

Bitemark Evidence Expertise

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Through the specialty of forensic odontology, dentistry plays a small but significant role in maintaining law and order. Bite-marks are the commonest form of dental evidence presented in criminal court in rape, murder and violence cases. These marks are also valuable in determining the type of physical abuse and age bracket of the criminal.

Although one doesn't have to be a board-certified specialist to become an expert witness in this area, it does help to lend validity to any scientific opinions rendered. There are seven types of bite marks:

1. Hemorrhage - small bleeding spot
2. Abrasion - undamaging mark on skin
3. Contusion - ruptured blood vessel, bruise
4. Laceration - punctured or torn skin
5. Incision - neat puncture of skin
6. Avulsion - removal of skin
7. Artifact - bitten-off piece of body

Contusions are the most common type of bite mark and incisions offer the best three-dimensional image of the teeth. When avulsions and artifacts can be combined, you've also got three-dimensional imaging. Bites have been found in cases of homicide, attempted suicide, sexual assault and child abuse. Bite marks on a live body also have different characteristics from those on a dead body, so a forensic dentist might be able to assist with things like time of attack and/or time of death. Human skin is elastic; it swells, heals, and it can deform or warp a bite so that it does not align properly. Generally, the better the bite mark, the better an expert can make a comparison. Furthermore, "experts" often use pictures to compare a person's dentition to the bite mark on the victim, increasing the unreliability of bite mark evidence.

While the bite mark can be photographed or even excised from the decedent, it's better to let the forensic dentist get there as soon as possible. A bite mark,

however, is not an accurate representation of the teeth. A lot depends on the mechanics of jaw movement and use of the tongue. Inside the mouth, the lower jaw (mandible) is movable and usually delivers the most biting force. The upper jaw (maxilla) is stationary, holding and stretching the skin, but when skin is ripped or torn, the upper teeth are involved more deeply. The bite mark Hyzer's scale is a tool to help identify bodies through dental records and identify violent criminals from bite marks they leave on victims. Practically every crime lab and medical examiner's office uses this scale. But a one-dimensional measuring tool—a simple ruler—cannot reliably give scale to photographic images because if photos are captured at even the slightest angle, uncorrectable distortion can occur.

"It's not as cut and dry and statistical as DNA, but there's something DNA doesn't show that bite marks do show—that there's violence involved". Even with all the above, bite mark interpretation is still subjective. There are cases of false conviction indicating how spurious the evidence can often be and demonstrates that confusion still surrounds the area.

It is rightly said 'while the criminal may lie through his teeth, his bite marks reveal all, and do not lie'.

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