



Science of Teeth and Role of Forensic Odontology in Criminal Investigations

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Received date: 22 January, 2023, Manuscript No. DHCR-23-91839;

Editor assigned date: 24 January, 2023, Pre QC. DHCR-23-91839(PQ);

Reviewed date: 14 February, 2023, QC No. DHCR-23-91839;

Revised date: 21 February, 2023, Manuscript No. DHCR-23-91839(R);

Published date: 28 February, 2023 DOI: 10.4172/2470-0886.1000136

Description

Forensic odontology, also known as forensic dentistry, is a branch of forensic science that uses teeth, dental records, and bite marks to identify human remains and provide evidence in criminal investigations [1].

Forensic odontologists examine dental records and compare them to the teeth of the deceased or the teeth of a suspect to determine a match. Dental records may include X-rays, photographs, and written descriptions of dental work such as fillings, crowns, and bridges. The forensic odontologist may also examine the condition of the teeth and note any unique characteristics, such as missing or extra teeth, that can aid in identification [2].

Forensic odontology can be particularly useful in cases where other forms of identification, such as fingerprints or DNA, are unavailable or difficult to obtain. It can also provide information about the age, sex, and ethnicity of the deceased [3].

In addition to identifying human remains, forensic odontology can also be used to provide evidence in criminal investigations. Bite marks on a victim or on an object found at the crime scene can be analyzed and compared to the teeth of a suspect. This can help establish a link between the suspect and the crime.

Overall, forensic identification through teeth is a valuable tool in forensic investigations and can provide important information for criminal investigations and identification of the deceased [4].

Methods used in forensic odontology

Dental records analysis: Dental records are used to identify individuals based on their unique dental characteristics such as tooth structure, fillings, and missing teeth. These records are compared to the teeth of an unidentified body or bite mark to establish a positive identification.

Bite mark analysis: Bite marks left on a victim can be compared to the dental records of a suspect. Bite marks can also be used to determine the size, shape, and alignment of the teeth of the perpetrator.

Dental radiographs: X-rays of teeth can provide additional information about a person's dental characteristics, such as root canal treatment or tooth fractures, which can help with identification.

Dental impressions: Dental impressions can be taken of a suspect's teeth and compared to bite marks left on a victim to determine if there is a match.

Post-mortem dental examination: If a body is badly decomposed or burned, a forensic odontologist may be able to extract teeth for identification purposes.

Age estimation: The development of teeth can be used to estimate the age of an individual. This information can be helpful in identifying unknown bodies.

Trauma analysis: Forensic odontologists can analyze the dental trauma of a victim to determine the cause of death or identify a possible murder weapon.

Conclusion

In conclusion, forensic odontology plays a critical role in the field of forensic science. Its methods and techniques help to identify victims and suspects, provide evidence in criminal investigations, and bring closure to families of missing persons. Dental records analysis, bite mark analysis, dental radiographs, dental impressions, post-mortem dental examination, age estimation, and trauma analysis are all essential methods in forensic odontology that aid in the identification and investigation of crimes. The use of these techniques continues to advance, and as technology improves, forensic odontology will undoubtedly continue to be a valuable tool in the criminal justice system.

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Citation: Hesse M (2023) Science of Teeth and Role of Forensic Odontology in Criminal Investigations. *Dent Health Curr* 9:1.