



***I.O.F.O.S. Recommendations for Quality Assurance:
Tooth mark (bite mark) analysis and comparison***

Working Group on “Tooth mark” - Background

- IOFOS recommendations reviewed (12/02/2008) with advice from:
Drs. Torpet (Denmark), Verbiest (Belgium), Stene-Johansen (Norway), Kirsh
(Germany), Bernitz (South Africa), Teivens (Sweden), Willems (Belgium), and
Knell (Switzerland)

IF YOU FOLLOW THE PROCEDURES AND STEPS

1. Black indicates required steps
2. Blue indicates only recommended steps (may be omitted or changed without further explanation)

GENERAL

The purpose of the examination is to:

1. Collect and preserve the evidence from the victim, suspect or inanimate object
2. Describe all details in the injury that could help identify the perpetrator
3. Collect and preserve the evidence from suspects to be able to make comparison with the tooth marks
4. Describe details in the teeth of suspects that may be compared with the marks
5. Give a detailed comparison between tooth marks and a suspect

EXAMINATION OF TOOTH MARKS

1. On a living person (victim or assailant)
 - a. ask if he/she has been bitten
 - b. ask how it happened
 - c. ask for permission to examine the marks
 - d. explain how you plan to do this
 - e. take a saliva sample for DNA testing
 - f. establish a medical history
2. Orientate and describe the marks
3. Assess if it is consistent with a bite
4. Assess whether it is a result of human or animal tooth marks
5. Assess the age of the mark
6. Take pictures with and without a scale
 - a. produce copies in the size 1:1
7. Take stereoscopic pictures
8. Make a drawing of the marks, preferably on translucent foil
9. Take impressions of the marks, preferably two sets
10. Make dental casts from the impressions, preferably two sets
11. Preserve the marks according to the material it is in. If in a dead person, consider removing the area/organ with the marks

EXAMINATION OF A SUSPECT

1. If a living person
 - a. obtain informed consent - explain your role as expert and ask for permission to examine his/her teeth
 - b. explain how you plan to do this
 - c. ask if he/she knows that tooth marks occur in connection with the crime
 - d. ask if he/she may have left the marks
 - e. if yes, ask how they were made and ask for orientation
2. Examine the teeth
 - a. Note characteristic details - note especially details that were or were not found in the marks
 - b. Note any injuries to the teeth and assess the age of these injuries

- c. Take photographs of the teeth and characteristic details
 - d. Take impressions of the teeth, both upper and lower and preferably two of each.
 - e. Make a bite registration
3. Take a swab for DNA analysis

COMPARISON

- 1. Analyze the marks and dentition of suspect
- 2. Orient the tooth marks (which teeth may have made which marks)
- 3. Find inconsistent details
 - a. cannot be explained -> exclude identity
 - b. can be explained -> identity possible -> continue comparison
- 4. Find consistent details
- 5. Assess the value of those individually and together
- 6. Make a conclusion

CONCLUSIONS

- 1. Use one of the following conclusions
 - a. Identity with a high degree of certainty.
 - Less than 1:10 000 other person may fit the details
 - The experts should feel confident that the identity is correct
 - b. Identity probable
 - c. Identity cannot be excluded
 - More than 1:100 persons may fit the details
 - d. Identity excluded
 - Inconsistent and inexplicable details are found
- 2. Two dentists should agree upon the conclusion and sign the report