



B42 The Persistence of Salivary α -Amylase on Decomposing Skin

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Learning Overview: After attending this presentation, attendees will better understand the factors that may affect the persistence of saliva evidence over time and will have a more comprehensive timeline of how long saliva is detectable on a decomposing body.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by establishing a timeline during which saliva will be detectable on a body and detailing how the conditions of the body may impact the ability to detect saliva. The timeline may empower investigators to determine if saliva is likely to be found on the body or not, based on the estimated time of death and state of the body. If the detection of saliva is not possible, investigators may pursue other evidence items for testing and potential recovery of DNA.

This study explores the hypothesis that environmental factors impact the ability to detect saliva and suggests that it possible to establish a timeline in which investigators can expect to be able to detect saliva.

Crime scene investigators have many types of evidence at their disposal, and biological fluids are among the most useful of these. Some forms of biological evidence, like blood and semen, have been thoroughly researched while other fluids, such as saliva, are much less common in research.¹ Saliva evidence may be found at a variety of crime scenes including homicides and sexual assaults, which makes the understanding of this evidence essential for investigators and forensic scientists.

The research performed aims to address the lapse in research regarding saliva evidence in general with a focus on its persistence over time. The experiment observed the ability to detect salivary α -amylase over time on decomposing skin. The study used a total of 33 subjects which were divided into three experimental groups. Each group was designed to reflect standard conditions that a deceased person may be found in, with each environment varying in temperature and exposure to environmental factors. Saliva samples were collected from the bodies and tested for the presence of salivary amylase using the SALiGAE[®] indicator test.

The results suggest that environment has a significant impact on the ability to detect saliva over time. The data also demonstrates that the detection of saliva may be possible for a longer period of time than previously suggested in other research.²

This presentation will detail an experiment in which saliva was deposited onto decomposing bodies to determine if saliva is detectable over time and evaluates the impact of environment on the persistence of saliva.

Reference(s):

1. Baxter, & Rees. (1975). The identification of saliva in stains in forensic casework. *Medicine, Science and the Law*, vol. 15, no. 1, 1975, pp. 37–41., Retrieved from doi:10.1177/002580247501500108.
2. Dockery, Kenna, McDermott, McKenna, & Smyth. (2010). The recovery and persistence of salivary DNA on human skin. *Journal of Forensic Sciences*, vol. 56, no. 1, Dec. 2010, pp. 170–175., doi:10.1111/j.1556-4029.2010.01520.x.

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