OSAC RESEARCH NEEDS ASSESSMENT FORM

NOTE. Make a copy of this form. Save it to your Google Drive Folder. Edit for your use.

Title of research need:	Optimization of DNA Evidence Collection following oral sexual assault and activities that inhibit DNA detection
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 activities that would affect the detection of foreign DNA in the oral cavity, e.g., eating, use of mouthwash, drinking acidic/alkaline liquids.
Keyword(s):	DNA, oral cavity, sexual assault, fellatio

Submitting subcommittee(s):	Forensic Nursing, Human Forensic Biology	**Date Approved:**	9/15/2025

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. Currently research does not specifically address what activities inhibit the detection of DNA in the oral cavity or which areas 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.

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?

No.

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

Understanding what activities interfere with DNA detection following oral sexual assault would optimize evidence collection and 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 educational training of practitioners to collect oral swabs following an oral sexual 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.