

Forensic dentistry

[Health & Medicine](#)



Forensic Dentistry is used as a major part in solving cases where people are unidentifiable. Forensic evidence is any evidence that can be legally used in a court of law. Many people know what forensics are because of shows such as Bones, Criminal Minds, and Without a Trace. What most people don't know are the minor details that have to be sought out when using any forensics to solve a case. Odontology; commonly referred to as dental forensics is highly unrecognized by the general population and can be very useful in forensicscience.

In forensic science odontology is used to identify the unknown in many unique situations, and can act as evidence in the court of law. Even though most people don't know about the growing scientific art Odontology, the history goes back decades. Dental forensics began around 66 A. D. , although the study wasn't as useful as today's due to the lack of technology it was still useful to those who chose to use it. During World War II the study of Odontology was used to identify both Adolf Hitler and Eva Braun.

Odontology isn't a specific job on its own; it is studied by dentists, hygienists and other forms of specialists who have correct knowledge about the oral cavity. These citizens work together using the technology created to help in the identification of the deceased. Two common technological systems that are important in finding the records needed in Odontology are the pantomorphograph registry and CAPMI (Computerized Assisted Postmortem Identification System). CAPMI was developed by the U. S. Army Dental Research institute. Many other kinds of databases have been created to help aid in the study of Dental forensics.

Together the knowledge of those who choose to study the oral cavity, and the people dedicated to help broaden today's dental databases has changed the outlook on what can possibly be achieved in the future. Forensic Dentists are responsible for identifying human remains and assess bite mark on the human body. The forensic dentist is to determine age, whether it be the age of an unidentified living individual or the age of the deceased. The only two methods that are used more commonly in the identification process are fingerprint and DNA evidence.

When these two means of identification cannot be found, investigators rely on dental records and evidence to back up their case. Teeth are very durable and strongly resistant to deterioration or harm, due to their hard outer shell known as enamel. Far after decomposition has ended. The oral cavity can be used as evidence, because no one person can have the same dental work and dental structure as another. Generally adults may have up to 32 teeth present in their oral cavity, but a child's mouth can only accommodate 20 teeth total. When a body is found an odontologist can look at the tooth development to determine the John or Jane doe's age.

Using dental forensics to determine an age can be extremely accurate. As age increases, the means to identification vary from person to person. The age of a teenager can be estimated by looking at the third molars, when these teeth come into the mouth at an age ranging from 17 to 25 years old. Determining the age of an adolescent can be precise because the oral cavity is somewhat at a standstill. When odontology is used to determine the age of an adult or someone referred to as elderly, the age estimation may not be as

accurate. After all of the adult teeth have grown in, the oral cavity goes through slight changes.

As someone gets older their gum tissues soften and their teeth usually become more mobile as the ligaments attaching the teeth grow weak. This alone is not an accurate indication as to how old an adult is because every adult uses and takes care of their teeth in a different manner. Forensic dentists use previously taken FMX (full mouth set of x-rays) and BWX (bitewing x-rays), along with dental records to figure out a subjects identity. When new x-rays are taken, the forensic dentist can try to find x-ray matches in dental records and world wide databases.

This makes it possible for the deceased to be legally identified, if the forensic dentist is able to provide the proper evidence. Both the x-rays of an individual's teeth and the small amount of nasal passage that can be seen on upper dental x-rays can help to be proper evidence for the odontologist to prove their case. When patients at dental offices receive things such as fillings, crowns, bridges, and braces, the information has to be written down in the patient's dental chart. These charts can be used as legal references when the forensic dentist looks into the mouth of an unidentified individual.

Postmortem dental profiling technology has made it so when using the overall dental and facial structure of a deceased individual, the general appearance of this individual can be correctly portrayed. After producing a postmortem dental profile, investigators are then able to look through missing person cases and reports so that they can match the postmortem profile created to an individual that fits within the correct age frame, sex and build. Dental profiling is also a common way forensic dentists identify bite

marks. Bite marks appear on many individuals, both dead and alive. Usually these injuries occur during various types of crimes.

Odontology uses impressions of a suspect's teeth in order to link that specific suspect to the crime they may be accused of committing. Bite mark evidence is also used in cases such as assault, abuse, or murder. When clear human bite marks are present on bodies, it is simple to link the bite mark to a suspect and the suspect to the crime. Specific people such as police and forensic examiners have access to worldwide data records; this means that when an unidentified body is found an odontologist is then able to access the records so he/she can compare previous dental records to the newly found evidence.

When a name needs to be given to an unidentified body the odontologist may take impressions of the oral cavity using various dental procedures. When impressions are taken in alginate: impression trays, wax pieces, or alginate paste may be used. These means of acquiring evidence can help to identify a body, or to link a suspect to a case. The different classifications of dental identification are major parts of the evidence needed to prove forensic based identification to a judge. The amount of evidence that can be gathered from an individual's new and previous dental records is necessary in the field of Odontology and forensics.

The ABFO (American Board of Forensic Odontology) and the ABFD (American Board of Forensic Dentistry) are two major groups involved in dental forensics. As it is, forensic dentistry is still commonly studied and used as evidence in court cases around the world today. Forensic evidence is widely used in courts of law to ensure correct prosecution of those who are on trial.

<https://assignbuster.com/forensic-dentistry/>

The jury wants to know all of the legitimate information and evidence, in a criminal investigation so they can give an accurate verdict. It is here that the involved odontologist provides them with all of the knowledge they need.

A forensic scientist may be present in a court case to provide and explain the evidence that ties the accused into the crime presented, in court they will be used as what is known as an expert witness. A development known as LUIS (a machine) has made it possible to trace bite marks left a few weeks before the victim's body was found. LUIS works after an impression of the suspect's teeth has been taken, and the plaster model made. The plaster model gets scanned onto a computer where it can be placed digitally on an image of the bite mark wound found on the victim's body.

This new technology moved dental forensics from tracing the tooth pattern of the bite mark, to actually being able to digitally move the suspect's teeth onto the bite mark. This makes for a more accurate and quicker paced way of matching a suspect's bite to the victim's bite mark. It makes it possible to see if the digital scans of the teeth match up with the marks on the victim. When the bodies of the deceased are so badly mangled that a general picture cannot positively identify them, dental forensics can use dental records instead. Around 99% of forensic cases can be solved using dental knowledge and records.

When other means of identification are used and fail, or simply cannot be used, dental technology will aid in finding the information needed for proper identification. A body's teeth are extremely durable; they can withstand much force and still be well preserved. When the teeth are affected greatly, DNA can be found deep down in the dried pulp (in the center nerve) of the

<https://assignbuster.com/forensic-dentistry/>

tooth. Without the knowledge of these dentists, many people in the world would go without emotional closure; identities would be left unfound during events such as brutal accidents, murders and environmental disasters.

References Burnie, David. The Concise Encyclopedia of the Human Body. Dorling Kindersley, 1995. “ Forensic Evidence” <http://www.businessdictionary.com/definition/forensic-evidence.html> “ Forensic Odontology” <http://www.all-about-forensic-science.com/forensic-odontology.html> “ History behind Forensic Odontology” <http://www.biology-online.org/articles/forensic-odontology/history-behind-forensicodontology.html> “ How Forensic Evidence is presented to a Jury” <http://www.exploreforensics.co.uk/forensic-evidence-presented-to-a-jury.html> MacKay, Jenny.

Forensic Art. Detroit: Lucent Books, 2009. MacKay, Jenny. Forensic Biology. Detroit: Lucent Books, 2009. Orwell, Mark. “ Forensic Dentistry Information” http://www.ehow.com/about_6815602_forensic-dentistry-information.html Phinney, Donna, and Judy, Halstead. Delmar's Dental Assisting. United States: Delmar Learning, 2004. Thomas, Peggy. Talking Bones: the Science of Forensic Anthropology. New York: Facts on File, 1995. Cover Art credited to <http://dental-times-magazine.blogspot.com/2009/10/forensic-dentistry.html> By Stephanie Myers 2012