

The reading lists in this document represent articles of interest to various aspects of Forensic Odontology. The lists are not totally inclusive of all literature published, but they should provide the interested scholar or student with many of the key concepts that have been important to the field. Additional references may be found in the current literature, textbooks, reading material from presentations and workshops, and diligent searches of reference guides. The ABFO makes no claims to the completeness of these lists, or to the accuracy, findings or conclusions of any references listed.

Reading Lists Included:

- Page 2: Dental Age Assessment
- Page 7: Dental Identification
- Page 11: Domestic Violence – Abuse and Neglect
- Page 12: Patterned Injury and Bitemark Analysis

## Dental Age Assessment References

ADA Technical Report 1077: Human Age Assessment by Dental Analysis. 2020. American Dental Association . Chicago, IL.

AlQahtani SJ, Hector MP, and Liversidge HM. 2010. Brief communication: The London atlas of human tooth development and eruption. *American Journal of Physical Anthropology* 142(3):481-490.\*

AlQahtani SJ, Hector MP, and Liversidge HM. 2014. Accuracy of dental age estimation charts: Schour and Massler, Ubelaker and the London Atlas. *American Journal of Physical Anthropology* 154(1):70-78.\*

American Board of Forensic Odontology, 2016. Dental Age Estimation Procedures Chart. <http://www.abfo.org>.

American Board of Forensic Odontology, 2016. Dental Age Assessment Guidelines and Standards. ABFO Reference Manual. <http://www.abfo.org>.

American Board of Forensic Odontology, 2016. Adult Dental Age Estimation Technique Chart. <http://www.abfo.org>.

American Board of Forensic Odontology, 2016. Child and Adolescent Dental Age Estimation Technique Chart. <http://www.abfo.org>

Arany, S., Iino M., Yoshioka N., 2004. Radiographic survey of third molar development in relation to chronological age among Japanese juveniles. *Journal of Forensic Sciences* 49(3):1-5.

Arany, S., Ohtani S., 2010. Age estimation by racemization method in teeth: Application of aspartic acid, glutamate and alanine. *Journal of Forensic Sciences* 55(3): 701-705.

Ash, M.M., Nelson, S.J., 2003. Development and eruption of teeth. In: Rudolf P, Pendill J (Eds.), *Wheeler's Dental Anatomy, Physiology and Occlusion Eighth Edition*. Elsevier Science, USA pp. 29-63.

Bang G, and Ramm E. 1970. Determination of Age in Humans from Root Dentin Transparency. *Acta Odontologica Scandinavia* 28:3-35.\*

Blankenship JA, Mincer HH, Anderson KM, Woods MA, and Burton EL. 2007. Third Molar Development in the Estimation of Chronologic Age in American Blacks as Compared With Whites\*. *Journal of Forensic Sciences* 52(2):428-433.\*

Boonpitaksathit, T., Hunt N., Roberts G.J., Petrie A., Lucas V.S., 2011. Dental age assessment of adolescents and emerging adults in United Kingdom Caucasians using censored data for stage H of third molar roots. *European Journal of Orthodontics* 33:503-508.

Buikstra JE, and Ubelaker DH, editors. 1994. Standards for Data Collection from Human Skeletal Remains: Proceedings of a Seminar at The Field Museum of Natural History. Fayetteville: Arkansas Archaeological Research Series. 218 p.\*

Burns, K.R. and Maples, W.R. 1976. Estimation of age from individual adult teeth. *Journal of Forensic Sciences* 21: 343-356.

Cameriere R, Ferrante L, Belcastro MG, Bonfiglioli B, Rastelli E, and Cingolani M. 2007. Age Estimation by Pulp/Tooth Ratio in Canines by Peri-Apical X-Rays. *Journal of Forensic Sciences* 52(1):166-170.\*

Cameriere R, Ferrante L, and Cingolani M. 2006. Age estimation in children by measurement of open apices in teeth. *Int J Legal Med* (2006) 120: 49–52.

Cameriere R, Ferrante L, and Cingolani M. 2004. Variations in Pulp/Tooth Area Ratio as an Indicator of Age: a Preliminary Study. *Journal of Forensic Sciences* 49(2):317-319.\*

Collier, S, Lewis, J, Kasper, K., 2022. Dental Age Assessment of United States Black and White Children, Performance Reliability of Harris and McKee (1990). *Am J Forensic Med Pathol* In print.

Demirjian, A., Goldstein H., 1976. New systems for dental maturity based on seven and four teeth. *Annals of Human Biology* 3:411-421.

Demirjian, A., Goldstein, H., Tanner, J.M. 1973. A new system of dental age assessment. *Human Biology* 45:211-227.

De Tobel, J., Hillewit, E., Verstraete, K., 2017. Forensic age estimation based on magnetic resonance imaging of third molars: converting 2D staging into 3D staging. *Ann. Hum. Biol.* 44(2):121-129.

De Tobel, J., 2017. Magnetic resonance imaging of third molars: developing a protocol suitable for forensic age estimation. *Ann. Hum. Biol.* 44(2):130-139.

Doyle, Edel, Nicholas Marquez-Grant, Lisa Field, Kathleen Kasper et al., Guidelines for best practice: Imaging for age estimation in the living. *Journal of Forensic Radiology and Imaging*, 2019; 16:38-49.

Draft, Derek, Lucas, V., McDonald, F., Andiappan, M., Roberts, G., 2019. Expressing Uncertainty in Dental Age Estimation: A Comparison between Two Methods of Calculating the “Average” Standard Deviation. *Journal of Forensic Sciences* 64(5): 1506-1509.

Draft, D.M, Kasper, K, Fancher, J.P., AlQahtani, S.J., 2019. Illustrated Moorrees, Fanning, and Hunt Dental Development Staging Charts, 2019. Copyright 2019.

González-Colmenares G, Botella-López MC, Moreno-Rueda G, and Fernández-Cardenete JR. 2007. Age Estimation by a Dental Method: A Comparison of Lamendin's and Prince & Ubelaker's Technique. *Journal of Forensic Sciences* 52(5):1156-1160.\*

Gunst, K., Mesotten K., Carbonez A., Willems G., 2003. Third molar root development in relation to chronological age: a large sample sized retrospective study. *Forensic Science International* 136:52-57.

Gustafson G. 1950. Age Determination on Teeth. *Journal of the American Dental Association* 41:45-54.\*

Harris, E.F. 2007. Mineralization of the mandibular third molar: A study of American Blacks and Whites. *Am. J. Phys. Anthropol.* 132:98-109.

Harris, E.F., and J.H. McKee. 1990. Tooth mineralization standards for blacks and whites from the middle southern United States. *Journal of Forensic Sciences* 35: 859-872.

Harris, E.G., and A. Buck. 2002. Tooth mineralization: A technical note on the Moorrees-Fanning-Hunt standards. *Dental Anthropology* 16: 15-20.

Jayaraman, J., N.M. King, G.J. Roberts and H.M. Wong, 2011. Dental age assessment: Are Demirjian's standards appropriate for Southern Chinese Children? *Journal of Forensic Odontostomatology* 29 (2) 22-28.

Johanson G. 1971. Age Determinations from Human Teeth: A Critical evaluation with Special Consideration of changes after Fourteen Years of Age. *Odontologisk Revy* 22:1-126.\*

Kasper KA, Austin D, Kvanli AH, Rios TR, and Senn DR. 2009. Reliability of Third Molar Development for Age Estimation in a Texas Hispanic Population: A Comparison Study\*. *Journal of Forensic Sciences* 54(3):651-657.\*

Kvaal SI, Kolltveit KM, Thomsen IO, and Solheim T. 1995. Age estimation of adults from dental radiographs. *Forensic Science International* 74(3):175-185.\*

Lamendin H. 1973. Observations on teeth roots in the estimation of Age. *The International Journal of Forensic Dentistry* 1(1):4-7.\*

Lewis JM, and Kasper KA. 2018. Assessment of Dental Age. In: David TJ, and Lewis JM, editors. *Forensic Odontology: Principles and Practice*. San Diego, CA: Elsevier. p 145-173.\*

Lewis, J.M., Senn D.R. 2010. Dental age estimation utilizing third molar development: a review of principles, methods, and population studies used in the United States. *Forensic Science International*. 201:79-83.

- Lewis, J.M., Senn D.R., 2015. Forensic dental age estimation: an overview. *California Dental Association Journal* 43(6):315-319.
- Liversidge, H.M. 2000. Crown formation times of human permanent anterior teeth. *Arch Oral Biol* 45: 713-721.
- Liversidge, H.M. 2008. Timing of human mandibular third molar formation. *Annals of Human Biology*. 35(3):294-321.
- Liversidge HM. 2011. Similarity in dental maturation in two ethnic groups of London children. *Annals of Human Biology* 38(6):702-715.\*
- Lucas, V., McDonald, F., Andiappan, M., Roberts., G., 2017 (A). Dental Age Estimation—Root Pulp Visibility (RPV) patterns: A reliable Mandibular Maturity Marker at the 18year threshold. *Forensic Sci. Int.* 270:98-102.
- Lucas, V., McDonald, F., Andiappan, M., Roberts., G., 2017 (B). Dental age estimation: periodontal ligament visibility (PLV)—pattern recognition of a conclusive mandibular maturity marker related to the lower left third molar at the 18-year threshold. *International Journal of Legal Medicine* 131:797–801.
- Mann RW, Symes SA, and Bass WM. 1987. Maxillary suture obliteration: Aging the human skeleton based on intact or fragmentary maxilla. *Journal of Forensic Sciences* 32(1):148-157.\*
- Mann, Robert W., Jantz, Richard L., Bass, William M., and Willey, Patrick S., 1991. Maxillary Suture Obliteration: A Visual Method for Estimating Skeletal Age. *Journal of Forensic Science, JFSCA*, 36 (3):781-791.
- Maples, W.R. 1978. An improved technique using dental histology for estimation of adult age. *Journal of Forensic Sciences* 23(4): 764-770.
- Mincer HH, Harris EF, and Berryman HE. 1993. The A.B.F.O. study of the third molar development and its use as an estimator of chronological age. *Journal of Forensic Sciences* 38(2):379-390.\*
- Moore, J.A., Lewis J.M., Senn D.R., 2016. Third molar age estimation: appropriately censoring stage “H” using the data from two previously published studies: Blankenship et al. (2007) & Kasper et al. (2009). Presented at the Annual American Academy of Forensic Sciences Meeting, February 22-27, Las Vegas.
- Moorrees CFA, Fanning EA, and Hunt EE. 1963a. Formation and resorption of three deciduous teeth in children. *American Journal of Physical Anthropology* 21(2):205-213.\*
- Moorrees CFA, Fanning EA, and Hunt EE. 1963b. Age variation of formation stages for ten permanent teeth. *Journal of Dental Research* 42:1490-1502.\*

Ohtani, S., Yamamoto T., 2010. Age estimation by amino acid racemization in human teeth. *Journal Forensic Science*. 55(6):1630-1633.

Prince DA, and Ubellakeer DH. 2002. Application of Lamendin's Adult Dental Aging Technique to a Diverse Skeletal Sample. *Journal of Forensic Sciences* 47(1):107-116.\*

Roberts, G.J., McDonald, F., Andiappan, M., Lucas, V., 2015. Dental Age Estimation(DAE): Data management for tooth developmental stages including the third molar. Appropriate censoring of Stage H, the final stage of tooth development. *Journal of Forensic and Legal Medicine* 36:177-184.

Schour, I., and M. Massler. 1941. The development of the human dentition. *Journal of the American Dental Association* 28:1153-1160.

Solari, A.C., Abromovitch K., 2002. The accuracy and precision of third molar development as an indicator of chronological age in Hispanics. *Journal of Forensic Sciences* 47(3):531-535.

Tang N, Antoine D, and Hillson S. 2014. Application of the Bang and Ramm age at death estimation method to two known-age archaeological assemblages. *American Journal of Physical Anthropology* 155(3):332-351.\*

Thevissen, P.W., Fieuws, S., Willems, G., 2013. Third molar development: Evaluation of Nine Tooth Development Registration Techniques for Age Estimations. *J. Forensic Sci.* 58(2):393-397.

Ubelaker, D.H. 1978. *Human skeletal remains, excavation analysis, interpretation (1<sup>st</sup> ed.)*. Washington D.C.: Taraxacum.

Ubelaker, D.H. 1989. *Human skeletal remains, excavation analysis, interpretation (2<sup>nd</sup> ed.)*. Washington D.C.: Taraxacum.

Willems, G., 2001. A review of the most commonly used dental age estimation techniques. *Journal of Forensic Odontostomatol* 19:9-17.

Wilems, G., 2010. Willems II. Non-gender-specific dental maturity scores. *Forensic Science International* 201:84-85.

Willems, G. 2017. Age Estimation based on Willems method versus new county-specific method in South African black children. *International Journal of Legal Medicine* DOI 10.1007/s00414-017-1686-3.

## **Dental Identification by Dental Means**

Source: Loomis, P. W., Reid, J. S., Tabor, M. P., & Weems, R. A. (2018). Dental Identification and Radiographic Pitfalls. In *Forensic Odontology, Principles and Practice*. London, United Kingdom: Elsevier.

Adams, B., 2003a. Establishing personal identification based on specific patterns of missing, filled, and unrestored teeth. *Journal of Forensic Sciences* 48 (3), 487e496.

Adams, B., 2003b. The diversity of adult dental patterns in the United States and the implications for personal identification. *Journal of Forensic Sciences* 48 (3), 497e503.

Almeida, M.A., Phillips, C., Kula, K., Tulloch, C., 1995. Stability of the palatal rugae as landmarks for analysis of dental casts. *The Angle Orthodontist* 65, 43e48.

American Board of Forensic Odontology, 2015. *Diplomates Reference Manual*. <http://www.abfo.org>.

Bonavilla, J.D., Bush, M.A., Bush, P.J., Pantera, E.A., 2008. Identification of incinerated root canal filling materials after exposure to high heat incineration. *Journal of Forensic Sciences* 53 (2), 412e418.

Botha, C.T., 1986. The dental identification of fire victims. *The Journal of Forensic Odontostomatology* 4 (2), 67e75.

Bowers, C.M., 2004. *Forensic Dental Evidence*. Elsevier, Oxford, U.K.

Bowers, C.M., Bell, G.L., 1996. *Manual of Forensic Odontology*, third ed. American Society of Forensic Odontology, Saratoga Springs, NY.

Bush, M.A., Bush, P.J., Miller, R.G., 2006. Detection and classification of composite resins in Incinerated teeth for forensic purposes. *Journal of Forensic Sciences* 51 (3), 636e642.

Bush, M.A., Miller, R.G., 2011. The crash of Colgan Air flight 3407: advanced techniques in victim Identification. *The Journal of the American Dental Association* 142 (12), 1352e1356.

Bush, M.A., Miller, R.G., Norrlander, A.L., Bush, P.J., 2008. Analytical survey of restorative resins by SEM/EDS and XRF: databases for forensic purposes. *Journal of Forensic Sciences* 53 (2), 419e425.

Bush, M.A., Miller, R.G., Prutsman-Pfeiffer, J., Bush, P.J., 2007. Identification through XRF analysis of dental restorative resin materials: a comprehensive study of non-cremated, cremated, and processed cremated individuals. *Journal of Forensic Sciences* 52 (1), 157e165.

Caldas, I.C., Magalhaes, T., Afonso, A., 2007. Establishing identity using cheiloscopy and palatoscopy. *Forensic Science International* 165 (1), 1e9.

Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council, 2009. *Strengthening Forensic Science in the United States: A Path Forward*.  
<https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>.

Fridell, S., Ahlqvist, J., 2006. The use of dental radiographs for identification of children with unrestored dentitions. *The Journal of Forensic Odonto-Stomatology* 24 (2), 42e46.

Hemanth, M., Vidya, M., Shetty, N., Karkera, B.V., 2010. Identification of individuals using palatal rugae: computerized method. *Journal of Forensic Dental Sciences* 2, 86e90.

Harvey, W., 1971. Identification from dental data. *British Dental Journal* 131 (10), 432.

Hermanson, A.S., Bush, M.A., Miller, R.G., Bush, P.J., 2008. Ultraviolet illumination as an adjunctive aid in dental inspection. *Journal of Forensic Sciences* 53 (2), 408e411.

Herschaft, E.E., Alder, M.E., Ord, D.K., Rawson, R.D., Smith, E.S., 2006. *Manual of Forensic Odontology*, fourth ed. Impress, Albany, NY.

Jackowski, C., Lussi, A., Classens, M., Kilchoer, T., Bolliger, S., Aghayev, E., Criste, A., Dirnhofer, R., Thali, M.J., 2006. Extended CT scale overcomes restoration caused streak artifacts for dental identification in CTe3D color encoded automatic discrimination of dental restorations. *Journal of Computer Assisted Tomography* 30 (3), 510e513.

Khalid, K., Yousif, S., Satti, A., 2016. Discrimination potential of root canal treated tooth in forensic dentistry. *The Journal of Forensic Odonto-Stomatology* 1 (34), 19e26.

Kieser, J.A., Laing, W., Herbison, P., 2006. Lessons learned from large-scale comparative dental analysis following the South Asian tsunami of 2004. *Journal of Forensic Sciences* 51 (1), 109e112.

Keiser-Nielsen, S., 1980. *Person Identification by Means of the Teeth: A Practical Guide*. John Wright and Sons Ltd, Bristol, U.K.

Kogon, S.L., Peterson, K.B., Locke, J.W., et al., 1974. A computerized aid to dental identification in mass disasters. *Forensic Science International*.

Lorton, L., Langley, W.H., 1986. Decision making concepts in postmortem identification. *Journal of Forensic Sciences* 31 (1), 365e378.

Marella, G.L., Rossi, P., 1999. An approach to person identification by means of dental prostheses in a burnt corpse. *The Journal of Forensic Odonto-Stomatology* 17 (1), 16e19.

McGivney, J., Fixott, R.H., 2001. Computer-assisted dental identification. *Dental Clinics of North America* 45 (2), 309e325.

Merlati, G., Savio, C., Danesino, P., Fassina, G., Meghini, P., 2004. Further study of restored and un-restored teeth subjected to high temperatures. *The Journal of Forensic Odonto-Stomatology* 22 (2), 34e39.

Merlati, G., Savio, C., Danesino, P., Fassina, G., Osculati, A., Meghini, P., 2002. Observations on dental prostheses and restorations subjected to high temperatures: experimental studies to aid identification processes. *The Journal of Forensic Odonto-Stomatology* 20 (2), 17e24.

Muller, M., Berytrand, M.F., Quatrehomme, G., Bolla, M., Rocca, J.P., 1998. Macroscopic and microscopic aspects of incinerated teeth. *The Journal of Forensic Odonto-Stomatology* 16 (1), 1e7.

Narang, T., Arora, P., Randhawa, K., 2011. Cheiloscopy as an aid to forensic methodology. *Indian Journal of Comprehensive Dental Care* 1, 57e60.

Pretty, I.A., Addy, L.D., 2002. Dental postmortem profiles additional findings of interest to investigators. *Science & Justice: Journal of the Forensic Science Society* 42 (2), 65e74.

Pretty, I.A., Sweet, D., 2001. A look at forensic dentistry Part 1: the role of teeth in the determination of human identity. *British Dental Journal* 190 (7), 359e366.

Pretty, I.A., Webb, D.A., Sweet, D., 2001. The design and assessment of mock mass disasters for dental personnel. *Journal of Forensic Sciences* 46 (1), 74e79.

Senn, D.R., Stimson, P.G., 2010. *Forensic Dentistry*, second ed. CRC Press, Boca Raton, FL.

Senn, D.R., Weems, R., 2012. *Manual of Forensic Odontology*, fifth ed. CRC Press, Boca Raton, FL.

Sharma, P., Saxena, S., Rathod, V., 2009. Cheiloscopy: the study of lip prints in sex identification. *Journal of Forensic Dental Sciences* 1, 24e27.

Siegel, R., Sperber, N.D., 1977. Identification through the computerization of dental records. *Journal of Forensic Sciences* 22, 434e442.

Silver, W.E., Souviron, R.R., 2009. *Dental Autopsy*. CRC Press, Boca Raton, FL.

Smith, V.A., Christensen, A.M., Myers, S.W., 2010. The reliability of visually comparing small frontal sinuses. *Journal of Forensic Sciences* 55 (6), 1413e1415.

Stuart, L.S., Leonard, G., 2005. *Forensic Application of Palatal Rugae in Dental Identification*. Forensic Examiner Spring, Missouri, pp. 44e47.

Sweet, D., 2001. Why a dentist for identification? *Dental Clinics of North America* 45 (2), 237e251.

Sweet, D., DiZinno, J.A., 1996. Personal identification through dental evidence and tooth fragments to DNA. *Journal of the California Dental Association* 24 (5), 35e42.

Sweet, D., Hildebrand, D., Phillips, D., 1999. Identification of a skeleton using DNA from teeth and a PAP smear. *Journal of Forensic Sciences* 44 (3), 630e633.

## Reading List for ABFO Credentialing and Examination Committee

### Domestic Violence – Abuse and Neglect

Barbi W, Sonawane R, et al. Evaluation of orofacial features in victims of abuse and neglect of 5-16 year-old children. *J Pharm Bioallied Sci.* 2021 Nov; 13 (suppl 2): 1705-1708.

Behanie E, Gebregziabher D, et al. Intimate partner violence during pregnancy and adverse birth outcomes: a case-control study. *Reproductive Health.* 2019 Feb 25; 16(1) 22.

Cairns A, Welbury R. Injuries to the head, face, mouth and neck in physically abused children in a community setting. *International J of Ped Dent.* 2005 Oct 15 (5): 310-18.

Cohn JE, Licata JJ, Othman S, Shokri T, Zwillenberg S. Comparison of maxillofacial trauma patterns in urban versus suburban environment: A pilot study. *Craniomaxillfac Trauma Reconst.* 2020 Jun; 13 (2); 115-21.

Fisher-Owens SA, Lukefahr JL, Tate AR. Oral and dental aspects of child abuse and neglect. *Pediatrics.* Aug 2017. 40 (2): 2017-2027.

Hanson JB, Killough E, Moffat ME, Knapp JF. Retinal hemorrhages: abuse head trauma or not? *Pediatr Emergency Care.* 2015 Sep 34 (9): 665-670.

Mathurs S, Chopra R. Combating Child Abuse: The role of a dentist. *Oral Health Prev Dent.* 20 (3) 11: 243-250.

Naidoo S. A prolife of orofacial injuries in child abuse at a children's hospital. *Child Abuse Negl.* 2002 Mar: 26(3): 267-76.

Needleman HL. Orofacial trauma in child abuse: types, prevalence, management and the dental profession's involvement. *Pediatric Dentistry.* 1986 May vol 8: 71-80.

Sarkar R, Ozanne-Smith J, Based R. Systematic review of patterns of orofacial injuries in physically abused children and adolescents. *Trauma.* 2021 Jan 22 (1):136-146.

Welbury R. Torn labial frenum in isolation not pathognomonic of physical abuse. *Evid Based Dent.* 2007; 8 (3): 71.

## **Annotated Bibliography of the Peer Reviewed Literature concerning Bitemark and Patterned Injury Analysis**

Source: NIST.IR.8352sup4 Bitemark reference list, NIST Interagency Report-DRAFT  
Bitemark Analysis: A NIST Scientific Foundation Review

1. 1960 Fearnhead RW. Med Sci Law; 1:273-77 Facilities for forensic odontology. Describes the use of hand drawn acetate overlays. Draws the conclusion that "evidence which involves the identification of a person by tooth-marks left as bruises in flesh should never be admitted". Describes simple experiment. One of the first papers to question the use of bitemark evidence based upon the reliability of the technique.
2. 1963 Taylor DV. Brit Dent J; 114:389 The law and the dentist. Written by a dual qualified dentist and lawyer. Describes all aspects of forensic dentistry, including bitemarks. States "..unlikely to establish convincing proof in most cases".
3. 1966 Layton JJ. J Forensic Sci Soc; 6:76-80 Identification from a bitemark in cheese. A bitemark in cheese found at a crime scene. Control bitemark made in similar cheese by the suspect and twenty points of similarity are discussed. Suspect admitted guilt. States that BMs can never be as positive as fingerprints.
4. 1966 Harvey W, Butler O, Furness J, Laird R. J Forensic Sci Soc; 8(4):157-219 The Biggar murder. Dental, medical, police and legal aspects of a case "in some ways unique, difficult and puzzling". Extensive case report detailing a Scottish murder in which bitemark evidence played a key role in the conviction of the defendant.
5. 1968 Furness J. Br Dent J; 124(6):261-7 A new method for the identification of teeth marks in cases of assault and homicide. Paper describes the inking of the occlusal surfaces of the teeth which are then photographed and placed on white board. Lines of comparison are drawn with photographs of the injury. Technique is still used today for court exhibits depicting bitemark comparisons.
6. 1969 Furness J. J Forensic Sci Soc; 9:126-75 Teeth marks and their significance in cases of homicide. Paper claims to differentiate between marks made in self-defence, those made sadistically and "love-nips". Unconvincing. Numerous case examples given. There is somewhat of a debate on the psychology of biting and the inferences that can be made about an attacker from the injury.
7. 1970 Hodson JJ. Med Sci Law; 10(4):247-51 Forensic odontology and its role in the problems of the police and forensic pathologist. Paper outlines the value of forensic dentistry

to the police. Recommends the type of dentists who should be called to assist. Summarizes with case reports including a bitemark case on two young children.

8. 1970 Levine LJ, Beaghtler RL. NY State Dent J; 36(9):539-42 Forensic odontology - a routine case and commentary. This paper, written for the general practitioner, mentions bitemarks only in passing. The majority of the paper is devoted to an identification case.
9. 1970 Furness J. Probe; 11:221-22 Dental evidence in a case of rape. Case report describing a bite to the nose of an assailant.
10. 1971 DeVore DT. Med Sci Law; 11(3):144-5 Bitemarks for identification? A preliminary report. Author used ink models to place marks on living volunteers and cadavers. Photographs of the marks were taken in several body positions. Skin from the cadavers bearing the ink was excised. Paper concludes that there is a large margin of error in using bitemark photographs and unsecured excised skin. States that the exact position of the body when bitten must be known and replicated. A useful study. Little attention has been paid to this paper that encourages caution when examining bite injuries.
11. 1972 MacDonald DG, MacFarlane TW. Glasg Dent J; 3(1):16-9 Forensic odontology. Report of a case involving bitemarks. Case report of a bitemark on a living victim.
12. 1973 Stoddart TJ. Br Dent J; 135(6):285-7 Bitemarks in perishable substances. A method of producing permanent models. A method for producing accurate models of bitten materials, silicone impression material is recommended. Technique described is still applicable today.
13. 1973 Butler OH. Int J Forens Dent; 1(1):23-4 The value of bitemark evidence. Written by a police officer, this paper discusses the types and presentation of dental evidence.
14. 1973 Woolridge ED. Int J Forens Dent; 2(1):6-12 Significant problems of the forensic odontologist in the USA. Describes some of the legal issues that surround forensic dentistry. This topic has been addressed in more contemporary articles.
15. 1973 Harvey et al. Int J leg Med; 1973;(8):3-15. Bite-marks the clinical picture; physical features etc. First paper to show stress/strain curve for skin. Remarkable biting experiment on live volunteer with tissue specimens taken. Paper focuses on 'suckling' as a factor.
16. 1973 Luntz, L. L. and P. Luntz. "Case in Forensic Odontology - Bite-Mark in a Multiple Homicide." Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics 36(1): 72-78. Case report.

17. 1974 Marshall W. *Criminol*; 9(32):21-34 Bitemarks in apples - forensic aspects. Paper describes the stability and usefulness of bites in a variety of different types of apple.
18. 1973 Sims BG, Grant JH, Cameron JM. *Med Sci Law*; 13(3):207-10 Bitemarks in the 'battered baby' syndrome Describes the frequent occurrence of bite injuries in child abuse cases and presents three cases.
19. 1974 Simon A, Jordan H, Pforte K. *Int J Forens Dent*; 2:17-2 Successful identification of a bitemark in a sandwich. Case report describing a bitemark in a sandwich.
20. 1974 Jonason CO, Frykholm KO, Frykholm A. *Int J Forensic Dent*; 2(6):70-8 Three dimensional measurement of tooth impression of criminological investigation. Use of a stereomicroscope to measure the three dimensional aspects of bitemarks. Later repeated using scanning electron microscopy.
21. 1974 Clift A, Lamont CM. *J Forens Sci Soc*; 14(3):241-5 Saliva in forensic odontology. Describes the methods for collecting and analysing saliva for the determination of blood groups. Influential paper, although now superseded by DNA work.
22. 1974 Dinkel EH Jr. *J Forens Sci*; 19(3):535-47 Use of bitemark evidence as an investigative aid. Reviews the current (74) literature dealing with the handling and examination of bitemarks. Includes a discussion of the legal implications of the time. Case reports described. Comprehensive, and describes areas in which improvement must be made.
23. 1974 Barbanel JC, Evans JH. *J Forensic Sci Soc*; 14(3):235-8 Bitemarks in skin - mechanical factors. Describes the mechanical factors used to produce a bite, including tongue pressure and suction. States that the properties of particular skin area bitten may affect the appearance of a bitemark. Clear and concise coverage of the topic that has not been addressed since.
24. 1974 Millington PF. *J Forensic Sci Soc*; 14(3):239-40 Histological studies of skin carrying bitemarks. Histological examination of bites from both living and deceased individuals. States that complete recovery of a bite injury may take 2 or 3 weeks. States that the use of histology in determining the time of the injury may be helpful. The ageing of wounds, and in particular bitemarks, is still debated.
25. 1974 MacDonald DG. *J Forensic Sci Soc*; 14(3):229-33 Bitemark recognition and interpretation. Describes a method of classification of bitemarks based on their aetiology.
26. 1974 MacFarlane TW., MacDonald DG, Sutherland DA. *J Forensic Sci Soc*; 14(3):247-52 Statistical problems in dental identification. Discusses the issue of the individuality of the human dentition and describes an experiment to determine this. Authors conclude that their

preliminary data supports the notion that human teeth are unique to an individual level. Study looked at incidence of certain dental traits in the anterior dentition. N=200.

27. 1974 Ruddick RF. *Med Biolo Illus*; 24(3):128-9 A technique for recording bitemarks for forensic studies Describes the use of alternative light sources for the enhancement of bitemark injuries. A subject of interest to many forensic dentists.
28. 1975 Sognaes RF, Therrell R. *J Cal Dent Assoc*; 3(10):50-3 Bitemark lesions in human skin caused by an unequivocally identified 'suspect'. Describes an accidental bite caused by a child on her father.
29. 1975 Solheim T, Leidal TI. *Forensic Sci*; 6(3):205-15 Scanning electron microscopy in the investigation of bitemarks in foodstuffs. In this study students with no obvious irregularities on their anterior teeth were asked to bite various foodstuffs. Using SEM the marks were analysed and the authors concluded that as many individual characteristics were visible the technique was useful in forensic investigations. An interesting technique, although infrequently used in case work.
30. 1975 Whittaker DK. *Int Dent J*; 25(3):166-71 Some laboratory studies on the accuracy of bitemark comparisons. Author studied bites in wax and on pig skin. Found that those on pig skin were less reliable than those on wax in terms of biter identification. Highest accuracy found was 76%. Extrapolates that bites on human skin may be similarly unreliable; offers a warning that more research is required. Highly cited paper - often regarded as one of the first attempts to validate the science of bitemark analysis. Warning went unheeded.
31. 1975 Whittaker DK, Watkins KE, Wiltshire J. *Int J Forensic Dent*; 3:2-7 An experimental assessment of the reliability of bitemark analysis. Same paper as described above - republished with some editorial differences and apparently two new authors.
32. 1976 Bang G. *Acta Odontol Scand*; 34(1):1-11 Analysis of tooth marks in a homicide case. Observations by means of visual description, stereo-photography, scanning electron microscopy and stereometric graphic plotting. Author was asked to re-examine a bitemark case involving an injury to a breast. Using novel techniques, including SEM, the author found that the originally convicted individual was the likely biter.
33. 1976 Anderson WR, Hudson RP. *Forens Sci*; 7(1):71-4 Self inflicted bitemarks in battered child syndrome. Victim of child abuse victim had bitemarks on both arms. Authors demonstrated that the bite was from the victim. Importance of this phenomenon in evaluation of bite injuries is discussed. Used transparent overlays in analysis. Established that bites can be self-inflicted.

34. 1976 MacDonald DG, Laird WR Int J Forensic Dent; 3(10):26-30 Bitemarks in a murder case. Case report describing a murder involving a bite to the abdomen and breast. Authors describe the use of statistics to determine the number of individuals capable of producing the bite. Statistical evidence was presented in court. Use of statistics is interesting in this case. Arrived at a figure of 1 in 62 million. It must be noted that approximately half of the Scottish population were edentulous at this time.
35. 1976 Sognaes RF. Int J Forensic Dent; 3(9):14-6 Dental science as evidence in court. Describes some applications of forensic dental techniques in court.
36. 1976 Mills PB. Int J Forensic Dent; 3:38-9 An unusual case of bitemark identification. Describes a bitemark on a bullet.
37. 1976 Vale GL, Sognaes RF, Felando GN, Noguchi TT. J Forensic Sci; 21(3):642-52 Unusual three-dimensional bitemark evidence in a homicide case. Describes a case of bitemark identification. Bite was on victim's nose. Authors concluded a positive match and this became the first case in Californian Law using bitemark evidence.
38. 1976 Goodbody RA, Turner CH, Turner JL. Med Sci Law; 16(1):44-8 The differentiation of toothed marks: report of a case of special interest. Discusses the differences between bite injuries and "toothed" injuries such as those made by a saw. Used acetate film to compare to a suspect's dentition.
39. 1977 Levine LJ Dent Clin N Amer; 21(1):145-158 Bitemark evidence. Review followed by numerous case reports.
40. 1977 Sognaes RF. Int J Forensic Dent; 4(13):17-20 The case for better bite and bitemark preservations. Describes the excision of skin and the use of elastomeric impression materials for the preservation of bitemark evidence.
41. 1977 Kerr NW. Int J Forensic Dent; 4:20-23 Apple bitemark identification of a suspect. Simple case report of a bitemark in an apple found after a house break-in.
42. 1977 Sognaes RF. J Cal Dent Assoc; 4:22-8 Battered child death involving enigmatic bitemark evidence. Cases report describing bitemark evidence in a child abuse case. Describes comparison technique and the legal outcome. Uses SEM.
43. 1977 Sognaes RF. New Eng J Med; 296:79-85 Forensic stomatology. Three part series. Sognaes reviews the forensic literature in a three part series as part of the Medical Progress section. Various methods of forensic evaluation of bitemarks are discussed.

44. 1978 Sognaes RF. Dental Survey; 54(12):12-24 Forensic oral measurements. A review of the "state-of-the-art" of forensic dentistry.
45. 1979 Beckstead JW, Rawson RD, Giles W. JADA; 99(1):69-74 Review of bite mark evidence. A general review.
46. 1979 Morrison HL. J Forens Sci; 24(2):492-502 Psychiatric observations and interpretations of bite mark evidence in multiple murders. Interesting paper in which the author describes over 400 hours of contact time with a serial murder who bit many of his victims. Whilst not answering "why do people bite?" author raises interesting questions. The psychological aspects of bitemarks are yet to be firmly established.
47. 1979 Rawson RD, Bell A, Kinard BS, Kinard JG J Forens Sci; 24(4):898-901 Radiographic interpretation of contrast-media-enhanced bite marks. Describes a techniques of radiographing soft -tissue that has been removed from cadavers. Study used postmortem bites.
48. 1979 Aitken C, MacDonald DG. An application of discrete kernel methods to forensic odontology. Applied Statistics, 28:1;55-61. Probability study using MacFarlane's 1974 dataset of 200 subjects. No practical value.
49. 1980 Glass RT, Andrews EE, Jones K 3d. J Forens Sci; 25(3):638-45 Bitemark evidence: a case report using accepted and new techniques. Case report with bitemarks found on a murder victim. Authors describe the use of novel techniques including microbiologic and histologic/histochemical. Preparation and presentation of evidence are discussed.
50. 1980 Holt JK. J Forensic Sci Soc; 20(4):243-6 Identification from bitemarks. A collection of case reports describing different methods of augmenting bite photographs and production of 3D models of bite injuries.
51. 1981 Furness J. Am J Forensic Med Pathol; 2(1):49-52 A general review of bitemark evidence. A personal recollection of a forensic dentist, describes case work and issues around bitemarks in English law. No papers cited.
52. 1981 Sperber ND, Lubin H. J Am Col Health Association.; 29(4):165-7 Bite mark evidence in crimes against persons. Paper describes bites for college and university health workers and security personnel. Techniques for photographing the injuries are presented.

53. 1981 Jakobsen JR, Keiser-Nielsen S. *Forensic Sci Int*; 18(1):41-55 Bitemark lesions in human skin. Case of severe bitemarks on the back of a male victim. The authors used a volunteer to repeat the bite injuries for comparison. Ethical issues surround the use of human volunteers in bitemark studies.
54. 1981 Sognaes, R. F., R. D. Rawson, et al. (1981). "Computer Comparison of Radiographic Bite-Mark Patterns in Identical-Twins." *Journal of the Forensic Science Society* 21(2): 144-144.
55. 1981 Suzuki, K., M. Hashimoto, et al. (1981). "Bite Mark Evidence - a Case-Report and Preliminary-Study." *Journal of the Forensic Science Society* 21(2): 147-148. Case report.
56. 1982 Dorion RB. *J Can Dent Assoc*; 48(12):795-8 Bite mark evidence. General review.
57. 1982 Webster G. *Forensic Sci Int*; 20(1):45-52 A suggested classification of bitemarks in foodstuffs in forensic dental analysis. Author states that it is the labial surfaces rather than the biting edges that are responsible for bitemarks in food. Webster suggests an alternate terminology to bring uniformity in describing such evidence. Bitemarks in food are rare in criminal cases, although recently cheese has yielded DNA from a bite.
58. 1982 Sognaes RF, Rawson RD, Gratt BM, Nguyen NB. *JADA*; 105(3):449-51 Computer comparison of bitemark patterns in identical twins. Using computer technology and radiographic bitemark analysis the authors conclude that occlusal arch form and individual tooth positions, even in identical twins are in fact unique. This paper is frequently cited as evidence of dental "uniqueness". Highly cited paper, frequently used as part of the dental uniqueness argument.
59. 1982 Rudland M. *Med Sci Law*; 22(1):47-50 The dimensional stability of bitemarks in apples after long-term storage in a fixative. Paper describes the method for preserving a variety of apple types. Used a pre-defined mark which was examined over a period of ten years, with little distortion noted.
60. 1983 Irons F, Steuterman MC, Brinkhous W. *Am J Forensic Med Pathol*; 4(2):177-80 Two bitemarks on assailant. Primary link to homicide conviction. Two bitemarks were found on a suspect in a homicide. The authors state that the injuries matched the victims' teeth and the suspect pled guilty to the offence.
61. 1983 McCullough DC. *Am J Forensic Med Pathol*; 4(4):355-8 Rapid comparison of bitemarks by xerography. Case report of bite in cheese, the detective used a photocopier to record the evidence.

62. 1983 Ligthelm AJ, de Wet FA. J Forens Odontostomatol; 1(1):19-26 Registration of bitemarks: a preliminary report. Used bites on sheep to investigate methods of recording bitemarks. Utilized SEM to compare back to the human volunteers who bit the sheep.
63. 1983 Deming JE, Mittleman RE, Wetli CV J Forens Sci; 28(3): 572-6 Forensic science aspects of fatal sexual assaults on women. The authors review the case files of 41 female victims of proven fatal sexual assault. Describe bitemarks as not infrequent in such crimes.
64. 1983 Vale GL, Noguchi TT. J Forens Sci; 28(1):61-9 Anatomical distribution of human bitemarks in a series of 77 cases. Paper which examined the author's own cases to establish common bite locations. Seminal paper, establishes the nature of bites and likely crimes.
65. 1984 Rawson RD, Brooks S. Am J Forensic Med Pathol; 5(1):19-24 Classification of human breast morphology important to bitemark investigation. Describes the range of breast morphologies found and their likely impact on bitemark analysis.
66. 1984 Walter RA. Am J Forensic Med Pathol; 5(1):25-9 An examination of the psychological aspects of bitemarks. Paper attempts to examine some of the psychological threads which appear to be operative for the perpetrator of bite marks. Author makes outrageous claims. Walter later discredited.
67. 1984 Corbett ME, Spence D. Br Dent J; 157(8):270-1 A forensic investigation of teeth marks in soap. A bite mark in soap was used as evidence in the prosecution of a homicide of a 2 year old girl.
68. 1984 Elliot TR. Rogers AH. Haverkamp JR. Groothuis D. Forens Sci Int; 26(2):131-7 Analytical pyrolysis of Streptococcus salivarius as an aid to identification in bitemark investigation Authors describe "finger-printing" strains of Streptococcus salivarius. The results of the analysis of isolates from two individuals are presented, illustrating the differentiation of S. salivarius at strain level according to the origin of the isolate.
69. 1984 Brown KA. Elliot TR. Rogers AH. Thonard JC. Forensic Sci Int; 26(3):193-7 The survival of oral streptococci on human skin and its implication in bitemark investigation. Authors describe their experiments for recovering bacteria from saliva. Found that after 24 hours on skin viable bacteria could still be removed.
70. 1984 Dorion RB. J Can Dent Assoc; 50(2):129-30 Preservation and fixation of skin for ulterior scientific evaluation and courtroom presentation. Describes a method for removing and preserving human skin exhibiting bite injuries. Author uses acrylic which is placed on the skin, cyanoacrylate glue used to stick the acrylic ring to the skin and the tissue excised.

Three year preservation achieved little or no post fixation shrinkage. No discussion of how the lack of shrinkage was assessed. Numerous photographs illustrate the procedure well.

71. 1984 Krauss TC J Forens Sci; 29(2):633-8 Photographic techniques of concern in metric bite mark analysis. Author advises the use of a rigid ruler for scale, proper camera positioning in relation to the scale, and a method to evaluate the distortion in a two-dimensional print that records a three-dimensional object is suggested. Disregarding these factors makes metric bite mark analysis inappropriate.
72. 1984 Rawson RD. J Forens Sci; 29(1):245-53 Statistical evidence for the individuality of the human dentition. A general population sample of bite marks in wax was used to determine how unique bites are. Authors conclude that the analysis confirms the unique nature of human bites. Seminal paper, but incorrectly assumed that tooth position is uniformly distributed and not correlated. Used the product rule to calculate probability. Refuted by Bush et al, 2011.
73. 1984 Rawson RD. J Forens Sci; 29(1):254-9 Incidence of bitemarks in a selected juvenile population: a preliminary report. A study of the frequency of bite marks among sheltered children. Found an incidence of 1 545 bite marks per 100 000 population. Analysis of the age, sex, and location of bite marks is presented.
74. 1984 Karazulas CP. J Forens Sci; 29(1):355-358 Presentation of bitemark evidence resulting in the acquittal of a man after serving seven years in prison for murder Author describes case in which he appeared for the defense with another odontologist testifying for the prosecution. 3 months of bitemark analysis.
75. 1984 Rao VJ, Souviron RR. J Forensic Sci; 19(1):326-30 Dusting and lifting the bite print: a new technique. Utilizing the powder and brush method employed in lifting fingerprints, one of the authors was able to lift tooth prints on the body surface of both living and dead victims. Possibly a useful technique but never revisited.
76. 1984 Fellingham SA, Kotze TJ, Nash JM. J Forensic Odonto-Stomatology 2:2, 45-52. Probabilities of Dental Characteristics. Combination review and study of statistical probability of dental configurations. Found 4% match rate in two out of three populations studied.
77. 1984 Sperber, N. D. (1984). "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 24(4): 304-305.

78. 1984 Sperber, N. D. (1984). "Procedures in Recording Bite Mark Evidence in Sexual Assault and Child-Abuse Cases." Journal of the Forensic Science Society **24**(4): 305-305.
79. 1985 Krauss TC, Warlen SC. *J Forens Sci*; 30(1):262-8 The forensic science use of reflective ultraviolet photography. The procedure for reflective ultraviolet photography in bite mark cases is presented. Technique is described as simple and inexpensive.
80. 1985 Havel DA *Journal of Biological Photography*. 53(2):59-62 The role of photography in the presentation of bitemark evidence. Paper explains the various photographic techniques that can be used with bitemark evidence.
81. 1985 Walter RD. *Am J Forensic Med Pathol*; 6(3):219-21 Anger biting - the hidden impulse. Examines principle of anger related biting, describes memory loss of biting incidents and offers a framework to resolving anger biting by decompressing the emotional content. Needs a serious assessment.
82. 1985 Drinnan AJ, Melton MJ. *Int Dent J*; 35(4):316-21 Court presentation of bitemark evidence. Instructs readers on court presentation techniques and gives details on how to avoid common pitfalls. Opens with the acceptance that an individual's bite is unique. Quote twin study as support for this and supported by Rawson et al. Discusses the polarization of expert opinions. Describes Frye.
83. 1985 Sobel, M. N. and J. A. Perper (1985). "Self-Inflicted Bite Mark on the Breast of a Suicide Victim." American Journal of Forensic Medicine and Pathology **6**(4): 336-339. Case report.
84. 1985 Bernstein ML. *J Forens Sci*; 30(3):958-64 Two bitemark cases with inadequate scale references. Both cases illustrate that a technical infraction in processing and recording bite marks, though serious, need not automatically disqualify the analysis.
85. 1986 Sperber N. *Forensic Sci Int*; 30(2-3):187-93 Identification of children and adults through federal and state dental identification systems: recognition of human bitemarks. Mainly a discussion of human dental identification - the paper contains a small section on human bitemarks to complete the forensic dental review.
86. 1986 David TJ. *J Forens Sci*; 31(3):1126-34 Adjunctive use of scanning electron microscopy in bitemark analysis: a 3D study. Case report in which adjunctive use of scanning electron microscopy (SEM) demonstrated the presence of unusual three-dimensional characteristics in a bite mark. Technical problems with images.

87. 1986 Rawson RD, Vale GL. J Forens Sci; 31(4):1261-8 Analysis of photographic distortion in bitemarks: a report of the bitemark guidelines committee. States that some degree of distortion is found in all bitemarks. A method of analyzing the distortion is presented. Recommend a 90o angle for bitemark photography.
88. 1986 Rawson RD, Vale GL, Sperber ND, Herschaft EE, Yfantis A. J Forens Sci; 31(4):1235-60 Reliability of the Scoring System of the American Board of Forensic Odontology for Human Bite Marks. The various methods of determining the validity of the scoring guide are presented with statistical data generated from scores reported by recognized forensic science experts. States that this paper represents the first truly scientific approach to bitemark analysis. Emphasize the need for peer review. The paper was ultimately disregarded as overly complex and the system never gained credibility with forensic dentists.
89. 1986 ABFO Inc. JADA; 112:383-6 Guidelines for bitemark analysis. This paper, written by the members of the Bite Mark Committee, presents guidelines for the proper investigation of bite injuries. The article cites Hale's 78 paper as an instigator in the process of establishing protocols. These guidelines include a discussion of the controversial bitemark scoring system. Despite being described as "dynamic" these guidelines were not updated.
90. 1986 Bernstein, M. L. (1986). "Testing the Bite Mark." Journal of the American Dental Association **112**(6): 806-806. Letter to the editor.
91. 1986 Wagner GN. Pediatric Dentistry 1986;8: Special issue 1. 96-100 Bitemark identification in child abuse cases. General review of causes and occurrence of BM in children.
92. 1987 Warnick AJ, Biedrzycki L, Russanow G. J Forensic Sci; 32(3):788-92 Not all bite marks are associated with abuse, sexual activities, or homicides: a case study of a self-inflicted bitemark. A case of self-inflicted bite mark during an episode of myocardial ischemia is presented. Paper alerts odontologists to the non-criminal bite.
93. 1987 Ligthelm AJ, Coetzee WJ, van Niekerk PJ. J Forensic Odont;97 5(1):1-8 The identification of bite marks using the reflex microscope. Used bitemarks in cheese, apples and chewing gum. The use of the reflex microscope is described. Not used in casework.
94. 1987 Farrell, W. L., R. D. Rawson, et al. (1987). "Computerized Axial-Tomography as an Aid in Bite Mark Analysis - a Case-Report." Journal of Forensic Sciences **32**(1): 266-272. Case report.

95. 1987 Dorion RB. J Forens Sci; 32(3):690-7 Transillumination in bite mark evidence. Author describes the value of using transillumination in the examination of bitemarks. Author describes the technique's use when bites are poorly defined, barely visible, or obscured by other superimposed bite marks or traumatic injury patterns. Controversy surrounds the removal of tissue from victims of crime. Does the increase in evidentiary value justify this mutilation?
96. 1988 Zarkowski P. J Law & Eth Dent; 1(1):47-57 Bite mark evidence: its worth in the eyes of the expert. Excellent review of the legal status of bitemarks. States " [BMs] evolved from a weak beginning...never progressed through a testing phase to measure accuracy and reliability" Recommends cautious use.
97. 1988 Hyzer WG, Krauss TC. J Forensic Sci; 33(2):498-506 The Bite Mark Standard Reference Scale--ABFO No. 2. The ABFO scale is now universally adopted by not only forensic dentists but also many other forensic professionals. This paper describes the design and constructional features of the scale and offers guidelines for its effective application to bite mark photography. Paper describes an important tool in BM investigations.
98. 1988 Benson, B. W., J. A. Cottone, et al. (1988). "Bite Mark Impressions - a Review of Techniques and Materials." Journal of Forensic Sciences **33**(5): 1238-1243. Method paper.
99. 1988 Vale GL, Rawson RD. J Forensic Sci; 33(1):20 Discussion of "Reliability of the scoring system of the ABFO for human bitemarks" A "back-track" from the scoring system, advising caution when using the index and recommending more research. Brought to an end the point system - no further work was carried out.
100. 1988 Summers, R. and D. A. Lewin (1988). "Photographic Procedures Relating to Bite Mark Evidence." Journal of the Forensic Science Society **28**(3): 211-212. Method paper.
101. 1989 Gundelach A. J Forensic Odont;7(2):11-6 Lawyers' reasoning and scientific proof: a cautionary tale in forensic odontology. Describes a legal case and states that a cautious approach to bitemark evidence should be taken. Yet another paper which advises caution when using bitemark evidence. Little attention paid to such articles.
102. 1989 Grey, T. C. (1989). "Defibrillator Injury Suggesting Bite Mark." American Journal of Forensic Medicine and Pathology **10**(2): 144-145. Case report.
103. 1989 Dailey, J. C., A. F. Shernoff, et al. (1989). "An Improved Technique for Bite Mark Impressions." Journal of Prosthetic Dentistry **61**(2): 153-155. Method of taking impression using low viscosity impression and custom tray materials.

104. 1990 Whittaker DK *Dental Update*; 17(9):386-90 Principles of forensic dentistry: 2. Non-accidental injury, bitemarks and archaeology. The paper reviews the role of the forensic dentist with respect to non-accidental injury to children, analysis of bite marks, and archaeological investigations. Another review on this subject.
105. 1990 West MH, Barsley RE. *Mississippi D Ass J*; 46(4):7, 11-2 First bite mark convictions in Mississippi. Case reports of bitemark cases in this State.
106. 1990 West MH, Barsley RE, Frair J, Seal MD. *J Forensic Sci*; 35(6):1477-85 The use of human skin in the fabrication of a bite mark template: two case reports. In this article skin was used as a template for the reproduction of a bite. In one case the victim's skin was used; in the other, the skin of an anatomically similar person was used. The use of inked dental casts, photography, and transparent overlays significantly reduced the errors common to analysis of bite marks in these highly curved areas. Novel technique although not well accepted.
107. 1990 Pierce LJ, Strickland DJ, Smith ES *Am J Forensic Med Pathol*; 11(2):171-7 The case of *Ohio v. Robinson*. An 1870 bite mark case. This trial represents an early and perhaps the first attempt to admit bite-mark evidence in a court of law in the United States. First case - historical value only.
108. 1990 Barsley RE, West MH, Fair JA. *Am J Forensic Med Pathol*; 11(4):300-8 Forensic photography. Ultraviolet imaging of wounds on skin. This article discusses the photographic techniques involved in reflective and fluorescent UVL. Documentation of skin wounds via still photography and dynamic video photographic techniques, which utilize various methods of UV illumination, are covered. The use of advanced photographic techniques has been questioned in courts.
109. 1990 R T Allison and D K Whittaker 1990 43: 600-603 *J Clin Pathol* of Use of benzidine for histological demonstration of haemoglobin in human bite marks. Describes use of a prohibited carcinogen to stain for haemoglobin.
110. 1991 Dailey JC. *J Forensic Sci*; 36(2):565-70 A practical technique for the fabrication of transparent bite mark overlays. A quick, inexpensive, and accurate technique for generating transparent overlays, using office photocopy machines, for use in bite mark case analysis is presented. Photocopy technique was the 1st attempt to produce an objective overlay with precision.
111. 1992 Robinson E, Wentzel J. *J Forensic Sci*; 37(1):195-207 Toneline bite mark photography. A high-contrast film technique previously used primarily in the graphic arts field has been refined and applied to forensic odontology.

112. 1993 Mailis NP. J Forensic Odont; 11(1):31-3 Bitemarks in forensic dental practice: the Russian experience. Cases from Russia are described.
113. 1993 Figgener L. J Forensic Odont; 11(2):71-5 Points of contact between quality issues and forensic aspects. Issues related to jurisprudence.
114. 1994 Ligthelm AJ, van Niekerk PJ J Forensic Odont; 12(2):23-9 Comparative review of bitemark cases from Pretoria, South Africa. The purpose of this study was to record the experiences with bitemark cases presented to forensic odontologists at the University of Pretoria from 83-93 and to compare them with trends and findings elsewhere. Some details on anatomical locations may be useful.
115. 1994 Wood RE, Miller PA, Blenkinsop BR. J Forensic Odont; 12(2):30-6 Image editing and computer assisted bitemark analysis: a case report. Three different approaches for comparison with the bitemark photograph were utilized: comparison with radiographs of amalgam-filled impressions of dental casts, a transparent overlay technique and comparison with photographs of a simulated bitemark inked onto the hand of a volunteer.
116. 1994 Thompson IO, Phillips VM. J Forensic Odont; 12(2):37-40 A bitemark case with a twist. This is a case report in which the bite patterns of two suspects were compared to a bitemark on the breast of a murder victim. Each suspect had sufficient concordant features to have been found guilty of producing the bitemark. The irony in this case is that the bitemark was not inflicted by the murderer.
117. 1994 Aboshi H, Taylor JA, Takei T, Brown KA. J Forensic Odont; 12(2):41-4 Comparison of bitemarks in foodstuffs by computer imaging: a case report. Marks in cake discovered at a crime scene were examined and compared with the teeth of a suspect arsonist. The comparison was made by computer imaging analysis and a remarkable similarity in arch shape was observed.
118. 1994 Jessee SA Paediatric Dentistry; 16(5):336-9 Recognition of bite marks in child abuse cases. Health professionals must be attentive to any and all signs of child maltreatment. Bite marks are one of several visual expressions of active child abuse. Another paper describing this important issue.
119. 1994 Barry LA Bull Hist Dent; 42(1):21-7 Bite mark evidence collection in the United States. A legal historical review.
120. 1994 Nuckles DB, Herschaft EE, Whatmough LN. General Dentistry. 42(3):210-4 Forensic odontology in solving crimes: dental techniques and bite-mark evidence. Usual review of technique and legal issues.

121. 1994 David, T. J. and M. N. Sobel (1994). "Recapturing a 5-Month-Old Bite Mark by Means of Reflective Ultraviolet Photography." Journal of Forensic Sciences **39**(6): 1560-1567. The Kunco case report. Astonishing claim of being able to positively identify a bite perpetrator based on a 5 month old bitemark. Appeal denied in 2011.
122. 1994 Golden, G. S. (1994). "Use of Alternative Light-Source Illumination in Bite Mark Photography." Journal of Forensic Sciences **39**(3): 815-823. Method paper.
123. 1995 Nambiar P, Bridges TE, Brown KA. J Forensic Odont; 13(2):18-25 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. In this study, an interactive shape analysis computer program ("SCIP"-Shape Comparison Interactive Program) has been employed in an attempt to derive experimentally a quantitative comparison, in the form of a Similarity Index (S.I.), between the "offender's" teeth and the bite marks produced on a standard flat wax form.
124. 1995 Nambiar P, Bridges TE, Brown KA. J Forensic Odont; 13(2):26-32 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. In this study, "SCIP" was employed in an attempt to quantify the comparison, in the form of the Similarity Index (S.I.), between the "offender's" teeth and the bite marks produced on foodstuffs and on human skin, under experimental conditions.
125. 1995 Free EW, Brown KA. J Forensic Odont; 13(2):33-5 A bitemark and a fracture? Case presents an interesting problem of interpretation of odontological evidence relevant to the identification of the offender, and raises issues concerning proper procedures for the utilisation of expertise in forensic odontology. First case in Dutch law.
126. 1995 Jakobsen J, Holmen L, Fredebo L, Sejrsen B. J Forensic Odont; (13)2:36-40 Scanning electron microscopy, a useful tool in forensic dental work. Another description of the use of SEM in bitemarks, presents four example cases.
127. 1995 Rothwell BR. JADA; 126(2):223-32 Bite marks in forensic dentistry: a review of legal, scientific issues. This review article explores the legal and scientific basis of bite mark evidence.
128. 1995 McKinstry, R. E. (1995). "Resin Dental Casts as an Aid in Bite Mark Identification." Journal of Forensic Sciences **40**(2): 300-302. Method paper.

129. 1996 Naru AS, Dykes E. *Science & Justice*. 36(1):47-50 The use of a digital imaging technique to aid bite mark analysis. Describes the use of a computer based overlay technique and uses a case example to illustrate the method.
130. 1996 Vale GL. *J Cal Dent Assoc*; 24(5):29-34 Dentistry, bite marks and the investigation of crime. Another review of the bitemark science - includes case examples.
131. 1996 West MH, Hayne S, Barsley RE. Wound patterns: detection, documentation and analysis. *J Clinical Forensic Med* (1996)3, 21-7. Discussion of how odontologists team with pathologists to interpret wounds in skin.
132. 1996 Aksu MN, Gobetti JP. *Am J Forensic Med Pathol*; 17(2):136-40 The past and present legal weight of bite marks as evidence. Legal review. This paper was followed by a letter from Ann Norrlander who criticised many of the points. Better legal reviews available.
133. 1997 Naru AS, Dykes E. *Science & Justice*; 37(4):251-8 Digital image cross-correlation technique for bite mark investigations. Describes the production of a complex computer program for assessing bitemarks. Describes a series of experiments to validate the system.
134. 1997 Williams RG, Porter BE. *J Oklahoma Dent Assoc*; 88(2):29-30 Forensic dentistry. Documentation of bite-mark evidence using multiple computer-assisted techniques. Describes a computer technique - however describes using a pencil to highlight the incisal edges prior to scanning - subjective?
135. 1997 Dailey, J. C. and C. M. Bowers. Aging of bitemarks: A literature review. *Journal of Forensic Sciences* **42**(5): 792-795. Cautionary analysis suggesting that aging of wounds is not reliable.
136. 1998 Sweet D, Parhar M, Wood RE. *J Forensic Sci*; 43(5):1050-5 Computer-based production of bite mark comparison overlays. This paper describes this technique to enable the odontologist to produce high-quality, accurate comparison overlays without subjective input.
137. 1998 Wright FD. *J Forensic Sci*; 43(4):881-7 Photography in bite mark and patterned injury documentation. Part 2: A case study. The evidence recovered at each photography session is discussed and photographs are presented for review. Suggestions concerning the need for more research are presented.

138. 1998 Sweet D, Bowers CM. *J Forensic Sci*; 43(2):362-7 Accuracy of bite mark overlays: a comparison of five common methods to produce exemplars from a suspect's dentition. Five common overlay production methods were compared using digital images of dental study casts as a reference standard.
139. 1998 Atkinson SA. *Med, Sci & Law*; 38(1):34-41 A qualitative and quantitative survey of forensic odontologists in England and Wales, Forty forensic odontologists in England and Wales, as listed for the British Association for Forensic Odontology in Spring 94, were surveyed by post. Interesting paper with some useful statistics.
140. 1998 Whittaker DK, Brickley MR, Evans L. *Forensic Sci Int*; 92(1):11-20 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. Fifty colour prints of human bite marks were sent to 109 observers who were asked to decide using a six point rating scale, whether the marks had been produced by the teeth of an adult or a child. Non-experts had similar performance to experts.
141. 1999 McKenna CJ, Haron MI, Taylor JA. *J Forensic Odont*, 1999;17:40-43. Evaluation of a bitemark using clear acrylic replicas of the suspect's dentition – a case report.
142. 1999 McGivney, J. and R. Barsley (1999). "A method for mathematically documenting bitemarks." *Journal of Forensic Sciences* 44(1): 185-186. Proposed method paper.
143. 1999 Sweet, D. and G. G. Shutler (1999). "Analysis of salivary DNA evidence from a bite mark on a body submerged in water." *Journal of Forensic Sciences* 44(5): 1069-1072.
144. 2000 Rawson, R. B., G. H. Starich, et al. (2000). "Scanning electron microscopic analysis of skin resolution as an aid in identifying trauma in forensic investigations." *Journal of Forensic Sciences* 45(5): 1023-1027. SEM study claiming that living skin records detail as small as 3µm.
145. 2000 Pretty, I. A. and D. Sweet (2000). "Anatomical location of bitemarks and associated findings in 101 cases from the United States." *Journal of Forensic Sciences* 45(4): 812-814. Analysis of bitemark anatomical location in US cases.
146. 2001 Sheasby DR, McDonald DG. *For Sci Int* 122:1:Oct 75-8. A forensic classification of distortion in human bitemarks. Important cautionary paper. Acknowledges that distortion is probably present in all bitemarks.
147. 2001 Pretty IA, Turnbull MD. Lack of dental uniqueness between two bite mark suspects. Urges caution due to similarity of dentitions.

148. 2001 Pretty IA, Sweet D. *Science and Justice* 2001;41(2): 85-92. The scientific basis for human bitemark analyses – a critical review. Much cited review paper.
149. 2001 Pretty, I. A. and D. Sweet (2001). "Digital bite mark overlays - An analysis of effectiveness." *Journal of Forensic Sciences* **46**(6): 1385-1391. One of the few papers addressing error rates. Used a pigskin model and reported sensitivity and specificity values against a known gold standard. Best practices were employed with overlays provided to the examiners.
150. 2001 Karazulus, C. P., T. M. Palmbach, et al. (2001). "Digital enhancement of sub-quality bitemark photographs." *Journal of Forensic Sciences* **46**(4): 954-958. Describes arbitrary image manipulation.
151. 2001 Kouble, R. F. and G. T. Craig (2001). "Comparisons between direct and indirect techniques for bite mark analysis." *Journal of Dental Research* **80**(4): 1179-1179. Method paper.
152. 2001 Rothwell, B. R. and A. V. Thien (2001). "Analysis of distortion in preserved bite mark skin." *Journal of Forensic Sciences* **46**(3): 573-576.
153. 2001 Sweet, D. and I. A. Pretty (2001). "A look at forensic dentistry - Part 2: Teeth as weapons of violence - identification of bitemark perpetrators." *British Dental Journal* **190**(8): 415-418. General review article.
154. 2001 Arheart, K. L. and I. A. Pretty (2001). "Results of the 4th ABFO Bitemark Workshop-1999." *Forensic Science International* **124**(2-3): 104-111. Reports results of an ABFO blind study workshop using ROC analysis. Paper has contradictory language stating that forensic pattern analysis is subjective and not an exact science, but also that bitemark examination is an accurate technique. The results as described can be interpreted in several ways.
155. 2002 Kittelson JM, Kieser JA, Buckingham DM, Herbison GP. *J For Odont.* 2002; 20(2):31-7 Weighing evidence: Quantitative measures of the importance of bitemark evidence. Concludes that likelihood ratios are not useful in bitemark analysis.
156. 2002 Bowers, C. M. and R. J. Johansen (2002). "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* **47**(1): 178-185. Method of rectifying distortion using Photoshop. Although widely accepted at the time, the method is actually arbitrary image manipulation.

157. 2002 Pretty, I. A. and R. C. Hall (2002). "Forensic dentistry and human bite marks: issues for doctors." Hospital Medicine **63**(8): 476-482. General review.
158. 2002 Vogeley, E., M. C. Pierce, et al. (2002). "Experience with wood lamp illumination and digital photography in the documentation of bruises on human skin." Archives of Pediatrics & Adolescent Medicine **156**(3): 265-268. UV photography method paper.
159. 2002 Webb, D. A., D. Sweet, et al. (2002). "Forensic implications of biting behavior: A conceptually underdeveloped area of investigation." Journal of Forensic Sciences **47**(1): 103-106. Exploration of behavioral aspects of biting.
160. 2003 McNamee, A. H. and D. Sweet (2003). "Adherence of forensic odontologists to the ABFO guidelines for victim evidence collection." Journal of Forensic Sciences **48**(2): 382-385. Survey of practices.
161. 2003 Pretty IA. J For Sci 2003;48(5):1117-20. A web-based survey of odontologist's opinion concerning bitemark analysis. 91% of respondents believed the dentition unique, 78% believed uniqueness transferred to skin.
162. 2003 Thali, M. J., A. Braun, et al. (2003). "Bite mark documentation and analysis: the forensic 3D/CAD supported photogrammetry approach." Forensic Science International **135**(2): 115-121. Graphical superposition of a single dental model and bitemark in 3D space (N=1).
163. 2004 Kouble, R. F. and G. T. Craig (2004). "A comparison between direct and indirect methods available for human bite mark analysis." Journal of Forensic Sciences **49**(1): 111-118. Repeat of material presented in 2001.
164. 2004 Randerson, J. (2004). "Bite-mark evidence can leave a false impression." New Scientist **181**(2438): 6-7. Brief review of concerns about BM evidence.
165. 2005 Freeman, A. J., D. R. Senn, et al. (2005). "Seven hundred seventy eight bite marks: Analysis by anatomic location, victim and biter demographics, type of crime, and legal disposition." Journal of Forensic Sciences **50**(6): 1436-1443. Results of bite anatomical location survey.
166. 2005 Martin-de las Heras, S., A. Valenzuela, et al. (2005). "Computer-based production of comparison overlays from 3D-scanned dental casts for bite mark analysis." Journal of Forensic Sciences **50**(1): 127-133. Describes 3D software package that uses a proprietary file

format.

167. 2005 McNamee, A. H., D. Sweet, et al. (2005). "A comparative reliability analysis of computer-generated bitemark overlays." Journal of Forensic Sciences **50**(2): 400-405. Another study on overlays.
168. 2005 Rahimi, M., N. C. K. Heng, et al. (2005). "Genotypic comparison of bacteria recovered from human bite marks and teeth using arbitrarily primed PCR." Journal of Applied Microbiology **99**(5): 1265-1270. Proof of concept paper matching bacteria genotypes to eight volunteers.
169. 2006 Pretty IA, Sweet D. J For ODont 24;1:2006. The judicial view of bitemarks within the United States Criminal Justice system. Review of appellate court proceedings and problems.
170. 2006 Pretty IA. For Sci Int 159;1 S110-120. The barriers to achieving an evidence base for bitemark analysis. Review stating urgent need for further studies to achieve scientific basis.
171. 2006 Bowers CM. For sci Int 159S 2006 S104-S109. Problem-based analysis of bitemark misidentifications: the role of DNA. Review of overturned cases.
172. 2006 Al-Talabani et al. Digital analysis of experimental human bitemarks: Application of two new methods. J Forensic Sci 51:6, 1372-5  
In the only empirical study of it's kind, 50 living volunteers were bitten. Study concludes that it was difficult to distinguish biters due to gross similarity of the dentitions.
173. 2006 Bernitz, H., W. F. P. van Heerden, et al. (2006). "A technique to capture, analyze, and quantify anterior teeth rotations for application in court cases involving tooth marks." Journal of Forensic Sciences **51**(3): 624-629. Reports metric dental measurements of tooth rotation prevalence in a population. Classified as common, uncommon and very uncommon.
174. 2006 Van der Velden. J Forensic Odont 2006;24(1)14-7. Bite mark analysis and comparison using image perception software. Report on digital image manipulation with no justification for arbitrary changes.
175. 2006 Murmann, D. C., P. C. Brumit, et al. (2006). "A comparison of animal jaws and bite mark patterns." Journal of Forensic Sciences **51**(4): 846-860. Metric survey of animal jaws.

176. 2007 Kouble, R. F. and G. T. Craig (2007). "A survey of the incidence of missing anterior teeth: Potential value in bite mark analysis." Science & Justice **47**(1): 19-23. Survey of prevalence of missing teeth in 1010 individuals in a UK population.
177. 2007 Pretty, I. A. (2007). "Development and validation of a human bitemark severity and significance scale." Journal of Forensic Sciences **52**(3): 687-691. First serious attempt to develop an evidentiary value scale by means of a survey of 30 examiners looking at 35 bitemarks. Landmark effort, although the resulting scale has not been universally adopted.
178. 2007 Blackwell SA, et al. Int J Leg Med. 2007 121:9-17. 3D imaging and quantitative comparison of human dentitions and simulated bitemarks. Found 15% false positive rate in wax bites.
179. 2007 Kieser et al. The Uniqueness of the Human Anterior Dentition: A Geometric Morphometric Analysis J Forensic Sci, May 2007, Vol. 52, No. 3. Used shape analysis methods to study a small (33 mx 49 mn) population. Claimed dental uniqueness based on small differences. Did not report measurement error. Flawed inference from insufficient data.
180. 2007 Martin-de las Heras, S., A. Valenzuela, et al. (2007). "Effectiveness of comparison overlays generated with DentalPrint (c) software in bite mark analysis." Journal of Forensic Sciences **52**(1): 151-156. Validation study for 3D software using bitemarks in pigskin.
181. 2008 Bernitz, H., J. H. Owen, et al. (2008). "An integrated technique for the analysis of skin bite marks." Journal of Forensic Sciences **53**(1): 194-198. Claims that metrics can help resolve biter ID using a Case report.
182. 2008 Metcalf, R. D. (2008). "Yet another method for marking incisal edges of teeth for bitemark analysis." Journal of Forensic Sciences **53**(2): 426-429. Describes complex method of marking incisal edges of dental models.
183. 2009 Bowers, C. M. and I. A. Pretty (2009). "Expert Disagreement in Bitemark Casework." Journal of Forensic Sciences **54**(4): 915-918. Assessment of outcome of 49 cases using the 2007 severity scale. Concludes that expert disagreement is related to quality of evidence.
184. 2009 Martin-de-las-Heras, S. and D. Tafur (2009). "Comparison of simulated human dermal bitemarks possessing three-dimensional attributes to suspected biters using a proprietary three-dimensional comparison." Forensic Science International **190**(1-3): 33-37. Dental models of nine adults and four children with mal-alignments were used to bite wax and pigskin in a self-validation study. Flawed study because of sample selection bias.

185. 2009 Lasser, AJ, Warnick A. (2009). "Three-Dimensional Comparative Analysis of Bitemarks." Journal of Forensic Sciences **54**(3): 658-661. Comparison of a bitemark to dental model in 3D. Study of N=1.
186. 2009 Bush MA, Miller RG, Bush PJ, Dorion RBJ. Biomechanical Factors in Human Dermal Bitemarks in a Cadaver Model *J Forensic Sci*, 2009; 54(1):167-76. First serious consideration of skin properties. 23 bites were made with the same dentition in cadaver skin, none were measurably the same. Postural distortion was also studied and found to be significant. Bitemarks were not reproducible. Landmark paper using cadaver model.
187. 2009 Miller RG, Bush PJ, Dorion RBJ, Bush MA. Uniqueness of the Dentition as Impressed in Human Skin: A Cadaver Model. *J Forensic Sci*, 2009;54(4):909-14. 100 models were compared to bitemarks made with 10 dentitions with different alignments. Results showed difficulty distinguishing the biter from individuals with similarly aligned dentitions and in some cases, an incorrect biter appeared better correlated to the bite. Cautionary paper empirically demonstrating unreliability of bitemark analysis.
188. 2010. 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. *J Forensic Sci*, January 2010, Vol. 55, No. 1. Force per unit area was varied during controlled bites on cadaver skin using an instrumented biting machine. Bite appearance was not predictable, nor did laceration reliably occur. A principal variable is tissue type.
189. 2010 J.G. Clement, S.A. Blackwell, Is current bite mark analysis a misnomer? *Forensic Sci. Int.* (2010),doi:10.1016/ 2010.03.006. Discusses four problematic cases, suggests a paradigm shift is necessary.
190. 2010 I.A. Pretty, D. Sweet, A paradigm shift in the analysis of bitemarks, *Forensic Sci. Int.* (2010), doi:10.1016/j.forsciint.2010.04.004. Uses three of the Bush group papers to suggest that the paradigm shift is already occurring. Also lists cases in which exonerations occurred.
191. 2010 S.L. Avon, et al., Error rates in bite mark analysis in an in vivo animal model, *Forensic Sci. Int.* (2010), doi:10.1016/j.forsciint.2010.04.016. Showed error rates of examiners using a live pig model. Inexperienced examiners performed as well as board-certified examiners. Suggested that results might support the contention that bite mark analysis is entirely subjective.
192. 2010 Bush MA, Cooper HI, Dorion RBJ. Inquiry into the Scientific Basis for Bitemark Profiling and Arbitrary Distortion Compensation *J Forensic Sci* 2010; 55(4):976-83. Discussion with examples of why it is not appropriate to profile a biter from a bitemark or make universal distortion corrections.

193. 2010 Wright, F. D. and G. S. Golden (2010). "The use of full spectrum digital photography for evidence collection and preservation in cases involving forensic odontology." Forensic Science International **201**(1-3): 59-67. Photography method description.
194. 2010 Stols, G. and H. Bernitz (2010). "Reconstruction of Deformed Bite Marks Using Affine Transformations." Journal of Forensic Sciences **55**(3): 784-787. Describes use of affine transformations to correct for distortion. Sample size of one. Methodology refuted by Bush 2011
195. 2010 Lopez, T. T., M. G. H. Biazevic, et al. (2010). "National survey of the incidence of missing anterior teeth: Potential use in bite mark analysis in the Brazilian context." Science & Justice **50**(3): 119-122. Survey of missing teeth in Brazilian population.
196. 2010 Desranleau S, Dorion RBJ. Bite Marks: Physical Properties of Ring Adhesion to Skin—Phase 1. J Forensic Sci, January 2011, Vol. 56, No. S1. Method of adhesion to skin prior to excision.
197. 2011 Heras S, Tafur D. Validity of a dichotomous expert response in bitemark analysis using 3-D technology. Science and Justice 51 (2011) 24–27. Study explores decision-making process. However, this and a previous study (Heras 09) used the same set of 13 dentitions, selected because they were distinct from each other. It is no surprise that it was possible to match biter with dentition.
198. 2011 Santoro V, Lozito P, De Donno A, Introna F. Experimental Study of Bite Mark Injuries by Digital Analysis. J Forensic Sci, January 2011, Vol. 56, No. 1. Digital morphometric comparison of 20 dentitions and 20 bites in pigskin and plastic.
199. 2011 Tuceryan M, Li F, Blitzer HL, Parks ET, Platt JA. A Framework for Estimating Probability of a Match in Forensic Bite Mark Identification. J Forensic Sci, January 2011, Vol. 56, No. S1. Bitemarks were simulated by impressing 15 lipstick coated dental models on a rubber doll. Metric analysis was attempted.
200. 2011 Bush MA, Bush PJ, Sheets HD. Statistical Evidence for the Similarity of the Human Dentition. J Forensic Sci, 2011;56(1):118-23.  
Refutation of Rawsons 1984 study that claimed dental uniqueness. Two dental populations of 172 and 344 were examined for match rates. Statistics were used that took into account dental correlation and non-independent nature of the human dentition. Matches were found in the populations studied. Study suggests that the dentition is not unique as measured.

201. 2011 Sheets HD, Bush PJ, Brzozowski C, Nawrocki LA, Ho P, Bush MA. Dental shape match rates in selected and orthodontically treated populations in New York State: A 2 dimensional study. *J Forensic Sci*, 2011;56(3):621-6. Study of dental match rates using shape analysis methods in a general population of 410 (match rate 1.46%) and an orthodontically treated population of 110 (match rate 42%). Orthodontic treatment had a dramatic effect on match rate.
202. 2011 Bush MA, Bush PJ, Sheets HD. Similarity and Match Rates of the Human Dentition In 3 Dimensions: Relevance to Bitemark Analysis. *International Journal of Legal Medicine* published online 4 September 2010.  
Match rates determined in a population of 500 dentitions using 3D models and shape analysis. Significant numbers of matching dentitions were found. The effect of 2D vs 3D measurement on match rate was also explored (match rate lowered when 3D included). This and prior studies showed that dental match rate is population-dependent.
203. 2011 Bush MA, Sheets HD. Mathematical matching of a dentition to bitemarks: Use and evaluation of affine methods. *Forensic Science International* (2010), doi:10.1016/j.forsciint.2010.09.013.  
Mathematical investigation into distortion correction using bitemarks in cadavers. Affine methods cannot be applied because of skin anisotropy. Refutation of Stols and Bernitz 2010 approach and mathematical confirmation of Bush 2010 empirical distortion study.
204. 2011 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), doi:10.1016/j.forsciint.2011.03.028. Comparison of 89 bitemarks to dentition shape. Concludes that false positives are readily possible due to distortion of dental shape in skin.