



F45 Published Bitemark Research — Relevance in Real Bitemark Cases: Is It Helping to Better Understand Human Bitemarks in Living Skin?

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After attending this presentation, attendees will better understand the current bitemark research models in relationship to real-world bitemark cases. This presentation will review published studies that discuss research findings related to bitemark analysis and comparison. The foundations and methodologies used will be discussed in relation to real cases involving bitemark-patterned injuries in living skin.

This presentation will impact the forensic science community by reviewing peer-reviewed published studies related to bitemark analysis and comparison in an attempt to open a discussion on the current direction of bitemark research and its relevance to real-world bitemark cases. This presentation will discuss peer reviewed articles that have been published in the recent past related to bitemark analysis and the relevance of the stated results of the studies to bitemark patterned injuries in living human skin. A review of the foundation and methods of the published studies will be presented and compared to examine how they relate to real world bitemark cases that occur in criminal events in society.

The studies focus on three main areas: recognition of bitemark-patterned injuries in living skin, transfer of the details of the dentition creating the bitemark to skin, and the uniqueness of the human dentition.

Recognition of patterned injuries in living skin is a critical first step if a patterned injury is to be investigated as a human bitemark. Guidelines published by the American Board of Forensic Odontology offer an investigative pathway to identifying the characteristics of bitemarks in living skin as well as terminology to express the certainty that a patterned injury represents a bitemark. Recently published peer-reviewed research examined the ability of examiners to correctly identify patterned injuries as representing human bitemarks.

The scientific underpinnings of bitemark analysis and comparison are necessarily related to the ability of living human skin to record the individual tooth patterns in a biter's dentition such that the pattern is a representation of the biter's teeth. Recently published peer reviewed studies have examined laboratory inflicted "biting" patterns directed at examining pattern transfer to non-living human skin and pig skin.

The arrangement and uniqueness of the human dentition as it relates to human bitemarks in living skin has not been proven in large open-population studies. Recent peer-reviewed studies have examined the anterior human dentition using Procrustes analysis techniques to attempt to determine if the human dentition is unique.

Bitemark, Peer-Reviewed Research, Bitemark Research