

F32 Development and Validation of a Human Bite Mark Severity and Significance Scale

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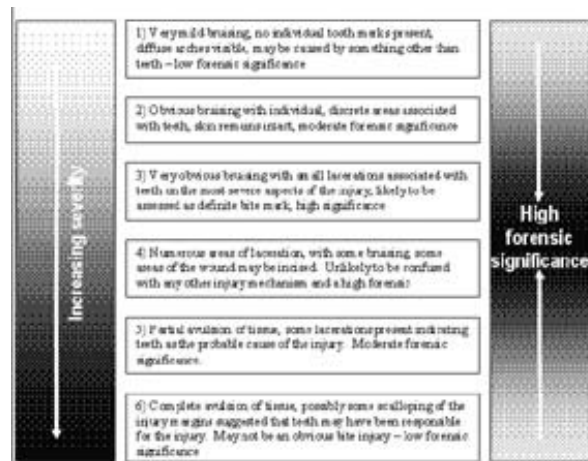
After attending this presentation, attendees will understand the need for assessment of bite injuries for their severity and significance and that severity is linked to forensic significance. That bite marks with poor significance should be treated with caution when considering analysis

Numerous methods for describing bite marks have been suggested. Common methods include the use of descriptors for the severity of the injury, the location of the injury or the presence of gross, class or unique characteristics. However, there is no universally accepted means of describing bite injuries and hence communication between professionals dealing with such injuries is complicated. A review of the literature found no studies that examined the use of such an index, or any attempts to characterize any bite mark descriptors by means of reliability and validity testing.

There is a clear link between the severity of a bite injury at presentation and its forensic significance. For example, a bite injury that presents as a diffuse, non-discrete bruise is unlikely to possess unique characteristics suitable for analysis resulting in the positive identification of the perpetrator. However, on the other end of the severity spectrum, very aggressive, avulsive injuries are frequently poor candidates for analysis. A combination of factors including the loss of tissue, tearing and distortion of wound margins and the need for urgent medical treatment generally render such injuries poor candidates for analysis. Bite injuries that present in the middle of these extremes, *i.e.*, injuries made up of discrete, individual bruises, small abrasions and lacerations frequently and considered by odontologists to present the highest level of significance and many will enable the exclusion and inclusion of potential suspects.

A novel index, relating severity to forensic significance was developed. See scale at end of this abstract. A text version and accompanying visual index were produced and distributed (via the web) to three groups; odontologists, forensic pathologists and police officers. A total of 35 bite marks were assessed and rated using the new index. Intra-class correlation co-efficients (ICC) were used to analyse the agreement data both between and within groups and individuals. ICCs demonstrated a high level of intra-operator and inter-operator reliability. Weighted kappa scores ranged from 0.89 to 0.93 for inter-examiner agreement and 0.90 and 0.98 for intra-examiner agreement. There were no statistically significant differences between the three groups of professionals suggesting that the new scale is both a valid and reliable means of reporting bite marks between professionals.

The proposed bite mark scale.



Bite Marks, Significance, Severity