

## DNA Transfer Assessment

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This project focused on the question of how much DNA is lost between subsequent transfers on nonporous surfaces. In order to test this, solutions with known concentrations of DNA were prepared from both buccal swabs and blood samples. An aliquot of each solution of differing concentrations of DNA was spotted onto a fake finger that was created from Mikrosil, to ensure no background DNA influence while maintaining fine ridge detail of an actual finger. This finger was then pressed to a white 6x6 inch tile four consecutive times to simulate possible transfer scenarios that could be found at the scene a crime. After the transfers were conducted they were allowed to air dry before being collected with sterile cotton tip swab, extracted, and quantitated. The results obtained showed, across all of the transfer scenarios run, that an average of 82% of DNA was lost between the first and second transfer, while only 9% of DNA was lost between transfers two and three, showing exponential loss. Connecting this to an actual scene, if multiple stains were collected, and this trend was observed, it could help provide leads to possible movements around the scene by the suspect. This aids in the difficult task of reconstructing the scene of a crime.

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