

TOUCH DNA

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When a crime is committed, DNA evidence is perhaps the most concrete evidence tying a person to that crime. Historically, blood, semen and saliva were the predominate sources of DNA evidence due to their typical high abundance at crime scenes. However, the technology has become increasingly sensitive, allowing for the analysis of low quantities of DNA, such as touch DNA, DNA that is deposited when humans touch an object. However, the benefit of touch DNA, the ease in which it is deposited, is also a disadvantage, where cells or cell-free DNA already existing on an object can be transferred by a second individual to another object. This is known as secondary transfer and its mechanism and existence have been studied and shown to contribute to crime scene DNA profiles³. This project will investigate the amount of touch DNA that is deposited on a surface through the process of secondary transfer, thereby permitting a greater understanding of secondary transfer and the possibility of individuals being falsely placed at a scene as a result of secondary transfer of their touch DNA. Secondary transfer will be quantified by exploiting the sex-chromosomes associated with male and female donors, where the male will deposit touch DNA onto the first item and a female will handle the first item and then handle a second item. It is expected that there will be substantially less touch DNA present from the male participant than from the female participant. The touch DNA present from the male participant should yield at least a partial DNA profile, but will not yield a full profile⁹, while a full DNA profile will be able to be obtained from the touch DNA of the female participant.[MM1]