



Forensic Odontology

B.M.C. Durfee High School

Objectives

- Identify the two different types of forensic examinations that Forensic Odontologists are called in to perform
- Explain how Forensic Odontologists help identify human remains
- Explain how Forensic Odontologists analyze bite marks on victims



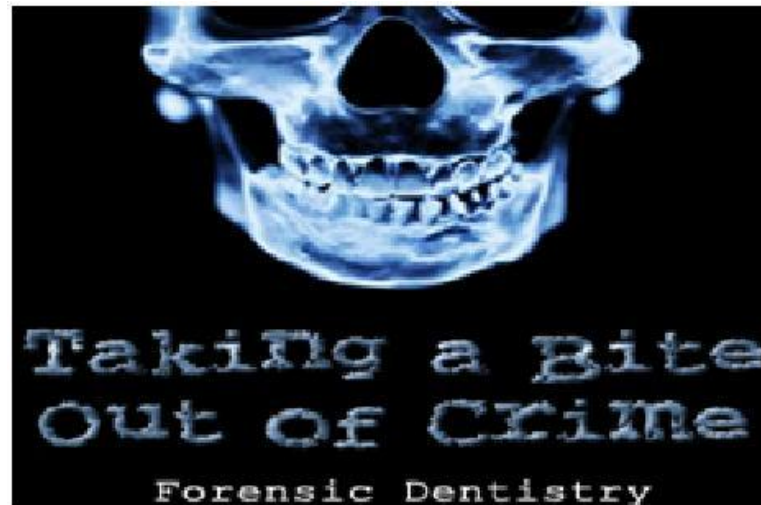
Introduction

- **Odontology is the technical term for forensic dentistry**
- **Odontology is the application of dental science to problems of human identification**
 - **Odontologists compare dental evidence with dental records**
 - **Teeth are important because they usually last the longest**
 - **They are not as good as fingerprints because teeth respond to wear and tear**
 - **Also useful in determining age of individual**

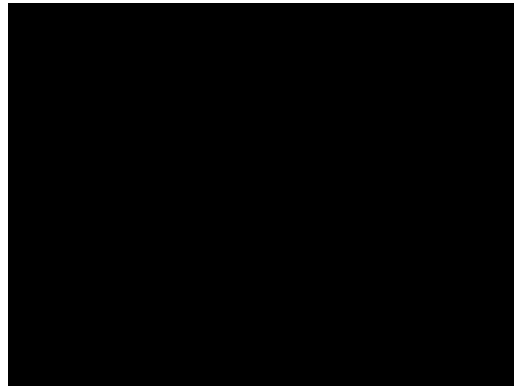


Introduction...

- When working a case the Odontologists will:
 - Examine a piece of dental evidence
 - Look for all of the unique and individual characteristics
 - Then look for pre-existing dental records containing the same characteristics
 - If the characteristics match → identification is possible



Odontology Video



[How is odontology used to solve crimes](#)

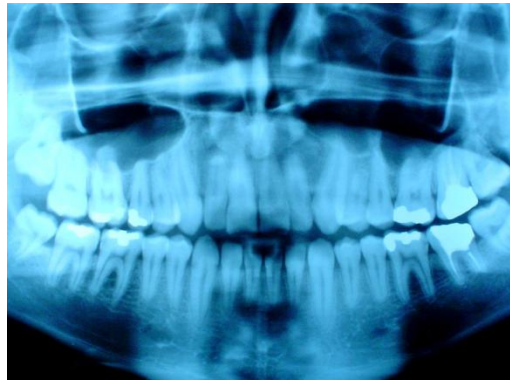
What Do Forensic Odontologists Do?

- They perform two different types of forensic examinations:
 - Identifying unknown human remains
 - Analyzing bite marks on crime victims, suspects, and evidence



Identifying Unknown Remains

- Compare dental x-rays of unidentified human remains with the antemortem dental records of known persons
- This is done when more conventional means of identification are not possible (just a skeleton, plane crashes)
- Forensic Odontologists can identify a person by using a complete jaw, a piece of a jaw or a few teeth



Identifying Unknown Remains...

- **May participate in autopsies**
 - **Chart dental and skull features, take x-rays and write reports of findings**
 - **Law enforcement then uses this information and puts into a database with known dental records**
 - **Program compares records to match**
- **Sometimes need to work at a crime scene or mass disaster; identify victims in mass graves**



Analyzing Bite Marks

- Forensic Oenologist also locate, examine, and compare bite marks
- Computer imaging technology helps comparison of bite marks
- Both the perpetrators and victims can leave potential bite marks evidence at the crime scene



Teeth Characteristics

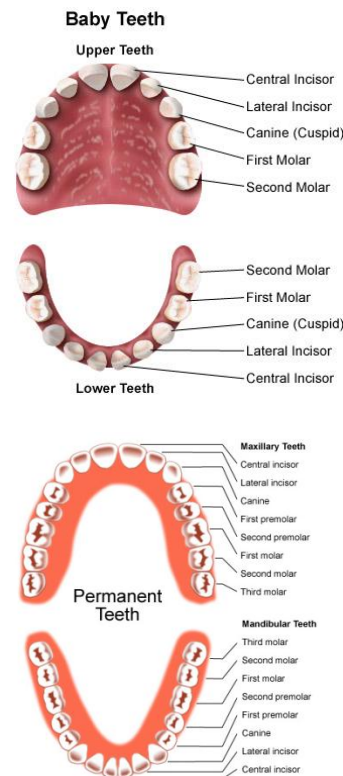
- We all have two dentitions in our lifetimes:

- **Primary**

- Begins 4 months in utero
- Teeth start erupting at 6 months
- 2 years → all 20 teeth are in

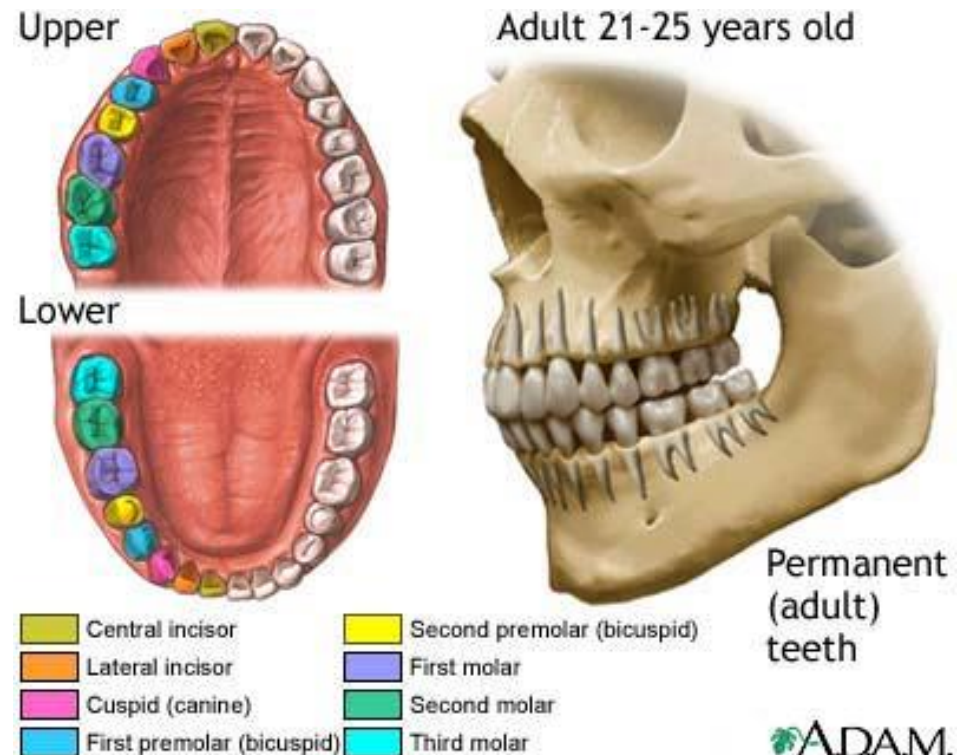
- **Permanent**

- Starts after birth
- 6 → 8 years to form and erupt
- 2 more years for roots to completely form
- 32 teeth



Teeth Characteristics...

- When the permanent teeth start to form the root of the primary teeth start to resorb and can no longer hold the tooth in; teeth fall out
- Teeth are divided between the maxilla and the mandible



Teeth Characteristics...

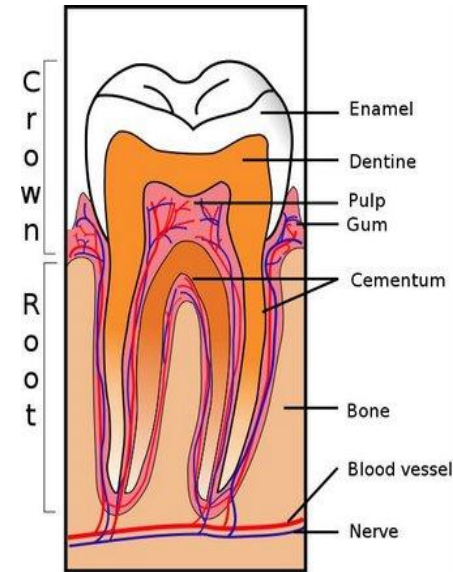
- **Tooth Structure**

- **Crown**

- **Is seen in the mouth**
 - **Outer covering of enamel**

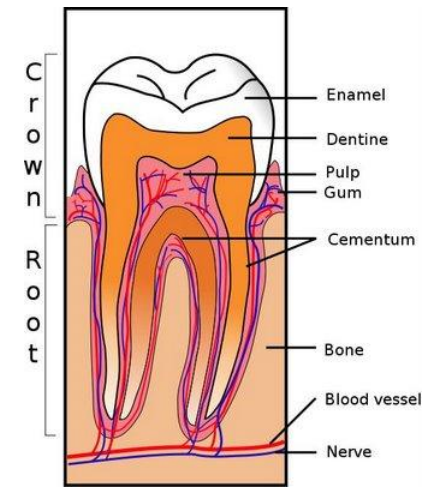
- **Root anchors tooth into the jaw**

- **Outer covering called the cementum**
 - **Cementum has fibers that join ligaments in holding a tooth in the socket of the bone**



Teeth Characteristics...

- Socket is called the alveolus
- Underlying structure of tooth is the dentin
- Pulp
 - The nervous tissue in the center of the tooth
 - Good for nuclear and mitochondrial DNA
- When tooth is lost, the bone heals by eliminating the socket



Review

- Identify the two different types of forensic examinations that Forensic Odontologists are called in to perform
- Explain how Forensic Odontologists help identify human remains
- Explain how Forensic Odontologists analyze bite marks on victims





**Learn Long
Live Long**