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SEXUAL ASSAULT INVESTIGATIONS

Key Words: First responders, detective, SART, SANE, footwear impressions, crime scene investigator, latent fingerprint, semen, saliva, trace evidence, evidence from the victim, scalp or pubic hairs, evidence from the scene, bruises, bite mark injuries, blood, knots, forensic medical examination, swabs, oral swabs, aspirate, fingernail scrapings, anus and rectum examinations, evidence from the suspect, victim's clothing, penile swabs.

LEARNING OUTCOMES

After studying this chapter, you should be able to:

- Discuss the role of physical evidence in sexual assault investigations.
- Explain evidence from the victim, suspect, and the scene.
- Describe the process of child abuse examination.
- Summarize the examination of the victim and suspect.

INTRODUCTION

Modern sexual assault investigation requires a multidisciplinary approach to the investigation. The investigative team includes the **first responders**, the **detective**, the crime scene personnel, the laboratory analyst, the sexual assault medical examiner, the victim advocate from the rape crisis center, and the prosecutor from the district attorney's office. The effectiveness of the investigation depends on the three "Cs" of team investigation: Communication, Cooperation, and Coordination.¹ Each of the members of the investigative team needs to understand the role and responsibilities of the others and the way in which the coordination of the team relies on cooperation and effective communication between the team members. In most investigations, the detective will be the team leader, assembling information from each member into a sound case to present to the prosecutor.

In some jurisdictions (although not all), sexual assault cases may be investigated by a **sexual assault response team (SART)** composed of the first responder, the investigator, a victim advocate, and a **sexual assault nurse examiner (SANE)** at a designated rape treatment center or hospital. Key to this approach is the forensic sexual assault nurse examiner, whose training includes legal procedures for evidence collection, appropriate care for the sexual assault victim, training in the types of scientific evidence collected, and appropriate measures for their preservation. Other members of the response team also receive proper training for their role in the team, which provides a basis for the communication and cooperation necessary for smooth team investigations. The SART/SANE approach to sexual assault investigations represents a significant advancement in the collection of physical evidence, the quality of care for the victim, and the ability of the prosecutor to successfully prosecute an offender in sexual assault cases.

DEVELOPMENT OF MODERN SEXUAL ASSAULT INVESTIGATION

Prior to the 1970s, sexual assault victims were treated inordinately poorly by the criminal justice system. Often, the victim was blamed for the assault, manifested by the frequent remarks by law enforcement personnel "she asked for it," "she deserved it," "she wouldn't have been attacked if she hadn't been wearing such provocative clothing," and so on. In the early 1970s, a small group of dedicated women in Berkeley, California, formed a group named the Bay Area Women Against Rape (BAWAR). These women, many of whom were rape survivors, fought for improved treatment of rape victims, improved methods of sexual assault investigations, and, most importantly, the improvement of law enforcement members' attitudes about victims of sexual assault. The efforts of these women created an astounding revolution in the United States with regard to the investigation of sexual assault cases, leading directly to the development of rape crisis centers throughout the United States, the formation of victim/witness programs, the formation of SART programs, and the unfolding of a dramatic improvement in the forensic medical examination of sexual assault victims through the development of trained and certified SANEs. The net effect of these improvements was a dramatic increase in the prosecution and conviction of sexual assault offenders, and, more importantly, a striking improvement in the physical and psychological medical treatment of sexual assault victims. The debt that sexual assault victims owe these founders of BAWAR is immense and measureless.

ROLE OF PHYSICAL EVIDENCE IN SEXUAL ASSAULT INVESTIGATIONS

Physical evidence in sexual assault cases can assist in *establishing elements of the crime*, as well as *identification or elimination of a suspect*, and can be used to *corroborate or dispute the statements of principals*. The physical evidence most often encountered in sexual assault cases includes latent fingerprint impressions, semen, hairs, fibers, and blood. All of the other types of physical evidence may play a role in a sexual assault investigation, but these types are the ones most often encountered by the investigator. The principal sources of physical evidence in sexual assault investigations are the: (1) crime scene, (2) victim, and (3) perpetrator. The collection of physical evidence therefore involves an appropriate crime scene search and the forensic examinations of both the victim and the suspect. The successful investigation and prosecution of sexual assault crimes usually involves the use of physical evidence from these three sources.

The two principal defenses used by a suspect in a sexual assault case are: (1) *false identification* of the suspect by the victim and (2) *consent* to sexual activity by the victim. The search for physical evidence at the crime scene and during the medical examinations of the victim and suspect may provide evidence to counter or support either of these defenses. Physical evidence at the crime scene that may serve to identify the perpetrator includes latent fingerprints, blood or semen stains, trace evidence such as hairs and fibers, and impression evidence such as **footwear impressions**. Physical evidence that supports nonconsensual sexual assault includes bloodstains at the site of the assault; displaced furniture at the crime scene that indicates a struggle; torn clothing from the victim; and injuries to the victim, such as bruises and lacerations, which are consistent with nonconsensual sexual activity. The crime scene should be processed systematically for those types of evidence that serve to identify the perpetrator(s), establish elements of the crime, and verify or dispute the statements of principals with regard to the nonconsensual nature of the assault. (See Chapter 2 on crime scene search principles for appropriate guidelines for the crime scene search and documentation of the physical evidence present.)

I repeatedly tell students that preliminary information is important when crime scene technicians respond to the crime scene (such as facts of the case), but too much information will create a situation where we may want to make evidence fit what we are hearing. Let the scene speak for itself. Physical evidence does not lie, so if left alone without alteration or destruction this evidence will tell a story. It is a critical point in any investigation when physical evidence corroborates independently the information that is being gathered from victims, suspects and/or witnesses.

EVIDENCE FROM THE CRIME SCENE

First responders

PROTECTION OF THE VICTIM

The protection of the victim and the scene, and the apprehension of the suspect are the primary goals of the first responders. It is important that the first responders advise the victim not to change clothing, bathe, or shower, or to perform other hygienic measures, since these actions may destroy valuable evidence needed in the investigation. Evidence gathered from the victim or the victim's clothing may help to establish the identity of the perpetrator, if unknown, and to provide evidence that will support statements of the victim and will refute statements of the perpetrator.

SECURING THE CRIME SCENE

The sexual assault crime scene should be secured in the same manner as for other crime scenes. It is a good practice to keep the scene secured until after the medical examination of the victim, since additional evidence at the crime scene may be indicated by facts discovered during the medical examination. It should be noted that in sexual assault cases, there may be multiple crime scenes.

DOCUMENTATION OF THE CRIME SCENE

Document the crime scene with notes, photographs, and sketches to identify items of evidence and to record any injuries to the victim (see Chapters 3 and 4). Documentation of the crime scene will establish a basis for reconstruction efforts directed toward determining the veracity of the suspect's claim of consensual intercourse as opposed to a sexual assault. Particular attention should be directed to displaced furniture, any materials used to bind the victim, and any objects that may have been used as a weapon.

INTERVIEW THE VICTIM IN PRIVACY²

The officer should establish rapport with the victim (a female victim may prefer to have a female officer for the interview or to have a female present; a male victim may prefer male officers). Determine whether the crime scene has been altered or contaminated. Also determine whether the victim has changed clothing; discarded soiled items such as bedding, towels, or clothing; bathed; or douched. Make notes for the collection of these items by the crime scene investigator (CSI).

The interview techniques should be designed to help restore the victim's self-esteem and sense of safety.

INITIATE CRIME BROADCAST IF APPLICABLE

Monitor the broadcast to assure the accuracy of the suspect description.

ARRANGE FOR MEDICAL EXAMINATION OF THE VICTIM

Make certain that the sexual assault response team has been activated and that the individual who will perform the forensic examination has been notified. Arrange for a victim advocate from the rape crisis or victim advocate center to accompany the victim to the medical facility where the examination is to take place. The officer should advise the victim to take a change of clothing to the examination. These arrangements should be automatic in those jurisdictions having a SART program in place. If the jurisdiction does not have a SART program, the responding officer or the detective assigned to the case should ensure that the victim brings a change of clothing or that it is provided for the victim.

Crime scene investigators

In some jurisdictions, the **crime scene investigator** may be the first responder; but in most instances, the crime scene investigator will be the detective assigned to the case, or it may be a crime scene specialist from the crime scene unit.

Regardless of which individual is responsible for the crime scene investigation, it is important that the processing of the scene be accomplished in the same systematic and

orderly manner as for other crimes. Appropriate notes, photographs, and sketches should be completed in order to document properly the crime scene and the physical evidence located. Proper documentation of the crime scene is key to an effective crime scene reconstruction, should a reconstruction be necessary to answer false claims by a suspect, or, in the rare instance of false allegations by an alleged victim, refute the false claims. *Note:* In modern sexual assault investigations, it is an axiom of proper investigation that the victim is to be believed in any sexual assault allegation, in order to avoid dissuading victims to report their assaults. The investigator must keep in mind, however, that the investigation may develop facts that suggest the allegations made by a victim may be false. The analysis and interpretation of the physical evidence may provide evidence that helps determine the actual nature of the allegations.

LATENT FINGERPRINT IMPRESSIONS

Latent fingerprint impression evidence remains the best evidence for identification of the perpetrator when the perpetrator is unknown to the victim. Latent fingerprints are a permanent record of the presence of a suspect at the scene. The investigator should always consider processing the scene for latent fingerprints. If good quality latent fingerprint impressions are recovered, they may allow for rapid identification of an unknown suspect by a computer search through the automated fingerprint identification system (AFIS). The latent impressions recovered at the scene may link assaults committed by the same perpetrator through intercomparison of latent impressions from the scenes of other assaults. The investigator should remember to take elimination prints from the victim and any individual normally having access to the scene.

FOOTWEAR IMPRESSIONS, TIRE TRACKS, AND TOOLMARKS

These types of impression evidence may serve to identify the perpetrator(s) through identification of the suspect's footwear, vehicle, or tools for entry, and such evidence should always be considered by the investigator (see Chapter 9 for detailed information on the collection and preservation of these types of evidence). Footwear impressions may provide tracking data that can assist in the reconstruction of the events at the crime scene.

SEMEN EVIDENCE

With the advent of DNA profiling by forensic scientists, **semen** evidence is virtually equivalent to latent fingerprints for identifying the perpetrator of sexual assault crimes. A number of high-profile cases throughout the United States have demonstrated that semen evidence is also a powerful tool for eliminating a suspect who has been falsely accused of a sexual assault crime or a rape homicide. The investigator should be diligent in searching the crime scene for semen evidence. The use of a laser light or an alternate (forensic) light source may be very helpful in this regard, because of the fluorescence of semen under these light sources. Semen from the crime scene, the medical examination of the victim, and the victim's clothing are important evidence that should not be overlooked by the investigator. In some cases, DNA typing from semen evidence may furnish the critical information that leads to successful identification and prosecution of a suspect. It should be noted that suspects have had associates "plant" semen evidence at a crime scene in an attempt to exonerate falsely the accused. Diligent documentation of the crime scene will effectively blunt this ruse.

SALIVA STAINS

Saliva stains may occur on the victim's body as a result of biting, licking, or sucking activities. If the victim has used towels or tissues to wipe away saliva from the body, the items used to wipe the saliva stains should be collected and packaged in paper bags as evidence. The victim's clothing may also be a source of this valuable evidence type. Saliva stains may yield adequate DNA for successful DNA profiling and comparison with a suspect's DNA profile. The investigator should not overlook items such as cigarettes, cigars, chewing gum, and the like, which may contain DNA evidence from the suspect.

TRACE EVIDENCE COLLECTION

Search the crime scene diligently for **trace evidence** such as fibers, hairs, or soil tracked in by the perpetrator. Alternate light sources can assist with the detection of trace evidence such as hair and fibers. Collect and package any trace evidence recovered in accordance with the guidelines for trace evidence collection in Chapter 6. Particular attention should be given to any hair evidence that may have intact root sheaths, which need to be dried and kept frozen until submission to the laboratory in order to preserve the genetic markers in the hair root tissue, particularly the DNA that may be present in the root sheath. When there is no root present on the hair(s), mitochondrial DNA (mtDNA) typing of the hair shaft may be successful.

SUBMISSION OF LAB ANALYSIS REQUEST FORMS TO THE LABORATORY WITH THE EVIDENCE

A lab analysis request form must accompany the evidence submitted to the forensic laboratory. A sexual assault form must also accompany the evidence being analyzed. This form has information regarding the assault itself, collection of evidence, and history of the victim involved (see Figure 13-1 for forms). These forms assist lab personnel with pertinent information and the analysis that is being requested, and will also facilitate the laboratory analyst's ability to contact the investigator responsible for the investigation in the event that further information, evidence controls, or standards are needed to complete the laboratory examinations. The forms may also suggest to the laboratory analyst other types of evidence that may be present at the crime scene.

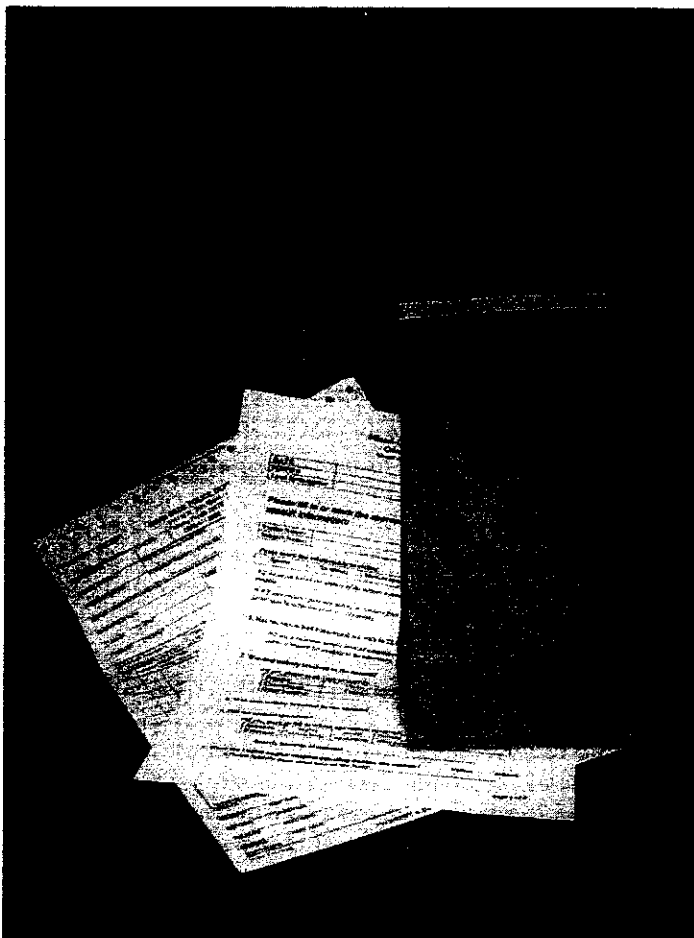


FIGURE 13-1 Sexual Assault Kit
Sharon Plotkin

EVIDENCE FROM THE VICTIM³

Roles of evidence from the victim

Evidence from the victim may assist in identifying the perpetrator or may rebut a defense of consent at trial. Evidence from the victim that serves to identify the perpetrator includes semen stains, saliva stains, and trace evidence transferred to the victim from the perpetrator's body or clothing. **Scalp or pubic hairs** from the perpetrator may be found on the victim's body or adhering to the victim's clothing. Trace **evidence from the scene** of the crime, when the scene is not the victim's residence or vehicle, may be discovered on the victim's body or garments. Soil and vegetation, for example, from an outdoor scene may be found in the victim's hair, on the victim's body surfaces, and on the victim's garments. Fibers from the suspect's vehicle may be found on the victim's garments or on footwear when the victim is abducted and transported in the perpetrator's vehicle.

Evidence from the victim that may be used to corroborate the nonconsensual nature of the attack includes injuries to the victim documented at the medical examination and evidence of damage to the victim's clothing that indicates a struggle. Injuries to the victim may consist of lacerations, bruising, binding marks, and bite marks. Damage to the victim's clothing often includes torn fabric, buttons torn off the garment, and evidence of cutting. Each of these types of evidence may be used to reconstruct events that took place and thus corroborate the victim's statements and dispute those of the assailant. A meticulous crime scene search, thorough medical and evidentiary examination of the victim, and appropriate crime laboratory examinations of the physical evidence by the crime laboratory analysts will assist immeasurably in determining the truth of what occurred during the crime and will help to establish elements of the crime.

Sexual assault evidence collection kits

Sexual assault evidence kits (both victim and suspect kits) may be prepared by the jurisdiction's forensic laboratory, or they may be purchased from a crime scene supply firm. The kits should have the necessary packaging supplies for collection of the clothing, and all necessary supplies for the collection and packaging of the evidence items collected at the forensic medical examination of the victim or suspect, whether the victim is a female adult, male adult, or child (see Figure 13-2 for a typical sexual assault evidence collection kit for adult females). The provision of a change of clothing for the victim or suspect after clothing collection needs to be addressed as part of the planning process for sexual assault cases. Victim advocate agencies may be a valuable resource in this regard, as some have changes of clothing available for this purpose. If not, then the investigating agency should take this need into consideration as part of the guidelines for sexual assault investigations.

VICTIM'S CLOTHING

The clothing worn by the victim both *before/during* the assault and *after* the assault should be collected. The clothing worn before and at the time of the assault may have evidence supporting the violent nature of the assault, such as rips and tears in the fabric, missing buttons, and bloodstains from the victim and/or the suspect. Clothing worn during the assault may also contain trace evidence such as hairs or fibers transferred from the assailant's clothing during the assault by the perpetrator. Clothing worn after the assault may have semen from vaginal drainage that may constitute the majority of the semen evidence recovered (the majority of semen deposited in the vaginal vault is usually lost by drainage). The quantity of semen recovered is a factor in the number and kinds of tests that can be performed on the semen and also is a factor in the amount and quality of information obtainable from these tests. The clothing should be collected as part of the medical and evidentiary examination of the victim (see the section on medical examination of the victim). Each garment should be packaged in a separate paper bag in order to allow any stains present to dry and to avoid cross-transfer of trace evidence between garments. (See the section on medical examination of the victim for detailed instructions on clothing collection.)

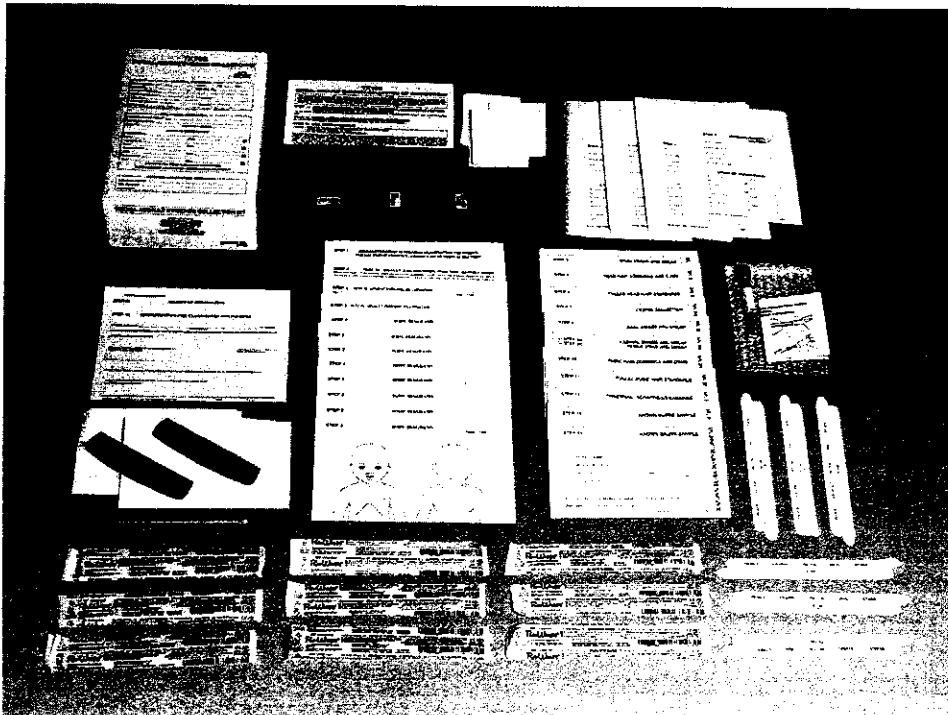


FIGURE 13-2 Female Victim Sexual Assault Evidence Collection Kit
Courtesy of Sirchie Fingerprint Laboratories.

INJURIES TO THE VICTIM

Injuries to the victim, such as bruising, lacerations, and bite marks need to be documented as part of the medical examination. It is important to note that some bruises may not be apparent at the time of the initial medical examination, so it may be necessary to make follow-up examinations of the victim at daily intervals up to a week postassault in order to provide documentation of the bruises. The investigator should note any injuries to the victim and evaluate the need for follow-up medical examinations and documentation of bruise development. **Bruises** are a light bluish-red after a few hours, purple within a few days, green-yellow at the end of a week, and brown after a week. The bruises disappear in about two to four weeks.⁴

BITEMARK INJURIES

Bite mark injuries may have two types of evidence present, saliva from the assailant and dental impressions. The saliva may be typed in the DNA system. The dental impressions from the assailant's bite marks may be identifiable and must be properly documented with photography and, in some instances, with silicone casting material. It is very helpful to have a forensic odontologist examine the bite marks and prepare the photographic and casting documentation.

BLOOD EVIDENCE

Injuries to the assailant may have transferred **blood** to the victim's clothing or body surfaces. Bloodstain evidence on the victim's body surfaces should be collected at the medical examination of the victim. Blood standards from the victim and any suspects need to be collected for comparison with any bloodstain evidence obtained from the victim (see the section on blood samples from living subjects in Chapter 7). Injuries to the victim may have transferred bloodstains to the assailant, so the clothing from any suspect should be examined closely for bloodstains.

TRACE EVIDENCE: HAIRS AND FIBERS

The violent nature of a sexual assault will often create a transfer of trace evidence such as hairs and fibers from assailant to victim and from victim to assailant, or from either to the

crime scene. The examination of the victim's clothing and the suspect's clothing will reveal trace evidence produced in this manner. It is also important to keep in mind the transfer of trace evidence from the crime scene to the clothing and bodies of both victim and assailant and to collect the appropriate standards from bedding, carpets, furniture, and other items at the scene for possible comparison with any fibers recovered from the victim or suspect.

Hair from the assailant may be transferred to the victim's clothing or body during the assault. The hairs transferred may include scalp hairs, pubic hairs, or other body hairs. Scalp and pubic hair standards from the suspect should be collected for possible comparison to any hairs recovered from the victim's clothing or body surfaces during the medical examination. Hair adjacent to any injuries to the assailant should also be collected, although hairs other than scalp or pubic hairs may not be suitable for comparison purposes.

TRACE EVIDENCE: SOIL/VEGETATION

If the sexual assault occurs in an outdoor setting, soil and vegetation may have been transferred to the clothing of both the victim and the suspect. Samples of the soil and vegetation at the crime scene need to be collected for possible comparison with any evidence recovered from the victim's clothing (see Chapter 6 for soil collection procedures). It is important to ensure that the bags containing the victim's clothing are properly sealed with tape to avoid loss of soil or vegetation evidence.

LATENT FINGERPRINT IMPRESSIONS

It is considered highly unlikely that latent impressions can be recovered from living subjects because of the nature of the latent deposit and the skin surfaces. In the case of a rape-homicide, it is possible (although unlikely) to recover latent impressions from the victim. Superglue (cyanoacrylate) fuming (deceased victims) or magnetic powder fingerprinting techniques have been known to yield results on rare occasions when optimal environmental conditions exist. If such prints are yielded these should be scaled and photographed. As always, remember that prior approval from the medical examiner/coroner must be given before the deceased is processed.

BINDINGS FROM THE VICTIM

Leave any **knots** intact by cutting several inches away from the knot. When making the cut, I use a marker to denote where I will be cutting the bindings and then cut into between the marks I placed. This helps to show where the cut was made. Duct tape may have latent impressions on either side, so remove it carefully, preserving the ends torn from the tape roll for comparison with any roll of duct tape recovered from a suspect.

MEDICAL EXAMINATION OF THE VICTIM

Introduction

The **forensic medical examination** of a sexual assault victim typically includes a physical examination for injuries and treatment for those injuries, sexually transmitted diseases, and emotional trauma. Some states mandate the types of examinations and treatments that must be provided to the victim of a sexual assault and the payment for these examinations and treatments. The procedures for the medical and forensic examinations of victims of sexual assault prescribed by the State of California are followed closely in this text. Medical personnel providing the forensic examinations should be trained specifically in the care and treatment of the sexual assault victim and in the appropriate methods for collection and preservation of physical evidence from the victim, and the examiner should use a specially prepared victim sexual assault evidence kit for collection of evidence materials.

Important note: "Flossing" the victim's teeth for semen recovery from the oral cavity should never be attempted. Only sterile cotton **swabs** should be used for semen recovery from the victim's oral cavity (see the section for Oral Swabs under "Medical Examination of the Victim").

Standard identification data

Each item of evidence (or its sealed package) collected for medical-legal purposes must have sufficient labeling data to ensure that the item can be unequivocally identified at any future time. Each item must be identified as that specific item collected by the examiner from a particular patient during an examination at a specific date and time. The identification data that are needed to ensure this identification are referred to in this text as "standard identification data" and must include the following minimum information:

- Case file number.
- Item number.
- Date of collection.
- Name of individual who collected the item.
- Name of the patient (victim).

The item should also be marked by the officer taking custody of the item. The person collecting each item should place their initials partially on the evidence tape and partially on the package to ensure that the evidence tape has not been tampered with and the evidence has not been altered in any way. In addition, the location on the victim's body where the item was collected should also be noted when the object is collected from the victim's body.

Chain of custody data

A stringent legal requirement for forensic evidence is that each individual or entity having possession of an evidence item from the time it is collected until the time it is introduced into evidence at a court proceeding must be identified. This requirement is referred to as the "chain of custody" or "chain of possession." The chain of custody begins at the time the item is collected and continues through until submission of the evidence at a court proceeding. This chain of custody is denoted with the use of property receipts (e.g., see Appendix 13-B). The items collected must be stored in a secured facility or room, so that any person having custody or access to the item can be identified. This requirement ensures that the condition of the evidence remains unchanged from the time of its collection until its introduction in a court proceeding or that the individual responsible for any change (e.g., crime laboratory personnel) can document any changes in the condition of the evidence. Evidence items should not be left unattended in the sexual assault victim examination room unless the room is locked and any individual with access to the room can be identified for authentication of the security of the room.

The individual collecting the evidence should ensure that each item of evidence is identified with standard identification data, the chain of custody forms are filled out properly, and should obtain a signed receipt from the individual taking custody of the evidence when it is relinquished (a chain of custody form is adequate for this purpose). The name of the individual taking custody of the evidence and the date and time of the custody transfer should be recorded in the examiner's case file.

Collection of clothing

A change of clothing should be provided for patients. Planning and coordination between law enforcement agencies, victim services agencies, and the hospital to provide a change of clothing for the forensic examination of sexual assault victims are essential to avoid delays in the examination and treatment of the victim.

PRIOR TO DISROBING

The patient should remain clothed until it is time to conduct the medical and forensic examination. This procedure will facilitate the evidence collection process and ensure the integrity of the collected evidence items.

DISROBING

When victim disrobes, be sure that there are brown paper bags for each item prior to the collection and as each item is removed it is placed into a brown paper bag. This prevents cross-contamination.

REMOVAL OF PATIENT'S SHOES

The patient should remove the shoes *prior to stepping on the paper for disrobing* to avoid contamination of loose trace evidence with non-evidential debris from the shoe soles. The shoes should be collected and packaged separately if indicated by the circumstances of the case.

OBSERVATION OF CONDITION OF PATIENT'S CLOTHING

The condition of the patient's clothing should be observed and noted in the examination notes by the sexual assault examiner before the patient disrobes. Note any rips or tears in the garments and the presence of any foreign materials. These observations should be recorded in the examiner's case notes. Clothing may be scanned with a Wood's Lamp (long-wave ultraviolet lamp) to detect areas of fluorescence. Semen has a faint fluorescence under long-wave UV light, and many fibers will show a strong fluorescence under this light. When utilizing a light source, be sure to put brown paper down under the object prior to examining it. Change this paper for each item as well as gloves worn by the examiner.

DEBRIS ON PATIENT'S CLOTHING

- Foreign materials firmly attached to clothing should not be removed but should be packaged with the garment.
- Fine, loose debris falling from clothing should be collected and placed in glassine envelopes. The envelope is marked with where the foreign materials came from. I separate the materials from front to those from the back, or articles of clothing and do not put foreign materials together. This is to prevent cross contamination/cross transfer.
- Loose debris that is large, has outstanding characteristics, or appears significant should be packaged separately in a bundle. The bundle should be packaged in an envelope, and the envelope should be labeled with standard identification data and sealed.
- Foreign materials collected should be noted in the examiner's case notes.

DISROBING AND COLLECTION OF PATIENT'S CLOTHING

- The patient should disrobe on the paper previously described in order to collect any loose foreign material falling from the clothing.
- All outer- and underclothing worn during or immediately after the assault should be collected because of the possible presence of vaginal drainage and the presence of trace evidence such as hairs, fibers, and stains.
- Each garment should be folded as it is removed to prevent stains or foreign materials from being lost or transferred from one garment to another. Place paper in between each fold to prevent cross-contamination and cross-transfer.
- *Each garment should be packaged separately in an individual paper bag.* Never package clothing in plastic bags, because they retain moisture that may result in mold and deterioration of the biological evidence that may be present.
- Wet or damp clothing must be given to the law enforcement officer with directions to arrange for drying before final packaging.
- The large-sized bundle of paper in its sealed bag and all the individually bagged garments should be placed into large paper bags, labeled with standard identification data, and sealed with tape.
- Whether or not clothing was collected from the patient should be documented in the case notes.

Examination of body surfaces

A visual examination can be aided with the use of a long-wave ultraviolet light, commonly known as a Wood's Lamp. This can be used to scan the body or clothing for evidence of dried or moist secretions, stains, fluorescent fibers not readily visible in white light, or subtle injury. Ultraviolet light searches should be done in a darkened room. The patient may instead be searched with an alternate light source, *making sure that each individual in the room (including the patient) is wearing protective eyewear. This is done at the rape treatment center or hospital.*

SEMEN STAINS

Dried semen stains have a characteristic shiny, mucoid appearance and tend to flake off the skin. Under an ultraviolet light, semen usually exhibits a faint blue-white or orange fluorescence. Fluorescent areas usually appear as smears, streaks, or splash marks. Since freshly dried semen may not fluoresce, swab each suspicious area with a separate swab whether it fluoresces or not (see the section on collection that follows). Fluorescent areas observed under ultraviolet light may not be semen stains, and independent confirmation of the presence of semen by the forensic laboratory is necessary to identify the stain as a semen stain. Collect the suspect stains for submission to the forensic laboratory for analysis (see the section on collection of dried or moist stains that follows).

SUBTLE INJURY

Rope marks, recent contusions, and other subtle injuries may be more visible with the aid of a Wood's Lamp. A visual examination is necessary to differentiate between old or recent trauma. *Note that bruising may not be fully developed at the time of the forensic examination, and follow-up examinations at twenty-four-hour intervals should be scheduled.* Ultraviolet (UV) light photographs of the bruises should also be considered, as UV photographs may sometimes reveal detail not visible with digital photography.

Collection of dried or moist stains from the body

Dried or moist stains identified through the general physical examination and the Wood's Lamp or forensic light source scan should be collected, packaged separately, and labeled as to location on the body. The stains should be collected in the following suggested manner:

- **Semen, saliva, or bloodstains**

Semen, saliva, or bloodstains should be sampled with sterile swabs, dried, the swab head protected with a shield or folded paper bundle, and packaged in an envelope. Alternatively, the swabs can be packaged in a "swab box" (see Figure 7-7, Chapter 7), sealed in the swab box (which allows for drying of the swab), labeled appropriately, and sealed in a paper envelope. The envelope containing the swab bundle or swab box should be labeled with standard identification data.

- **Semen in the pubic hair**

If semen or other unidentified material is found in the pubic hair, the examiner should cut out the matted hairs bearing the material and package in a bundle. The bundle should be packaged in an envelope, standard identification data affixed, and the envelope sealed with tape.

- **Recording location of semen, saliva, or bloodstains**

If semen, saliva, or bloodstains are found, the examiner should record the location of the stains on the body and note any injuries to the victim that may account for bloodstains.

- **Moist stains or secretions**

The examiner should follow these steps for the collection of moist stains or secretions on the patient's body:

- Moist stains or secretions should be collected with a dry swab to avoid dilution. As many swabs as necessary should be used to collect the entire stain.
- The swab(s) should be dried and packaged in the same manner as for dried secretions (discussed earlier).
- Diagrams should be used to record the location(s) of secretions on the body.

Collection of foreign materials from the victim's body

FOREIGN MATERIALS SUCH AS FIBERS, HAIR, GRASS, AND DIRT

These materials should be packaged in a separate paper bundle for each location of the body. Use tweezers, or gently scrape the substance(s) into a bundle with a clean tongue depressor or the back of a scalpel blade.