

OSAC RESEARCH NEEDS ASSESSMENT FORM



Title of research need: Optimization of DNA Evidence Collection following oral sexual assault
○ Oral areas to swab for exam

Describe the need: Evidence in sexual assault cases involving oral penetration is rapidly eliminated from the oral cavity due to physiological processes (swallowing, eating, drinking, etc.). Research is needed to identify optimal swabbing locations in the mouth (under tongue, gum line, outside of mouth) to locate areas where evidence may be detected the longest.

Keyword(s): DNA, oral cavity, sexual assault, fellatio

Submitting subcommittee(s): Forensic Nursing, Human Forensic Biology, Crime Scene Investigation & Reconstruction

Date Approved: 2/2/2023

Background Information:

1. Does this research need to address a gap(s) in a current or planned standard? (ex.: Field identification system for on scene opioid detection and confirmation)

Yes. The current draft standard "Evidence Std Title" proposed by the Forensic Nursing Subcommittee does not specifically address best practice for oral cavity swabbing as there is little research that specifies where in the oral cavity swabs should be taken to optimize detection of a foreign DNA profile in cases involving oral sexual assault.

2. Are you aware of any ongoing research that may address this research need that has not yet been published (e.g., research presented in conference proceedings, studies that you or a colleague have participated in but have yet to be published)?

No? Unpublished oral survey?

1. Title: A comparison of oral regions in the recovery of DNA introduced through kissing IRB approval 16-092 10/24/16. Presentation EVAWI
2. Comparison of areas in the mouth to recover DNA. AAFS 2019 podium presentation
3. Comparison of areas in the mouth to recover DNA IAFN 2017 podium presentation

3. Key bibliographic references relating to this research need: (ex.: Toll, L., Standifer, K. M., Massotte, D., eds. (2019). Current Topics in Opioid Research. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-88963-180-3)

1. Willott, G. M. and J. E. Allard. Spermatozoa - Their Persistence After Sexual Intercourse. Forensic Science International, 19 (1982), 135-154.
2. Christian, C. W. et al. Forensic Evidence Findings in Prepubertal Victims of Sexual Assault. Pediatrics, 106 (2000), 100-104.

3. Roberts KA, Johnson DJ, Cruz S, Simpson H, Safer A. A comparison of the effectiveness of swabbing and flossing as a means of recovering spermatozoa from the oral cavity. J Forensic Sci. 2014 Jul;59(4):909-18. doi: 10.1111/1556-4029.12423. Epub 2014 Mar 18. PMID: 24635105. Forensic Sci. 2014 Jul;59(4):909-18. doi: 10.1111/1556-4029.12423. Epub 2014 Mar 18. PMID: 24635105.
4. Banaschak, Sibylle & Möller, K & Pfeiffer, Heidi. (1998). Potential DNA mixtures introduced through kissing. International journal of legal medicine. 111. 284-5. 10.1007/s004140050172.
5. Sweet study (skin) Sweet D & Shutler GG. Analysis of salivary DNA evidence from a bite mark on a body submerged in water. J Forensic Sci 1999;44(5):1069–1072.

4. Review the annual operational/research needs published by the National Institute of Justice (NIJ) at <https://nij.ojp.gov/topics/articles/forensic-science-research-and-development-technology-working-group-operational#latest>? Is your research need identified by NIJ?

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5. In what ways would the research results improve current laboratory capabilities?

Optimizing evidence collection will improve overall forensic results for cases involving oral sexual assault.

6. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

This research would serve to improve the collection and training of practitioners to collect oral swabs following an assault.

7. In what ways would the research results improve services to the criminal justice system?

Optimizing evidence collection will improve overall forensic results for cases involving oral sexual assault.

8. Status assessment (I, II, III, or IV):

III

	Major gap in current knowledge	Minor gap in current knowledge
No or limited current research is being conducted	I	III
Existing current research is being conducted	II	IV

This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.