

MALE DNA RECOVERY FROM EXTENDED POST-COITAL INTERVAL CERVICOVAGINAL SWABS UNDER VARIABLE CONDITIONS

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Sexual assault victims often delay reporting an incident to authorities for 3-4 days following an attack, sometimes even longer. The ability of a commercial Y-STR kit (Power Plex Y, Promega) and a commercial STR kit (Power Plex 16, Promega) was evaluated for the ability to recover male DNA profiles from vaginal swabs collected at extended post-coital intervals (≥ 4 days), while simultaneously evaluating in the effects of post coital activity on male DNA recovery. In this study, three donor couples each collected post-coital vaginal swabs at defined intervals up to 8 days for five discrete intercourse events. Each of the five intercourse events was followed by a different physical activity—no movement, moderate activity, menstruation, showering, and douche. A pre-coital vaginal swab was collected as a negative control. Each act of sexual intercourse was preceded by a 3-day abstention period and followed by a 9 day abstention period.

The results of this study indicate that post-coital activity can have a marked impact on the recovery of male DNA from cervicovaginal swabs. When coitus was followed by a full night of sleep, full Y-STR and male autosomal profiles were recovered at 72 and 24 hours, respectively, with partial Y-STR profiles recovered at 96 to 120 hour intervals. When coitus was followed by either a shower or vaginal douche and then normal activity, full Y-STR profiles were similarly recovered up to 72 hours post coitus, and partial profiles recovered after 72 to 144 hours. However, full autosomal profiles were only recovered after 8 hours and partial profiles up to 24 hours. In sharp contrast, when coitus was followed by either menstruation or moderate exercise, full Y-STR profiles were only recovered 48 hours post-coitus, with partial profiles at 72 to 120 hours. Autosomal recovery remained consistent, with full profiles after 8 hours and partial profiles after 24 hours.