



Understanding the Role of DNA Evidence in a Sexual Assault Investigation: Part 4 *Alternative Sources and Potential Purposes*

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This training bulletin is the fourth in a series explaining the role of DNA evidence in a sexual assault investigation. In the first installment, we examined some assumptions that influence both discussions and policy initiatives in this area. We then provided a case example illustrating many of our points, and offered a brief historical perspective on the use of DNA evidence within the criminal justice system. In this installment, we will describe alternative sources of DNA evidence and explore their potential purposes during a sexual assault investigation. Finally, we will conclude in the next installment by charting a course for reform and offering best practice recommendations.

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Alternative Sources of DNA Evidence

1. Forensic Evidence

In many sexual assault cases, a DNA profile can be developed from forensic evidence collected from the victim's body or clothing (e.g., during a medical forensic exam) or recovered from the crime scene(s).¹ Forensic evidence can also be collected from the body or clothing of the suspect. For example, a forensic examiner may recover epithelial cells or body fluids *from the victim* on the suspect's body or clothing.²

This evidence can be sent to a crime laboratory for analysis – whether it is a local crime lab, a crime lab that is not local but nonetheless used by the police department investigating the case (e.g., state or private lab), or the FBI lab. If a criminalist is able to develop a DNA profile for a suspect, it can then be submitted to the [Combined DNA Index System \(CODIS\)](#), in a section referred to as the *Forensic Database*. Within CODIS, this entry is described as a *forensic DNA profile*, because it is developed on the basis of forensic evidence collected in the case (U.S. Department of Justice, 2010).

¹ Because we are focusing on the topic of DNA, we are primarily talking about biological evidence that can be recovered (e.g., blood, semen, saliva, fingernail scrapings). Trace evidence is also collected and could potentially be available for analysis (e.g., hairs, fibers, dirt, grass, paint chips).

² The forensic examination of the suspect is a critically important source of evidence that is all too often overlooked. Many law enforcement agencies have failed to establish appropriate policies and procedures for obtaining comprehensive forensic examinations for sexual assault suspects. This is unfortunate given the potential for recovering probative evidence from the body as well as the clothing of suspects. More information is available in a previous [training bulletin](#) on the topic of forensic exams for the sexual assault suspect. Included in the appendix of that training bulletin are a variety of resources, including a sample template for a search warrant (and supporting affidavit) to conduct a suspect exam and a standardized form for documenting clothing evidence.

Some professionals refer to a forensic DNA profile as a *forensic unknown*, because it is developed from forensic evidence rather than directly from a known individual (e.g., suspect, victim, or consensual partner). However, this does not necessarily mean that the suspect is truly unknown; the victim and/or police may actually know who the suspect is. The terminology is simply used to distinguish a DNA profile developed from forensic evidence rather than reference standards collected directly from the suspect(s).

2. Reference Standards

As a sexual assault investigation proceeds, biological evidence might also be collected directly from a suspect, by drawing blood or using a buccal (cheek) swab. These samples are described as *reference standards*, and they are submitted to crime labs to develop DNA profiles.

Historically, the DNA profile developed from a suspect reference standard could not be submitted to CODIS during the process of an investigation. Until a few years ago, a reference standard could only be entered in CODIS when the person was convicted of a violent crime and/or certain sex offenses. These DNA profiles are entered in the *Convicted Offender Database* within CODIS. However, more than half of the U.S. states have now passed laws specifically authorizing the submission of DNA reference standards at the point of an arrest.³ These profiles go into the *Arrestee Database* in CODIS (U.S. Department of Justice, 2010).⁴

Primary Purposes of DNA Evidence in a Sexual Assault Investigation

1. Establish the Sexual Act and/or Contact

One primary purpose of biological evidence (e.g., semen, saliva) is to confirm that a sexual act took place. This is important in any sexual assault case, because it may help to establish an element of the offense (e.g., the suspect's semen is found in the victim's vagina, or the victim's epithelial cells are found underneath the suspect's fingernails). However, this purpose is only crucial if the suspect denies that the sexual act took

³ The National Institute of Justice (NIJ) states on its [website](#) that that "the federal government and 28 states (as of June 2012) have enacted arrestee DNA collection laws" (Samuels, Davies, Pope & Holand, 2012). An alternative number of 27 states is put forth by "dna saves," an organization dedicated to the passage of DNA arrestee testing laws. On their website (www.dnasaves.org), they do not include several states on the list compiled by NIJ. Their list does not include Connecticut, for example, which authorizes the collection of DNA reference standards from arrestees only if they already have a prior felony conviction. The list also does not include Oklahoma, which only authorizes the collection from arrestees if they are "illegal immigrants," and Minnesota which passed a law generally authorizing collection from arrestees but was since struck down in district court. However, the list posted by dna saves does include two additional states (Nevada and Wisconsin), both of which passed DNA arrestee laws since the last update of the NIJ website in June 2012. (Thanks to Ilse Knecht of the National Center for Victims of Crime for providing this information.)

⁴ Information on CODIS is available from the website for the Federal Bureau of Investigations (FBI), at http://www.fbi.gov/hq/lab/html/codisbrochure_text.htm.

place, and this is rare. In most cases of non-stranger sexual assault, the suspect will acknowledge that the sexual act took place but argue that the victim consented.

For practical purposes, therefore, the main use for such evidence is to corroborate the victim's account of events (i.e., confirm that the sexual acts or contact described by the victim actually took place).⁵ For example, a female victim may state that the suspect licked or kissed her breast. If a forensic examiner swabs this area and recovers saliva that is later identified as being the suspect's, this will not necessarily establish an element of the offense – but it could help to corroborate the victim's account by indicating that at least some of the events can be documented to have taken place.

2. Identify (or Eliminate) a Suspect

A second purpose of DNA evidence in a sexual assault case is to identify the person who committed a sexual act. This is particularly important when the identity of the suspect is unknown. In this type of case (i.e., a stranger sexual assault), foreign biological and trace evidence can be collected from the victim's body, clothing, or the crime scene – and sent to the crime lab for analysis. If the crime lab is able to develop a DNA profile for the unknown suspect, it can be submitted to CODIS. Again, this CODIS entry is described as a *forensic DNA profile*, because it is developed on the basis of forensic evidence collected in the case, rather than a reference standard collected directly from the suspect.

After this forensic DNA profile is entered in CODIS, the database is searched for a match with any DNA profiles developed from reference standards taken directly from known individuals. These include DNA profiles in the Convicted Offender and Arrestee Databases.

If no identity or match is found, then the forensic DNA profile remains in CODIS waiting for a potential future match. It is like a permanent request through interlibrary loan; if the forensic DNA profile is ever identified as a specific person, then the investigator will be notified.

If a match is found within CODIS, within the Convicted Offender Database or the Arrestee Database, the suspect's identity can be established with considerable certainty, since the DNA profiles in these two databases are developed on the basis of reference standards taken directly from the suspect. This is typically what people mean when they refer to a "hit" in CODIS. The case might then lead to a successful prosecution if the suspect can be located, and the investigation yields sufficient

⁵ Establishing this element also requires confirming that the suspect is the person who committed the sexual act. In other words: "Is this suspect the same person whose DNA was collected from the victim or crime scene?" If the suspect is known, providing this confirmation is a relatively straightforward matter. First, biological evidence is collected from the victim's body, clothing, or the crime scene. A reference standard is then collected directly from the suspect, and both samples are sent to a crime lab. If the DNA profiles from both sources match, it provides this confirmation and establishes both the element of the crime as well as the suspect's identity.

evidence to prove that the suspect committed the crime, and the victim is able to participate in the criminal justice process, etc.

Alternatively, the evidence could match with a DNA profile from a prior case (i.e., within the Forensic Database of CODIS). The identity of the suspect in the prior case may have been known, but even if it remains unknown, the link between the two cases may still assist in the identification of the suspect by producing a viable lead. Investigators can begin by comparing notes in the two case files and pursuing the type of “good old fashioned police work” that can lead to the identification and arrest of a suspect.

Of course, it is also worth noting that the CODIS match could identify that the source of the DNA is someone who is *not* currently viewed as a suspect in the case. To that extent, DNA evidence that identifies one person as a suspect could at the same time eliminate another.

3. Identify Prior Convictions or Arrests

While many of these purposes are actually overlapping, a third use for DNA evidence is to identify any prior convictions or arrests. Because DNA profiles developed from known reference standards have historically been entered in CODIS at the point of conviction, such a “hit” traditionally meant that the suspect had been convicted for at least one prior offense. Now that many states allow DNA profiles to be entered at the point of an arrest, a “hit” may simply mean that the person was arrested at least once (for the offenses that are specifically included in the authorizing legislation for the state that entered the DNA profile).

In either situation, this “hit” may help in the prosecution of the present case by demonstrating a pattern of past behavior, which may include criminal activity. However, it is only likely to be offered as evidence in the present case if the past arrest or conviction was also for a sexual assault, or for some other offense with significant similarities to the present case (e.g., both crimes involved a similar pattern of burglary or home invasion).

4. Link Cases Based on Evidence

Similarly, another purpose of DNA evidence in a sexual assault investigation is to link the present case with the evidence submitted in any past cases, or even to ensure that the forensic DNA profile is available to match with evidence submitted in any future cases. Either way, such a link can assist with the investigation and prosecution of both cases, even if they are linked together solely on the basis of evidence (not reference standards).

For example, the suspect’s identity in the prior case may have been known, but the case was not prosecuted for other reasons (e.g., the victim was unable to participate in the criminal justice process, or the prosecutor rejected the case for insufficient

evidence). Depending on case law in a specific jurisdiction, it may be possible to introduce evidence or even victim testimony from the prior case – even those beyond the statute of limitations – in order to assist with the prosecution of the present one.⁶ It is also possible that both cases could be prosecuted jointly, depending on case law, the facts of the cases, and a host of other factors.

Challenges Remain

Even with the stunning advances we have seen in the field of DNA technology, there can still be significant delays in the process of submitting and testing evidence. This means the results of any DNA analysis and CODIS search may not be available to law enforcement for some time. This factor currently limits the potential of DNA evidence to link cases together in a timely manner and to assist in the investigation and prosecution of sexual assault. In the final bulletin in this series, we will explore future directions for reform. For example, we need to continue to work to increase the capacity for crime labs to test the high volume of evidence submitted by law enforcement, as well as the resources and training available to law enforcement agencies so they can utilize DNA evidence to its fullest potential during an investigation.

It is also important to keep in mind that only a small percentage of sexual assault cases lead to an arrest, let alone conviction (Frazier, Candell, Arikian, & Tofteland, 1994; Horney & Spohn, 1990; Koss, 2006; Lisak & Miller, 2002; Lonsway & Archambault, 2012; Matoesian, 1993; McWhorter et al., 2009; Senate Judiciary Committee, 1993; Tjaden & Thoennes, 2000). Another recommendation for best practice is therefore to increase the number of forensic DNA profiles entered in CODIS during the course of an investigation – regardless of whether the suspect’s identity is known – by submitting evidence collected from the victim and/or crime scene in a sexual assault case.

In the next (and final) training bulletin in this series, we will continue this discussion about future reforms and policy implications. With a little bit of history, we hope to better understand how we got to where we are now -- and forge a path forward to continued improvements.

⁶ The [National Center for Victims of Crime \(NCVC\)](#) offers a variety of information about the statutes of limitations in each U.S. state and territory. In a series of [charts](#), information is provided not only on the statute of limitations for sexual assault offenses, but also for any DNA exceptions (e.g., if a warrant can be issued on the basis of the suspect’s DNA rather than a name or other identifying information). When law enforcement obtains an arrest warrant, the statute of limitations is suspended until the suspect is taken in to custody. In addition to arrest warrants, the prosecution for the state might also be able to have the statute of limitations extended if they can show that the suspect fled prosecution by leaving the state. These exceptions allow for the possibility of prosecuting a sexual assault offense at any point when the suspect’s identity is definitively established and linked with the DNA profile developed on the basis of evidence in the case, and the suspect is arrested. NCVC also offers two papers on this topic. One is entitled, [Increasing victim’s access to justice: The statute of limitations and the prosecution of sexual assault cases](#). A second paper seeks to address the question: [Why test rape kits after the statute of limitations has expired?](#)

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