



B79 DNA Profiles From Contact Lens Fluid – Bloodstain Patterns From a Possible Case of “Curbing”: A Case Study

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After attending this presentation, attendees will learn about the distinctive aspects of a blood stain pattern arising from an unusual circumstance, and the potential to extract and generate a DNA profile from contact lens fluid.

This presentation will impact the forensic community and/or humanity by providing awareness of an unusual bloodstain pattern event. Additionally, this presentation will provide awareness of the potential to derive a DNA profile from an unlikely substrate.

This presentation will describe distinctive aspects of the DNA profiling and bloodstain pattern analysis in a homicide investigation in Toronto in 2003.

The deceased teenage male was found naked in the water near the shore of Lake Ontario. He had been severely beaten, suffering blunt force injury to his head, neck and torso, with the most serious injuries being to his mouth and oral cavity, including loss of his upper teeth, and hemorrhage in the strap muscles of the neck and pharynx walls. The pathologist could not rule out drowning as the terminal event.

The previous night, the deceased had attended a house party, at which witnesses stated there had been an altercation. Four males were seen entering the nearby brush but only three returned, about an hour later. This area between the house and Lake Ontario, approximated 140m, consisted of brushland and railway tracks. Investigators examined this area for the path that the deceased took, as well as evidence of the perpetrators.

The outdoor nature of the scene necessitated the examination of samples such as a rock, which required additional pre-processing to produce partial DNA profiles.

Two contact lens cases were also found in the vicinity of the deceased's clothing. The cases contained fluid but there were no lenses in the compartments. It was unclear if the cases belonged to the deceased or to a perpetrator. The fluid and compartments were sampled for DNA analysis. A mixed partial DNA profile was developed from one case. The deceased could not be excluded as one of the contributors. Male DNA (amelogenin) was detected in the second case but there were no results at the other Profiler Plus loci. Other methodologies for improving the likelihood of obtaining profiles from these types of samples will be discussed.

Blood stain patterns on the deceased's clothing included two distinctive tread patterns on the shoulder areas of his T-shirt. There was a single area of blood staining on the vertical portion of the inside surface of a railway track, appearing as a relatively large area of projected blood with accompanying spatter. Curbing (curb stomping) cannot be excluded as the reason for this pattern. Curbing describes a situation where a victim receives blows to the back of his head after being positioned so that he is lying on his stomach facing a curb, or in this case, a railway track, with his mouth open and surrounding the edge of the track.

Bloodstain Pattern, “Curbing”, STR Analysis