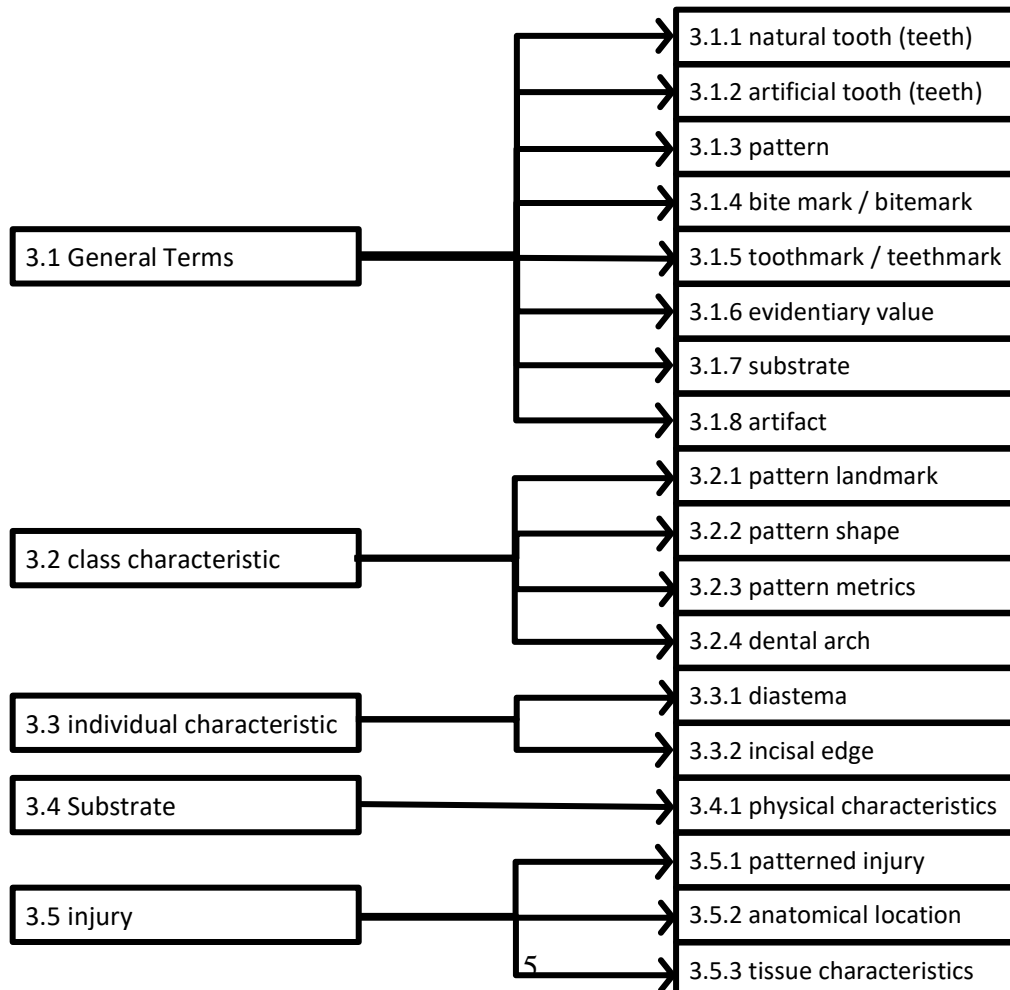
2 Normative References

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

3 Terms and definitions

For purposes of this document, the following definitions apply.

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



3.1 General terms

3.1.1

natural tooth (teeth)

oral organ consisting of enamel, dentin, cementum, and pulp

Note 1 to entry: Some elements may be missing due to congenital, developmental, or structural modifications

3.1.2

artificial tooth (teeth)

prosthesis restoring or replacing a natural tooth

3.1.3

pattern

discernable shape, form, or array appearing in or on a substrate

3.1.3.1

patterned injury

injury with a *pattern* that may reproduce the characteristics of the object causing the injury

3.1.4

bite mark/bitemark

physical alteration in a substrate caused by the contact of the biting surfaces of a tooth or teeth as a result of the forceful closure of the mouth

3.1.5

tooth mark/ toothmark / teeth mark/ teethmark

physical alteration in a substrate caused by contact between the substrate and a tooth or teeth that is not a result of a forceful closure of the mouth

3.1.6

evidentiary value

information of sufficient usefulness to serve as the basis for making an empirically significant scientific determination.

3.1.7

substrate

surface or surfaces on which a pattern appears

3.1.8

artifact

spurious observation not intrinsically present

3.2

class characteristic

feature that distinguishes items between categories

3.2.1

pattern landmark

reference feature in the pattern

3.2.1.1

cusp

occlusal eminence of a tooth used for biting

3.2.1.1.1

cuspal eminence

most protruding portion of a tooth cusp

3.2.2

pattern shape

outline of a pattern

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

3.2.3

pattern metrics

quantitative measurement of the characteristics of the pattern

3.2.3.1

circumferential distance

curvilinear measurement between two points

3.2.3.2

linear distance

the shortest measurement between two points

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

3.2.3.3

intercuspal distance

linear measurement between cuspal eminences of the same arch

3.2.4

dental arch

curved composite structure of the dentition

3.2.4.1
arch characteristic (of the dentition)
distinguishing dental features of a jaw

3.2.4.1.1
arch size
defined linear or curvilinear distance between two landmarks on the same jaw

3.2.4.1.2
maximum interarch distance
individual's greatest achievable opening distance between two landmarks on opposing jaws

3.2.4.1.3
dental midline
line drawn between the central incisors of a dental arch

3.2.4.1.4
arch midline
line bisecting an alveolar process, typically passing through the incisive foramen

3.3
individual characteristic
distinguishing feature within a *class characteristic*

3.3.1
diastema
naturally occurring interdental space

3.3.2
incisal edge
biting edge of an anterior tooth

3.3.2.1
incisal edge shape (by tooth)
area outline of the incisal edge of a tooth

Note 1 to entry: Suggested terms are included in Annex B - Suggested Terms for Describing the Incisal Edge Shape

3.3.2.2
incisal edge metrics (by tooth)
quantitative assessment of the incisal edge of a tooth

3.3.2.2.1

incisal edge angulation

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

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

3.3.2.3

orientation of the bitemark

positional relationship of a bitemark to the substrate

3.4

substrate characteristics

features or qualities belonging to a substrate

3.4.1

physical characteristics

measurable features of an entity

3.4.1.1

pattern color (multiple iterations allowed)

hue, chroma, and value of a pattern

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

3.4.1.2

surface

external layer of a substrate

3.4.1.2.1

surface contour (multiple iterations allowed)

surface topography of the substrate

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*

3.5

injury

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

3.5.1

patterned injury characteristics

features or qualities belonging to the *patterned injury*

3.5.1.1

abrasion

superficial scraping of the substrate

3.5.1.2

bruise

ecchymosis from a tissue injury

3.5.1.3

contusion

bruise from blunt trauma

3.5.1.4

laceration

soft tissue tear or break

3.5.1.5

petechial hemorrhage

pinpoint intradermal hemorrhages beneath the skin

3.5.1.6

avulsion

tearing away of an attached or anchored tissue

3.5.1.7

incision

cut in tissue made with a sharp object

3.5.1.8

indentation

recess on a surface

3.5.1.9

drag marks

abrasion injury induced by motion

3.5.1.10

unknown

undefined pathology

3.5.2

anatomical location (biological substrates)

site of the pattern

3.5.3

tissue characteristics (biological substrates)

features or qualities belonging to the biological substrate of the pattern

3.5.3.1

fixed substrate

substrate that is firmly attached to underlying structures

3.5.3.2

mobile substrate

substrate that is not firmly attached to underlying structures

3.5.3.3

substrate elasticity

substrate ability to resume its resting position

Annex A

(informative)

Suggested Terms for Pattern Shape

round
ovoid
crescent
diamond
rectangular
irregular
indeterminant

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

Annex B

(informative)

Suggested Terms for Describing the Incisal Edge Shape of Anterior Teeth

rectangular
circular
oval
triangular
indeterminant
unknown

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

Annex C
(informative)

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

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

Annex D
(informative)

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

flat
curved
irregular
convex
concave
multiple contours
indeterminant
unknown

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

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

4 Bibliography

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

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