E8 "Touch and Transfer" DNA Samples: Practical and Ethical Issues

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After attending this presentation, the attendees will understand the practical and ethical issues of "touch and transfer" DNA in the judicial system.

This presentation will impact the forensic community by providing a better understanding of the analytical process, misconceptions, and powerfully persuasive evidential impact of the utilization of "touch and transfer" DNA in criminal cases.

Due to the continuing advancements of forensic DNA technology, evidence samples previously considered unlikely sources of DNA are now considered relevant and material. Attorneys must be aware of the developments and emerging standards of touch and transfer DNA, also known as low copy number DNA (LCN) and contact DNA. The analytical process, misconceptions, and evidential impact of low copy DNA in criminal prosecutions must be understood and properly utilized. Previously undetectable evidence is being presented to facilitate the administration of equal justice. However, forensic DNA is not a panacea. Limitations of touch DNA need to be recognized and respected. Selected practical and ethical issues of touch DNA will be addressed.

Touch and transfer DNA samples are minuscule amounts of DNA (< 50 pg) from any cellular or biological material which comes into contact with another object or body. Transference may occur from person to person, person to object, object to person, and object to object. Due to the minute sample size, current testing procedures cannot adequately identify the origin (e.g., saliva, skin cells, biological fluids, etc.) of the DNA samples. Samples are collected with the intent of obtaining a DNA profile, regardless of cellular origin. Therefore, an assumption is made that potential cellular material exists and DNA analysis is used to validate its invisible presence. Common sources of touch DNA samples include: saliva on skin, fingernail scrapings, aspermatic semen, vaginal cells from penal swabs, shell casings, fingerprints, skin cells on ligatures, abrasion sites, gun grips, and perspiration stains. The possibilities and sources are nearly infinite.

The scientific principles utilized in typing these samples have been accepted by the judicial system for years using commercially available kits. Newly developed kits can differentiate between male and female DNA to aid in the elucidation of mixtures. Other kits are designed to type very small or degraded DNA samples.

The novelty and potential use of this rapidly emerging technology must be tempered through addressing practical considerations. These recognized scientific and analytical limitations include, but are not limited to: discretion in the selection of a typing kit, recognition of potential stochastic effects, the infallibility of low-level mixtures, adherence to established detection thresholds and compliance with analytical standards. Data analysis and impartial statistical significance of the results cannot be neglected. Presentation by the proponent, of these material factors must be competently and completely presented, in good faith, as an integral part of the judicial process.

In addition, ethical standards regarding the weight of the evidence must also be elucidated. Critical considerations for determining the reason for sample collection, issues of primary, secondary, and tertiary transfer, and sample contamination must all be considered. These issues foster speculation regarding evidential viability. Presence of a DNA profile, does not answer the question of when or how it get there nor its ensuing implications. The perseverance of introducing phantom suspects due to speculative testimony must be substantively examined. The potential of wrongfully convicting an innocent bystander or exoneration of a guilty person are of primary concern. The totality of the evidence is integral to the case. The mere existence of a DNA profile is not indicative of innocence or guilt.

The recognition and impact of touch and transfer DNA evidence in the judicial system is commonly neglected and misunderstood by the courts. In scrutinizing evidentiary standards for minuscule amounts of DNA in criminal cases, the court in State v. Freeman, 2008 WL 142299, (Mo.App.S.D. Jan. 16, 2008 - No.28150) determined, "DNA is robust and easily transferred ... Its mere presence is not adequate for inferences of guilt." Accordingly, prosecutors must be aware of limitations and challenges regarding touch DNA to minimize its misuse as evidence.

The analytical process, misconceptions and powerfully persuasive evidential impact of touch DNA in criminal prosecutions must be understood and properly utilized. Limitations of low level DNA need to be recognized and respected. The importance of ethical and good faith application of this invisible evidence is paramount.

Touch DNA, Ethics, Evidential Standards

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