



### A51 The Recovery of Spermatozoa From the Oral Cavity

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After attending this presentation, attendees will have a better understanding of the factors that contribute to recover spermatozoa from the oral cavity.

This presentation will impact the forensic science community by emphasizing how the recovery of physical evidence, such as semen in the oral cavity is of utmost importance in that it can provide valuable information and corroborate or refute statements.

Sexual assault investigations can often be problematic. These cases are rarely witnessed and conflicting accounts often occur between victims and suspects. Rapes occur under different circumstances such as stranger rape, acquaintance or date rape, and spousal rape. It is for this reason that the recovery of physical evidence, such as semen and saliva, is of utmost importance in that it can provide valuable information and corroborate or refute statements. This study evaluates two methods of collection of spermatozoa in the oral cavity. The collection methods consisted of flossing and swabbing the oral cavity. Recovery of spermatozoa was considered as a function of three variables: the method of collection (floss vs. swab); the post-coital interval; and the effect of oral activity (teeth brushing, eating, drinking, etc.) during the post-coital interval.

Each sample was extracted using a differential extraction procedure with the resultant epithelial cell fraction being discarded. The sperm fraction was stained using hematoxylin and eosin, and examined microscopically under x200 and x400 magnification. The spermatozoa visualized were counted individually. The two collection methods gave different results in the ability to recover spermatozoa. As a general trend, the average count of spermatozoa recovered for both swabbing and flossing decreases over time, with the greatest decline seen within 1.5 to 3 hours post-copulation. Collection of spermatozoa as a function of oral activity also suggests a sharp decrease in recovery as oral activity increases. In this study, the floss collection method recovered spermatozoa on three occasions where the preceding swab collection failed to recover spermatozoa. This study also revealed incidences where the combination of swabbing and flossing could significantly increase the yield of spermatozoa for DNA analysis.

#### **Spermatozoa, Oral Swabbing, Oral Swabbing**