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Bitemark Analysis Reference List

Kelly Sauerwein

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Abstract

This report provides supplemental information to NISTIR 8352 **Bitemark Analysis: A NIST Scientific Foundation Review**. Publicly available resources relating to bitemark analysis were collected to assist in the review of the scientific foundations of bitemark analysis conducted by the National Institute of Standards and Technology (NIST). Over 400 sources were collected from literature searches and input from previous efforts by the National Institute of Justice Forensic Technology Center of Excellence, the American Board of Forensic Odontology (ABFO), and other public resources. This reference list is meant as a resource for the odontology community and interested stakeholders but does not represent an exhaustive compilation of the literature pertaining to bitemark analysis.

Keywords

bitemark; forensic odontology; pattern evidence; dentition; dental morphology; forensic science; scientific foundation review.

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1. Introduction

This reference list was compiled to assist in the review of the scientific foundations of bitemark analysis conducted by the National Institute of Standards and Technology (NIST) and serves as supplemental information to NISTIR 8352 **Bitemark Analysis: A NIST Scientific Foundation Review**. A variety of sources contributed to this list:

- The National Institute of Justice Forensic Technology Center of Excellence within RTI International compiled a list of over 100 peer-reviewed journal articles relevant to bitemark analysis. A final list was provided to NIST from RTI in April 2021.
- The American Board of Forensic Odontology submitted a list in 2011 in response to a request by the Subcommittee on Forensic Science (Butler 2015).
- Mary Bush, Peter Bush, and Iain Pretty submitted an annotated bibliography to the Texas Forensic Science Commission (TXFSC 2016)
- A NIST-led literature search covering the years 2010-2021 was conducted to obtain current literature relating to bitemark analysis.

After duplicate references were eliminated, a total of 403 unique bitemark references remained in this list. While this list is intended as a resource for the forensic odontology community and other interested stakeholders, it is not exhaustive. Resources that were in a language other than English, not publicly available, or published after February 2022 are not included in this list. DOI information is provided where available.

2. Bitemark Analysis Reference List

- [1] Aboshi H, Taylor J, Takei T, Brown K. Comparison of bitemarks in foodstuffs by computer imaging: A case report. *Journal of Forensic Odontology*. 1994;12(2):41-4.
- [2] Aitken C, MacDonald D. An application of discrete kernel methods to forensic odontology. *Applied Statistics*. 1979;28(1):55-61. <https://doi.org/10.2307/2346811>
- [3] Aksu MN, Gobetti JP. The past and present legal weight of bite marks as evidence. *The American Journal of Forensic Medicine and Pathology*. 1996;17(2):136-40.
- [4] Al-Talabani N, Al-Moussawy ND, Baker FA, Mohammed HA. Digital analysis of experimental human bitemarks: Application of two new methods. *Journal of Forensic Sciences*. 2006;51(6):1372-5. <https://doi.org/10.1111/j.1556-4029.2006.00265.x>
- [5] Allison RT, Whittaker DK. Use of benzidine for histological demonstration of haemoglobin in human bite marks. *Journal of Clinical Pathology*. 1990;43(7):600-3. <http://dx.doi.org/10.1136/jcp.43.7.600>
- [6] AlReshaid RM, Bukhadher MF, Alabdullah AA, Janardanan RP, Masadomi HA. A comparative study of trends in human bite mark analysis methods: A systematic review. *The Saudi Dental Journal*. 2019;31:S68. <https://doi.org/10.1016/j.sdentj.2019.02.033>
- [7] Alsaker K, Morken T, Baste V, Campos-Serna J, Moen BE. Sexual assault and other types of violence in intimate partner relationships. *Acta obstetricia et gynecologica Scandinavica*. 2012;91(3):301-7. <https://doi.org/10.1111/j.1600-0412.2011.01336.x>
- [8] American Board of Forensic Odontology. Guidelines for bitemark analysis. *Journal of the American Dental Association*. 1986;112(3):383-6. [https://doi.org/10.1016/S0002-8177\(86\)23021-4](https://doi.org/10.1016/S0002-8177(86)23021-4)

- [9] American Board of Forensic Odontology. “RDT&E IWG Human Bitemark Analysis Question List” annotated bibliography provided October 2, 2011 by the American Board of Forensic Odontology to the National Science and Technology Council’s Subcommittee on Forensic Science Research, Development, Testing, and Evaluation Interagency Working Group. 2011. Available at:
<https://www.nist.gov/system/files/documents/forensics/Annotated-Bibliography-Odontology.pdf>
- [10] American Board of Forensic Odontology. Standards and Guidelines for Evaluating Bitemarks. 2018. Available at: <http://abfo.org/resources/id-bitemark-guidelines>
- [11] Anderson W, Hudson R. Self inflicted bitemarks in battered child syndrome. *Forensic Science*. 1976;7(1):71-4. [https://doi.org/10.1016/0300-9432\(76\)90011-x](https://doi.org/10.1016/0300-9432(76)90011-x)
- [12] Anzai-Kanto E, Hirata MH, Hirata RDC, Nunes FD, Melani RFH, Oliveira RN. DNA extraction from human saliva deposited on skin and its use in forensic identification procedures. *Brazilian Oral Research*. 2005;19(3):216-22. <https://doi.org/10.1590/S1806-83242005000300011>
- [13] Arheart K, Pretty I. Results of the 4th ABFO Bitemark Workshop - 1999. *Forensic Science International*. 2001;124(2-3):104-11. [https://doi.org/10.1016/S0379-0738\(01\)00575-8](https://doi.org/10.1016/S0379-0738(01)00575-8)
- [14] Atkinson SA. A qualitative and quantitative survey of forensic odontologists in England and Wales, 1994. *Medicine, Science and the Law*. 1998;38(1):34-41.
<https://doi.org/10.1177/002580249803800106>
- [15] Atsu SS, Gokdemir K, Kedici PS, Ikyaz YY. Bitemarks in forensic odontology. *Journal of Forensic Odontostomatology*. 1998;16(2):30-4.
- [16] Avon SL, Mayhall JT, Wood R. Clinical and histopathological examination of experimental bite marks in vivo. *Journal of Forensic Odontostomatology*. 2006;24(2):53-62.
- [17] Avon SL, Victor C, Mayhall JT, Wood RE. Error rates in bite mark analysis in an in vivo animal model. *Forensic Science International*. 2010;201(1):45-55.
<https://doi.org/10.1016/j.forsciint.2010.04.016>
- [18] Avon SL, Wood R. Porcine skin as an in vivo model for ageing of human bite marks. *Journal of Forensic Odontostomatology*. 2005;23(2):30-9.
- [19] Bang G. Analysis of tooth marks in a homicide case. *Acta Odontologica Scandinavica*. 1976;34(1):1-11. <https://doi.org/10.3109/00016357609026553>
- [20] Barbenel J, Evans J. Bite marks in skin - mechanical factors. *Journal of Forensic Science Society*. 1974;14(3):235-8. [https://doi.org/10.1016/S0015-7368\(74\)70908-2](https://doi.org/10.1016/S0015-7368(74)70908-2)
- [21] Barns J, Kruger E, Tennant M. Benchmarking forensic rulers and photographic techniques. *Journal of Forensic and Legal Medicine*. 2016;41:5-9.
<https://doi.org/10.1016/j.jflm.2016.04.004>
- [22] Barry L. Bite mark evidence collection in the United States. *Bulletin of the History of Dentistry*. 1994;42(1):21-7.
- [23] Barsley R, Bernstein ML, Brumit PC, Dorion R, Golden G, Lewis J, et al. Epidermis and enamel: Insights into gnawing criticisms of human bitemark evidence. *American Journal of Forensic Medicine and Pathology*. 2018;39(2):87-97.
- [24] Barsley R, Freeman A, Metcalf RD, Senn D, Wright F. Bitemark analysis. *Journal of the American Dental Association*. 2012;143(5):444,6.
<https://doi.org/10.14219/jada.archive.2012.0196>

- [25] Barsley R, Lancaster D. Measurement of arch widths in a human population: Relation of anticipated bite marks. *Journal of Forensic Sciences*. 1987;32(4):975-82.
<https://doi.org/10.1520/JFS12408J>
- [26] Barsley R, West M, Fair J. Forensic photography: Ultraviolet imaging of wounds on skin. *American Journal of Forensic Medicine and Pathology*. 1990;11(4):300-8.
- [27] Beckstead J, Rawson R, Giles W. Review of bite mark evidence. *Journal of the American Dental Association*. 1979;99(1):69-74.<https://doi.org/10.14219/jada.archive.1979.0231>
- [28] Bell K. Identification and documentation of bite marks. *Journal of Emergency Nursing*. 2000;26(6):628-30. <https://doi.org/10.1067/men.2000.111119>
- [29] Benson B, Cottone J, Bomberg T, Sperber N. Bite mark impressions: A review of techniques and materials. *Journal of Forensic Sciences*. 1988;33(5):1238-43.
<https://doi.org/10.1520/JFS12558J>
- [30] Bernitz H, Owen JH, Heerden WFPv, Solheim T. An integrated technique for the analysis of skin bite marks. *Journal of Forensic Sciences*. 2008;53(1):194-8.
<https://doi.org/10.1111/j.1556-4029.2007.00618.x>
- [31] Bernitz H, Stols G. The application of affine transformations in matching distorted forensic samples with a common origin. *Forensic Science International*. 2010;201(1):56-8.
<https://doi.org/10.1016/j.forsciint.2010.03.007>
- [32] Bernitz H, Van Heerden WFP, Solheim T, Owen JH. A technique to capture, analyze, and quantify anterior teeth rotations for application in court cases involving tooth marks. *Journal of Forensic Sciences*. 2006;51(3):624-9. <https://doi.org/10.1111/j.1556-4029.2006.00114.x>
- [33] Bernstein ML. Two bite mark cases with inadequate scale references. *Journal of Forensic Sciences*. 1985;30(3):958-64. <https://doi.org/10.1520/JFS11033J>
- [34] Bernstein ML. Testing the bite mark. *Journal of the American Dental Association*. 1986;112(6):806. <https://doi.org/10.14219/jada.archive.1986.0113>
- [35] Bernstein ML. Nature of bitemarks. In: Dorion RBJ, editor. *Bitemark Evidence*. Ukraine: CRC Press; 2011. p. 53-65.
- [36] Bhagat S, Gupta V, Tyagi N, Sharma E, Gupta S, Dadu M. Berry's index: Adjuvant to bite marks. *Journal of Forensic Dental Sciences*. 2018;10(1):45-9.
https://doi.org/10.4103/jfo.jfds_99_16
- [37] Biggs PR, Evans ST, Jones MD, Theobald PS. Development of a methodology for the standardisation and improvement of 'Smartphone' photography of patterned bruises and other cutaneous injuries. *Science & Justice*. 2013;53(3):358-62.
<https://doi.org/10.1016/j.scijus.2013.05.001>
- [38] Black HI, Coupaud S, Daéid NN, Riches PE. On the relationships between applied force, photography technique, and the quantification of bruise appearance. *Forensic Science International*. 2019;305:109998. <https://doi.org/10.1016/j.forsciint.2019.109998>
- [39] Blackwell SA, Taylor RV, Gordon I, Ogleby CL, Tanijiri T, Yoshino M, et al. 3-D imaging and quantitative comparison of human dentitions and simulated bite marks. *International journal of legal medicine*. 2007;121(1):9-17. <https://doi.org/10.1007/s00414-005-0058-6>
- [40] Block RW, Hibbard RA, Jenny C, Kellogg N, Spivack BS, Stirling J, et al. Oral and dental aspects of child abuse and neglect. *Pediatrics*. 2005;116(6):1565-8.
<https://doi.org/10.1542/peds.2005-2315>
- [41] Bloemen EM, Rosen T, Cline Schiroo JA, Clark S, Mulcare MR, Stern ME, et al. Photographing injuries in the acute care setting: Development and evaluation of a

- standardized protocol for research, forensics, and clinical practice. Academic emergency medicine. 2016;23(5):653-9. <https://doi.org/10.1111/acem.12955>
- [42] Bolliger SA, Thali MJ, Ross S, Buck U, Naether S, Vock P. Virtual autopsy using imaging: bridging radiologic and forensic sciences. A review of the Virtopsy and similar projects. European radiology. 2008;18(2):273-82. <https://doi.org/https://doi.org/10.1007/s00330-007-0737-4>
- [43] Bollinger SA, Brumit PC, Schrader BA, Senn DR. GrinLine identification using digital imaging and Adobe Photoshop. Journal of Forensic Sciences. 2009;54(2):422-7. <https://doi.org/10.1111/j.1556-4029.2008.00971.x>
- [44] Bowers C, Bell G. Manual of Forensic Odontology. Third Edition ed. Colorado Springs, CO: American Society of Forensic Odontology; 1995.
- [45] Bowers C, Johansen R. Photographic evidence protocol: The use of digital imaging methods to rectify angular distortion and create life size reproductions of bite mark evidence. Journal of Forensic Sciences. 2002;47(1):178-85. <https://doi.org/10.1520/JFS15221J>
- [46] Bowers CM. Problem-based analysis of bitemark misidentifications: the role of DNA. Forensic Science International. 2006;159. <https://doi.org/10.1016/j.forsciint.2006.02.032>
- [47] Bowers CM. Review of a forensic pseudoscience: Identification of criminals from bitemark patterns. Journal of Forensic and Legal Medicine. 2019;61:34-9. <https://doi.org/10.1016/j.jflm.2018.11.001>
- [48] Bowers CM, Pretty IA. Expert disagreement in bitemark casework. Journal of Forensic Sciences. 2009;54(4):915-8. <https://doi.org/10.1111/j.1556-4029.2009.01073.x>
- [49] Brown K, Elliot T, Rogers A, Thonard J. The survival of oral streptococci on human skin and its implication in bitemark investigation. Forensic Science International. 1984;26(3):193-7. [https://doi.org/10.1016/0379-0738\(84\)90217-2](https://doi.org/10.1016/0379-0738(84)90217-2)
- [50] Bruce-Chwatt RMMR. Response to “Kanchan and Menezes, Double human bite – A different perspective”. Journal of forensic and legal medicine. 2009;17(1):50. <https://doi.org/10.1016/j.jflm.2009.07.015>
- [51] Buck U, Buße K, Campana L, Schyma C. Validation and evaluation of measuring methods for the 3D documentation of external injuries in the field of forensic medicine. International Journal of Legal Medicine. 2018;132(2):551-61. <https://doi.org/10.1007/s00414-017-1756-6>
- [52] Bush MA. Forensic dentistry and bitemark analysis: Sound science or junk science? Journal of the American Dental Association. 2011;142(9):997-9. <https://doi.org/10.14219/jada.archive.2011.0307>
- [53] Bush MA. Bitemark analysis: Author’s response. Journal of the American Dental Association. 2012;143(5):446-448. <https://doi.org/10.14219/jada.archive.2012.0197>
- [54] Bush MA, Bush PJ, Sheets HD. Statistical evidence for the similarity of the human dentition. Journal of Forensic Sciences. 2011;56(1):118-23. <https://doi.org/10.1111/j.1556-4029.2010.01531.x>
- [55] Bush MA, Bush PJ, Sheets HD. Similarity and match rates of the human dentition in three dimensions: relevance to bitemark analysis. International Journal of Legal Medicine. 2011;125(6):779-84. <https://doi.org/10.1007/s00414-010-0507-8>
- [56] Bush MA, Bush PJ, Sheets HD. A study of multiple bitemarks inflicted in human skin by a single dentition using geometric morphometric analysis. Forensic Science International. 2011;211(1):1-8. <https://doi.org/10.1016/j.forsciint.2011.03.028>

- [57] Bush MA, Cooper HI, Dorion RBJ. Inquiry into the scientific basis for bitemark profiling and arbitrary distortion compensation. *Journal of Forensic Sciences*. 2010;55(4):976-83. <https://doi.org/10.1111/j.1556-4029.2010.01394.x>
- [58] Bush MA, Miller RG, Bush PJ, Dorion RBJ. Biomechanical factors in human dermal bitemarks in a cadaver model. *Journal of Forensic Sciences*. 2009;54(1):167-76. <https://doi.org/10.1111/j.1556-4029.2008.00908.x>
- [59] Bush MA, Thorsrud K, Miller RG, Dorion RBJ, Bush PJ. The response of skin to applied stress: Investigation of bitemark distortion in a cadaver model. *Journal of Forensic Sciences*. 2010;55(1):71-6. <https://doi.org/10.1111/j.1556-4029.2009.01235.x>
- [60] Butler JB. U.S. initiatives to strengthen forensic sciences & international standards in forensic DNA. *Forensic Science International: Genetics*. 2015;18:4-20. <https://doi.org/10.1016/j.fsigen.2015.06.008>
- [61] Butler JB, Iyer H, Press R, Taylor M, Vallone P, et al. NIST Scientific Foundation Reviews: NISTIR 8225.2020. <https://doi.org/10.6028/NIST.IR.8225>
- [62] Butler O. The value of bitemark evidence. *International journal of forensic Dentistry*. 1973;1(1):23-4.
- [63] Campana L, Breitbeck R, Bauer-Kreuz R, Buck U. 3D documentation and visualization of external injury findings by integration of simple photography in CT/MRI data sets (IprojeCT). *International Journal of Legal Medicine*. 2016;130(3):787-97. <https://doi.org/10.1007/s00414-015-1274-3>
- [64] Chavez-Briones ML, Hernandez-Cortes R, Jaramillo-Rangel G, Ortega-Martinez M. Relevance of sampling and DNA extraction techniques for the analysis of salivary evidence from bite marks: a case report. *Genetics and Molecular Research*. 2015;14(3):10165-71. <https://doi.org/10.4238/2015.August.21.23>
- [65] Chin JMaDAW. Forensic bitemark identification evidence in Canada. *UBC Law Review*. 2019;52:1-50. <https://doi.org/10.1038/s41415-019-0623-x>
- [66] Chinni SS, Al-Ibrahim A, Forgie AH. A simple, safe, reliable, and reproducible mechanism for producing experimental bitemarks. *Journal of Forensic Odontostomatolgy*. 2013;31(1):22-9.
- [67] Chong G, Forgie AH. A pilot study to analyze the uniqueness of anterior teeth using a novel three-dimensional approach. *Journal of Forensic Identification*. 2017;67(3):361-78.
- [68] Clement JG, Blackwell SA. Is current bite mark analysis a misnomer? *Forensic Science International*. 2010;201(1):33-7. <https://doi.org/10.1016/j.forsciint.2010.03.006>
- [69] Clift A, Lamon C. Saliva in forensic odontology. *Journal of the Forensic Science Society*. 1974;14(3):241-5. [https://doi.org/10.1016/S0015-7368\(74\)70910-0](https://doi.org/10.1016/S0015-7368(74)70910-0)
- [70] Clough S, Handley P. Diagnostic overshadowing in dentistry. *British Dental Journal*. 2019;227(4):311-5. <https://doi.org/10.1038/s41415-019-0623-x>
- [71] Corbett M, Spence D. A forensic investigation of teeth marks in soap. *British Dental Journal*. 1984;157(8):270-1. <https://doi.org/10.1038/sj.bdj.4805470>
- [72] Corte-Real A, Pedrosa D, Saraiva J, Caetano C, Vieira DN. Tri-dimensional pattern analysis of foodstuff bitemarks — A pilot study of tomographic database. *Forensic Science International*. 2018;288:304-9. <https://doi.org/10.1016/j.forsciint.2018.04.022>
- [73] Crane J. Interpretation of non-genital injuries in sexual assault. *Best Practice & Research Clinical Obstetrics & Gynaecology*. 2013;27(1):103-11. <https://doi.org/10.1016/j.bpobgyn.2012.08.009>

- [74] Dailey J. A practical technique for the fabrication of transparent bite mark overlays. *Journal of Forensic Sciences*. 1991;36(2):565-70. <https://doi.org/10.1520/JFS13059J>
- [75] Dailey J, Bowers C. Aging of bitemarks: A literature review. *Journal of Forensic Sciences*. 1997;42(5):792-5. <https://doi.org/10.1520/JFS14209J>
- [76] Dal Santo-Mendoza F, Fonseca GM. Morphological patterns misdiagnosed as bite marks in forensic contexts: A scoping review. *International Journal of Morphology*. 2021;39(2):642-52.
- [77] Dama N, Forgie A, Manica S, Revie G. Exploring the degrees of distortion in simulated human bite marks. *International Journal of Legal Medicine*. 2020;134(3):1043-9. <https://doi.org/10.1007/s00414-019-02163-5>
- [78] David Sheets H, Bush PJ, Bush MA. Patterns of variation and match rates of the anterior biting dentition: Characteristics of a database of 3D-scanned dentitions. *Journal of Forensic Sciences*. 2013;58(1):60-8. <https://doi.org/10.1111/j.1556-4029.2012.02293.x>
- [79] David T. Adjunctive Use of scanning electron microscopy in bite mark analysis: A three-dimensional study. *Journal of Forensic Sciences*. 1986;31(3):1126-34. <https://doi.org/10.1520/JFS11123J>
- [80] David T, Sobel M. Recapturing a five-month-old bite mark by means of reflective ultraviolet photography. *Journal of Forensic Sciences*. 1994;39(6):1560-7. <https://doi.org/10.1520/JFS13744J>
- [81] de Lima Targino Massoni AC, Brito Ferreira AM, Ramalho Aragao AK, de Menezes VA, Colares V. Orofacial aspects of childhood abuse and dental negligence. *Ciência & Saude Coletiva*. 2010;15(2):403-10. <https://doi.org/10.1590/S1413-81232010000200016>
- [82] de Paiva MHP, Lages LP, de Medeiros ZC. Studies on forensic nursing in Brazil: a systematic review of the literature. *International Nursing Review*. 2017;64(2):286-95. <https://doi.org/10.1111/inr.12328>
- [83] de Sainte Croix MM, Gauld D, Forgie AH, Lowe R. Three-dimensional imaging of human cutaneous forearm bite marks in human volunteers over a 4 day period. *Journal of forensic and legal medicine*. 2016;40:34-9. <https://doi.org/10.1016/j.jflm.2016.02.003>
- [84] Dellambra E, Odorisio T, D'Arcangelo D, Failia C, Facchiano A. Non-animal models in dermatological research. *ALTEX*. 2018;36(2):177-202. <https://doi.org/10.14573/altex.1808022>
- [85] Deming J, Mittleman R, Wetli C. Forensic science aspects of fatal sexual assaults on women. *Journal of Forensic Sciences*. 1983;28(3):572-6. <https://doi.org/10.1520/JFS11551J>
- [86] Desranleau S, Dorion R. Bite marks: Physical properties of ring adhesion to skin - Phase 1. *Journal of Forensic Sciences*. 2010;56(S1). <https://doi.org/10.1111/j.1556-4029.2010.01604.x>
- [87] Desranleau S, Dorion RBJ. Bite marks: physical properties of ring adhesion to skin-Phase 2. *Journal of Forensic Sciences*. 2012;57(1):201-5. <https://doi.org/10.1111/j.1556-4029.2011.01918.x>
- [88] DeVore DT. Bite marks for identification?—A preliminary report. *Medicine, Science and the Law*. 1971;11(3):144-5. <https://doi.org/10.1177/002580247101100309>
- [89] Dhar V, Tandon S. Bite mark analysis in child abuse. *Journal of the Indian Society of Pedodontics and Preventive Dentistry*. 1998;16(3):96-102.
- [90] Dinkel EJ. Use of bitemark evidence as an investigative aid. *Journal of Forensic Sciences*. 1974;19(3):535-47. <https://doi.org/10.1520/JFS10208J>

- [91] Dixon B. Identifying bite marks. *The Lancet Infectious Diseases*. 2006;6(3):127. [https://doi.org/10.1016/S1473-3099\(06\)70393-0](https://doi.org/10.1016/S1473-3099(06)70393-0)
- [92] Dorion R. Bite mark evidence. *Journal of the Canadian Dental Association*. 1982;48(12):795-8.
- [93] Dorion R. Preservation and fixation of skin for ulterior scientific evaluation and courtroom presentation. *Journal of the Canadian Dental Association*. 1984;50(2):129-30.
- [94] Dorion R. Transillumination in bite mark evidence. *Journal of Forensic Sciences*. 1987;32(3):690-7. <https://doi.org/10.1520/JFS12374J>
- [95] Dorion R. *Bitemark Evidence: A Color Atlas and Text*. 2nd ed. Boca Raton, FL: CRC Press; 2011.
- [96] Drinnan A, Melton M. Court presentation of bitemark evidence. *International Dental Journal*. 1985;35(4):316-21.
- [97] Dror IE, Cole SA. The vision in "blind" justice: Expert perception, judgment, and visual cognition in forensic pattern recognition. *Psychonomic Bulletin & Review*. 2010;17(2):161-7. <https://doi.org/10.3758/PBR.17.2.161>
- [98] Dubowitz H, Bennett S. Physical abuse and neglect of children. *The Lancet (British edition)*. 2007;369(9576):1891-9. [https://doi.org/10.1016/S0140-6736\(07\)60856-3](https://doi.org/10.1016/S0140-6736(07)60856-3)
- [99] Ebert JI. Discussion of "The Bite Mark Standard Reference Scale--ABFO No. 2". *Journal of Forensic Sciences*. 1988;33(2):301. <https://doi.org/10.1520/JFS11942J>
- [100] Ebert JI, Campbell JHR. Discussion of "Photographic techniques of concern in metric bite mark analysis". *Journal of Forensic Sciences*. 1985;30(3):599. <https://doi.org/10.1520/JFS10996J>
- [101] Ebert LC, Thali MJ, Ross S. Getting in touch—3D printing in forensic imaging. *Forensic Science International*. 2011;211(1):e1-e6. <https://doi.org/10.1016/j.forsciint.2011.04.022>
- [102] Elliot T, Rogers A, Haverkamp J, Groothuis D. Analytical pyrolysis of *Streptococcus salivarius* as an aid to identification in bitemark investigation. *Forensic Science International*. 1984;26(2):131-7. [https://doi.org/10.1016/0379-0738\(84\)90069-0](https://doi.org/10.1016/0379-0738(84)90069-0)
- [103] Ermertcan AT, Ertan P. Skin manifestations of child abuse. *Indian Journal of Dermatology, Venereology, and Leprology*. 2010;76(4):317-26. <https://doi.org/10.4103/0378-6323.66572>
- [104] Evans S, Jones C, Plassmann P. 3D imaging in forensic odontology. *Journal of Visual Communication in Medicine*. 2010;33(2):63-8. <https://doi.org/10.3109/17453054.2010.481780>
- [105] Evans S, Noorbhai S, Lawson Z, Stacey-Jones S, Carabott R. Contrast enhancement of bite mark images using the grayscale mixer in ACR in Photoshop®. *Journal of Forensic Sciences*. 2013;58(3):804-10. <https://doi.org/10.1111/1556-4029.12085>
- [106] Evans SM, Baylis SM, Carabott RM, Jones MP, Lawson ZP, Marsh NM, et al. Focusing on the future: Survey results on the image capture of patterned cutaneous injuries. *Journal of Forensic and Legal Medicine*. 2014;24:7-11. <https://doi.org/10.1016/j.jflm.2014.02.007>
- [107] Fahrni S, Delémont O, Campana L, Grabherr S. An exploratory study toward the contribution of 3D surface scanning for association of an injury with its causing instrument. *International Journal of Legal Medicine*. 2019;133(4):1167-76. <https://doi.org/10.1007/s00414-018-1973-7>
- [108] Farrell W, Rawson R, Steffens R, Stephens D. Computerized axial tomography as an aid in bite mark analysis: A case report. *Journal of Forensic Sciences*. 1987;32(1):266-72. <https://doi.org/10.1520/JFS12354J>

- [109] Fearnhead RW. Facilities for forensic odontology. *Medicine, Science and the Law.* 1960;1(3):273-7. <https://doi.org/10.1177/002580246100100306>
- [110] Fellingham S, Kotze T, Nash J. Probabilities of dental characteristics. *Journal of Forensic Odontostomatology.* 1984;2(2):45-52.
- [111] Figgener L. Points of contact between quality issues and forensic aspects. *Journal of Forensic Odontology.* 1993;11(2):71-5.
- [112] Fischer H, Hammel P, Allasio D, Tunnessen WW. Picture of the month - Human bite marks. *Archives of Pediatrics & Adolescent Medicine.* 1996;150(4):429-30. <https://doi.org/10.1001/archpedi.1996.02170290095016>
- [113] Fisher-Owens SA, Lukefahr JL, Tate AR, Council Clinical Affairs Council S, et al. Oral and dental aspects of child abuse and neglect. *Pediatrics (Evanston).* 2017;140(2). <https://doi.org/10.1542/peds.2017-1487>
- [114] Franco A, Willems G, Souza PHC, Bekkering GE, Thevissen P. The uniqueness of the human dentition as forensic evidence: a systematic review on the technological methodology. *International Journal of Legal Medicine.* 2015;129(6):1277-83. <https://doi.org/10.1007/s00414-014-1109-7>
- [115] Franco A, Willems G, Souza PHC, Coucke W, Thevissen P. Three-dimensional validation of the impact of the quantity of teeth or tooth parts on the morphological difference between twin dentitions. *Journal of Forensic Odontostomatology.* 2016;34(1):27-37.
- [116] Franco A, Willems G, Souza PHC, Coucke W, Thevissen P. Uniqueness of the anterior dentition three-dimensionally assessed for forensic bitemark analysis. *Journal of Forensic and Legal Medicine.* 2017;46:58-65. <https://doi.org/10.1016/j.jflm.2017.01.005>
- [117] Franco A, Willems G, Souza PHC, Tanaka OM, Coucke W, Thevissen P. Three-dimensional analysis of the uniqueness of the anterior dentition in orthodontically treated patients and twins. *Forensic Science International.* 2017;273:80-7. <https://doi.org/10.1016/j.forsciint.2017.02.010>
- [118] Free E, Brown K. A bitemark and a fracture? *Journal of Forensic Odontology.* 1995;13(2):33-5.
- [119] Freeman A, Pretty I. Construct validity of bitemark assessments using the ABFO decision tree. American Academy of Forensic Sciences; Las Vegas, NV 2016.
- [120] Freeman A, Senn D, Arendt D. Seven hundred seventy eight bite marks: Analysis by anatomic location, victim and biter demographics, type of crime, and legal disposition. *Journal of Forensic Sciences.* 2005;50(6):178-8. <https://doi.org/10.1520/JFS2005178>
- [121] French GM, Johnson CF. Bites in the night - determining the etiology of bite marks on an infant. *Pediatric emergency care.* 1994;10(5):281-3. <https://doi.org/10.1097/00006565-199410000-00009>
- [122] Furness J. A new method for the identification of teeth marks in cases of assault and homicide. *British Dental Journal.* 1968;124(6):261-7.
- [123] Furness J. Teeth marks and their significance in cases of homicide. *Journal of the Forensic Science Society.* 1969;9:169-75. [https://doi.org/10.1016/S0015-7368\(69\)70531-X](https://doi.org/10.1016/S0015-7368(69)70531-X)
- [124] Furness J. Dental evidence in a case of rape. *Probe.* 1970;11:221-2.
- [125] Furness J. A general review of bitemark evidence. *American Journal of Forensic Medicine and Pathology.* 1981;2(1):49-52.
- [126] Giri S, Tripathi A, Patil R, Khanna V, Singh V. Analysis of bite marks in food stuffs by CBCT 3D-reconstruction. *Journal of Oral Biology and Craniofacial Research.* 2019;9(1):24-7. <https://doi.org/10.1016/j.jobcr.2018.08.006>

- [127]Glass RT, Andrews EE, Jones K. Bite mark evidence: A case report using accepted and new techniques. *Journal of Forensic Sciences*. 1980;25(3):638-45.
<https://doi.org/10.1520/JFS11268J>
- [128]Gold MH, Roenigk HH, Smith ES, Pierce LJ. Human bite marks - Differential diagnosis. *Clinical Pediatrics*. 1989;28(7):329-31. <https://doi.org/10.1177/000992288902800707>
- [129]Gold MH, Roenigk HH, Smith ES, Pierce LJ. Evaluation and treatment of patients with human bite marks. *The American Journal of Forensic Medicine and Pathology*. 1989;10(2):140-3. <https://doi.org/10.1097/00000433-198906000-00009>
- [130]Golden G. Use of alternative light source illumination in bite mark photography. *Journal of Forensic Sciences*. 1994;39(3):815-23. <https://doi.org/10.1520/JFS13659J>
- [131]Goodbody RA, Turner CH, Turner JL. The differentiation of toothed marks: Report of a case of special forensic interest. *Medicine, Science and the Law*. 1976;16(1):44-8.
<https://doi.org/10.1177/002580247601600113>
- [132]Gundelach A. Lawyers' reasoning and scientific proof: A cautionary tale in forensic odontology. *Journal of Forensic Odontology*. 1989;7(2):11-6.
- [133]Hale A. The admissibility of bite mark evidence. *Southern California Law Review*. 1978;51(2):309-34.
- [134]Harris C, Alcock A, Trefan L, Nuttall D, Evans ST, Maguire S, et al. Optimising the measurement of bruises in children across conventional and cross polarized images using segmentation analysis techniques in Image J, Photoshop and circle diameter measurements. *Journal of Forensic and Legal Medicine*. 2018;54:114-20.
<https://doi.org/10.1016/j.jflm.2017.12.020>
- [135]Harvey W, Butler O, Furness J, Laird R. The Biggar murder. *Journal of the Forensic Science Society*. 1968;8(4):157-219. [https://doi.org/10.1016/S0015-7368\(68\)70474-6](https://doi.org/10.1016/S0015-7368(68)70474-6)
- [136]Havel D. The role of photography in the presentation of bitemark evidence. *Journal of Biological Photography*. 1985;53(2):59-62.
- [137]Hein PM, Pannenbecker J, Schulz E. Bite injuries upon a newborn. *International Journal of Legal Medicine*. 1992;105(1):53-5. <https://doi.org/10.1007/BF01371240>
- [138]Hinchliff J. Forensic odontology, part 4. Human bite marks. *British Dental Journal*. 2011;210(8):363-8. <https://doi.org/10.1038/sj.bdj.2011.285>
- [139]Hodson JJ. Forensic odontology and its role in the problems of the police and forensic pathologist. *Medicine, Science and the Law*. 1970;10(4):247-51.
<https://doi.org/10.1177/002580247001000412>
- [140]Holt J. Identification from bitemarks. *Journal of the Forensic Science Society*. 1980;20(4):243-6. [https://doi.org/10.1016/S0015-7368\(80\)71350-6](https://doi.org/10.1016/S0015-7368(80)71350-6)
- [141]Holtkotter Hea. Effect of systematic dental shape modification in bitemarks. *Forensic Science International*. 2013;228:61-9. <https://doi.org/10.1016/j.forsciint.2013.02.024>
- [142]Hornor G. Physical abuse: Recognition and reporting. *Journal of Pediatric Health Care*. 2005;19(1):4-11. [https://doi.org/10.1016/S0891-5245\(04\)00173-7](https://doi.org/10.1016/S0891-5245(04)00173-7)
- [143]Hsu L, Power D, Upritchard J, Burton J, Friedlander R, Horswell J, et al. Amplification of Oral Streptococcal DNA from Human Incisors and Bite Marks. *Current Microbiology*. 2012;65(2):207-11. <https://doi.org/10.1007/s00284-012-0148-x>
- [144]Hunt AC. Ring-resolution of bruises--a little recognized phenomenon. *Journal of Forensic and Legal Medicine*. 2007;14(2):85-6. <https://doi.org/10.1016/j.jcfm.2006.01.012>

- [145] Hwang E, Matthews M, Browning JC. Purple-grey indurations with linear and arcuate scarring on a neonate. *Pediatric Dermatology*. 2016;33(2):223-4. <https://doi.org/10.1111/pde.12762>
- [146] Hyzer W, Krauss T. The Bite Mark Standard Reference Scale - ABFO No. 2. *Journal of Forensic Sciences*. 1988;33(2):498-506. <https://doi.org/10.1520/JFS11963J>
- [147] Irons F, Steuterman M, Brinkhous W. Two bitemarks on assailant. *American Journal of Forensic Medicine and Pathology*. 1983;4(2):177-80.
- [148] Ivanoff CS, Hottel TL. Comprehensive training in suspected child abuse and neglect for dental students: A hybrid curriculum. *Journal of Dental Education*. 2013;77(6):695-705. <https://doi.org/10.1002/j.0022-0337.2013.77.6.tb05521.x>
- [149] Jablonski NG. Skin: A Natural History. Berkeley, CA: University of CA Press; 2006.
- [150] Jakobsen J, Holmen L, Fredebo L, Sejrsen B. Scanning electron microscopy, a useful tool in forensic dental work. *Journal of Forensic Odontology*. 1995;13(2):36-40.
- [151] Jakobsen JR, Keiser-Nielsen S. Bite mark lesions in human skin. *Forensic Science International*. 1981;18:41-55. [https://doi.org/10.1016/0379-0738\(81\)90138-9](https://doi.org/10.1016/0379-0738(81)90138-9)
- [152] James H, Cirillo GN. Bite mark or bottle top? *Journal of Forensic Sciences*. 2004;49(1):119-21. <https://doi.org/10.1520/JFS2003154>
- [153] Jessee S. Recognition of bite marks in child abuse cases. *Pediatric Dentistry*. 1994;16(5):336-9.
- [154] Johansen RJ, Michael Bowers C. Positive dental identification using tooth anatomy and digital superimposition. *Journal of Forensic Sciences*. 2013;58(2):534-6. <https://doi.org/10.1111/1556-4029.12040>
- [155] Johanson GR, R. Bite marks just as revealing as fingerprints. *Svenska Polis*. 1975(8-9):26-9.
- [156] Johnson L, Blinka D, VanScotter-Asbach P. Quantification of the individual characteristics of the human dentition: Methodology. *Journal of Forensic Identification*. 2008;58(4):409-18.
- [157] Johnson L, Radmer T, Visotcky A, Ahn K, Blinka D. A methodology for three-dimensional quantification of anterior tooth width. *Journal of Forensic Identification*. 2011;61(3):296-310.
- [158] Johnson L, Radmer T, Wirtz T, Pajewski N, Cadle D, Brozek J, et al. Quantification of the individual characteristics of the human dentition. *Journal of Forensic Identification*. 2009;59(6):609-25.
- [159] Jonason C, Frykholm K, Frykholm A. Three-dimensional measurement of tooth impression of criminological investigation. *International Journal of Forensic Dentistry*. 1974;2(6):70-8.
- [160] Jovanovic N, Petrovic B, Kojic S, Sipovac M, Markovic D, Stefanovic S, et al. Primary teeth bite marks analysis on various materials: A possible tool in children health risk analysis and safety assessment. *International Journal of Environmental Research and Public Health*. 2019;16(13):2434. <https://doi.org/10.3390/ijerph16132434>
- [161] Kanetake J, Sakaue K, Sakai J, Takahashi S, Kanawaku Y, Hashiyada M, et al. Two small linear marks on a mandible: Collaborative networking between forensic experts. *Legal Medicine (Tokyo, Japan)*. 2007;10(1):46-9. <https://doi.org/10.1016/j.legalmed.2007.06.003>
- [162] Karazulas C. The presentation of bite mark evidence resulting in the acquittal of a man after serving seven years in prison for murder. *Journal of Forensic Sciences*. 1984;29(1):355-8. <https://doi.org/10.1520/JFS11674J>

- [163] Karazulas C, Palmbach T. Digital enhancement of sub-quality bite mark photographs. *Journal of Forensic Sciences*. 2001;46(4):954-8. <https://doi.org/10.1520/JFS15076J>
- [164] Kassin SM. Why confessions trump innocence. *The American Psychologist*. 2012;67(6):431-45. <https://doi.org/10.1037/a0028212>
- [165] Katz JO, Cottone JA. The present direction of research in forensic odontology. *Journal of Forensic Sciences*. 1988;33(6):1319-27. <https://doi.org/10.1520/JFS12575J>
- [166] Kemp A, Maguire SA, Sibert J, Frost R, Adams C, Mann M. Can we identify abusive bites on children? *Archives of Disease in Childhood*. 2006;91(11):951. <https://doi.org/10.1136/adc.2006.095463>
- [167] Kennedy DM, Stanton J-AL, Garcia JA, Mason C, Rand CJ, Kieser JA, et al. Microbial analysis of bite marks by sequence comparison of Streptococcal DNA. *PloS one*. 2012;7(12):e51757-e. <https://doi.org/10.1371/journal.pone.0051757>
- [168] Kennedy SA, Stoll LE, Lauder AS. Human and other mammalian bite injuries of the hand: evaluation and management. *Journal of the American Academy of Orthopaedic Surgeons*. 2015;23(1):47-57. <https://doi.org/10.5435/JAAOS-23-01-47>
- [169] Kerr N. Apple bitemark identification of a suspect. *International Journal of Forensic Dentistry*. 1977;4:20-3.
- [170] Kieser JA. Weighing bitemark evidence: A postmodern perspective. *Forensic Science, Medicine, and Pathology*. 2005;1(2):75-80. <https://doi.org/10.1385/FSMP:1:2:075>
- [171] Kieser JA, Bernal V, Neil Waddell J, Raju S. The uniqueness of the human anterior dentition: A geometric morphometric analysis. *Journal of Forensic Sciences*. 2007;52(3):671-7. <https://doi.org/10.1111/j.1556-4029.2007.00403.x>
- [172] Kittelson J, Kieser JA, Buckingham D, Herbison G. Weighing evidence: Quantitative measures of the importance of bitemark evidence. *Journal of Forensic Odontology*. 2002;20(2):31-7.
- [173] Kottner S, Ebert LC, Ampanozi G, Braun M, Thali MJ, Gascho D. VirtoScan - a mobile, low-cost photogrammetry setup for fast post-mortem 3D full-body documentations in x-ray computed tomography and autopsy suites. *Forensic Science, Medicine, and Pathology*. 2017;13(1):34-43. <https://doi.org/10.1007/s12024-016-9837-2>
- [174] Kouble R, Craig G. Comparisons between direct and indirect techniques for bite mark analysis. *Journal of Dental Research*. 2001;80(4):1179. <https://doi.org/10.1177/00220345010800040101>
- [175] Kouble R, Craig G. A comparison between direct and indirect methods available for human bite mark analysis. *Journal of Forensic Sciences*. 2004;49(1):1-8. <https://doi.org/10.1520/JFS2001252>
- [176] Kouble R, Craig G. A survey of the incidence of missing anterior teeth: Potential value in bite mark analysis. *Science & Justice*. 2007;47:19-23. <https://doi.org/10.1016/j.scijus.2006.05.001>
- [177] Krauss T. Photographic techniques of concern in metric bite mark analysis. *Journal of Forensic Sciences*. 1984;29(2):633-8. <https://doi.org/10.1520/JFS11716J>
- [178] Krauss TC, Warlen SC. The forensic science use of reflective ultraviolet photography. *Journal of Forensic Sciences*. 1985;30(1):262-8. <https://doi.org/10.1520/JFS10991J>
- [179] Laird WRE. Watershed case. *British Dental Journal*. 2011;211(1). <https://doi.org/10.1038/sj.bdj.2011.532>

- [180] Lasser AJ, Warnick AJ, Berman GM. Three-dimensional comparative analysis of bitemarks. *Journal of Forensic Sciences*. 2009;54(3):658-61.
<https://doi.org/10.1111/j.1556-4029.2009.01009.x>
- [181] Lawson Z, Nuttall D, Young S, Evans S, Maguire S, Dunstan F, et al. Which is the preferred image modality for paediatricians when assessing photographs of bruises in children? *International Journal of Legal Medicine*. 2011;125(6):825-30.
<https://doi.org/10.1007/s00414-010-0532-7>
- [182] Layton J. Identification from a bitemark in cheese. *Journal of the Forensic Science Society*. 1966;6:76-80. [https://doi.org/10.1016/S0015-7368\(66\)70312-0](https://doi.org/10.1016/S0015-7368(66)70312-0)
- [183] Lessig R, Wenzel V, Weber M. Bite mark analysis in forensic routine case work. *EXCLI Journal*. 2006;5:93-102.
- [184] Leung A. Pseudo-abusive human bitemarks in a Chinese infant. *Injury*. 1985;16(7):503-4.
[https://doi.org/10.1016/0020-1383\(85\)90182-2](https://doi.org/10.1016/0020-1383(85)90182-2)
- [185] Levine L. Bite mark evidence. *Dental Clinics of North America*. 1977;21(1):145-58.
[https://doi.org/10.1016/S0011-8532\(22\)00897-7](https://doi.org/10.1016/S0011-8532(22)00897-7)
- [186] Levine L, Beaghler R. Forensic odontology - a routine case and commentary. *NY State Dental Journal*. 1970;36(9):539-42.
- [187] Lewis C, Marroquin LA. Effects of skin elasticity on bite mark distortion. *Forensic Science International*. 2015;257:293-6. <https://doi.org/10.1016/j.forsciint.2015.07.048>
- [188] Ligthelm A, Coetzee W, van Niekerk P. The identification of bitemarks using the reflex microscope. *Journal of Forensic Odontology*. 1987;5(1):1-8.
- [189] Ligthelm A, de Wet F. Registration of bitemarks: A preliminary report. *Journal of Forensic Odontostomatology*. 1983;1(1):19-26.
- [190] Ligthelm A, van Niekerk P. Comparative review of bitemark cases from Pretoria, South Africa. *Journal of Forensic Odontostomatology*. 1994;12(2):23-9.
- [191] Limmen RM, Ceelen M, Reijnders UJL, Joris Stomp S, de Keijzer KC, Das K. Enhancing the Visibility of Injuries with Narrow-Banded Beams of Light within the Visible Light Spectrum. *Journal of Forensic Sciences*. 2013;58(2):518-22. <https://doi.org/10.1111/1556-4029.12042>
- [192] Lin AC-Y, Hsieh H-M, Tsai L-C, Linacre A, Lee JC-I. Forensic applications of infrared imaging for the detection and recording of latent evidence. *Journal of Forensic Sciences*. 2007;52(5):1148-50. <https://doi.org/10.1111/j.1556-4029.2007.00502.x>
- [193] Lombardi M, Canter J, Patrick PA, Altman R. Is fluorescence under an alternate light source sufficient to accurately diagnose subclinical bruising? *Journal of Forensic Sciences*. 2015;60(2):444-9. <https://doi.org/10.1111/1556-4029.12698>
- [194] Lopez TT, Biazovic MGH, Michel-Crosato E. National survey of the incidence of missing anterior teeth: Potential use in bite mark analysis in the Brazilian context. *Science & Justice*. 2009;50(3):119-22. <https://doi.org/10.1016/j.scijus.2009.12.001>
- [195] Lucas T, Henneberg M. Are human faces unique? A metric approach to finding single individuals without duplicates in large samples. *Forensic Science International*. 2015;257:514.e1-.e6. <https://doi.org/10.1016/j.forsciint.2015.09.003>
- [196] Luntz L, Luntz P. Case in forensic odontology - Bite-mark in a multiple homicide. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics*. 1973;36(1):72-8. [https://doi.org/10.1016/0030-4220\(73\)90268-5](https://doi.org/10.1016/0030-4220(73)90268-5)
- [197] MacDonald D. Bite mark recognition and interpretation. *Journal of the Forensic Science Society*. 1974;14(3):229-33. [https://doi.org/10.1016/S0015-7368\(74\)70907-0](https://doi.org/10.1016/S0015-7368(74)70907-0)

- [198] MacDonald D, MacFarlane T. Forensic odontology. Glasgow Dental Journal. 1972;3(1):16-9.
- [199] MacDonald DG, Laird WRE. Bitemarks in a murder case. International Journal of Forensic Dentistry. 1976;3(10):26-30.
- [200] MacFarlane T, MacDonald D, Sutherland D. Statistical problems in dental identification. Journal of the Forensic Science Society. 1974;14(3):247-52. [https://doi.org/10.1016/S0015-7368\(74\)70911-2](https://doi.org/10.1016/S0015-7368(74)70911-2)
- [201] Madi HA, Swaid S, Al-Amad S. Assessment of the uniqueness of human dentition. Journal of Forensic Odontostomatology. 2013;31(1):30-9.
- [202] Mailis N. Bitemarks in forensic dental practice: The Russian experience. Journal of Forensic Odontology. 1993;11(1):31-3.
- [203] Maji A, Khaitan T, Sinha R, Sarkar S, Verma P, Shukla AK. A novel computer-assisted method of bite mark analysis for gender determination. Journal of Environmental and Public Health. 2018;2018:1-4. <https://doi.org/10.1155/2018/7130876>
- [204] Maloth S, Ganapathy, K. Comparison between five commonly used two-dimensional methods of bite mark overlay reproduction from the dental study casts. Indian Journal of Dental Research. 2011;22(3):499-505.
- [205] Marques J, Musse J, Caetano C, Corte-Real F, Corte-Real AT. Analysis of bite marks in foodstuffs by computed tomography (cone beam CT) - 3D reconstruction. Journal of Forensic Odontostomatology. 2013;31(1):1-7.
- [206] Marshall W. Bitemarks in apples - forensic aspects. Criminology. 1974;9(32):21-34.
- [207] Martin-de las Heras S, Valenzuela A. Effectiveness of comparison overlays generated with DentalPrint(c) software in bite mark analysis. Journal of Forensic Sciences. 2007;52(1):151-6. <https://doi.org/10.1111/j.1556-4029.2006.00321.x>
- [208] Martin-de las Heras S, Valenzuela A, Ogayar C, Valverde A, Torres J. Computer-based production of comparison overlays from 3D-scanned dental casts for bite mark analysis. Journal of Forensic Sciences. 2005;50(1):JFS2004226-7. <https://doi.org/10.1520/JFS2004226>
- [209] Martin-de-las-Heras S, Tafur D. Comparison of simulated human dermal bitemarks possessing three-dimensional attributes to suspected biters using a proprietary three-dimensional comparison. Forensic Science International. 2009;190(1):33-7. <https://doi.org/10.1016/j.forsciint.2009.05.007>
- [210] Martin-de-las-Heras S, Tafur D. Validity of a dichotomous expert response in bitemark analysis using 3-D technology. Science & Justice. 2011;51(1):24-7. <https://doi.org/10.1016/j.scijus.2010.07.003>
- [211] Martin-de-las-Heras S, Tafur D, Bravo M. A quantitative method for comparing human dentition with tooth marks using three-dimensional technology and geometric morphometric analysis. Acta Odontologica Scandinavica. 2014;72(5):331-6. <https://doi.org/10.3109/00016357.2013.826383>
- [212] Martin-de-las-Heras S, Valenzuela A, de Dios Luna J, Bravo M. The utility of dental patterns in forensic dentistry. Forensic Science International. 2009;195(1):166.e1-e5. <https://doi.org/10.1016/j.forsciint.2009.11.004>
- [213] McCullough D. Rapid comparison of bitemarks by xerography. American Journal of Forensic Medicine and Pathology. 1983;4(4):355-8.
- [214] McGivney J, Barsley R. A method for mathematically documenting bitemarks. Journal of Forensic Sciences. 1999;44(1):185-6. <https://doi.org/10.1520/JFS14431J>

- [215] McKenna C, Haron M, Taylor J. Evaluation of a bite mark using clear acrylic replicas of the suspect's dentition - a case report. *Journal of Forensic Odontology*. 1999;17:40-3.
- [216] McKinstry R. Resin dental casts as an aid in bite mark identification. *Journal of Forensic Sciences*. 1995;40(2):300-2. <https://doi.org/10.1520/JFS15362J>
- [217] McNamee A, Sweet D. Adherence of forensic odontologists to the ABFO guidelines for victim evidence collection. *Journal of Forensic Sciences*. 2003;48(2):382-85. <https://doi.org/10.1520/JFS2002285>
- [218] McNamee A, Sweet D, Pretty I. A comparative reliability analysis of computer-generated bitemark overlays. *Journal of Forensic Sciences*. 2005;50(2):400-405. <https://doi.org/10.1520/JFS2004206>
- [219] Metcalf RD. Yet another method for marking incisal edges of teeth for bitemark analysis. *Journal of Forensic Sciences*. 2008;53(2):426-9. <https://doi.org/10.1111/j.1556-4029.2008.00683.x>
- [220] Miller RG, Bush PJ, Dorion RBJ, Bush MA. Uniqueness of the dentition as impressed in human skin: A cadaver model. *Journal of Forensic Sciences*. 2009;54(4):909-14. <https://doi.org/10.1111/j.1556-4029.2009.01076.x>
- [221] Millington P. Histological studies of skin carrying bite marks. *Journal of the Forensic Science Society*. 1974;14(3):239-40. [https://doi.org/10.1016/S0015-7368\(74\)70909-4](https://doi.org/10.1016/S0015-7368(74)70909-4)
- [222] Mills P. An unusual case of bitemark identification. *International Journal of Forensic Dentistry*. 1976;3:38-9.
- [223] Mimasaka S, Oshima T, Ohtani M. Visualization of old bruises in children: Use of violet light to record long-term bruises. *Forensic Science International*. 2018;282:74-8. <https://doi.org/10.1016/j.forsciint.2017.11.015>
- [224] Modesti LDM, Vieira GM, Galvão MF, Amorim RFB. Human identification by oral prosthesis analysis with probability rates higher than DNA analysis. *Journal of Forensic Sciences*. 2014;59(3):825-9. <https://doi.org/10.1111/1556-4029.12404>
- [225] Molina A, Martin-de-las-Heras S. Accuracy of 3D scanners in tooth mark analysis. *Journal of Forensic Sciences*. 2015;60(s1):S222-S6. <https://doi.org/10.1111/1556-4029.12598>
- [226] Morrison H. Psychiatric observations and interpretation of bite mark evidence in multiple murders. *Journal of Forensic Sciences*. 1979;24(2):492-502. <https://doi.org/10.1520/JFS10858J>
- [227] Murmann DC, Brumit PC, Schrader BA, Senn DR. A comparison of animal jaws and bite mark patterns. *Journal of Forensic Sciences*. 2006;51(4):846-60. <https://doi.org/10.1111/j.1556-4029.2006.00166.x>
- [228] Murrie DC, Boccaccini MT, Guarnera LA, Rufino KA. Are forensic experts biased by the side that retained them? *Psychological Science*. 2013;24(10):1889-97. <https://doi.org/10.1177/0956797613481812>
- [229] Naether S, Buck U, Campana L, Breitbeck R, Thali M. The examination and identification of bite marks in foods using 3D scanning and 3D comparison methods. *International Journal of Legal Medicine*. 2012;126(1):89-95. <https://doi.org/10.1007/s00414-011-0580-7>
- [230] Nambiar P, Bridges T, Brown K. Quantitative forensic evaluation of bite marks with the aid of a shape analysis computer program: Part 1: the development of "SCIP" and the similarity index. *Journal of Forensic Odontostomatology*. 1995;13(2):18-25.
- [231] Nambiar P, Bridges T, Brown K. Quantitative forensic evaluation of bite marks with the aid of a shape analysis computer program: Part 2: "SCIP" and bite marks in skin and foodstuffs. *Journal of Forensic Odontostomatology*. 1995;13(2):26-32.

- [232]Naru AS, Dykes E. The use of a digital imaging technique to aid bite mark analysis. *Science & Justice*. 1996;36(1):47-50. [https://doi.org/10.1016/S1355-0306\(96\)72554-6](https://doi.org/10.1016/S1355-0306(96)72554-6)
- [233]Naru AS, Dykes E. Digital image cross-correlation technique for bite mark investigations. *Science & Justice*. 1997;37(4):251-8. [https://doi.org/10.1016/S1355-0306\(97\)72199-3](https://doi.org/10.1016/S1355-0306(97)72199-3)
- [234]National Commission on Forensic Science. Recommendation to the Attorney General: Technical Merit Evaluation of Forensic Science Method and Practices. 2016.
- [235]National Research Council, Committee on Identifying the Needs of the Forensic Science Community. Strengthening Forensic Science in the United States: A Path Forward. National Academy of Sciences; 2009. Contract No.: 228091.
- [236]Nuckles D, Herschaft E, Whatmough L. Forensic odontology in solving crimes: Dental techniques and bite mark evidence. *General Dentistry*. 1994;42(3):210-4.
- [237]Nuzzolese E, Lepore MM, Cukovic-Bagic I, Montagna I, Di Vella G. Forensic sciences and forensic odontology: issues for dental hygienists and therapists. *International Dental Journal*. 2008;58(6):342-8. <https://doi.org/10.1111/j.1875-595X.2008.tb00355.x>
- [238]Nuzzolese E, Lepore MM, Montagna F, Marcario V, De Rosa S, Solarino B, et al. Child abuse and dental neglect: the dental team's role in identification and prevention. *International Journal of Dental Hygiene*. 2009;7(2):96-101. <https://doi.org/10.1111/j.1601-5037.2008.00324.x>
- [239]Obafunwa JO, Ogunbanjo VO, Ogunbanjo OB, Soyemi SS, Faduyile FA. Forensic odontological observations in the victims of DANA air crash. *The Pan African Medical Journal*. 2015;20:96. <https://doi.org/10.11604/pamj.2015.20.96.5360>
- [240]Ohta J, Konishi-Kato Y, Minegishi S, Sakurada K. Oral bacterial DNA-based discrimination of human and canine saliva for the analysis of indistinct bite marks. *Forensic Science International: Genetics*. 2021;54:102566. <https://doi.org/10.1016/j.fsigen.2021.102566>
- [241]Olds K, Byard RW, Winskog C, Langlois NEI. How useful are ultraviolet, infrared, and narrow band light sources for enhancing occult bruises in cases of assault? *Forensic Science, Medicine, and Pathology*. 2016;12(2):209-10. <https://doi.org/10.1007/s12024-016-9756-2>
- [242]Oliva JD, Beety VE. Regulating bite mark evidence: Lesbian vampires and other myths of forensic odontology *Washington Law Review*. 2019;94(4):1769-829.
- [243]Oliver WR. Effect of history and context on forensic pathologist interpretation of photographs of patterned injury of the skin. *Journal of Forensic Sciences*. 2017;62(6):1500-5. <https://doi.org/10.1111/1556-4029.13449>
- [244]Oliver WR, Fang X. Forensic pathologist consensus in the interpretation of photographs of patterned injuries of the skin. *Journal of Forensic Sciences*. 2016;61(4):972-8. <https://doi.org/10.1111/1556-4029.13092>
- [245]Osborne N, Woods S, Kieser JA, Zajac R. Does contextual information bias bitemark comparisons? *Science & Justice*. 2014;54(4):267-73. <https://doi.org/10.1016/j.scijus.2013.12.005>
- [246]Page M, Taylor J, Blenkin M. Reality bites—A ten-year retrospective analysis of bitemark casework in Australia. *Forensic Science International*. 2011;216(1):82-7. <https://doi.org/10.1016/j.forsciint.2011.08.023>
- [247]Page M, Taylor J, Blenkin M. Forensic identification science evidence since Daubert: Part II-judicial reasoning in decisions to exclude forensic identification evidence on grounds of

- reliability. *Journal of Forensic Sciences*. 2011;56(4):913-7. <https://doi.org/10.1111/j.1556-4029.2011.01776.x>
- [248] Page M, Taylor J, Blenkin M. Context effects and observer bias—Implications for forensic odontology. *Journal of Forensic Sciences*. 2012;57(1):108-12. <https://doi.org/10.1111/j.1556-4029.2006.00166.x>
- [249] Page M, Taylor J, Blenkin M. Expert interpretation of bitemark injuries—A contemporary qualitative study. *Journal of Forensic Sciences*. 2013;58(3):664-72. <https://doi.org/10.1111/1556-4029.12108>
- [250] Pajnigara NG, Balpande AS, Motwani MB, Choudhary A, Thakur S, Pajnigara NG. A comparative study of three commonly used two-dimensional overlay generation methods in bite mark analysis. *Journal of Oral and Maxillofacial Pathology*. 2017;21(3):442-6. https://doi.org/10.4103/jomfp.JOMFP_155_15
- [251] Pallam NK, Boaz K, Natrajan S, Raj M, Manaktala N, Lewis AJ. Computer-based method of bite mark analysis: A benchmark in forensic dentistry? *Journal of Forensic Dental Sciences*. 2016;8(1):32-9.
- [252] Pandeshwar PMDS, Das RMDS. Role of oral fluids in DNA investigations. *Journal of Forensic and Legal Medicine*. 2013;22:45-50. <https://doi.org/10.1016/j.jflm.2013.12.007>
- [253] Park J. Offender characteristics and behaviors in nonsexual child maltreatment. *Journal of Forensic Sciences*. 2020;65(3):860-4. <https://doi.org/10.1111/1556-4029.14270>
- [254] Pfeifer CM, Gass A, Klein-Unseld R, Wiegand P. DNA persistence of bite marks on food and its relevance for STR typing. *International Journal of Legal Medicine*. 2017;131(5):1221-8. <https://doi.org/10.1007/s00414-017-1627-1>
- [255] Pierce LJ, Strickland DJ, Smith ES. The case of Ohio v Robinson - An 1870 bite mark case. *The American Journal of Forensic Medicine and Pathology*. 1990;11(2):171-7. <https://doi.org/10.1097/00000433-199006000-00014>
- [256] Poor VS, Lukacs D, Nagy T, Racz E, Sipos K. The rate of RNA degradation in human dental pulp reveals post-mortem interval. *International Journal of Legal Medicine*. 2016;130(3):615-9. <https://doi.org/10.1007/s00414-015-1295-y>
- [257] President's Council of Advisors on Science and Technology (U.S.), Executive Office of the President. Report to the President, Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods. Washington, D.C.: Executive Office of the President, President's Council of Advisors on Science and Technology; 2016. Available at: https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf
- [258] Pretty I. A web-based survey of odontologist's opinions concerning bite mark analyses. *Journal of Forensic Sciences*. 2003;48(5):1117-20. <https://doi.org/10.1520/JFS2003017>
- [259] Pretty I. Forensic Dentistry: 2. Bitemarks and bite injuries. *Dental Update*. 2008;35(1):48-61.
- [260] Pretty I. Reliability of bitemark evidence. In: Dorion R, editor. *Bitemark Evidence: A Color Atlas and Text*. Second Edition ed. Boca Raton, FL: CRC Press; 2011. p. 587-99.
- [261] Pretty I, Sweet D. Anatomical location of bitemarks and associated findings in 101 cases from the United States. *Journal of Forensic Sciences*. 2000;45(4):812-4. <https://doi.org/10.1520/JFS14775J>
- [262] Pretty I, Sweet D. Digital bite mark overlays - An analysis of effectiveness. *Journal of Forensic Sciences*. 2001;46(6):1385-91. <https://doi.org/10.1520/JFS15160J>

- [263] Pretty I, Sweet D. Adherence of forensic odontologists to the ABFO bite mark guidelines for suspect evidence collection. *Journal of Forensic Sciences*. 2001;46(5):1152-8.
<https://doi.org/10.1520/JFS15114J>
- [264] Pretty I, Sweet D. The scientific basis for human bitemark analysis - A critical review. *Science & Justice*. 2001;41:85-92. [https://doi.org/10.1016/S1355-0306\(01\)71859-X](https://doi.org/10.1016/S1355-0306(01)71859-X)
- [265] Pretty I, Sweet D. The judicial view of bitemarks within the United States criminal justice system. *Journal of Forensic Odontology*. 2006;24(1).
- [266] Pretty IA. The barriers to achieving an evidence base for bitemark analysis. *Forensic Science International*. 2006;159(1):S110-S20.
<https://doi.org/10.1016/j.forsciint.2006.02.033>
- [267] Pretty IA. Development and Validation of a Human Bitemark Severity and Significance Scale. *Journal of Forensic Sciences*. 2007;52(3):687-91. <https://doi.org/10.1111/j.1556-4029.2007.00412.x>
- [268] Pretty IA, Hall RC. Forensic dentistry and human bite marks: issues for doctors. *Hospital Medicine (London, England : 1998)*. 2002;63(8):476-82.
<https://doi.org/10.12968/hosp.2002.63.8.1968>
- [269] Pretty IA, Sweet D. A paradigm shift in the analysis of bitemarks. *Forensic Science International*. 2010;201(1):38-44. <https://doi.org/10.1016/j.forsciint.2010.04.004>
- [270] Pretty IA, Turnbull MD. Lack of dental uniqueness between two bite mark suspects. *Journal of Forensic Sciences*. 2001;46(6):1487-91. <https://doi.org/10.1520/JFS15177J>
- [271] Prinz JF, Lucas PW. 'The first bite of the cherry' intra-oral manipulation prior to the first bite in humans. *Journal of Oral Rehabilitation*. 2001;28(7):614-7.
<https://doi.org/10.1046/j.1365-2842.2001.00732.x>
- [272] Radford G, Kieser JA, Bernal V, Waddell JN, Forrest A. Biomechanical approach to human bitemark reconstruction. *Journal of Forensic Odontostomatology*. 2009;27(1):33-6.
- [273] Radmer T, Johnson L. The correlation of dental arch width and ethnicity. *Journal of Forensic Identification*. 2009;59(3):268-74.
- [274] Radmer T, Johnson L, Yang M, Wirtz T. The quantification of tooth displacement. *Journal of Forensic Identification*. 2010;60(1):4-18.
- [275] Rahimi M, Heng NCK, Kieser JA, Tompkins GR. Genotypic comparison of bacteria recovered from human bite marks and teeth using arbitrarily primed PCR. *Journal of Applied Microbiology*. 2005;99(5):1265-70. <https://doi.org/10.1111/j.1365-2672.2005.02703.x>
- [276] Raina P, Kulkarni N, Shah R. A comparative study of sagittal dental relationship using digital method of bite mark evaluation. *Journal of Forensic Dental Sciences*. 2019;11(3):125-32.
- [277] Ramos B, Torres JC, Molina A, Martin-de-las-Heras S. A new method to geometrically represent bite marks in human skin for comparison with the suspected dentition. *Australian Journal of Forensic Sciences*. 2019;51(2):220-30.
<https://doi.org/10.1080/00450618.2017.1356869>
- [278] Ranamukhaarachchi SA, Lehnert S, Ranamukhaarachchi SL, Sprenger L, Schneider T, Mansoor I, et al. A micromechanical comparison of human and porcine skin before and after preservation by freezing for medical device development. *Scientific Reports*. 2016;6(1):32074. <https://doi.org/10.1038/srep32074>
- [279] Randerson J. Bite-mark evidence can leave a false impression. *New Scientist*. 2004;181(2438):6-7.

- [280] Rao V, Souviron R. Dusting and lifting the bite print: A new technique. *Journal of Forensic Sciences*. 1984;29(1):326-30. <https://doi.org/10.1520/JFS11668J>
- [281] Rawson R. Solarisation as an aid to bite mark analysis. *International Journal of Forensic Dentistry*. 1976;3(10):31-3.
- [282] Rawson R. Production of bite mark overlays from CAT scans and model positioning apparatus. *Proceedings of the American Academy of Forensic Sciences*. 1990:112.
- [283] Rawson R, Bell A, Kinard J. Radiographic interpretation of contrast-media-enhanced bite marks. *Journal of Forensic Sciences*. 1979;24(4):898-901.
<https://doi.org/10.1520/JFS10921J>
- [284] Rawson R, Brooks S. Classification of human breast morphology important to bitemark investigation. *American Journal of Forensic Medicine and Pathology*. 1984;5(1):19-24.
- [285] Rawson R, Ommen R, Kinard G, Johnson J, Yfantis A. Statistical evidence for the individuality of the human dentition. *Journal of Forensic Sciences*. 1984;29(1):245-53.
<https://doi.org/10.1520/JFS11656J>
- [286] Rawson R, Starich G, Rawson R. Scanning electron microscopic analysis of skin resolution as an aid in identifying trauma in forensic investigations. *Journal of Forensic Sciences*. 2000;45(5):1023-7. <https://doi.org/10.1520/JFS14825J>
- [287] Rawson R, Vale G, Herschaft E, Sperber N, Dowell S. Analysis of photographic distortion in bite marks: A report of the Bite Mark Guidelines Committee. *Journal of Forensic Sciences*. 1986;31(4):1261-8. <https://doi.org/10.1520/JFS11904J>
- [288] Rawson R, Vale G, Sperber N, Herschaft E, Yfantis A. Reliability of the scoring system of the American Board of Forensic Odontology for human bite marks. *Journal of Forensic Sciences*. 1986;31(4):1235-60. <https://doi.org/10.1520/JFS11903J>
- [289] Rawson RD, Koot A, Martin C, Jackson J, Novosel S, Richardson A, Bender T. Incidence of bite marks in a selected juvenile population: A preliminary report. *Journal of Forensic Sciences*. 1984;29(1):254-9. <https://doi.org/10.1520/JFS11657J>
- [290] Reardon S. Faulty forensic science under fire. *Nature (London)*. 2014;506(7486):13-4.
<https://doi.org/10.1038/506013a>
- [291] Reesu GV, Brown NL. Inconsistency in opinions of forensic odontologists when considering bite mark evidence. *Forensic Science International*. 2016;266:263-70.
<https://doi.org/10.1016/j.forsciint.2016.06.002>
- [292] Reinprecht S, van Staden PJ, Jordaan J, Bernitz H. An analysis of dental intercanine distance for use in court cases involving bite marks. *International Journal of Legal Medicine*. 2017;131(2):459-64. <https://doi.org/10.1007/s00414-016-1510-5>
- [293] Ribéreau-Gayon A, Rando C, Schulier Y, Chapenoire S, Crema ER, Claes J, et al. Extensive unusual lesions on a large number of immersed human victims found to be from cookiecutter sharks (*Isistius spp.*): an examination of the Yemenia plane crash. *International Journal of Legal Medicine*. 2017;131(2):423-32.
<https://doi.org/10.1007/s00414-016-1449-6>
- [294] Rivera-Mendoza F, Martín-de-las-Heras S, Navarro-Cáceres P, Fonseca GM. Bite mark analysis in foodstuffs and inanimate objects and the underlying proofs for validity and judicial acceptance. *Journal of Forensic Sciences*. 2018;63(2):449-59.
<https://doi.org/10.1111/1556-4029.13586>
- [295] Robinson E, Wentzel J. Toneline bite mark photography. *Journal of Forensic Sciences*. 1992;37(1):195-207. <https://doi.org/10.1520/JFS13227J>

- [296] Rothschild MA, Schneider V. On the temporal onset of postmortem animal scavenging: “Motivation” of the animal. *Forensic Science International*. 1997;89(1):57-64.
[https://doi.org/10.1016/S0379-0738\(97\)00112-6](https://doi.org/10.1016/S0379-0738(97)00112-6)
- [297] Rothwell B, Thien A. Analysis of distortion in preserved bite mark skin. *Journal of Forensic Sciences*. 2001;46(3):573-6. <https://doi.org/10.1520/JFS15004J>
- [298] Rothwell BR. Bite marks in forensic dentistry - A review of legal, scientific issues *The Journal of the American Dental Association*. 1995;126(2):223-32.
<https://doi.org/10.14219/jada.archive.1995.0149>
- [299] Ruddick R. A technique for recording bite marks for forensic studies. *Medical and Biological Illustration*. 1974;24(3):128-9.
- [300] Rudland M. The dimensional stability of bite marks in apples after long-term storage in a fixative. *Medicine, Science and the Law*. 1982;22(1):47-50.
<https://doi.org/10.1177/002580248202200108>
- [301] Saks MJ. Forensic identification: From a faith-based “science” to a scientific science. *Forensic Science International*. 2010;201(1-3):14-7.
<https://doi.org/10.1016/j.forsciint.2010.03.014>
- [302] Saks MJ, Albright T, Bohan TL, Bierer BE, Bowers C, Bush MA, et al. Forensic bitemark identification: Weak foundations, exaggerated claims. *Journal of Law and the Biosciences*. 2016;3(3):538-75. <https://doi.org/10.1093/jlb/lsw045>
- [303] Saks MJ, Koehler JJ. The coming paradigm shift in forensic identification science. *Science*. 2005;309(5736):892-5. <https://doi.org/10.1126/science.1111565>
- [304] Sansare K. Forensic odontology, historical perspective. *Indian Journal of Dental Research*. 1995;6(2):55-7.
- [305] Sansoni G, Cattaneo C, Trebeschi M, Gibelli D, Porta D, Picozzi M. Feasibility of contactless 3D optical measurement for the analysis of bone and soft tissue lesions: New technologies and perspectives in forensic sciences. *Journal of Forensic Sciences*. 2009;54(3):540-5. <https://doi.org/10.1111/j.1556-4029.2009.01041.x>
- [306] Santoro V, Lozito P, De Donno A, Introna F. Experimental study of bite mark injuries by digital analysis. *Journal of Forensic Sciences*. 2011;56(1):224-8.
<https://doi.org/10.1111/j.1556-4029.2010.01519.x>
- [307] Senn D. The good, the bad, and the ugly: A critical look at the forensic value of bite mark analysis. *Forensic Odontology News*. 2007;24(6):1, 6-9.
- [308] Senn D. Presentation on Forensic Odontology: Bite Marks to the National Academies: Committee on Identifying the Needs of the Forensic Science Community. Washington, D.C.2007.
- [309] Senn D. History of bitemark evidence. In: Dorion R, editor. *Bitemark Evidence: A Color Atlas and Text*. 2nd ed. Boca Raton, FL: CRC Press; 2011. p. 3-22.
<https://doi.org/10.1201/b10520>
- [310] Sheasby DR, MacDonald DG. A forensic classification of distortion in human bite marks. *Forensic Science International*. 2001;122:75-8. [https://doi.org/10.1016/S0379-0738\(01\)00433-9](https://doi.org/10.1016/S0379-0738(01)00433-9)
- [311] Sheets H, Bush MA. Mathematical matching of a dentition to bitemarks: Use and evaluation of affine methods. *Forensic Science International*. 2011;207(1-3):111-8.
<https://doi.org/10.1016/j.forsciint.2010.09.013>
- [312] Sheets H, Bush P, Brzozowski C, Nawrocki L, Ho P, Bush MA. Dental shape match rates in selected and orthodontically treated populations in New York State: A two-dimensional

- study. *Journal of Forensic Sciences*. 2011;56(3):621-6. <https://doi.org/10.1111/j.1556-4029.2011.01731.x>
- [313] Sheets HD, Bush PJ, Bush MA. Bitemarks: Distortion and covariation of the maxillary and mandibular dentition as impressed in human skin. *Forensic Science International*. 2012;223(1):202-7. <https://doi.org/10.1016/j.forsciint.2012.08.044>
- [314] Simon A, Jordan H, Ptote K. Successful identification of a bitemark in a sandwich. *International journal of forensic Dentistry*. 1974;2:17-22.
- [315] Sims BG, Grant JH, Cameron JM. Bite-marks in the battered baby syndrome. *Medicine, Science and the Law*. 1973;13(3):207-10. <https://doi.org/10.1177/002580247301300308>
- [316] Slot L, Larsen PK, Lynnerup N. Photogrammetric documentation of regions of interest at autopsy-A pilot study. *Journal of Forensic Sciences*. 2014;59(1):226-30. <https://doi.org/10.1111/1556-4029.12289>
- [317] Sobel M, Perper J. Self-inflicted bite mark on the breast of a suicide victim. *American Journal of Forensic Medicine and Pathology*. 1985;6(4):336-9.
- [318] Sognnaes R, Rawson R, Gratt B, Nguyen N. Computer comparison of bitemark patterns in identical twins. *Journal of the American Dental Association*. 1982;105(3):449-52. <https://doi.org/10.14219/jada.archive.1982.0338>
- [319] Sognnaes RF. Dental science as evidence in court. *International journal of forensic Dentistry*. 1976;3(9):14-6.
- [320] Sognnaes RF. The case for better bite and bitemark preservations. *International Journal of Forensic Dentistry*. 1977;4(13):17-20.
- [321] Sognnaes RF. Battered child death involving enigmatic bitemark evidence. *Journal of the California Dental Association*. 1977;4:22-8.
- [322] Sognnaes RF. Forensic stomatology. *New England Journal of Medicine*. 1977;296:79-85. <https://doi.org/10.1056/NEJM197701132960205>
- [323] Sognnaes RF. Forensic oral measurements. *Dental Survey*. 1978;54(12):12-24.
- [324] Sognnaes RF. Forensic bite mark measurements. *Dental Survey*. 1979;55(4):34, 7-8, 43-7.
- [325] Sognnaes RF, Rawson R. Computer comparison of radiographic bite-mark patterns in identical twins. *Journal of the Forensic Science Society*. 1981;21(2):144. [https://doi.org/10.1016/S0015-7368\(81\)71382-3](https://doi.org/10.1016/S0015-7368(81)71382-3)
- [326] Sognnaes RF, Therrell R. Bitemark lesions in human skin caused by an unequivocally identified ‘suspect’. *Journal of the California Dental Association*. 1975;3(10):50-3.
- [327] Solheim T, Leidal T. Scanning electron microscopy in the investigation of bite marks in foodstuffs. *Forensic Science*. 1975;6(3):205-15. [https://doi.org/10.1016/0300-9432\(75\)90011-4](https://doi.org/10.1016/0300-9432(75)90011-4)
- [328] Souviron R, Haller L. Bite mark evidence: Bite mark analysis is not the same as bite mark comparison or matching or identification. *Journal of Law and the Biosciences*. 2017;4(3):617-22. <https://doi.org/10.1093/jlb/lsx026>
- [329] Souza AAdF, de Rosa CTA, Arantes LC, Pujol-Luz JR. Artifacts caused by leaf-cutting ants of the genus Atta (Hymenoptera: Formicidae): Postmortem bite injuries and the tearing of clothes. *Journal of Forensic Sciences*. 2020;65(3):1012-5. <https://doi.org/10.1111/1556-4029.14279>
- [330] Sperber N. A bite mark being the only item of physical evidence that led to the conviction of a suspect in a Southern Californian mutilation homicide case. *Journal of the Forensic Science Society*. 1984;24(4):304-5. [https://doi.org/10.1016/S0015-7368\(84\)72979-3](https://doi.org/10.1016/S0015-7368(84)72979-3)

- [331] Sperber N. Procedures in recording bite mark evidence in sexual assault and child-abuse cases. *Journal of the Forensic Science Society*. 1984;24(4):305.
[https://doi.org/10.1016/S0015-7368\(84\)72979-3](https://doi.org/10.1016/S0015-7368(84)72979-3)
- [332] Sperber N. Identification of children and adults through federal and state dental identification systems: recognition of human bitemarks. *Forensic Science International*. 1986;30(2-3):187-93. [https://doi.org/10.1016/0379-0738\(86\)90013-7](https://doi.org/10.1016/0379-0738(86)90013-7)
- [333] Sperber N. Lingual markings of anterior teeth as seen in human bite marks. *Journal of Forensic Sciences*. 1990;35(4):838-44. <https://doi.org/10.1520/JFS12896J>
- [334] Sperber N, Cottone J, Warnick A, Burkes J, Morlang W, Levine L, et al. *Forensic Dentistry*. *The Journal of the American Dental Association* (1939). 1989;119(3):355.
<https://doi.org/10.14219/jada.archive.1989.0055>
- [335] Sperber N, Lubin H. Bite mark evidence in crimes against persons. *Journal of American College Health Association*. 1981;29(4):165-7.
<https://doi.org/10.1080/01644300.1981.10392996>
- [336] Sperber ND. Further discussion on discussions of "Bite mark impressions: a review of techniques and materials". *Journal of Forensic Sciences*. 1990;35(4):777.
<https://doi.org/10.1520/JFS12889J>
- [337] Sperry K, Campbell H. An elliptical incised wound of the breast misinterpreted as a bite injury. *Journal of Forensic Sciences*. 1990;35(5):1226-35.
<https://doi.org/10.1520/JFS12949J>
- [338] Stavrianos C, Vasiliadis L, Emmanouil J, C. P. In vivo evaluation of the accuracy of two methods for the bite mark analysis in foodstuff. *Research Journal of Medical Sciences*. 2011;5:25-31. <https://doi.org/10.3923/rjmsci.2011.25.31>
- [339] Steadman DW, Dautartas A, Kenyhercz MW, Jantz LM, Mundorff A, Vidoli GM. Differential scavenging among pig, rabbit, and human subjects. *Journal of Forensic Sciences*. 2018;63(6):1684-91. <https://doi.org/10.1111/1556-4029.13786>
- [340] Stoddart T. Bitemarks in perishable substances. *British Dental Journal*. 1973;135(6):285-7.
<https://doi.org/10.1038/sj.bdj.4803076>
- [341] Stols G, Bernitz H. Reconstruction of deformed bite marks using affine transformations. *Journal of Forensic Sciences*. 2010;55(3):784-7. <https://doi.org/10.1111/j.1556-4029.2010.01337.x>
- [342] Summers R, Lewin D. Photographic procedures relating to bite mark evidence. *Journal of the Forensic Science Society*. 1988;28(3):211-2. [https://doi.org/10.1016/S0015-7368\(88\)72833-9](https://doi.org/10.1016/S0015-7368(88)72833-9)
- [343] Suzuki K, Hashimoto M. Bite mark evidence - A case-report and preliminary study. *Journal of the Forensic Science Society*. 1981;21(2):147-8. [https://doi.org/10.1016/S0015-7368\(81\)71382-3](https://doi.org/10.1016/S0015-7368(81)71382-3)
- [344] Sweet D, Bastien R. Use of an Acrylonitrile-Butadiene-Styrene (ABS) plastic ring as a matrix in the recovery of bite mark evidence. *Journal of Forensic Sciences*. 1991;36(5):1565-71. <https://doi.org/10.1520/JFS13177J>
- [345] Sweet D, Bowers C. Accuracy of bite mark overlays: A comparison of five common methods to produce exemplars from a suspect's dentition. *Journal of Forensic Sciences*. 1998;43(2):362-7. <https://doi.org/10.1520/JFS16146J>
- [346] Sweet D, Hildebrand D. Saliva from cheese bite yields DNA profile of burglar: a case report. *International Journal of Legal Medicine*. 1999;112(3):201-3.
<https://doi.org/10.1007/s004140050234>

- [347] Sweet D, Lorente JA, Valenzuela A, Lorente M, Villanueva E. PCR-based DNA typing of saliva stains recovered from human skin. *Journal of Forensic Sciences*. 1997;42(3):447-51. <https://doi.org/10.1520/JFS14146J>
- [348] Sweet D, Lorente M, Lorente JA, Valenzuela A, Villanueva E. An improved method to recover saliva from human skin: The double swab technique. *Journal of Forensic Sciences*. 1997;42(2):320-2. <https://doi.org/10.1520/JFS14120J>
- [349] Sweet D, Lorente M, Valenzuela A, Lorente J, Alvarez JC. Increasing DNA extraction yield from saliva stains with a modified Chelex method. *Forensic Science International*. 1996;83(3):167-77. [https://doi.org/10.1016/S0379-0738\(96\)02034-8](https://doi.org/10.1016/S0379-0738(96)02034-8)
- [350] Sweet D, Parhar M, Wood R. Computer-based production of bite mark comparison overlays. *Journal of Forensic Sciences*. 1998;43(5):1050-5. <https://doi.org/10.1520/JFS14356J>
- [351] Sweet D, Pretty I. A look at forensic dentistry - Part 2: Teeth as weapons of violence - identification of bitemark perpetrators. *British Dental Journal*. 2001;190(8):415-8. <https://doi.org/10.1038/sj.bdj.4800990>
- [352] Sweet D, Shutler G. Analysis of salivary DNA evidence from a bite mark on a body submerged in water. *Journal of Forensic Sciences*. 1999;44(5):1069-72. <https://doi.org/10.1520/JFS12045J>
- [353] Tai MW, Chong ZF, Asif MK, Rahmat RA, Nambiar P. A comparative study between xerographic, computer-assisted overlay generation and animated-superimposition methods in bite mark analyses. *Legal Medicine (Tokyo, Japan)*. 2016;22:42-8. <https://doi.org/10.1016/j.legalmed.2016.07.009>
- [354] Taylor D. The law and the dentist. *British Dental Journal*. 1963;114:389.
- [355] Texas Forensic Science Commission. Forensic Bitemark Comparison Complaint Filed by National Innocence Project on Behalf of Steven Mark Chaney - Final Report. 2016.
- [356] Texas Forensic Science Commission. Bite Mark Case Review Report. 2017. Available at: <https://www.txcourts.gov/media/1445768/bite-mark-review-report.pdf>
- [357] Thali MJ, Braun M, Buck U, Aghayev E, Jackowski C, Vock P, Sonnenschein M, Dirnhofer R. VIRTOPSY-Scientific documentation, reconstruction and animation in forensic: Individual and real 3D data based geo-metric approach including optical body/object surface and radiological CT/MRI scanning. *Journal of Forensic Sciences*. 2005;50(2):428-42. <https://doi.org/10.1520/JFS2004290>
- [358] Thali MJ, Braun M, Dirnhofer R. Optical 3D surface digitizing in forensic medicine: 3D documentation of skin and bone injuries. *Forensic Science International*. 2003;137(2):203-8. <https://doi.org/10.1016/j.forsciint.2003.07.009>
- [359] Thali MJ, Braun M, Markwalder TH, Brueschweiler W, Zollinger U, Malik NJ, Yen K, Dirnhofer R. Bite mark documentation and analysis: the forensic 3D/CAD supported photogrammetry approach. *Forensic Science International*. 2003;135(2):115-21. [https://doi.org/10.1016/S0379-0738\(03\)00205-6](https://doi.org/10.1016/S0379-0738(03)00205-6)
- [360] Thompson I, Philips V. A bitemark case with a twist. *Journal of Forensic Odontology*. 1994;12(2):37-40.
- [361] Thompson WC, Newman EJ. Lay understanding of forensic statistics: Evaluation of random match probabilities, likelihood ratios, and verbal equivalents. *Law and Human Behavior*. 2015;39(4):332-49. <https://doi.org/10.1037/lhb0000134>

- [362] Thompson WC, Scurich N. How cross-examination on subjectivity and bias affects jurors' evaluations of forensic science evidence. *Journal of forensic sciences*. 2019;64(5):1379-88. <https://doi.org/10.1111/1556-4029.14031>
- [363] Trefan L, Harris C, Evans S, Nuttall D, Maguire S, Kemp AM. A comparison of four different imaging modalities – Conventional, cross polarized, infra-red and ultra-violet in the assessment of childhood bruising. *Journal of Forensic and Legal Medicine*. 2018;59:30-5. <https://doi.org/10.1016/j.jflm.2018.07.015>
- [364] Tsokos M. Diagnostic criteria for cutaneous injuries in child abuse: classification, findings, and interpretation. *Forensic Science, Medicine, and Pathology*. 2015;11(2):235-42. <https://doi.org/10.1007/s12024-015-9671-y>
- [365] Tuceryan M, Li F, Blitzer HL, Parks ET, Platt JA. A framework for estimating probability of a match in forensic bite mark identification. *Journal of Forensic Sciences*. 2011;56(s1):S83-S9. <https://doi.org/10.1111/j.1556-4029.2010.01571.x>
- [366] Vale G. Bite marks on human skin. 65(4):431-40.
- [367] Vale G. Dentistry, bite marks, and the investigation of crime. *Journal of the California Dental Association*. 1996;24(5):29-34.
- [368] Vale GL. Discussion of "Bite mark impressions: A review of techniques and materials". *Journal of Forensic Sciences*. 1989;34(4):805. <https://doi.org/10.1520/JFS12708J>
- [369] Vale GL, Noguchi TT. Anatomical distribution of human bite marks in a series of 67 cases. *Journal of Forensic Sciences*. 1983;28(1):61-9. <https://doi.org/10.1520/JFS12239J>
- [370] Vale GL, Rawson RD, Sperber ND, Herschaft EE. Discussion of "Reliability of the scoring system of the American Board of Forensic Odontology for Human Bite Marks". *Journal of Forensic Sciences*. 1988;33(1):20. <https://doi.org/10.1520/JFS12432J>
- [371] Vale GL, Sognnaes RF, Felando GN, Noguchi TT. Unusual three-dimensional bite mark evidence in a homicide case. *Journal of Forensic Sciences*. 1976;21(3):642-52. <https://doi.org/10.1520/JFS10538J>
- [372] van der Velden A, Spiessens M, Willems G. Bite mark analysis and comparison using image perception technology. *Journal of Forensic Odontostomatology*. 2006;24(1):14-7.
- [373] Verma AK, Kumar S, Bhattacharya S. Identification of a person with the help of bite mark analysis. *Journal of Oral Biology and Craniofacial Research*. 2013;3:88-91. <https://doi.org/10.1016/j.jobcr.2013.05.002>
- [374] Vilborn P, Bernitz H. A systematic review of 3D scanners and computer assisted analyzes of bite marks: Searching for improved analysis methods during the Covid-19 pandemic. *International Journal of Legal Medicine*. 2022;136:209-217. <https://doi.org/10.1007/s00414-021-02667-z>
- [375] Vogeley E, Pierce MC, Bertocci G. Experience with wood lamp illumination and digital photography in the documentation of bruises on human skin. *Archives of Pediatrics & Adolescent Medicine*. 2002;156(3):265-8. <https://doi.org/10.1001/archpedi.156.3.265>
- [376] Wagner G. Bitemark identification in child abuse cases. *Pediatric Dentistry*. 1986;8(Special Issue 1):96-100.
- [377] Wallace CG, Robertson CE. Prospective audit of 106 consecutive human bite injuries: the importance of history taking. *Emergency Medicine Journal*. 2005;22(12):883-4. <https://doi.org/10.1136/emj.2004.021246>
- [378] Walter R. An examination of the psychological aspects of bitemarks. *American Journal of Forensic Medicine and Pathology*. 1984;5(1):25-9.

- [379] Walter R. Anger biting - the hidden impulse. *American Journal of Forensic Medicine and Pathology*. 1985;6(3):219-21.
- [380] Warnick AJ, Biedrzycki L, Russanow G. Not all bite marks are associated with abuse, sexual activities, or homicides: A case study of a self-inflicted bite mark. *Journal of Forensic Sciences*. 1987;32(3):788-92. <https://doi.org/10.1520/JFS12386J>
- [381] Webb D, Sweet D. Forensic implications of biting behavior: A conceptually underdeveloped area of investigation. *Journal of Forensic Sciences*. 2002;47(1):103-6. <https://doi.org/10.1520/JFS15208J>
- [382] Webster G. A suggested classification of bite marks in foodstuffs in forensic dental analysis. *Forensic Science International*. 1982;20(1):45-52. [https://doi.org/10.1016/0379-0738\(82\)90105-0](https://doi.org/10.1016/0379-0738(82)90105-0)
- [383] Weeratna JB. Are they dermatological lesions, bottle top burns, or bite mark injuries? *Journal of Forensic Odontostomatology*. 2014;32(1):1-8.
- [384] Weigler S. Bite mark evidence: Forensic odontology and the law. *Health Matrix: The Journal of Law-Medicine*. 1992;2(2):303-23.
- [385] West M, Barsley R, Frair J, Seal M. The use of human skin in the fabrication of a bite mark template: two case reports. *Journal of Forensic Sciences*. 1990;35(6):1477-85. <https://doi.org/10.1520/JFS12986J>
- [386] West M, Hayne S, Barsley R. Would patterns: Detection, documentation, and analysis. *Journal of Clinical Forensic Medicine*. 1996;3:21-7. [https://doi.org/10.1016/S1353-1131\(96\)90041-3](https://doi.org/10.1016/S1353-1131(96)90041-3)
- [387] West MH, Barsley RE. Discussion of "Lingual markings of anterior teeth as seen in human bite marks" *Journal of Forensic Sciences*. 1991;36(2):303-6. <https://doi.org/10.1520/JFS13033J>
- [388] West MH, Frair J. The use of videotape to demonstrate the dynamics of bite marks. *Journal of Forensic Sciences*. 1989;34(1):88-95. <https://doi.org/10.1520/JFS12614J>
- [389] Whittaker DK. Some laboratory studies on the accuracy of bite mark comparison. *International Dental Journal*. 1975;25(3):166-71.
- [390] Whittaker DK. Principles of forensic dentistry: 2. Non-accidental injury, bitemarks, and archaeology. *Dental Update*. 1990;17(9):386-90.
- [391] Whittaker DK, Brickley MR, Evans L. A comparison of the ability of experts and non-experts to differentiate between adult and child human bite marks using receiver operating characteristic (ROC) analysis. *Forensic Science International*. 1998;92(1):11-20. [https://doi.org/10.1016/S0379-0738\(97\)00198-9](https://doi.org/10.1016/S0379-0738(97)00198-9)
- [392] Whittaker DK, Watkins K, Wiltshire J. An experimental assessment of the reliability of bite mark analysis. *International Journal of Forensic Dentistry*. 1975;3:3-7.
- [393] Wickenheiser RA. Trace DNA: A review, discussion of theory, and application of the transfer of trace quantities of DNA through skin contact. *Journal of Forensic Sciences*. 2002;47(3):442-50. <https://doi.org/10.1520/JFS15284J>
- [394] Wienert P, Heiss J, Rinecker H, Sing A. A human bite. *The Lancet (British edition)*. 1999;354(9178):572. [https://doi.org/10.1016/S0140-6736\(99\)02692-6](https://doi.org/10.1016/S0140-6736(99)02692-6)
- [395] Williams R, Porter B. Forensic dentistry. *Journal of Oklahoma Dental Association*. 1997;88(2):29-30.
- [396] Wood R, Miller P, Blenkinsop B. Image editing and computer assisted bitemark analysis: A case report. *Journal of Forensic Odontostomatology*. 1994 12(2):30-6.

- [397] Woolridge E. Significant problems of the forensic odontologist in the USA. *International Journal of Forensic Dentistry*. 1973;2(1):6-12.
- [398] Wright F. Photography in bite mark and patterned injury documentation - Part 2: A case study. *Journal of Forensic Sciences*. 1998;43(4):881-7. <https://doi.org/10.1520/JFS14322J>
- [399] Wright F. Photography in bite mark and patterned injury documentation - Part 1. *Journal of Forensic Sciences*. 1998;43(4):877-80. <https://doi.org/10.1520/JFS14321J>
- [400] Wright FD, Golden GS. The use of full spectrum digital photography for evidence collection and preservation in cases involving forensic odontology. *Forensic Science International*. 2010;201(1):59-67. <https://doi.org/10.1016/j.forsciint.2010.03.013>
- [401] Zainab H, Shaimaa, Pramod J, Hugar D, Sultana A. A comparative assessment of bite marks in analyzing the overlay generation using styrofoam sheet and modeling wax with the dental casts as one of the adjuncts for archiving the forensic records: An in vivo study. *Journal of Oral and Maxillofacial Pathology*. 2018;22(1):132-7.
https://doi.org/10.4103/jomfp.JOMFP_141_17
- [402] Zapico SC, Menéndez ST. Human mitochondrial DNA and nuclear DNA isolation from food bite marks. *Archives of Oral Biology*. 2016;70:67-72.
<https://doi.org/10.1016/j.archoralbio.2016.06.004>
- [403] Zarkowski P. Bite mark evidence: Its worth in the eyes of the expert. *Journal of Law and Ethics in Dentistry*. 1986;1(1):47-57.