



# Forensic Biology

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# Faculty Disclosure

I have not had any relevant financial relationships during the past 24 months.



# Educational Need/Practice Gap

Participants need to learn how to obtain evidence in an appropriate manner that preserves the integrity and minimizes the risk of cross contamination of evidence.

# Objectives

Upon completion of this educational activity, you will be able to:

- Identify kit components and rationale for the collection of each component.
- Explain the importance of maintaining the integrity and chain of custody of the evidence
- Explain how to properly collect and package forensic evidence to preserve for analysis.
- Explain the basics of forensic serological and DNA laboratory analyses.



# Expected Outcome

- A knowledge of how collection of the Sexual Assault Evidence Collection Kit and associated information correlates to the analyses once the is processed by the Kentucky State Police Crime Laboratory.

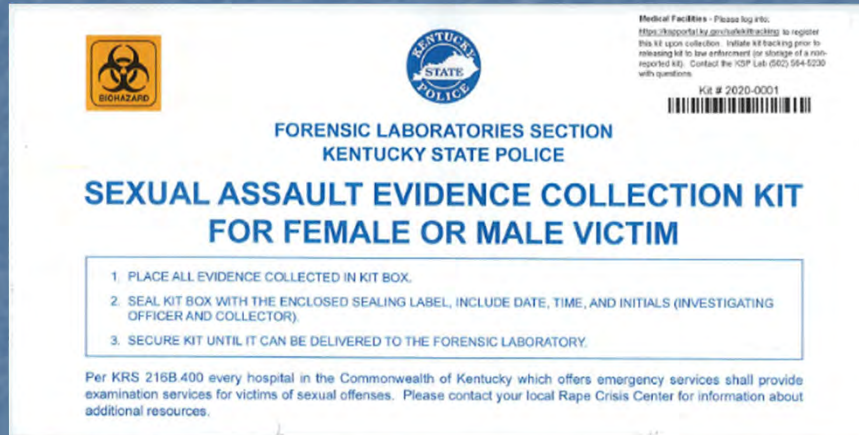
# General Rules of Forensic Evidence Collection

- Look first, photograph second, collect third
- Wear gloves and change often
- Air dry before packaging
- Package in \*PAPER\*
- Package separately
- Seal each package or envelope



# Sexual Assault Evidence Collection Kits

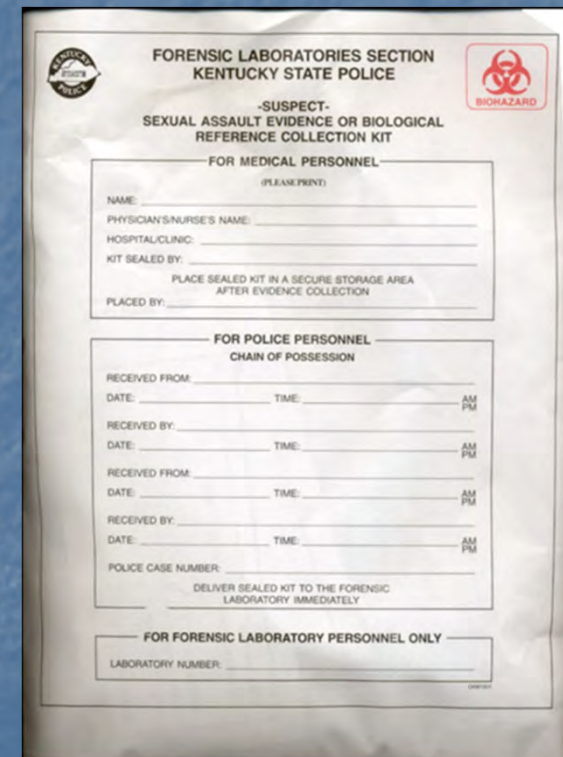
## Victim's Kit



The label for the Victim's Kit is white with blue and black text. It features a biohazard symbol in a yellow box on the left and the Kentucky State Police logo in the center. The text reads: "FORENSIC LABORATORIES SECTION KENTUCKY STATE POLICE SEXUAL ASSAULT EVIDENCE COLLECTION KIT FOR FEMALE OR MALE VICTIM". Below this, there are three numbered instructions: 1. PLACE ALL EVIDENCE COLLECTED IN KIT BOX. 2. SEAL KIT BOX WITH THE ENCLOSED SEALING LABEL, INCLUDE DATE, TIME, AND INITIALS (INVESTIGATING OFFICER AND COLLECTOR). 3. SECURE KIT UNTIL IT CAN BE DELIVERED TO THE FORENSIC LABORATORY. At the bottom, a note states: "Per KRS 216B.400 every hospital in the Commonwealth of Kentucky which offers emergency services shall provide examination services for victims of sexual offenses. Please contact your local Rape Crisis Center for information about additional resources." On the right side, there is a "Medical Facilities - Please log info" section with a URL, a kit number "Kit # 2020-0001", and a barcode.

Collected by Sexual Assault Nurse Examiner (SANE) or other healthcare provider

## Suspect's Kit



The label for the Suspect's Kit is white with black text and features two biohazard symbols, one on the left and one on the right. The text reads: "FORENSIC LABORATORIES SECTION KENTUCKY STATE POLICE -SUSPECT- SEXUAL ASSAULT EVIDENCE OR BIOLOGICAL REFERENCE COLLECTION KIT". Below this, there are two main sections: "FOR MEDICAL PERSONNEL" and "FOR POLICE PERSONNEL CHAIN OF POSSESSION". The "FOR MEDICAL PERSONNEL" section includes fields for NAME, PHYSICIAN'S/NURSE'S NAME, HOSPITAL/CLINIC, KIT SEALED BY, and PLACED BY. A note says "PLACE SEALED KIT IN A SECURE STORAGE AREA AFTER EVIDENCE COLLECTION". The "FOR POLICE PERSONNEL CHAIN OF POSSESSION" section includes fields for RECEIVED FROM, DATE, TIME, and AM/PM for two separate entries. At the bottom, there is a section for "FOR FORENSIC LABORATORY PERSONNEL ONLY" with a field for LABORATORY NUMBER.

# SAECK for Victim



Medical Facilities - Please log into:  
<https://kspportal.ky.gov/safekittracking> to register this kit upon collection. Initiate kit tracking prior to releasing kit to law enforcement (or storage of a non-reported kit). Contact the KSP Lab (502) 564-5230 with questions.

Kit # 2020-0001



**FORENSIC LABORATORIES SECTION  
KENTUCKY STATE POLICE**

## **SEXUAL ASSAULT EVIDENCE COLLECTION KIT FOR FEMALE OR MALE VICTIM**

1. PLACE ALL EVIDENCE COLLECTED IN KIT BOX.
2. SEAL KIT BOX WITH THE ENCLOSED SEALING LABEL, INCLUDE DATE, TIME, AND INITIALS (INVESTIGATING OFFICER AND COLLECTOR).
3. SECURE KIT UNTIL IT CAN BE DELIVERED TO THE FORENSIC LABORATORY.

Per KRS 216B.400 every hospital in the Commonwealth of Kentucky which offers emergency services shall provide examination services for victims of sexual offenses. Please contact your local Rape Crisis Center for information about additional resources.



# Kit "Expiration"

- The kit isn't technically expired, just the swabs
- For the safety of the patient
- Remove expired swabs, collect evidence with hospital stock swabs
- Include a separate envelope with control swabs labeled with lot number

**FDA INSERT**  
**Important Information Regarding**  
**RE-3KY**

This product information sheet is included to comply with FDA Regulations.

**PLEASE RETURN THIS FORM TO INSIDE OF KIT**

**Expiration Date Information:**  
The expiration date on this product pertains only to specific components. Please check the expiration date on the following components. If any are beyond the expiration date, please replace with similar components from hospital stock.  
12 pkgs. sterile, cotton-tipped swabs (2/pkg)\*  
\*Make sure all replacement swabs have the same lot number.

**Intended Use:**  
Evidence collection from the victims of sexual assault

**Contents:**

kit instruction sheets	bloodstain card
bag with label affixed	filter paper
envelopes	sterile, cotton-tipped swabs
swabbe towel	plastic comb
anatomical drawing form	kit box seal
patient card	kit # labels
request for examination form	
medical history and assault information form	

**Warnings and Precautions:**  
Blood and other biological fluids should be handled and processed as if they are potentially infectious.

**Waste Disposal Instructions:**

- **Needles:**  
Dispose of any needles in an approved Sharps container.
- **Blood Tubes:**  
Dispose of all tubes using safe laboratory procedures as outlined in *Reality in Microbiological and Biomedical Laboratories* as HHS Publication CDC 21-1112.

022KXFD-1 201

## EXPIRATION DATE NOTATION:

THE PRODUCT EXPIRATION DATE APPLIES TO STERILE SWABS ONLY. IF THE EXPIRATION DATE HAS PASSED, PLEASE SEE ENCLOSED FDA INSERT FOR PRODUCT UPDATING INFORMATION.

**REORDER NO: RE-2KY**  
**EXP. DATE: APR 30, 2021**  
**LOT NO: 31138**

# SAECK for Victim

## □ Victim Standards

- Blood standard
- Buccal standard
- Head hair standard
- Pubic hair standard

## □ General Collection

- Victim's Medical History and Assault Information Form
- Vaginal/Penile swabs
- Pubic Hair Combing
- Panties/Underwear
- Anatomical Drawings Form

## □ Other – additional swabs not specified on kit envelopes

- Oral swabs
- Perianal swabs
- Anal swabs
- External Genital swabs
- Dried Secretion swabs
- Fingernail swabs
- Other

<b>OTHER EVIDENCE</b>		<b>(4 SWABS)</b>
VICTIM'S NAME: _____		
DATE COLLECTED: _____	TIME: _____	am pm
COLLECTED BY: _____		
<b>PLEASE CHECK APPROPRIATE BOXES:</b>		
<input type="checkbox"/> PERIANAL SWABS	<input type="checkbox"/> ANAL SWABS	<input type="checkbox"/> ORAL SWABS
<input type="checkbox"/> DRIED SECRETION SWABS* from: _____		
<input type="checkbox"/> FEMALE EXTERNAL GENITALIA SWABS		
<input type="checkbox"/> FINGERNAIL SWABS		
<input type="checkbox"/> OTHER _____		
* NOTE WHERE FOUND ON ANATOMICAL DRAWINGS		



# INSTRUCTIONS VICTIM KIT FOR ADULTS

Use as a guideline  
for  
evidence collection

Use your best  
judgment  
as the examiner

## KENTUCKY STATE POLICE SEXUAL ASSAULT EVIDENCE COLLECTION KIT INSTRUCTIONS (FOR FEMALE OR MALE ADULT VICTIM)

This kit has been designed to assist the examining physician, nurse or technician in the collection and preservation of physical evidence from a victim of sexual assault for analysis by the Kentucky State Police Forensic Laboratory.

These instructions are guidelines. Collection order of evidence different than the order presented in this document may be adjusted based on the collector's experience and/or the case history provided by the victim (reason for such collections should be noted on the respective envelope). A Sexual Assault Evidence Collection Kit is routinely collected when the assault has occurred within 96 hours. If collection varies from instructions or additional information is important to provide, please note on form and/or envelope/bag as appropriate. Photographs and/or use of Forensic Alternative Light Source/UV lamp (general body fluid range 350-500nm, semen and saliva 415-490nm with forensic glasses) may be used by trained collectors and if such equipment is available.

The number of swabs collected for each item should not be less than the number in the instruction to follow, as the laboratory needs sufficient sample to test and maintain from the items. Do not use smaller or foam swabs for collection; only use the swabs provided or equivalent hospital stock swabs.

Collect all swabs in a manner which will distribute concentrated staining over the entire surface of the swab head by rolling the swabs in the stain, if possible.

When there are no or limited biological results, pubic hair combings, body swabs, and potentially underpants are routinely examined for hair analysis, making head and pubic hair standards collection necessary. Certain case scenarios and victim/assailant associations merit hair analysis, e.g., the collection request for head and pubic hair standards is vital when the assailant is a stranger to the victim.

Hospital personnel are not requested or encouraged to analyze forensically any of the evidence collected in this kit or other items collected during the exam. Any medical specimens required by the hospital are to be collected with hospital supplies.

If a law enforcement officer has already spoken with the victim prior to the collection of the kit, it may be helpful to speak with the officer prior to starting the exam, as they may have case history to consider for collection of additional swabs/items during the exam.

At a minimum, **change gloves with the collection of each step of sample collection to avoid any cross-contamination.** If you are placing a set of swabs or item in a new envelope/bag, you should have changed your gloves.

To avoid mislabeling, each envelope or bag should be labeled immediately following the collection of each item. Seal each envelope with tape or moisten with an adhesive and initial. Do not lick envelopes to seal.

### VICTIM'S MEDICAL HISTORY AND SEXUAL ASSAULT INFORMATION FORM

**Note:** This form must be completed in addition to any other paperwork required by the hospital. The laboratory utilizes the specific case history information provided on this form for analysis. Other hospital forms vary by facility and may not include all necessary information.

Fill out all information requested on form and have collector sign and date where indicated. Use an additional sheet of paper to complete the victim's description of reported assault (#32) as necessary, include a copy in the kit, and provide a copy to the investigating officer. Once completed, the pink copy of this form must be provided to the officer for their record and the yellow copy of this form must be returned in the kit for the laboratory.

### ANATOMICAL DRAWINGS

Using the appropriate set of anatomical drawings, note findings on form as you progress through the exam, then sign and date form where indicated. Once completed, the pink copy of this form must be provided to the officer for their record and the yellow copy of this form must be returned in the kit for the laboratory.

### BLOOD STANDARD

**Note:** 1. Blood Stain Collection Card should be prepared in all cases.  
2. If victim received a blood transfusion, collect the sample as advised, but note "transfusion" on the Blood Stain Collection envelope. A Buccal Standard must also be collected.

Using a 7 ml lavender stoppered (EDTA) blood collection tube from hospital stock and following normal hospital procedures, draw specimen from victim, allowing tube to fill to maximum volume.

Using the Blood Stain Collection Card provided, place one to two drops of blood from the lavender top tube on each of the five (5) printed circles on the card.

Allow blood stains to thoroughly **air dry**. Write victim's name on front of the Blood Stain Collection Card holder along with the

# INSTRUCTIONS VICTIM KIT FOR CHILD or ADOLESCENT

Use as a guideline  
for  
evidence collection

Use your best  
judgment  
as the examiner

## KENTUCKY STATE POLICE SEXUAL ASSAULT EVIDENCE COLLECTION KIT INSTRUCTIONS (FOR FEMALE or MALE CHILD or ADOLESCENT VICTIM)

This kit has been designed to assist the examining physician, nurse, or technician in the collection and preservation of physical evidence from a victim of sexual assault for analysis by the Kentucky State Police Forensic Laboratory.

These instructions are guidelines. Collection order of evidence different than the order presented in this document may be adjusted based on the collector's experience and/or the case history provided by the victim (reason for such collections should be noted on the respective envelope). A Sexual Assault Evidence Collection Kit is routinely collected when the assault has occurred within 96 hours. If collection varies from instructions or additional information is important to provide, please note on form and/or envelope/bag as appropriate. Photographs and/or use of Forensic Alternative Light Source/UV lamp (general body fluid range 350-500nm, semen and saliva 415-490nm with forensic glasses) may be used by trained collectors and if such equipment is available.

**The number of swabs collected for each item should not be less than the number in the instruction to follow, as the laboratory needs sufficient sample to test and maintain from the items. Do not use smaller or foam swabs for collection; only use the swabs provided or equivalent hospital stock swabs.**

Collect all swabs in a manner which will distribute concentrated staining over the entire surface of the swab head by rolling the swabs in the stain, if possible.

When there are no or limited biological results, pubic hair combings, body swabs, and potentially underpants are routinely examined for hair analysis, making head and pubic hair standards collection necessary. Certain case scenarios and victim/assault characteristics merit hair analysis, e.g., the collection request for head and pubic hair standards is vital when the assailant is a stranger to the victim.

Hospital personnel are not requested or encouraged to analyze forensically any of the evidence collected in this kit or other items collected during the exam. Any medical specimens required by the hospital are to be collected with hospital supplies.

If a law enforcement officer has already spoken with the victim prior to the collection of this kit, it may be helpful to speak with the officer prior to starting the exam, as they may have case history to consider for collection of additional swab/items during the exam.

At a minimum, change gloves with the collection of each step of sample collection to avoid any cross-contamination. If you are placing a set of swabs or item in a new envelope/bag, you should have changed your gloves.

To avoid mislabeling, each envelope or bag should be labeled immediately following the collection of each item. Seal each envelope with tape or molten wax with an adhesive and initial. Do not lick envelopes to seal.

### VICTIM'S MEDICAL HISTORY AND SEXUAL ASSAULT INFORMATION FORM

**Note:** This form must be completed in addition to any other paperwork required by the hospital. The laboratory utilizes the specific case history information provided on this form for analysis. Other hospital forms vary by facility and may not include all necessary information.

Fill out all information requested on form and have collector sign and date where indicated. Use an additional sheet of paper to complete the victim's description of reported assault (RSA) as necessary, include a copy in the kit, and provide a copy to the investigating officer. Once completed, the pink copy of this form must be provided to the officer for their record and the yellow copy of this form must be returned in the kit for the laboratory.

### ANATOMICAL DRAWINGS

Using the appropriate set of anatomical drawings, note findings on form as you progress through the exam, then sign and date form where indicated. Once completed, the pink copy of this form must be provided to the officer for their record and the yellow copy of this form must be returned in the kit for the laboratory. The anatomical drawings in these instructions should not be drawn on, use only for reference.

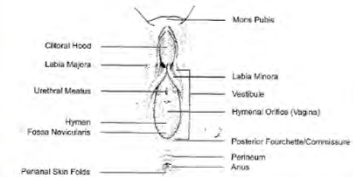
### BLOOD STANDARD

- Note:**
1. Blood Stain Collection Card should be prepared in all cases, when possible.
  2. If a blood sample is not needed for DFSA purposes, this sample may be collected at the end of the exam.
  3. If victim received a blood transfusion, collect the sample as advised, but note "transfusion" on the Blood Stain Collection envelope. A Buccal Standard must also be collected.
  4. If the draw of a Blood Standard is too traumatic for a child or adolescent, alternative collection of this reference standard may be appropriate.
    - a. Use an EDTA microtube in conjunction with a finger stick for the Blood Standard.
    - b. If no victim oral-to-vaginal/anal contact has been reported, a Buccal Standard is sufficient.

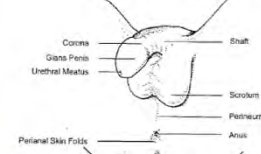
## KENTUCKY STATE POLICE SEXUAL ASSAULT EVIDENCE COLLECTION KIT INSTRUCTIONS

Use these anatomical drawings for reference only.

### Female Supine



### Male Dorsal View





# Modifications for Child Cases

- If there has been no report of oral penetration, collection of a blood standard may not be necessary and a buccal standard would be sufficient.
- Collection of the blood standard with an EDTA microtube in conjunction with a finger stick would be suitable.
- Collect the same number of swabs, as the same tests are still going to be performed at the laboratory.
- Do not use smaller or foam swabs for collection.
- Review additional collection locations.
- Keep in mind, child abuse cases may not be reported in a timely manner.

# VICTIM'S HISTORY AND ASSAULT INFORMATION FORM

This form is **tailored by the KSP lab** based on the testing we can perform and current protocols. It assists the analyst in determining which tests need to be performed based upon the specific responses provided for each individual case – include as much information as possible.

If you are required to complete a different form, **please also complete the provided KSP form** and make a copy of your form to place in the kit for the lab.

**VICTIM'S MEDICAL HISTORY AND ASSAULT INFORMATION**  
(Please print with a dark, ballpoint pen - press firmly)

1. Investigating Agency: \_\_\_\_\_ 2. Officer: \_\_\_\_\_

3. Victim's Name: \_\_\_\_\_

4. Date of Birth: \_\_\_\_\_ 5. Ethnicity: \_\_\_\_\_ 6.  Male  Female

7. Date and time of reported assault: \_\_\_\_/\_\_\_\_/20\_\_\_\_ : \_\_\_\_ AM/PM

8. Date and time of hospital examination: \_\_\_\_/\_\_\_\_/20\_\_\_\_ : \_\_\_\_ AM/PM

9. Examiner(s) (Print): \_\_\_\_\_

10. Between the assault and now, has the victim:

<input type="checkbox"/> Douched	<input type="checkbox"/> Defecated	<input type="checkbox"/> Brushed teeth
<input type="checkbox"/> Bathed/Showered	<input type="checkbox"/> Vomited	<input type="checkbox"/> Used Mouthwash
<input type="checkbox"/> Urinated	<input type="checkbox"/> Anything to Eat or Drink	<input type="checkbox"/> Changed Clothes/Underwear (write one or more)
<input type="checkbox"/> Other: _____		

11. Does victim remember and can communicate what happened to them during the assault? \_\_\_\_\_

12. Did the victim experience a loss of memory and/or consciousness?  Yes  No If yes, consider a DFSA toxicology collection

13. Was a blood/urine toxicology kit collected?  Yes  No

14. Was there penetration of:

Vagina	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Sure
Anus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mouth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Was there oral/genital contact:

Contact of victim's mouth to assailant's genitals:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Sure
Contact of assailant's mouth to victim's genitals:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Did assailant penetrate orifices with:

	penis	finger(s)	foreign object(s)
Vagina	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mouth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Did the assailant masturbate?  Yes  No  Not Sure

18. Did ejaculation occur?  Yes  No  Not Sure

(If yes, note location(s)):

<input type="checkbox"/> vagina	<input type="checkbox"/> body surface	<input type="checkbox"/> other: _____
<input type="checkbox"/> anus	<input type="checkbox"/> clothing	
<input type="checkbox"/> mouth	<input type="checkbox"/> bedding	

19. Did assailant use:  Condom  Lubricant  Saliva as a lubricant \*Note brand/type if known: \_\_\_\_\_

20. Was victim menstruating at time of:

Assault	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Sure
Examination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Any injuries to the victim resulting in bleeding?  Yes  No  Not Sure

If yes, describe: \_\_\_\_\_

22. Any consensual sex or sex acts in the last week?

If yes, Date: \_\_\_\_/\_\_\_\_/20\_\_\_\_ Time: \_\_\_\_ AM/PM

Name: \_\_\_\_\_  Male  Female

If yes, was condom used?  Yes  No

If yes, with act(s)?  Vaginal sex  Victim's mouth to consensual partner's genitals  With object

Anal sex  Consensual partner's mouth to victim's genitals

23. Were any of the following collected during the examination?

Tampon  Sanitary Pad  Panty Liner  Diaper  Condom  Other: \_\_\_\_\_

24. Number of assailant(s)? \_\_\_\_\_ 25. Name(s) of assailant(s) if known: \_\_\_\_\_

26. Age of assailant(s): \_\_\_\_\_ 27. Ethnicity of assailant(s): \_\_\_\_\_

28. Assailant(s) relationship to victim (check all that apply):

Stranger  Acquaintance  Cohabitant  Relative/Sigificant Other (specify): \_\_\_\_\_

29. Any injuries to assailant(s) resulting in bleeding?  Yes  No  Not Sure

If yes, describe: \_\_\_\_\_

30. Coercion used:  Choked\*\*  Knife  Gun  Physical Threats  Verbal Threats  Other: \_\_\_\_\_

\*\*If manual strangulation, were neck swabs collected?  Yes  No

31. List of victim's clothing at the time of the assault: \_\_\_\_\_

Were these items collected during the examination?  Yes  No

32. Victim's description of reported assault (use an additional sheet of paper if necessary and include a copy in kit/provide to the investigating officer): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Hospital: \_\_\_\_\_

Signature of Examiner: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/20\_\_\_\_

DATE: 11/08/14 11:00:00 AM 11/08/14 11:00:00 AM 11/08/14 11:00:00 AM



# ANATOMICAL FORM

Note all injuries, bruises, bite marks, etc.

Note where all other evidence swabs were collected (and write on the envelope)

**ANATOMICAL DRAWINGS**

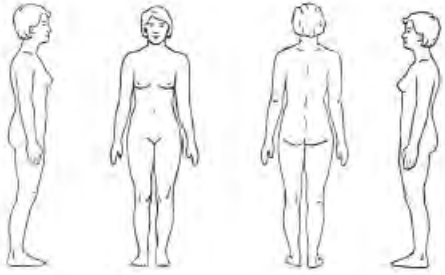
Photographs Taken?  Yes  No      VICTIM'S NAME: \_\_\_\_\_


Forensic Odontologist consulted?  Yes  No

Using this appropriate set of anatomical drawings, mark and describe all bruises (including hickeys), scratches, lacerations, bite marks, abrasions, etc. Also note where dried secretion swabs were collected. Use Key.

**KEY**

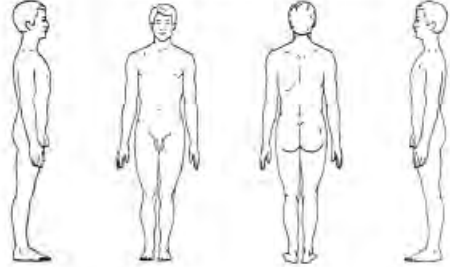
B = Bruise  
S = Scratch  
L = Laceration  
M = Bite Mark  
A = Abrasion  
D = Dried Secretion

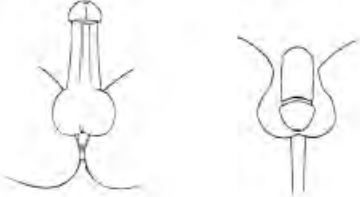




**PELVIC EXAMINATION** - Note all signs of trauma.  
Use non-lubricated speculum when possible.

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**EXTERNAL GENITALIA EXAMINATION** - Note all signs of trauma, i.e., bruises, petechiae, discolorities, sphincter tone.  
Also note any traces of lubricants or metal soiling.

Station of Examiner: \_\_\_\_\_ Date: \_\_\_\_\_

METS - HOSPITALS OWN RECORDS      VEDIC - HOSPITALS OWN RECORDS      IHS - HOSPITALS OWN RECORDS

# COLLECTION OF BLOOD STANDARD

- Draw blood into a 7mL lavender top (EDTA) tube from hospital stock, do not place liquid tubes of blood in kit box
- Allow blood stains to thoroughly air dry
- Remember to draw all blood needed for further testing at this time (i.e. additional tubes from the toxicology kit)

**BLOOD STANDARD**

VICTIM'S NAME: \_\_\_\_\_

DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO

IF NO, WHY NOT? \_\_\_\_\_

DID VICTIM RECEIVE A BLOOD TRANSFUSION?  YES  NO

IF YES, A BUCCAL STANDARD SHOULD ALSO BE COLLECTED.

REVISIONS 1/2011

**BLOOD STAIN CARD**

NOTE

Do not touch the enclosed Blood Stain Card unless you are wearing gloves.

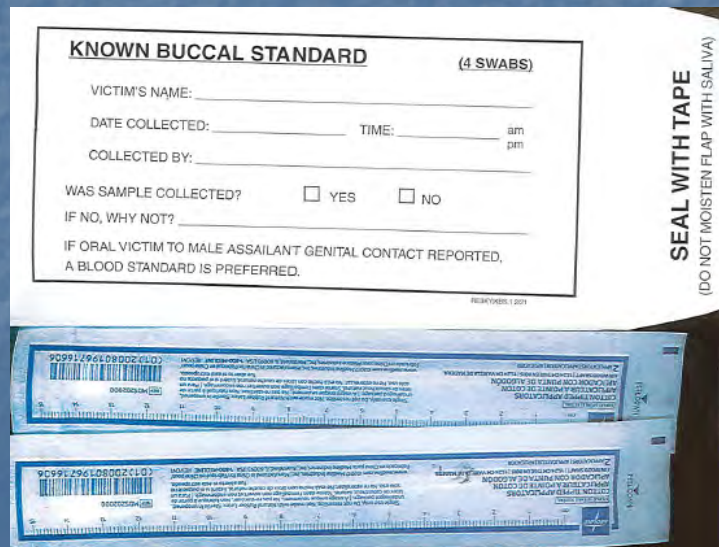
VICTIM'S NAME: \_\_\_\_\_

REVISIONS 1/2011

○ ○ ○ ○ ○

NAME \_\_\_\_\_

DATE \_\_\_\_\_



# COLLECTION OF BUCCAL STANDARDS

Swab the inside cheeks to collect cells from the mouth

- If oral sodomy occurred and semen is found on the swabs then we can't use the buccal standard as reference sample – a blood standard is needed
- If the victim has had a blood transfusion, make sure a buccal standard gets collected



## COLLECTION OF PUBIC HAIR COMBINGS AND PUBIC HAIR STANDARD

- Pubic hair combings may not need to be collected **after 24 hours** or if the victim has **bathed**
- Collect **30** pulled pubic hairs for the standard, from different areas of genitals, not all from one small area.

**PUBIC HAIR COMBINGS**

VICTIM'S NAME: \_\_\_\_\_

DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm


COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO

IF NO, WHY NOT? \_\_\_\_\_

**SEAL WITH TAPE**  
(DO NOT MOISTEN FLAP WITH SALIVA)

FD-302 (Rev. 11-20-03)



**PULLED PUBIC HAIR STANDARD (AT LEAST 30 HAIRS)**

**IF TOPICAL ANESTHETIC USED, THIS SHOULD BE THE LAST STEP IN KIT COLLECTION.**

VICTIM'S NAME: \_\_\_\_\_

DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO

IF NO, WHY NOT? \_\_\_\_\_

NO HAIR

WAS TOPICAL ANESTHETIC USED?  YES  NO

IF YES, LIST BRAND: \_\_\_\_\_

FD-302 (Rev. 11-20-03)

## COLLECTION OF HEAD HAIR STANDARD

- Collect **30** pulled head hairs for the standard, from different areas of head (i.e. front, back, sides), not all from one small area.

**PULLED HEAD HAIR STANDARD (AT LEAST 30 HAIRS)**

VICTIM'S NAME: \_\_\_\_\_

DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO

IF NO, WHY NOT? \_\_\_\_\_

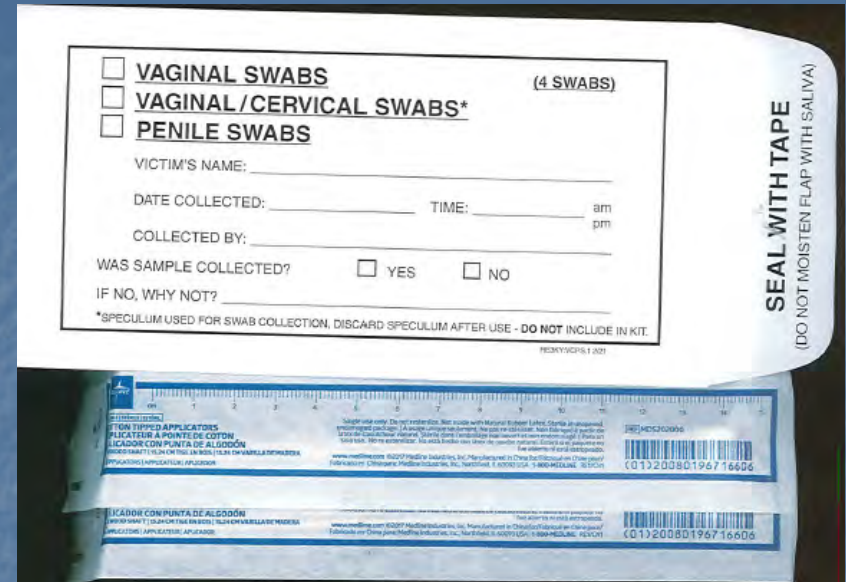
NO HAIR

FD-302 (Rev. 11-20-03)

Collect the head and pubic hair combings and standard even if the incident occurred at the victim's residence – Trace can look for hairs foreign to the victim in case no DNA evidence is found – Note reasons why not collected

# COLLECTION OF VAGINAL/PENILE SWABS

- Use **all four** swabs - generally we use tips for serological analysis, this leaves plenty for DNA analysis and possible further testing
  - Lightly moisten swabs to collect potential evidence from shaft and glans of the penis



**UNDERPANTS**

VICTIM'S NAME: \_\_\_\_\_

DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_ am/pm

COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO

IF NO, WHY NOT? \_\_\_\_\_

WAS ITEM WORN BY VICTIM

- PRIOR TO ASSAULT
- DURING THE ASSAULT
- AFTER THE ASSAULT
  - BEFORE SHOWER/BATH
  - AFTER SHOWER/BATH
- OTHER: \_\_\_\_\_

HOW WAS THE ITEM RETRIEVED?

- WORN BY VICTIM TO HOSPITAL
- BROUGHT BY VICTIM
- SOMEONE ELSE RETRIEVED
- OTHER: \_\_\_\_\_

# COLLECTION OF Panties/Underwear and Other Clothing

- Collect items the victim wore closest to skin
- Package underwear in SAECK
  - If victim is wearing underwear when the kit is being collected, but these are not the underwear worn during/immediately after the assault, still collect and include these in the kit noting such (could contain drainage); if the underwear worn during/immediately after the assault can be obtained those may be collected, packaged separately, and submitted.
- Collect all other clothing in separate PAPER bags
- Indicate when the clothing was worn, how it was retrieved, assault or other information such as if it were washed, etc.



# COLLECTION OF OTHER EVIDENCE SWABS

- Collect as needed according to assault details, 4 envelope each with 4 swabs are provided
- Indicate type of evidence (i.e. possible semen, saliva) and describe the location of collection (i.e. nipple, neck, leg, etc.) Can be, but not limited to, perianal, anal, oral, dried secretion (including bite marks), external genital, oral, anal, dried secretions, etc.
  - Oral swabs- collect sperm cells from around teeth and gum line
  - Also consider fingernail clippings or swabbings if the victim says they scratched the suspect (swabs rather than cut nails for living victims)
- Manual strangulation
- If you do not collect please leave envelopes in the kit - no need to fill out info on envelope
- If you have more areas of collection than envelopes and swabs provided, clean envelopes and hospital stock swabs may be utilized

<b>OTHER EVIDENCE</b>	<b>(4 SWABS)</b>	
VICTIM'S NAME: _____		
DATE COLLECTED: _____ TIME: _____ am pm		
COLLECTED BY: _____		
<b>PLEASE CHECK APPROPRIATE BOXES:</b>		
<input type="checkbox"/> PERIANAL SWABS	<input type="checkbox"/> ANAL SWABS	<input type="checkbox"/> ORAL SWABS
<input type="checkbox"/> DRIED SECRETION SWABS* from: _____		
<input type="checkbox"/> FEMALE EXTERNAL GENITALIA SWABS		
<input type="checkbox"/> FINGERNAIL SWABS		
<input type="checkbox"/> OTHER _____		
* NOTE WHERE FOUND ON ANATOMICAL DRAWINGS		

#### FOR ADDITIONAL SITES

Moisten two swabs with distilled water, then thoroughly swab the area. Using the additional swabs provided, repeat the swabbing procedure. Allow swabs (4) to **air dry**, then return to the Other Evidence envelope. Seal and fill out all information requested on the envelope then mark as 'Other' and add a description of the evidence.

# Final Instructions

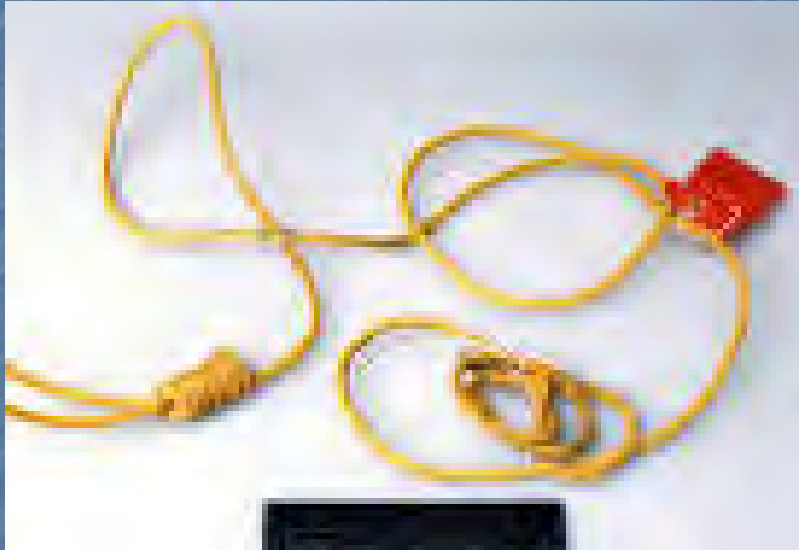
## FINAL INSTRUCTIONS

- 1) Make sure all information requested on all forms and specimen containers has been filled out completely. Ensure that all 3 copies of forms are legible prior to separating.
- 2) Return all yellow copies of forms and specimen containers to kit box.
- 3) Seal kit box with Kit Box Seal provided. Fill out all information requested on the seal.
- 4) Add kit information to the kit tracking portal. If your hospital does not have a log-in, please contact the KSP Central Forensic Laboratory at 502-564-5230.
- 5) For a non-reported\* kit, store kit in a secure location. These kits must be maintained by the hospital for at least 1 year, according to hospital policy. \*Unless mandatory for child abuse, neglect or dependency abuse, do not notify law enforcement or release this kit without the consent of the victim.
- 6) For a reported kit, hand sealed kit and all pink copies of forms to investigating officer. Update information in the kit tracking portal and following hospital chain of custody policies.
- 7) Review the "VICTIM'S MEDICAL HISTORY AND ASSAULT INFORMATION" form with the investigating officer.
  - a. If the victim answered 'yes' to '22. Any consensual sex or sex act in the last week?', inform the officer that it is advisable to collect a consensual partner blood or buccal standard once they have spoken with the victim.
  - b. If the victim provided a name of his/her assailant(s), direct the officer's attention to "25. Name(s) of assailant(s) if known".
  - c. Advise if a toxicology kit was collected.
  - d. Advise if any additional items were collected.

**Note:** If investigating officer is not present at this time, place sealed kit in a secure area. Hold for pickup by investigating officer or his/her representative.



# Ligatures and Manual Strangulation

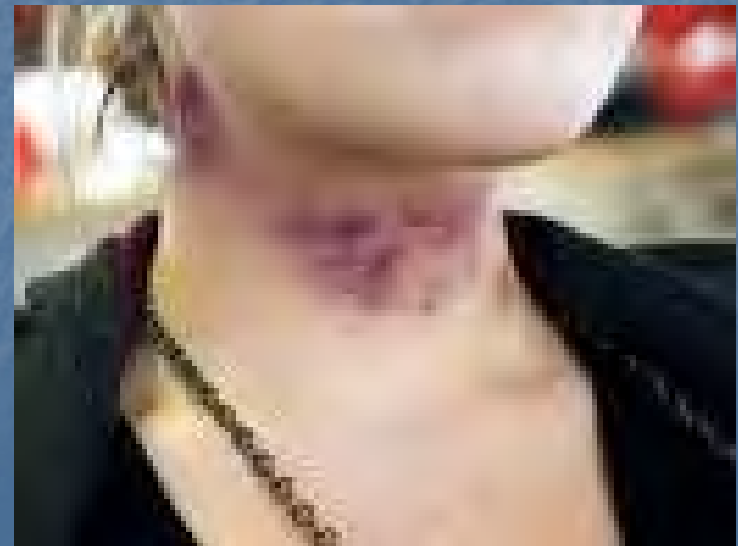


Ligatures should be collected and submitted to the laboratory.

If ligature is not found, you can still swab the neck. Call us to talk through scenario.

If manual strangulation has been reported and specific areas of interest are visible (i.e. red marks or bruising), lightly swab the area(s) with at least two moistened swabs.

Suicide vs. strangulation?



# Manual Strangulation

- A kit is forthcoming.
  - It is ready, working through ordering process.
- For now collect neck swabs and a buccal standard on 4 swabs each and put in separate sealed envelopes. Place in larger envelope and call it a kit.

Collect evidence when applicable. With advancements in the detection of trace DNA, Forensic Nurses are now able to swab the area of the victim-survivor's neck for DNA where pressure was applied. Per the Kentucky State Police Central Forensic Laboratory, **collection of neck swabs in strangulation cases should only be performed within 24 hours post-assault and when the victim has not yet bathed or showered.** Note that when collecting evidence from the neck, the swab should be moistened with sterile saline before swabbing the neck and then dried before being sealed and transferred to law enforcement. A standard buccal swab should be collected as well.



# Packaging

- Dried clothing
- Shoes
- Bedding




- Hair



# KSP 26

## Request for Examination

Bio hazard  


**KENTUCKY STATE POLICE**  
Request for Examination of Evidence

Exam No: \_\_\_\_\_

Submitting Officer: Det. Bob Agency: KSP Post-7

Address: Post 7 Case Number: 07-2-1498

City: Richmond Zip: \_\_\_\_\_ ORI No: \_\_\_\_\_

Phone: (859) 623-2404 Fax: (602) 544-3558

Offense: Murder Date: 10-27-02 City: Richmond

Victim: Marge Simpson County: Madison

Suspect  or Accused  Suspect  or Accused

Name: Homer Simpson Name: \_\_\_\_\_

Investigating Officer: Det. Bob Badge No. 618

Exhibits:

- 14- Rape kit from victim
- 15 - Knife from scene
- 23 - Suspect's clothing worn at time of arrest
- 27 - Buccal standard from suspect

Case History: Victim found stabbed to death in her home.  
Suspect was arrested when officers spotted him attempting to  
steal a car 2 streets over.

Examination Requested:  
Biological Analysis

Signature (Person accepting evidence)  Forward to AFIS  Forward to Lab  Return to Agency

Unit No: \_\_\_\_\_ Date/Time: \_\_\_\_\_

- Please fill out all applicable information as completely as possible.
- Please include more descriptive information about the items and where and from whom the items were collected\*.
- Please include a thorough case history\*.
- Please include contact information of the Investigating Officer (best phone number and email if possible).

\*CODIS



# RAPID DNA



**ANDE SWAB**



**A-CHIP**



**ANDE INSTRUMENT**

# RAPID DNA Kit Instruction

## Kentucky State Police Sexual Assault Evidence Collection Kit Instructions for RAPID DNA Supplemental Samples

(for Female Victims)

*Please review the sexual assault evidence collection kit instructions for Adult or Child/Adolescent, as appropriate for the case, in the conventional kit box prior to any collections. Samples collected for RAPID DNA are to be collected in addition to, but in tandem with the other samples collected in the conventional kit box. The envelopes and paperwork should be returned to their original respective containers.*

1. After completing the Victim's Medical History and Sexual Assault Information Form from the conventional kit box, also complete the form in the RAPID kit container. Ensure that that Kit # XXXX-XXXX from the kit box is listed on the top of this form.
2. On the manila envelope, ensure the Kit # XXXX-XXXX from the kit box is listed on the outside sticker.
3. Samples to be collected in the RAPID kit should include up to the two (2) most probative evidence samples suspected to contain semen, which should include: Vaginal/Cervical Swabs, External Genital Swabs, or Anal Swabs. It is important to know the order of the swab sets collected (see instructions below). **Samples from the same locations must also be collected for the conventional kit.** Note the suspected sample type and collection location of each evidence sample collected for the RAPID kit.
  - a. Vaginal/Cervical Swabs – A speculum should be used to visualize the cervix. Using two swabs simultaneously, carefully swab the cervix and the vaginal walls. Using the additional swabs provided, repeat the swabbing procedure two (2) additional times for a total of six (6) swabs. Allow swabs to air dry. Place swabs 1, 3, 4, and 5 to the Vaginal Swabs envelope of the conventional kit. Seal and fill out information requested on envelope. Mark as "Vaginal/Cervical Swabs". Place swabs 2 and 6 in one of the RAPID envelopes. Mark envelope as "Vaginal/Cervical".
  - b. Vaginal Swabs (no speculum used) – Using two swabs simultaneously, carefully swab the vaginal walls. Using the additional swabs provided, repeat the swabbing procedure two (2) additional times for a total of six (6) swabs. Allow swabs to air dry. Place swabs 1, 3, 4, and 5 to the Vaginal Swabs envelope of the conventional kit. Seal and fill out information requested on envelope. Mark as "Vaginal Swabs". Place swabs 2 and 6 in one of the RAPID envelopes. Mark envelope as "Vaginal".
  - c. External Genital Swabs – Moisten two swabs with distilled water, then thoroughly swab the external genitalia. Using the additional swabs provided, repeat the swabbing procedure two (2) additional times for a total of six (6) swabs. Allow swabs to air dry. Place swabs 1, 3, 4, and 5 to the Other Evidence envelope of the conventional kit. Seal and fill out information requested on envelope. Mark as "Female External Genitalia Swabs". Place swabs 2 and 6 in one of the RAPID envelopes. Mark envelope as "Other: External Genitalia".
  - d. Anal Swabs – If necessary, moisten two swabs with distilled water. Simultaneously, carefully swab the anal canal. Using the additional swabs provided, repeat the swabbing procedure two (2) additional times for a total of six (6) swabs. Allow swabs to air dry. Place swabs 1, 3, 4, and 5

## Kentucky State Police Sexual Assault Evidence Collection Kit Instructions for RAPID DNA Supplemental Samples

(for Female Victims)

to the Other Evidence envelope of the conventional kit. Seal and fill out information requested on envelope. Mark as "Anal Swabs". Place swabs 2 and 6 in one of the RAPID envelopes. Mark envelope as "Anal".

e. Based on case history, it may be necessary to collect a sample other than what is listed above for RAPID DNA; however, there are limitations on the types of samples which should be collected for the RAPID method. **Please collect these samples for the conventional kit, just not for the RAPID kit.** Do not collect RAPID samples that are suspected to be saliva only or touch DNA, this would include but is not limited to: fingernail swabs, body swabs, penile swabs, digital penetration, or suspect oral to victim genital contact. For samples that are collected, moisten two swabs with distilled water, then thoroughly swab the area. Using the additional swabs provided the, repeat the swabbing procedure two (2) additional times for a total of six (6) swabs. Allow swabs to air dry. Place swabs 1, 3, 4, and 5 to the Other Evidence envelope of the conventional kit. Seal and fill out information requested on envelope. Mark as "Other XXXXXXXX". Place swabs 2 and 6 in one of the RAPID envelopes. Mark envelope as "Other: XXXXXXXX".

4. Additionally, a Buccal Standard should be collected from the victim as a reference standard. Using two swabs simultaneously, vigorously swab the right and left side of the victim's cheek for 5 to 10 seconds. Using the additional swabs provided, repeat the swabbing procedure two (2) additional times for a total of six (6) swabs. Allow swabs to air dry. Place swabs 1, 3, 4, and 5 to the Known Buccal Standard envelope of the conventional kit. Seal and fill out information requested on envelope. Place swabs 2 and 6 in the Victim Standard envelope of the RAPID envelopes.
5. Return the RAPID kit form, the two RAPID evidence sample envelopes and the RAPID Victim Standard envelope to the manila envelope. Seal the RAPID kit.
6. Place the RAPID kit manila envelope in the FED EX prepaid packaging. The RAPID kit should be sent directly to the Kentucky State Police Central Forensic Laboratory for analysis. **Do not put the RAPID kit inside of the conventional kit. Do not send the conventional kit in the FED EX packaging, the conventional kit should be picked up by a law enforcement agency. Do not send RAPID kits for unreported cases.**



# RAPID DNA Kit Form

Medical Facility Name and City:

\_\_\_\_\_

This goes with Sexual Assault Kit Tracking # \_\_\_\_\_

Victim/Patient Name: \_\_\_\_\_

**Please check this box to verify that a conventional evidence kit has also been collected in addition to the Rapid DNA swabs**

Please provide the name of the Agency that will be contacted to pick up the conventional, boxed evidence kit:

\_\_\_\_\_

Date collected: \_\_\_\_\_ Time collected: \_\_\_\_\_

Date of offense (if different than date collected): \_\_\_\_\_

Approximate time of offense: \_\_\_\_\_

Has the patient showered since the assault? Yes or No

Was there also a consensual partner (within 72 hours)? Yes or No

Was a condom used with the consensual partner? Yes or No

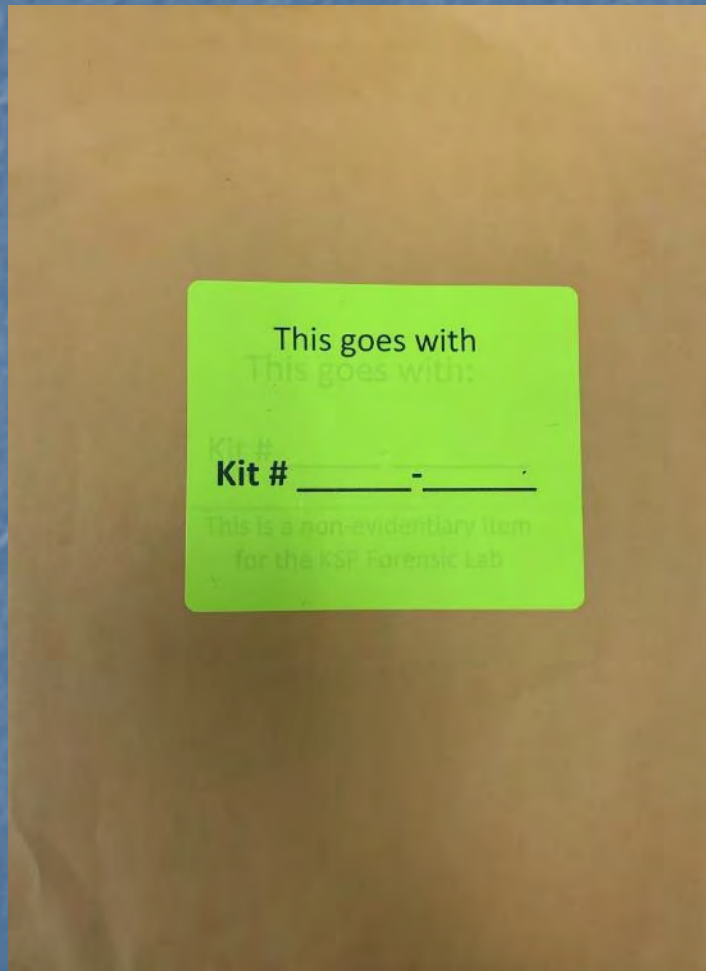
What is the name of the consensual partner? \_\_\_\_\_

# of assailants: \_\_\_\_\_

Name of Assailant(s) if known: \_\_\_\_\_

Additional Notes/Comments: (continue on back if needed)

# RAPID DNA Kit



Sample Type:  
Semen  
Saliva  
Both

Sample Location:  
Vaginal  
Anal  
Other: \_\_\_\_\_

Sample Type:  
Semen  
Saliva  
Both

Sample Location:  
Vaginal  
Anal  
Other: \_\_\_\_\_

Victim  
Standard



# RAPID DNA Kit



Initial Sites: Louisville, Lexington, NKY, and Bowling Green

## PRESERVING CHAIN OF CUSTODY FOR COURT

- Replace all items in the proper envelopes, seal and initial
- Seal kit box with label and fill out label

### REPORTED KITS:

- Hand over kit to investigating officer  
or
- Keep kit at room temperature in a locked area with limited access until it can be picked up by the investigating agency

### SAFE KITS:

- Maintain in designated secure location for at least 12 months, usually by the hospital

**FORENSIC LABORATORIES  
KENTUCKY STATE POLICE**

NAME OF VICTIM: \_\_\_\_\_

COLLECTOR'S INITIALS: \_\_\_\_\_

INV. OFFICER'S INITIALS: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

REKYM1

INTEGRITY SEAL TO BE OPENED BY LABORATORY PERSONNEL ONLY



# Other Items of Evidence

- Condoms- can swab yourself, one set of swabs for inside and another set of swabs for outside, package separately or you can give us the condom and we'll collect the swabs. We prefer that you send us the condom, but if you choose to swab it yourself still collect the condom and include within the kit
- Tampons/Sanitary Pads/Diaper - try to allow these to dry as much as possible before packaging so they don't leak onto other evidence envelopes. Package outside of the kit if you think it will leak onto other items in the kit.

# DIY At-Home Kits



- Cost (\$30, SAFE exams free)
- Chain of Custody (admissibility issues)
- Not a complete exam
  - not all components of SAFE kit
  - no medical care
  - no information about pregnancy, sexually transmitted infections (STIs), or possible injuries
- No community based or trauma informed resources
- DNA results would not be eligible for CODIS entry

\* While not ideal, if a victim has already collected an at-home kit and there is no other evidence, the at-home kit could still be tested by the laboratory for direct comparison to a known suspect. The victim would need to be advised that the kit is not eligible for CODIS entry and is not likely going to be allowed in court.



# SAFE Act

## Comprehensive Sexual Assault Forensic Evidence Reform

After a 2016 report by the state auditor found more than 5,000 untested sexual assault kits in the Commonwealth, the 2018 Kentucky General Assembly passed a law that seeks to prevent a backlog of untested kits from ever happening again.

### Key Elements of the New Law

#### Requires All Kits be Submitted and Tested



**24 Hours** Hospitals must report a kit to law enforcement

**5 days**

Law enforcement must retrieve the kit



**30 days**

Law enforcement must submit the kit to the lab



Lab must reduce average time for testing kits

**90 days by 2018**  
**60 days by 2020**

#### More Training, Policies for Law Enforcement



Prohibits destruction of kits



Mandates process for notifying victims about kit progress



SART Committee to help develop victim-centered, evidence-based model policies

#### Other Key Elements of the SAFE ACT

##### Establishes SANE-ready designation

CHFS will certify hospitals with SANE nurse on call 24/7, provide list of SANE-ready hospitals to EMS



##### Increases Reporting



Calls for collection of data related to sexual assault in Kentucky and analysis of costs of these crimes

##### Establishes Regional SARTs

Requires SART to help set up regional teams

# SAFE Kit Tracking Portal

Medical Facilities - Please log into:  
<https://ksportal.ky.gov/safekittracking> to register this kit upon collection. Initiate kit tracking prior to releasing kit to law enforcement (or storage of a non-reported kit). Contact the KSP Lab (502) 564-5230 with questions.

Kit # 2017-0397

Medical Facilities - Please log into:  
<https://ksportal.ky.gov/safekittracking> to register this kit upon collection. Initiate kit tracking prior to releasing kit to law enforcement (or storage of a non-reported kit). Contact the KSP Lab (502) 564-5230 with questions.

Kit # 2020-0001



The screenshot shows the 'Safe Kit Application' login page. It features a header with the Kentucky State Police logo and navigation links for 'Home' and 'About', along with a 'Log in' link. The main content area contains two input fields for 'Email' and 'Password'. A note below the password field states 'The Password field is required.' A 'Log in' button is positioned below the password field. At the bottom, there is a copyright notice: '© 2021 - Kentucky State Police | 1266 Louisville Rd. | Frankfort, KY 40601 | PH: 502.227.8710' and the Kentucky State Police logo.

The screenshot displays the 'Add Safe Kit' form. The header includes the Kentucky State Police logo, the title 'Safe Kit Tracking', and navigation links for 'Home', 'About', and 'Log off', along with the user email 'Hello whitney.collins@ky.gov!'. The form fields are as follows:

- ID** and **Re-Enter ID**: Text input fields.
- Facility**: A dropdown menu with 'KSP LAB' selected.
- Collected Date**: A date picker.
- Collected Time (24 Hour)**: A time input field with the example '(Example - 13:00)'. Below it is a red 'Under 18' section with radio buttons for 'Yes' and 'No'.
- Who Collected**: A dropdown menu.
- Reported?**: Radio buttons for 'Yes' and 'No'.
- Crisis Center Notified**: A checkbox.
- Crisis Center** and **Agency Contacted**: Text input fields.
- Contacted County** and **Contacted Agency**: Text input fields.
- Contacted Date** and **Contacted Time (24 Hour)**: Text input fields.
- Pickup Agency**: Text input field.
- Pickup County** and **Agency**: Text input fields.
- Pickup Date** and **Pickup Time (24 Hour)**: Text input fields.
- Notes**: A text area with a red 'Save' button.

Healthcare providers are responsible for data input after collection for all kits and also when the agency picks up reported kits.



# SAFE Kit Tracking Portal

Login

Search by Kit ID

Search

[About](#)

[Rape Crisis Centers](#)

[FAQ](#)

[Legal Steps](#)

[Links](#)



Safe Kit Tracking

[Home](#)

[About](#)

[Log in](#)

2982

Kits Collected

651

Kits Not Reported

1415

Kits At Lab

## Safe Kit Application

Email

Password

The Password field is required.

[Log in](#)

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Each facility providing kit collection services should have an account log in.

# KRS 16.132

- Now a law that KSP implement a sexual assault forensic evidence kit tracking portal by July 1, 2020.
- Accessible by survivors
  - location of kit
    - at hospital
    - released to agency
    - submitted to laboratory
  - status of analysis
    - serology and/or DNA analysis
    - CODIS hit



**KIT # 2020-0001**

<https://ksponline.ky.gov/safekit/>

If you have questions, need assistance, or would like more information on how to connect with a local victim advocate, call or visit 1-800-656-HOPE or [www.kasap.org](http://www.kasap.org)



# SAFE Kit Tracking Portal

Log in

Search by Kit ID

Search

About

Rape Crisis Centers

FAQ

Legal Steps

Links

2982

Kits Collected

651

Kits Not Reported

1415

Kits At Lab

1415

Kits Completed

If medical facility does not enter the kit into the portal, the lab has started entering those so patient can see it is here and being tested.

Both healthcare providers and victims can check the status of the kit by searching the kit number in the safe kit tracking portal.

Kit Information - 2021-1949

ID	Facility	Date	Time
2021-1949	KSP LAB	07/27/2021	16:00:00
Reported	Crisis Center Notified	Center	
<input type="checkbox"/>	<input type="checkbox"/>	N/A	
Notified	Agency	Date	Time
<input type="checkbox"/>	KY STATE POLICE, POST 12	08/02/2021	11:00:00
Lab Date	Lab Time		
Items sent to DNA	DNA Completed Date	Serology	Serology Completed Date
<input type="checkbox"/>		<input type="checkbox"/>	
Profile In DataBase	Entered In CODIS	Hit In CODIS	Report Completed Date
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# SAFE Kit Tracking Portal

## Forensic Laboratory Testing Process

- Your evidence kit is received at the laboratory from a police department where it is logged into the computer system and put into the line for analysis
- When your kit reaches the front of the line it will be assigned to a forensic scientist for testing
- The first tests we do are to look for the presence of semen and/or saliva
- When that testing is complete, the first lab report is then issued to the police agency letting them know what we did or did not find something that can be DNA tested
- If no semen or saliva was found, the analyst will ask the officer about any additional items that may be available for testing.
- If semen and/or saliva are found, the positive samples go on for DNA testing
- DNA is extracted and then we measure to see how much is there
- If there is enough present, it will be analyzed to see if a DNA profile can be obtained
- If a DNA profile is obtained, it will be compared directly to the DNA of the suspect or if there isn't a suspect, it is searched against a national DNA database of DNA profiles that come from other crime scene samples, convicted offenders, and arrestees from certain states.
- If there is not enough DNA extracted from the samples to produce a DNA profile, the analyst will contact the officer about any additional items that may be available for testing
- A second report is written and issued to the police agency to let them know if a DNA profile was obtained, if it matched the named suspect, and/or if it was added to the DNA Database for searching purposes
- A "hit letter" is sent to the police agency if the DNA profile matches to a convicted offender or an arrestee in the DNA database.
- A "hit letter" will also be sent to the police if the DNA profile from the semen or saliva matches the DNA profile of an unsolved case in the DNA database.




# SAFE Kit Tracking Portal

## Possible Test Results

- **Serology Negative:** Serological testing determined there were no body fluids present for DNA testing. The police agency will be contacted to see if there are any additional items appropriate for testing.
- **Serology Positive:** Serological testing determined the presence of a biological fluid and samples are going forward for DNA testing.
- **DNA Completed – No Profile Developed:** DNA testing was completed but a DNA profile from the perpetrator was not obtained
- **DNA completed – Profile Developed:** A DNA profile from the perpetrator was obtained and can be compared to the DNA profile for a named suspect or reached in the DNA database, CODIS.
- **DNA Completed – Additional Testing Required:** Some DNA was extracted but not enough to develop a profile from the perpetrator, additional testing is being conducted.
- **DNA Hit in CODIS – Not yet:** The perpetrator profile has been entered into CODIS and has not resulted in a match in the past 90 days.
- **DNA Hit in CODIS – Hit Reported:** The DNA profile of the perpetrator has been matched within the past 90 days to a convicted offender, a felony arrestee from certain states, or to a another open case. Please contact your investigating agency.

# Buccal Standard Kit

**KENTUCKY STATE POLICE**

 **BUCCAL STANDARD COLLECTION KIT**

(For DNA Testing)


FROM \_\_\_\_\_

OFFICER'S NAME: \_\_\_\_\_

AGENCY NAME: \_\_\_\_\_

AGENCY'S CASE NO.: \_\_\_\_\_

SUBJECT'S NAME: \_\_\_\_\_

 **BIOHAZARD**

**CHAIN OF POSSESSION**

RECEIVED FROM: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

RECEIVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

RECEIVED FROM: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

RECEIVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

*DELIVER SEALED KIT TO CRIME LABORATORY AS SOON AS POSSIBLE*

**FOR FORENSIC LABORATORY PERSONNEL ONLY**

CRIME LABORATORY CASE NUMBER: \_\_\_\_\_

DNA1KY(BS)-ENV.1 2/12

**KNOWN BUCCAL STANDARD**

NAME: \_\_\_\_\_



DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm

COLLECTED BY: \_\_\_\_\_

DNA1KY(BS)-KBS.1 2/12



# Suspect Kit

 **FORENSIC LABORATORIES SECTION  
KENTUCKY STATE POLICE** 

**-SUSPECT-  
SEXUAL ASSAULT EVIDENCE OR BIOLOGICAL  
REFERENCE COLLECTION KIT**

**FOR MEDICAL PERSONNEL**

(PLEASE PRINT)

NAME: \_\_\_\_\_

PHYSICIAN'S/NURSE'S NAME: \_\_\_\_\_

HOSPITAL/CLINIC: \_\_\_\_\_

KIT SEALED BY: \_\_\_\_\_

PLACE SEALED KIT IN A SECURE STORAGE AREA  
AFTER EVIDENCE COLLECTION

PLACED BY: \_\_\_\_\_

**FOR POLICE PERSONNEL**

**CHAIN OF POSSESSION**

RECEIVED FROM: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM  
PM

RECEIVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM  
PM

RECEIVED FROM: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM  
PM

RECEIVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM  
PM

POLICE CASE NUMBER: \_\_\_\_\_

DELIVER SEALED KIT TO THE FORENSIC  
LABORATORY IMMEDIATELY

**FOR FORENSIC LABORATORY PERSONNEL ONLY**

LABORATORY NUMBER: \_\_\_\_\_

CKM1021

# INSTRUCTIONS SUSPECT BIOLOGICAL REFERENCE KIT

Use as a guideline for  
evidence collection, but use  
your best judgment  
as the examiner

Two sets of instructions, one  
for within 24 hours and one  
for after 24 hours\*

\*if collect the lab will test penile swabs up  
to 72 hours, case dependent.

**KENTUCKY STATE POLICE  
SUSPECT SEXUAL ASSAULT EVIDENCE COLLECTION KIT INSTRUCTIONS  
(OR BIOLOGICAL REFERENCE COLLECTION KIT)  
FOR MEDICAL PERSONNEL**

A) This kit is designed to assist the examining physician and/or nurse in the collection of secondary specimens from a suspect for analysis by the Kentucky State Police Forensic Laboratory serving your area. You are not requested or encouraged to analyze any of the specimens/evidence collected in this kit.

Sexual assault is a legal matter for the court to decide and is not a medical diagnosis. The physician and/or nurse should not express conclusions or opinions to the suspect or others, nor should this be written in the record.

B) If the assault occurred **within the last 24 hours**, follow all Steps listed below.

C) If the assault occurred **more than 24 hours ago**, follow Steps 4 through 8 only.

**NOTE**

If the assault occurred within the last 24 hours, but the investigating officer **knows** that the suspect has bathed and changed clothes since the assault, follow Steps 4 through 8 only.

D) If kit is being used for the collection of comparison or biological reference samples from suspects for crimes other than sexual assault, follow Steps 4 through 8 only.

**STEP 1 PENILE SWABS COLLECTION** (For epithelial cells from victim)

Lightly moisten the swabs provided with distilled water then thoroughly swab the **glans and shaft** of the suspect's penis. Allow swabs to thoroughly air dry. Return to Penile Swabs Collection envelope. Seal and fill out information requested on envelope.

**STEP 2 OTHER EVIDENCE COLLECTION**

Dried secretions such as blood, semen, saliva, etc should be collected by lightly moistening the swab provided with distilled water and then thoroughly swabbing the area. Allow swabs to thoroughly air dry. Return to Other Evidence Collection envelope. Seal and fill out all information requested on envelope.

**STEP 3 PUBIC HAIR COMBSINGS** (To obtain pubic hairs shed by the victim during the assault)

Remove paper towel and comb provided in Pubic Hair Combing envelope. Place towel under suspect's buttocks. Using comb provided, comb pubic hair in downward strokes so that any loose hairs and/or debris will fall onto paper towel. Carefully remove towel from under suspect and place used comb in center of towel. Fold towel in manner to retain both comb and any evidence present, then return to Pubic Hair Combing envelope. Seal and fill out all information requested on envelope.

**STEP 4 PULLED PUBIC HAIRS** (For comparison with hairs found at crime scene or on victim's body)

Pull, do not cut, a minimum of 15 full-length pubic hairs from various locations and place in the Pulled Pubic Hairs envelope. Seal and fill out all information requested on envelope.

**STEP 5 BLOOD STANDARD**

**Note:** Blood stain collection cards **must** be prepared in air cases.

Using a 2ml heparin stoppered (EDTA) blood collection tube from hospital stock and following normal hospital procedure, draw specimen from suspect allowing tube to fill to maximum volume.

Using the Blood Stain Collection Cards provided, place several drops of blood on each of the nine (9) printed circles on the cards, allowing each circle to fill completely.

Allow blood stains to thoroughly air dry. Write suspect's name on the front of the Blood Stain Collection Cards and return cards to the Blood Standard envelope. Seal and fill out all information requested on envelope. Do not place empty blood tube in Step 5 envelope or in kit.

If toxicology or blood alcohol analysis is indicated, please collect additional blood samples in a separate Kentucky State Police blood tube kit.

**STEP 6 PULLED HEAD HAIRS** (For comparison with hairs found at crime scene or on victim's body)

Pull, do not cut, a minimum of 15 full-length hairs, 3 from each of the following scalp locations: dorsal, front, back, left side and right side and place in Pulled Head Hair envelope. Seal and fill out all information requested on envelope.

**STEP 7 KNOWN BUCCAL STANDARD**

**Note:** The suspect should not have anything to drink, eat or smoke for a minimum of 15 minutes prior to Known Buccal Standard collection.

Using two of the swabs provided, carefully swab one side of the inside cheek area of the mouth. Using the remaining two swabs, carefully swab the other side of the cheek. Allow swabs to air dry. Return swabs to Known Buccal Standard envelope. Seal and fill out all information requested on envelope.

**STEP 8 CONTROL SWABS**

If swabs used in any Step collection were moistened with distilled water, moisten the two control swabs with the same fluid, then allow them to air dry. Return swabs to Control Swabs envelope, seal and fill out all information requested on envelope.

**STEP 9 REQUEST FOR EXAMINATION FORM**

Instruct the investigating officer to fill out all information requested on form and return completed form to the kit.

**FINAL INSTRUCTIONS**

- 1) Fill out information requested on front of kit envelope under "FOR MEDICAL PERSONNEL"
- 2) Return all evidence envelopes and forms, sealed or unsealed, to kit envelope.
- 3) Hand envelope with tags, other police evidence seal to envelope where indicated, then initial seal.
- 4) Hand sealed kit to investigating officer. If officer is out please use this area, place sealed kit in a secure area and hold the package by investigating officer.

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# BIOLOGICAL REFERENCE COLLECTION KIT FROM SUSPECTS

If collecting within 24 hours or you see obvious injuries or debris collect other evidence from suspect

Within 24 hours collect pubic hair combings

Collection of penile swabs is important: lightly moisten and collect penile swabs from the shaft and glans of the penis  
- NOT urethra

Check suspect for bite marks or scratches

The image shows three forms from a biological reference collection kit, arranged vertically. Each form is a white sheet of paper with black text and lines for data entry. The forms are titled 'STEP 3 PUBIC HAIR COMBINGS', 'STEP 2 OTHER EVIDENCE', and 'STEP 1 PENILE SWABS'. Each form includes fields for 'SUSPECT'S NAME', 'DATE COLLECTED', 'TIME', and 'COLLECTED BY'. There are also checkboxes for 'WAS SAMPLE COLLECTED?' and 'IF NO, WHY NOT?'. The forms are slightly overlapping and appear to be part of a larger document or folder.

**STEP 3 PUBIC HAIR COMBINGS**

SUSPECT'S NAME: \_\_\_\_\_  
DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_  
COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO  
IF NO, WHY NOT? \_\_\_\_\_

RS1KY STEP3.1 497

**STEP 2 OTHER EVIDENCE**

SUSPECT'S NAME: \_\_\_\_\_  
DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_  
COLLECTED BY: \_\_\_\_\_

**CHECK APPROPRIATE BOX(ES)**

DRIED SECRETIONS  
 OTHER \_\_\_\_\_

RS1KY STEP2.1 497

**STEP 1 PENILE SWABS**

SUSPECT'S NAME: \_\_\_\_\_  
DATE COLLECTED: \_\_\_\_\_ TIME: \_\_\_\_\_  
COLLECTED BY: \_\_\_\_\_

WAS SAMPLE COLLECTED?  YES  NO  
IF NO, WHY NOT? \_\_\_\_\_

RS1KY STEP1.1 497

# BIOLOGICAL REFERENCE COLLECTION KIT FROM SUSPECTS

If collecting 24 hours or more  
after the assault collect only  
standards from the suspect

\*EXCEPTION: Ask if the suspect  
has showered in the time  
frame between the assault  
and the kit collection, again  
use your best judgment

Blood standard, buccal standard,  
**30** pulled head hairs and **30**  
pulled pubic hairs

The image shows four forms from a biological reference collection kit, arranged in two columns. Each form has a title and a step number. The forms are:

- STEP 8 CONTROL SWABS**: Includes fields for SUSPECT'S NAME, DATE COLLECTED, TIME, and COLLECTED BY. It also has a checkbox for "WAS SAMPLE COLLECTED?" and a field for "IF NO, WHY NOT?".
- STEP 7 KNOWN BUCCAL STANDARD**: Includes fields for SUSPECT'S NAME, DATE COLLECTED, TIME, and COLLECTED BY. It also has a checkbox for "WAS SAMPLE COLLECTED?" and a field for "IF NO, WHY NOT?".
- STEP 6 PULLED HEAD HAIRS**: Includes fields for SUSPECT'S NAME, DATE COLLECTED, TIME, and COLLECTED BY. It also has a checkbox for "WAS SAMPLE COLLECTED?" and a field for "IF NO, WHY NOT?".
- STEP 5 BLOOD STANDARD**: Includes fields for SUSPECT'S NAME, DATE COLLECTED, TIME, and COLLECTED BY. It also has a checkbox for "WAS SAMPLE COLLECTED?" and a field for "IF NO, WHY NOT?".



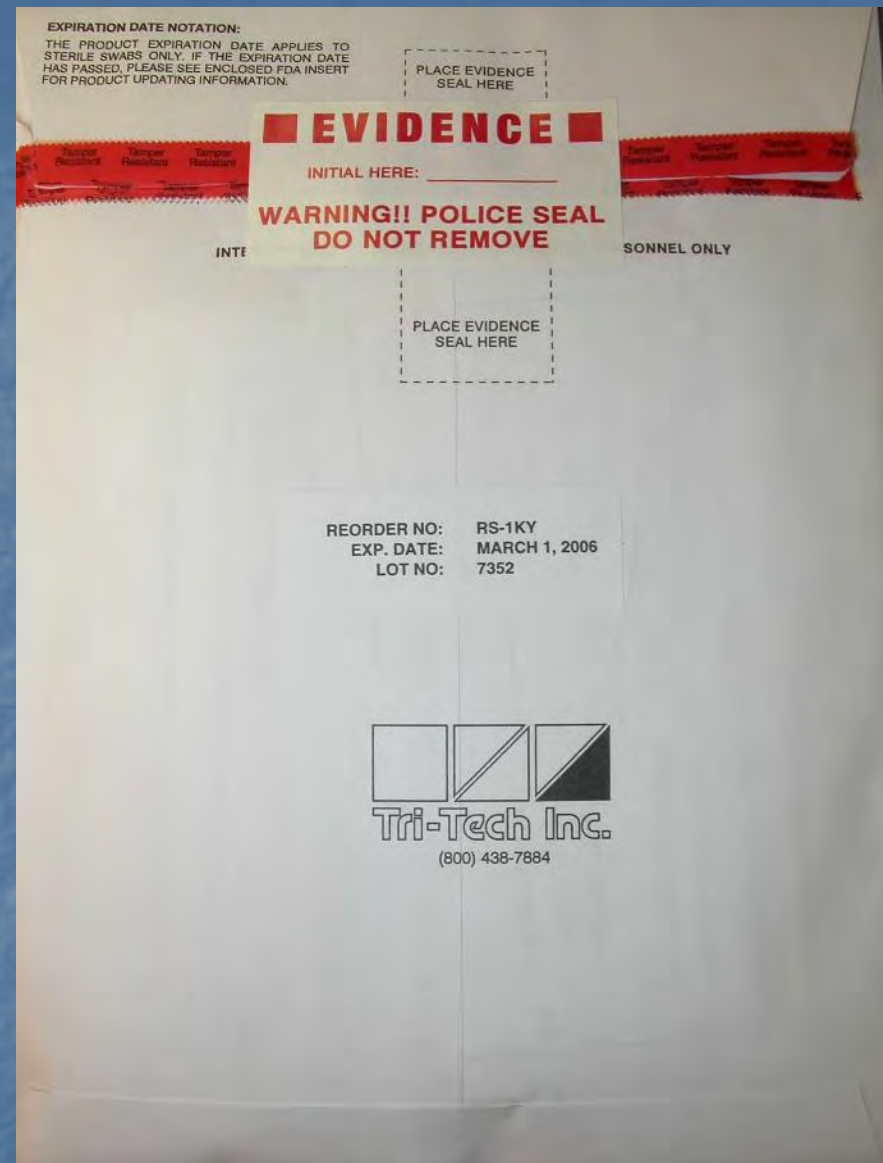
# PRESERVING CHAIN OF CUSTODY FOR COURT

Replace all items in the proper envelopes, seal and initial

Seal envelope with evidence seal from kit

Hand over kit to investigating officer  
or

Keep kit at room temperature in a locked area with limited access until it can be picked up by the investigating agency



# Collection of Samples for Drug Facilitated Sexual Assault Kits

**Drug Facilitated Sexual Assault  
BLOOD AND URINE SPECIMEN COLLECTION KIT  
FOR HOSPITAL PERSONNEL**  
(Please Print)

VICTIM'S NAME: \_\_\_\_\_  
PHYSICIAN'S/EXAMINER NAME: \_\_\_\_\_  
HOSPITAL/CLINIC: \_\_\_\_\_  
KIT SEALED BY: \_\_\_\_\_

PLACE SEALED KIT IN SECURE AND REFRIGERATED STORAGE AREA  
AFTER EVIDENCE COLLECTION

PLACED BY: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
pm


FOR POLICE PERSONNEL  
CHAIN OF POSSESSION

RECEIVED FROM: _____
DATE: _____ TIME: _____ am pm
RECEIVED BY: _____
DATE: _____ TIME: _____ am pm
RECEIVED FROM: _____
DATE: _____ TIME: _____ am pm
RECEIVED BY: _____
DATE: _____ TIME: _____ am pm

**DELIVER SEALED KIT TO CRIME LABORATORY IMMEDIATELY**

454

REORDER NO: BA-5KY

  
BIOHAZARD

**FORENSIC LABORATORIES  
KENTUCKY STATE POLICE**

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**BLOOD COLLECTION KIT  
FOR ALCOHOL AND/OR DRUG DETERMINATIONS**



# Kit “Expiration” for Tox Kits

If the vial pulls blood, it is fine to use!

If it doesn't replace with and use hospital stock tubes.

# Collection of Samples for Drug Facilitated Sexual Assault Kits

- Blood = what's there at the present time
- Urine = gives a history
- \*\*Give as much information as you know (i.e. possible drugs used, time of last drink, what victim was drinking, what victim remembers, etc.). The more information the Toxicologists have the better they can determine the best possible testing method.
- Some drugs can be quantitated (from blood samples)- don't have standards for all possible drugs that are manufactured
- The toxicology section is currently maintaining protocols for urine analysis, specifically for the purpose testing "date rape" samples. The toxicology kit is most often utilized for DUI case. Changes to and new lab protocols, along with the urine results not being utilized by judges and prosecutors has led to the change in kit components. If urine analysis is needed, please collect samples in sterile hospital stock urine bottles.
- **Urine** is best for "date rape" drugs; collect at least 100 mL ; however, **please collect both blood and urine.**



# Drug Facilitated Sexual Assault Kit

**Drug Facilitated Sexual Assault  
BLOOD AND URINE SPECIMEN COLLECTION KIT**  
FOR HOSPITAL PERSONNEL  
(Please Print)

VICTIM'S NAME: \_\_\_\_\_  
PHYSICIAN'S/EXAMINER NAME: \_\_\_\_\_  
HOSPITAL/CLINIC: \_\_\_\_\_  
KIT SEALED BY: \_\_\_\_\_

PLACE SEALED KIT IN SECURE AND REFRIGERATED STORAGE AREA  
AFTER EVIDENCE COLLECTION

PLACED BY: \_\_\_\_\_ TIME: \_\_\_\_\_ am  
\_\_\_\_\_ pm

FOR POLICE PERSONNEL  
CHAIN OF POSSESSION

RECEIVED FROM: _____
DATE: _____ TIME: _____ am
RECEIVED BY: _____ pm
DATE: _____ TIME: _____ am
RECEIVED FROM: _____ pm
DATE: _____ TIME: _____ am
RECEIVED BY: _____ pm
DATE: _____ TIME: _____ am
RECEIVED BY: _____ pm

**DELIVER SEALED KIT TO CRIME LABORATORY IMMEDIATELY**

454



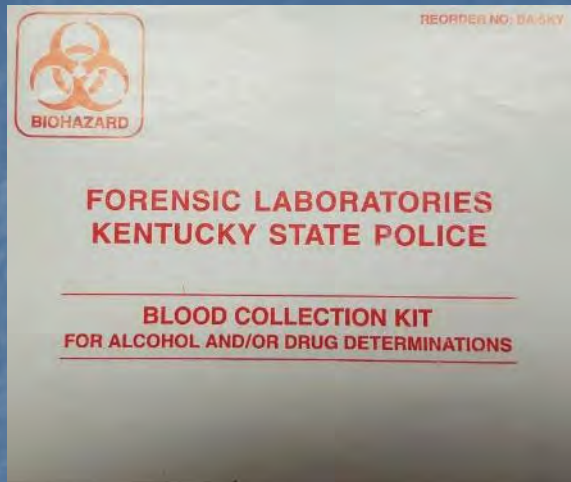
Not every case, just where it is warranted based on case specific information.







# Drug Facilitated Sexual Assault Kit Alternative

A form titled "INVESTIGATING OFFICER'S REPORT" with various fields for case information. Fields include: NAME OF SUBJECT, OFFENSE, DATE OF INCIDENT, TIME, COUNTY, INVESTIGATING OFFICER, DEPARTMENT, DATE BLOOD DRAWN, TIME, FACILITY WHERE DRAWN, BLOOD DRAWN BY, CASE OR CITATION NO., LAB NO., and a section for "WAS SUBJECT GIVEN BREATH ALCOHOL" with YES/NO options. There is also a "CHECK APPROPRIATE BLOCKS" section with checkboxes for "ALCOHOL" and "DRUG SCREEN (SPECIFY)". A "CHAIN OF POSSESSION" section at the bottom includes fields for RECEIVED FROM, BY, and DATE/TIME.

- When sexual assault cases are **MARKED** as such, the KSP Toxicology Section always tests both blood and urine (if provided).
- Currently DUI toxicology kits have 2 grey top tubes blood and 1 lavender top tube
- If a urine sample is required and there is no bottle in the kit, sterile hospital stock urine bottles can be utilized. Package that bottle in a ziploc bag.
- Please mark on the sticker attached to the styrofoam box the requested analyses, specifically alcohol and/or drug screen for "date rape" drugs, if applicable (helps to distinguish from DUI cases).
- A toxicology kit can be submitted with the sexual assault kit directly to the lab or officer can mail directly to lab (tox kits have mailing labels for the specific lab in their area)

# Drug Facilitated Sexual Assault

- “Date Rape” specific drugs:
  - Rohypnol (Flunitrazepam) – Is screened at the KSP Lab, but is NOT quanted at the KSP Lab
    - The sample can be sent out for Rohypnol identification – case by case basis
  - GHB (gammahydroxybutyric) - Is NOT tested at the KSP Lab
    - Quickly metabolized- usually out of the system in 6-12 hours so unless the Toxicology/DFSA kit is collected within a reasonable time frame they probably wouldn't find it
    - Some hormones that naturally occur in the human body can mimic GHB so tests can sometimes be unreliable
    - The sample can be sent out for GHB identification - case by case basis
  - Ketamine – Is screened and quanted at the KSP Lab

\*Ryan Johnson and Brandon Standifer , Toxicology Supervisors



Any  
questions  
about kits?

# THINKING OUTSIDE OF THE BOX, LITERALLY





# Locard's Exchange Principle



" Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as a **silent witness** against him. Not only his fingerprints or his footprints, but his hair, the fibers from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects. All of these and more, bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is **factual evidence**. Physical evidence cannot be wrong, it cannot perjure itself, it cannot be wholly absent. Only human failure to find it, study and understand it, can diminish its value"



- Professor Dr. Edmond Locard





# Cases Submitted to Forensic Biology

- Murder/Death Investigations
- Sexual Assault/Sodomy
- Assault/Wanton Endangerment/Kidnapping
- Robbery
- Arson
- Burglary/Other Property Crimes
- Game Law Violations/Animal Cruelty

# Forensic Biology

- Serology
  - Blood
    - human or animal
  - Semen
  - Saliva
- Bloodstain Pattern Analysis
- DNA Analysis (Casework – Autosomal and Y-STR)
- CODIS (Database)



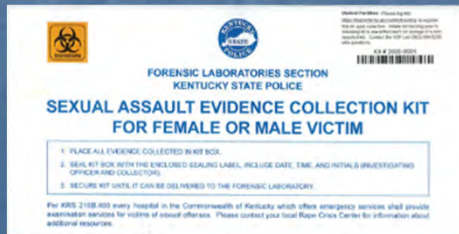
# Changes to Forensic Biology

- Sending all SAECK to a process called “Direct to DNA” – we extract and let the amounts of DNA guide us to which samples we take forward for what tests
- What this means for serology and Grand Jury
  - We are currently only testing kits for serology after DNA is complete and you feel you need the bodily fluid results for trial - example

# Direct to DNA



The KSP Laboratory is currently evaluating a Direct to DNA method that would remove the step for conventional serology for the analysis of most Sexual Assault Evidence Collection Kits.





# Serology

## Blood

luminol



## Semen

TMP

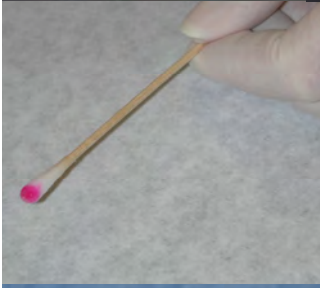


## Saliva

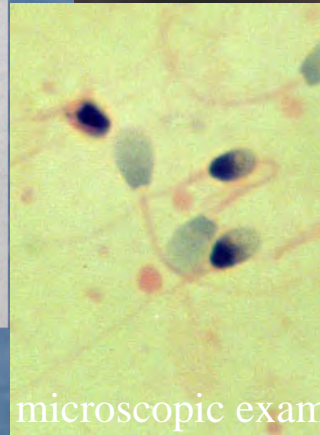
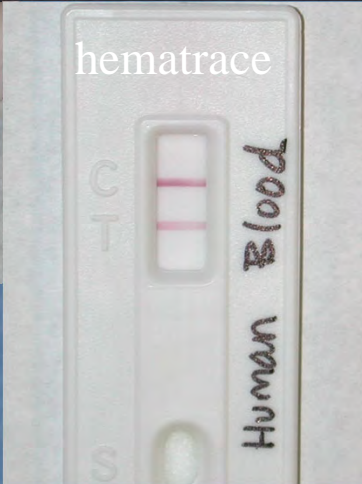
phadebas



phenolphthalein



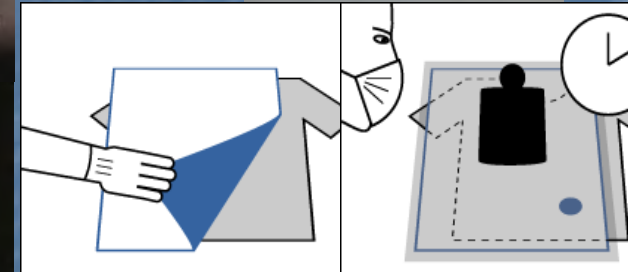
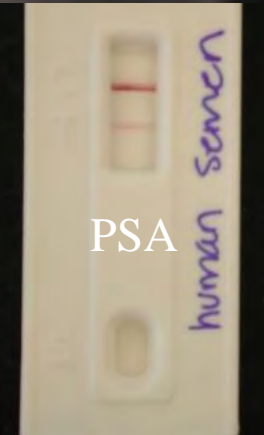
hematrace



microscopic exam

PSA

human semen



## Other body fluids. . . .

Vaginal fluid, feces, sweat, etc.:

no serological test available at KSP lab

can potentially still identify source with DNA

# Semen Identification

- Primary indicator of sexual activity
- Analysis is “inside to outside”:
  - vaginal swabs, external swabs, underpants, clothing, sheets, bedding, other
- Even with successful identification of semen, we now continue to screen all the relevant items in the SAECK – the more information we have the more precise we can be in our examination



# Semen Identification

## Presumptive test: TMP (Thymolphthalein Monophosphate)

Color change to blue indicates the presence of acid phosphatase, a component of semen.

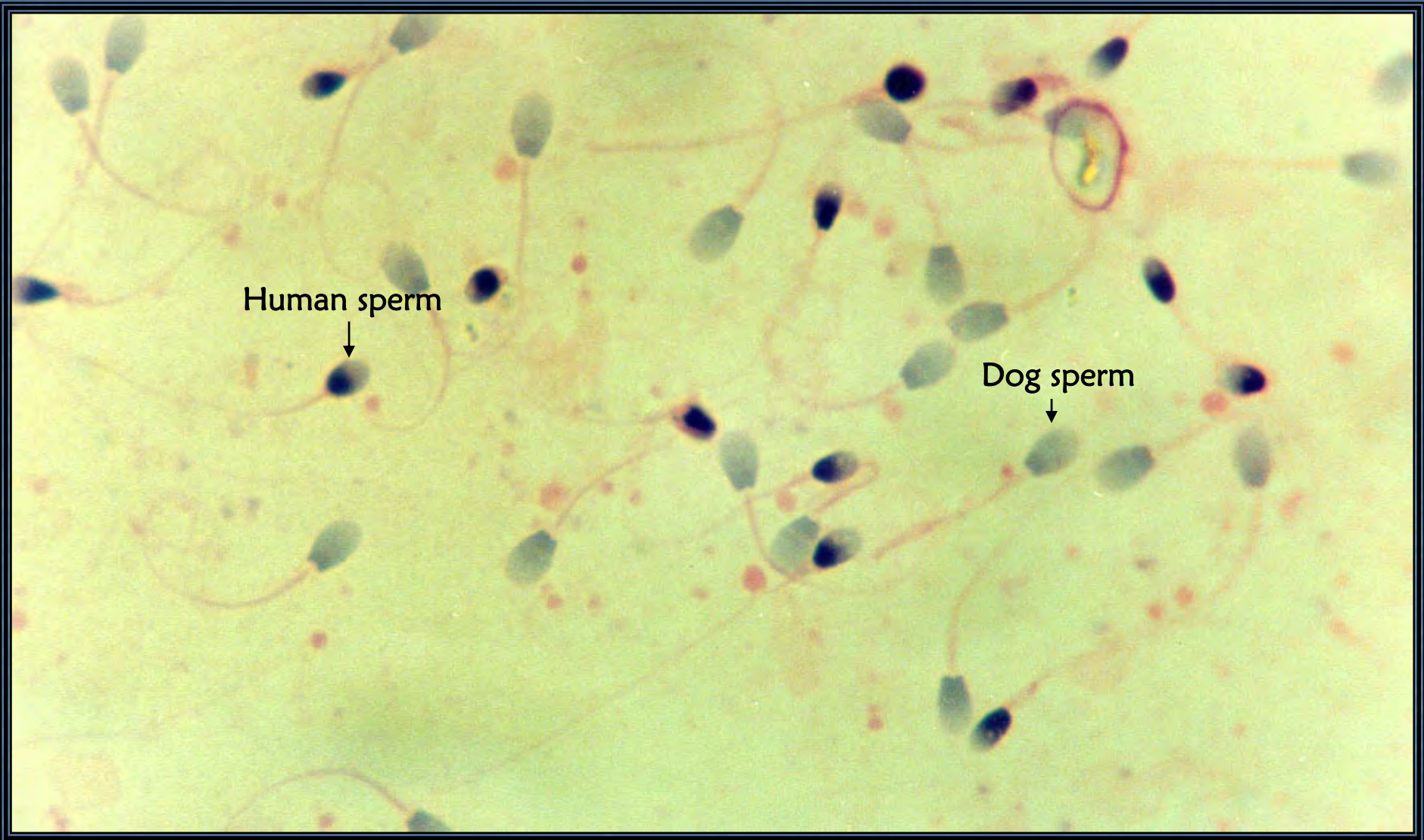
We take a cutting from positive area of fabric or a sampling of swabs for microscopic sperm search



# Microscopic view of human sperm cell







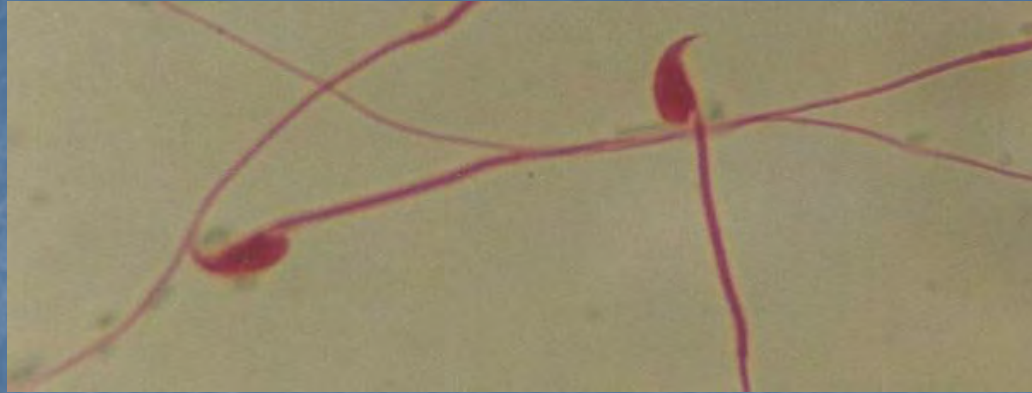
Human sperm



Dog sperm



# Mouse Sperm



# Raccoon Sperm

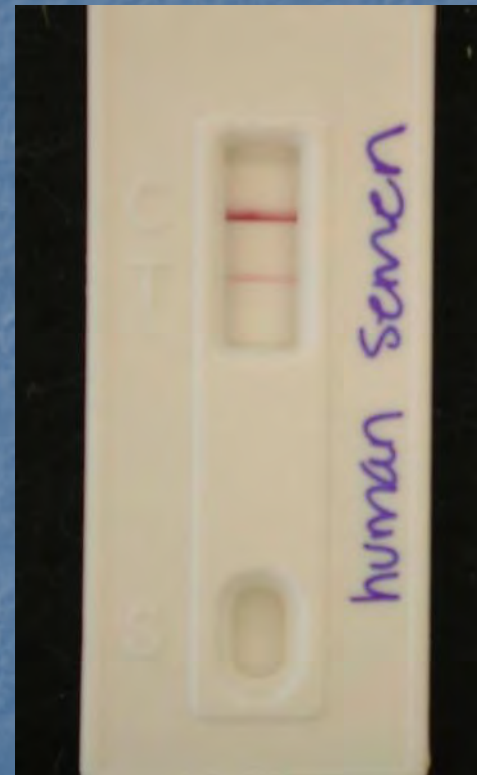




# Semen Identification

## p30

- Confirmatory test for the presence of semen
- These are extremely helpful when the perp may be vasectomized and we don't find sperm cells on microscopic slides
- Pink line in the "T" and "C" lanes = positive
- One of the tests we use now gives us an indication of the concentration of semen present (4ng/mL or less)



# Saliva Identification

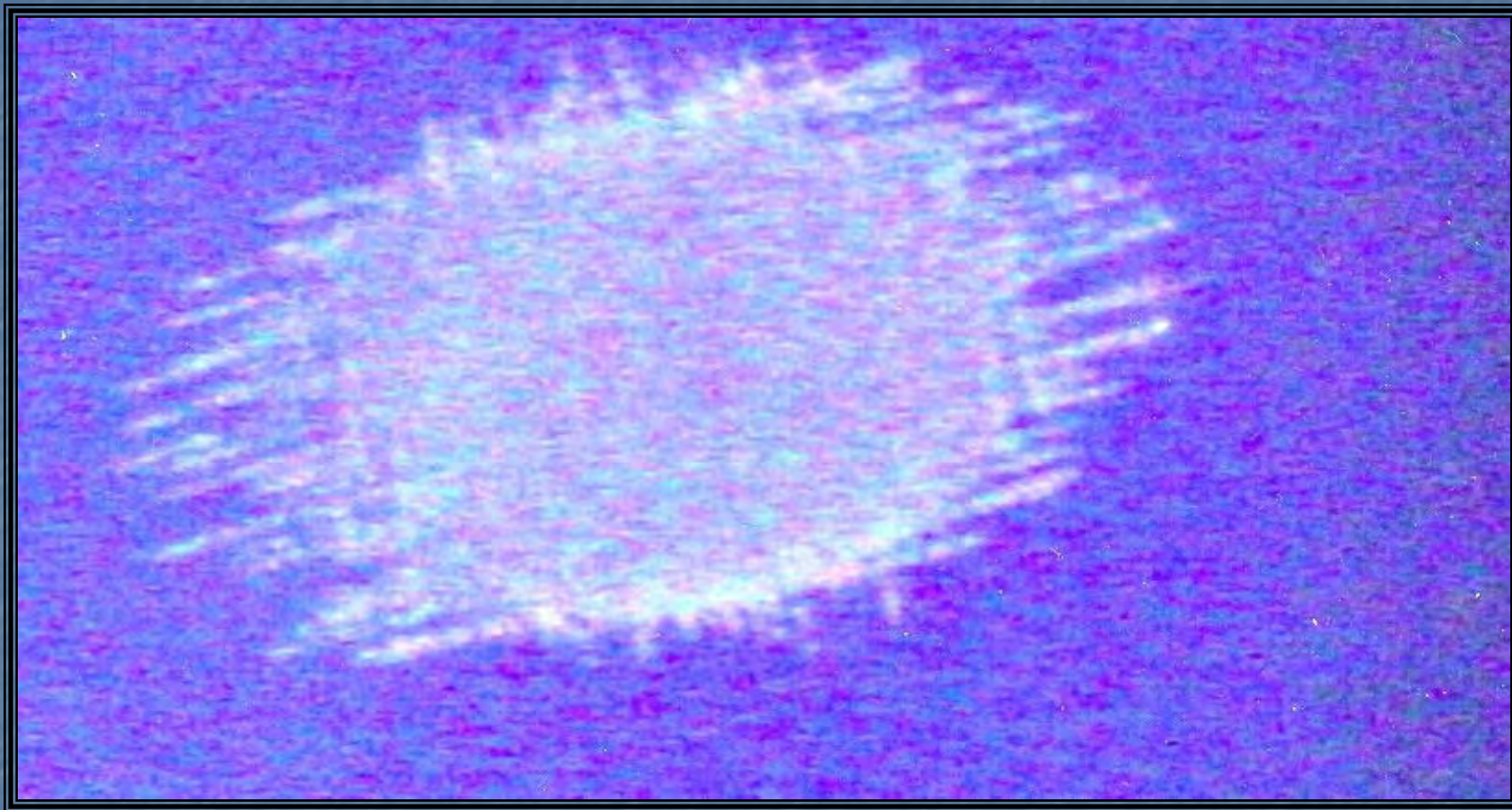
(Phadebas test)

- Can be used to identify oral sodomy or contact
  - Can be detected AT TIMES from swabbing of genital areas, breast area, bite marks, penile swabs.
  - Color change to blue in the presence of alpha-amylase, a component of saliva
- Skin cells in saliva can be used for DNA analysis





# Mini-Crimescope/ALS



Semen/Saliva- fluorescence

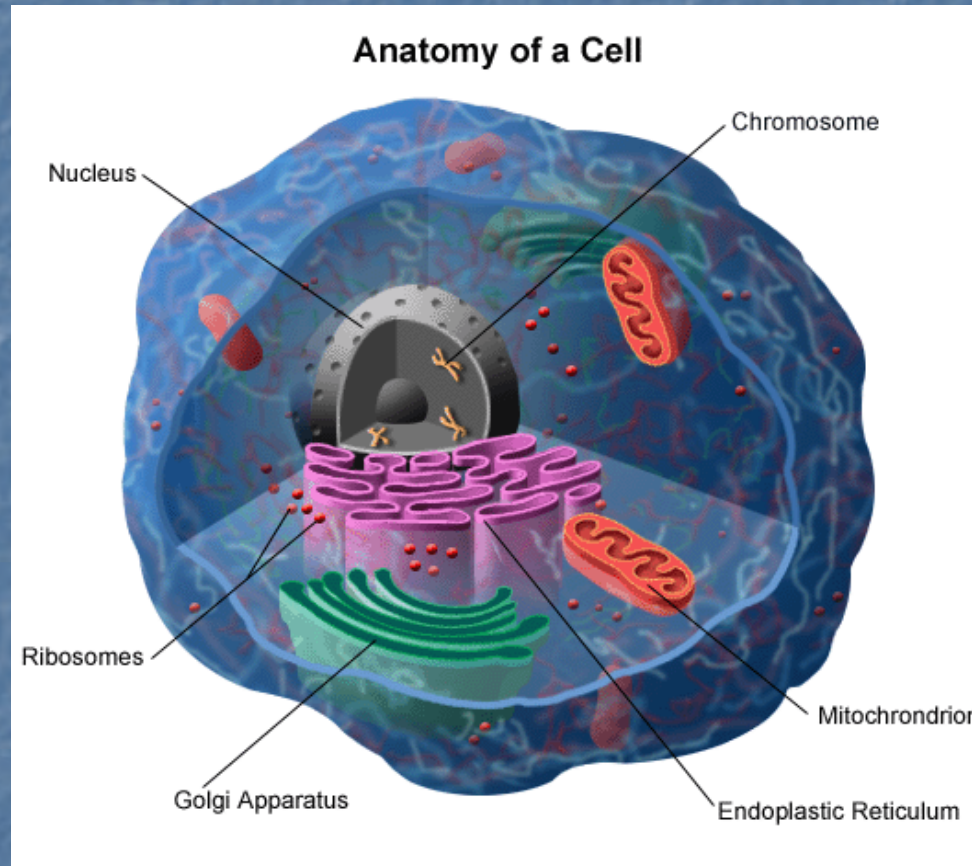
# Detectable Body Fluids by ALS

- Urine
- Semen
- Saliva
- Sweat
- Vaginal secretions





# DNA 101



<http://www.firetown.com/wp-content/uploads/2014/05/overview-of-chromosome-abnormalities-125933.gif>

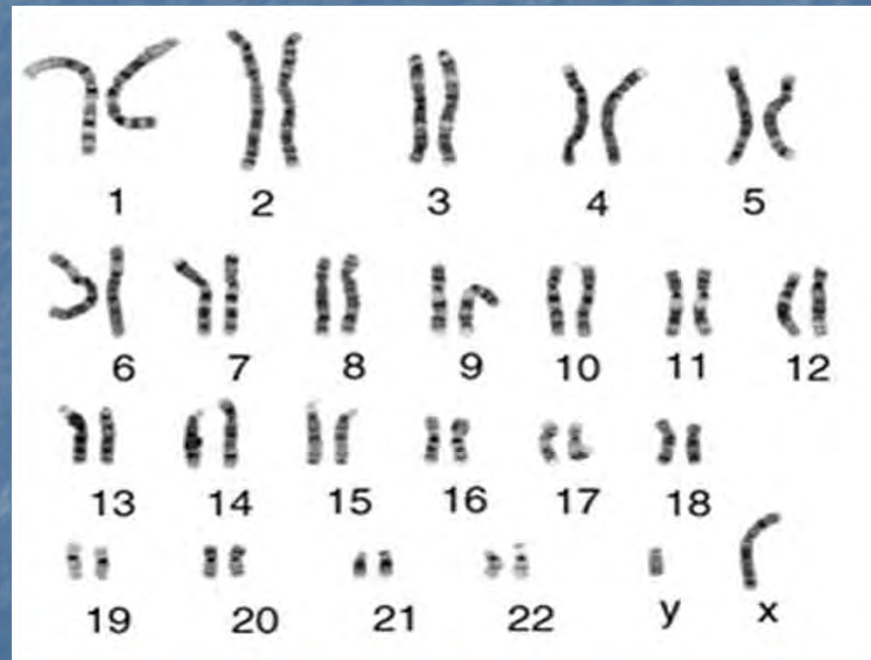
# DNA 101

## Chromosomes

22 matched pairs

sex-determining (X and Y)

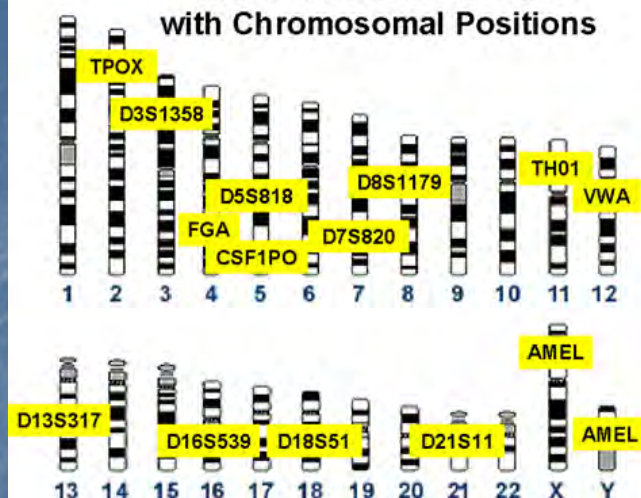
1 chromosome comes from Mom and 1 comes from Dad



<http://www.biotechnologyonline.gov.au/images/contentpages/karyotype.jpg>



**13 CODIS Core STR Loci  
with Chromosomal Positions**



**Table 2**

New 20 CODIS Core Loci. (For interpretation of the references to colour in this Table legend, the reader is referred to the web version of this article.)

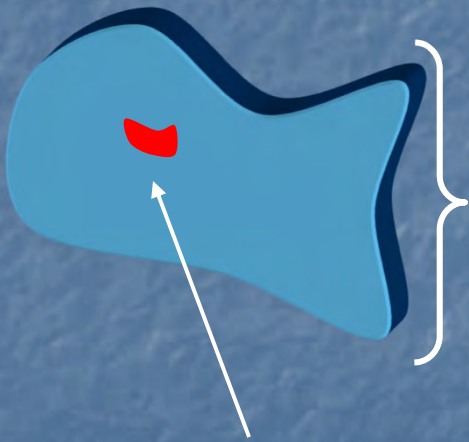
Locus
CSF1PO
D3S1358
D5S818
D7S820
D8S1179
D13S317
D16S539
D18S51
D21S11
FGA
TH01
TPOX
vWA
D1S1656
D2S441
D2S1338
D10S1248
D12S391
D19S433
D22S1045

Effective 2017

Red is for original CODIS Core 13 Loci.  
Blue is for new additional CODIS Core Loci.

# DNA is...

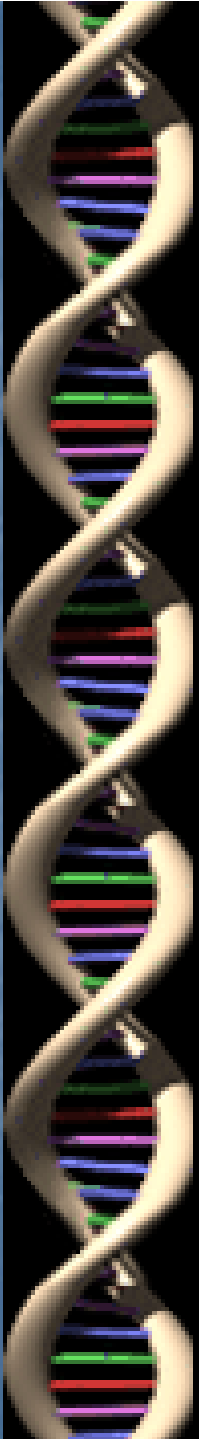
## Where can DNA be found?





# DNA

- Fundamental building block of all living organisms
- Half of our DNA comes from our mother and the other half from our father
- Different in every person except for identical siblings





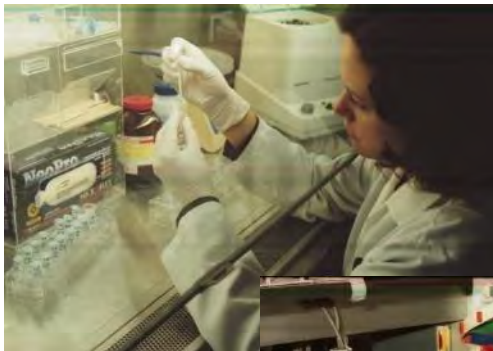
# DNA Facts

- ~99% of human DNA is the same from person to person
- Of course, in forensics we are interested in the remaining less than 1% where differences are found

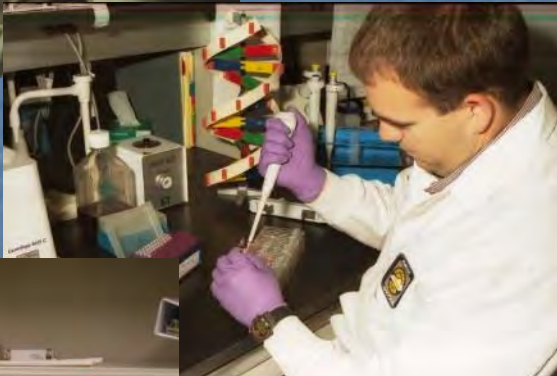
We currently look at 24 locations...  
makes up our “DNA profile”



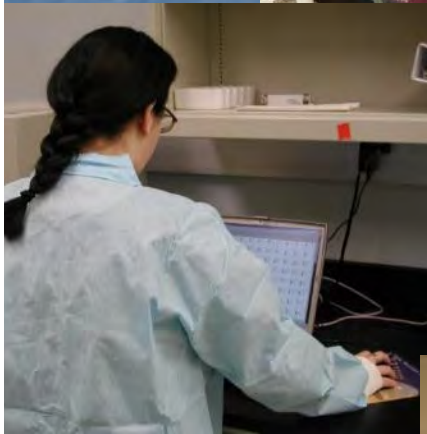
# DNA



Extraction



Quantification



Amplification



Electrophoresis



Data Evaluation and Report Writing



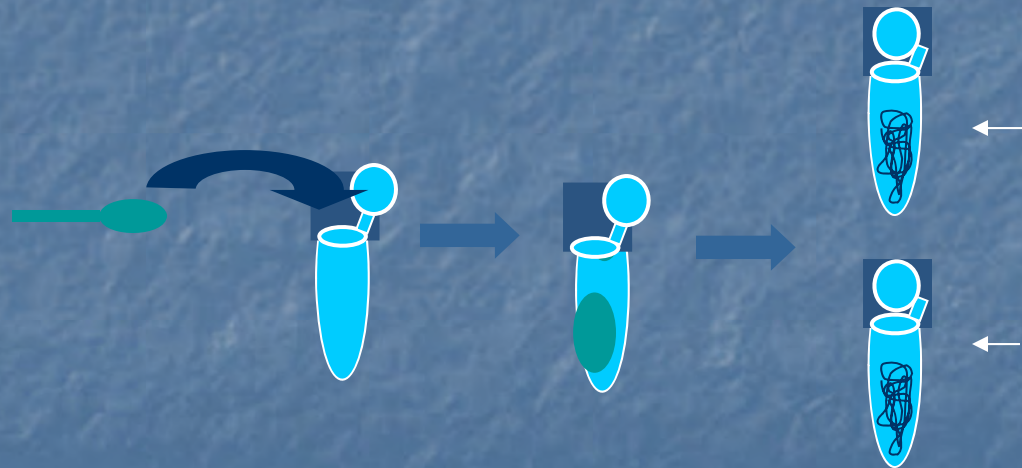
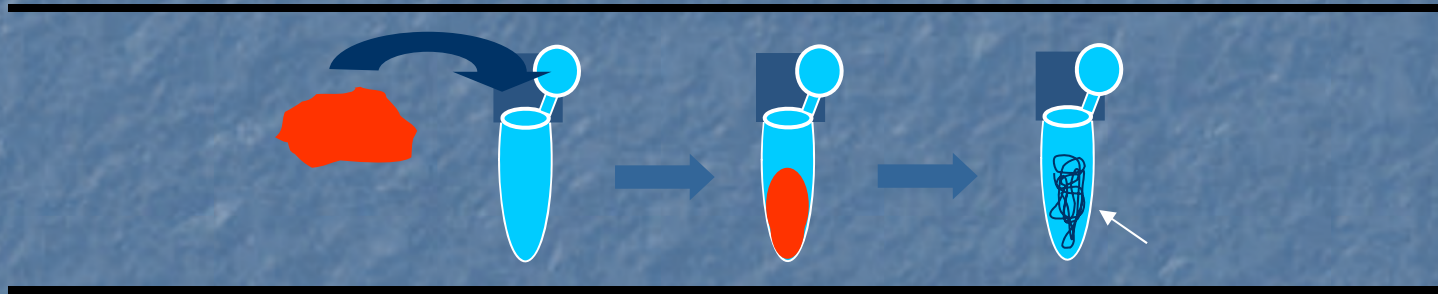
Case Review





DNA 101

# Extraction (Manual)



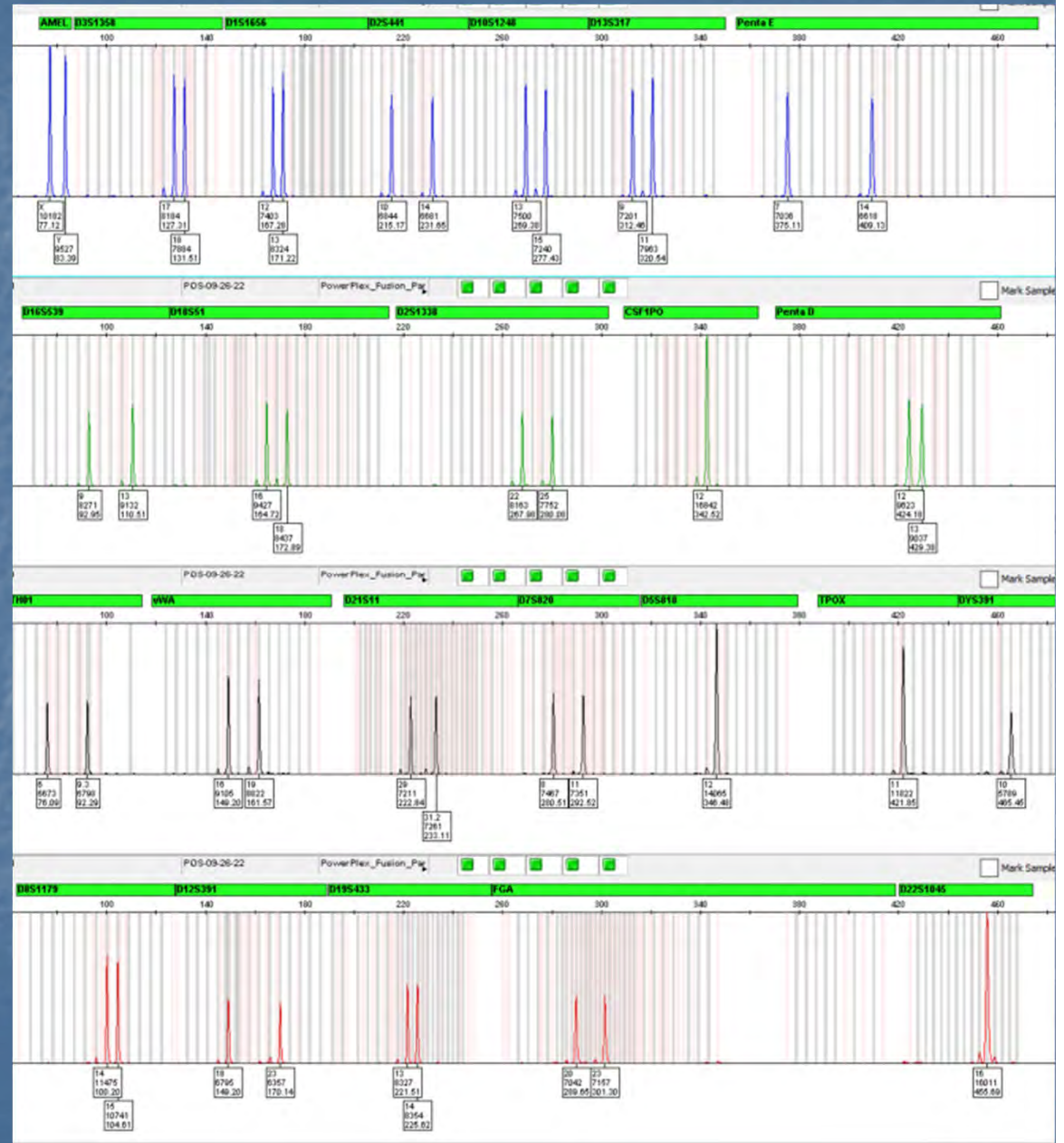


# What we CAN tell you from DNA:

- If suspect is a match (with statistic) or excluded
- If there is more than one contributor to a sample
- If profile matches other cases
- If unknown profile could be a relative to one of the parties involved

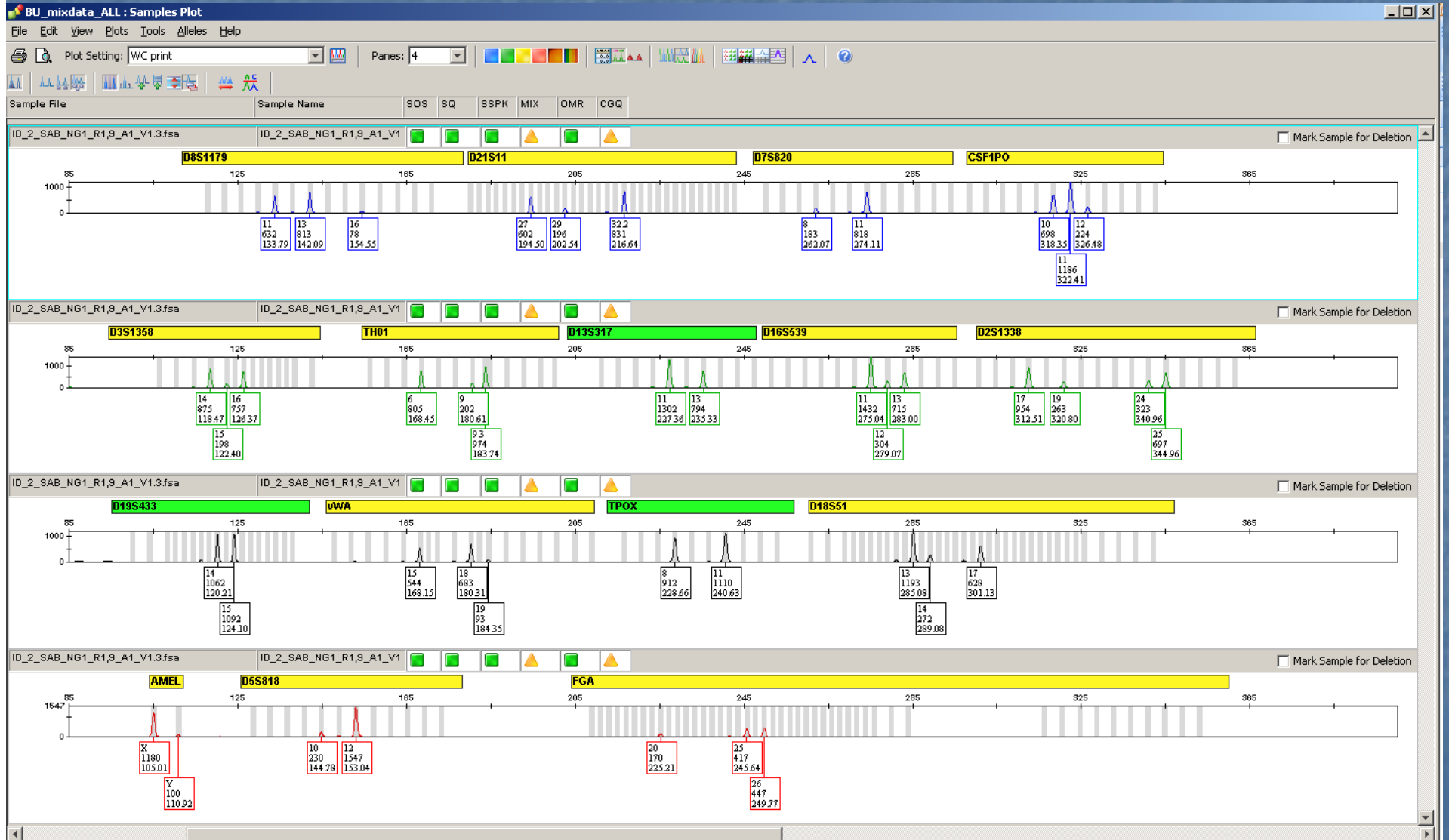
# Electropherogram

- Single source profile

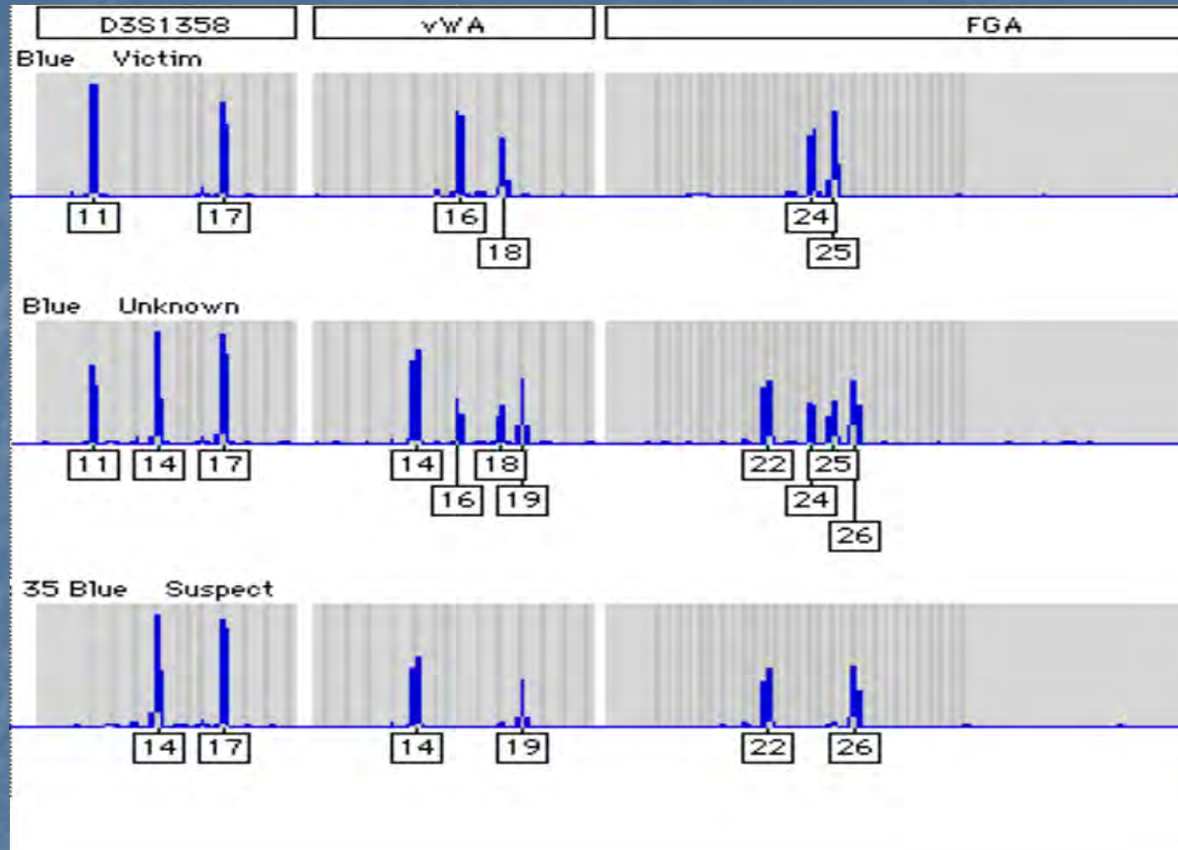




# Electropherogram mixture



# PCR Case Example



Location	Victim	Suspect	Unknown
D3S1358	11,17	14,17	11,14,17
VWA	16,18	14,19	14,16,18,19
FGA	24,25	22,26	22,24,25,26



# Forensic Biology Casework (DNA Reports)

- Our reports are going to start changing in the near future because of a DNA software interpretation tool called **STRmix**.
  - Also referred to as Probabilistic Genotyping.
  - What we do now is correct but this doesn't just say "it's there" or "it isn't there"
  - Makes better use of more of the data.
  - Does what we do but to a much higher degree.
- This DNA profile is 8.9 nonillion times more likely, indicating very strong support, if it originated from Jon Smith (Item 2) and one unknown individual than if it originated from two unknown, unrelated individuals.
- Joe Jones (Item 3) is excluded as a contributor to this mixture.

# What is Touch DNA?

We do accept certain "touch" samples for cases we analyze. This type of sample is specifically addressed in the current case acceptance policy:

- after other means exhausted, priority is given to non-touch samples within a case
- certain "touch" sample types are considered, not property crimes
- elimination standards may be required from victims(case dependent)
- elimination standards will be required from collectors
- possession of firearm by a convicted felon cases are not generally accepted (case dependent)

## "Touch" Sample Types Which Have Been Requested/Analyzed

### The Good (Really just the OK)

Discarded clothing  
Strangulation ligatures  
Masks  
Hat/Caps  
Rough surfaces  
Larger surface area contact  
Steering wheel  
Gun grips

### The Bad

Finger/palm print  
Countertops  
Cash drawers  
Door knobs  
Door plaques/handles  
Dresser handles  
Photographs  
Piece of paper  
Bullets/Shotgun Shells/Casings (live and fired)  
Keys

### And The Ugly

Hint, they all have the potential to be ugly. . . .

If someone is thought to have casually touched a surface, fingerprints may be the better option.

**And the results** – usually nothing, partial results, partial mixtures or heinous mixtures



# “Touch” DNA

- Touch DNA as defined by the lab - contact, which may be limited, between a person and an object that could result in the transfer of cells (most often epithelial) to another object
- DNA from fingerprints and brief contact with a surface- makes it very unreliable
- Most likely to get results when obtained from inanimate objects- rough surfaces are best, smooth surfaces best suited for fingerprint analysis
- Touch DNA on a victim will mostly pick up the victim’s DNA profile
- If there was licking or sweating by the perp then there is a greater chance of obtaining a DNA profile from epithelial cells
- Touch DNA would be a last resort option if no semen or saliva was found during analysis

# DNA Reports – Touch Samples

A partial DNA profile was obtained from Item X at 2 loci, but was too limited for interpretation/meaningful comparisons.

Or

The quantity and/or quality of human DNA from Item X was insufficient to for analysis/to obtain a profile.

Or

The DNA profile from Item X is a mixture. Due to the number of contributors to this mixture, no meaningful comparisons can be made.



# Uses for Relationship Analysis:

- Sexual Assault/Incest cases which result in pregnancy:
  - Product of Conception
  - Child
    - Require letter from Commonwealth's attorney
    - Require reference standards from alleged parents
    - Required payment authorization forms for cases that cannot be worked in-house
- Unidentified Human Remains
  - Comparisons can be made with items from a crime scene and/or person effects
    - Require family reference samples for comparison
    - Required payment authorization forms for cases that cannot be worked in-house

# Forensic Biology Casework (Relationship Results)

	dad		mom		daughter		son	
Marker	Allele 1	Allele 2	Allele 1	Allele 2	Allele 1	Allele 2	Allele 1	Allele 2
AMEL	X	Y	X		X		X	Y
D3S1358	15	16	14	17	16	17	15	17
D1S1656	16.3	18.3	12	18.3	12	18.3	12	18.3
D2S441	11	14	10	14	11	14	11	14
D10S1248	13	16	13	15	13	16	13	16
D13S317	11	12	10	11	11	12	11	
Penta E	7	19	11	12	7	12	7	11
D16S539	9	11	12		9	12	9	12
D18S51	16	17	12	15	15	17	12	16
D2S1338	21	24	24	25	21	25	24	
CSF1PO	10	11	12	14	10	14	11	12
Penta D	9	14	9	10	10	14	9	
TH01	7	9	7	9.3	9	9.3	9	9.3
vWA	14	15	14	16	14	16	15	16
D21S11	30	32.2	30	31.2	31.2	32.2	30	
D7S820	11	12	10		10	11	10	11
D5S818	11	13	11	12	12	13	10	11
TPOX	9	12	8	11	8	9	11	12
DYS391	10						10	
D8S1179	13	15	13		13	15	13	
D12S391	18	20	15	20	15	18	15	20
D19S433	13	14	14	15	13	14	13	15
FGA	21	23	20		20	23	20	21
D22S1045	15	16	11		11	16	11	17



# Forensic Biology Casework

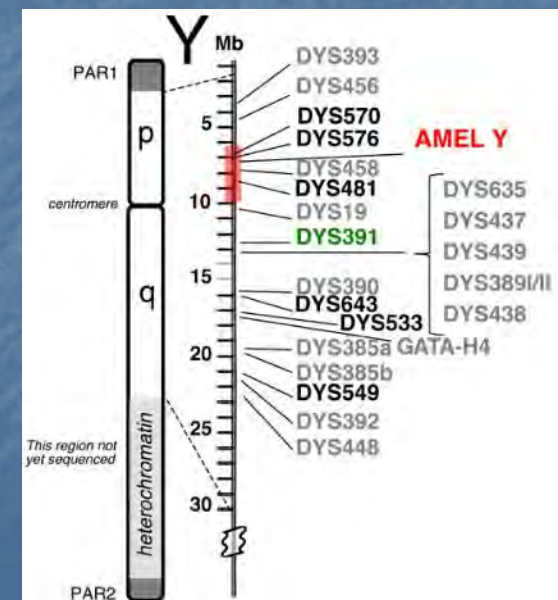
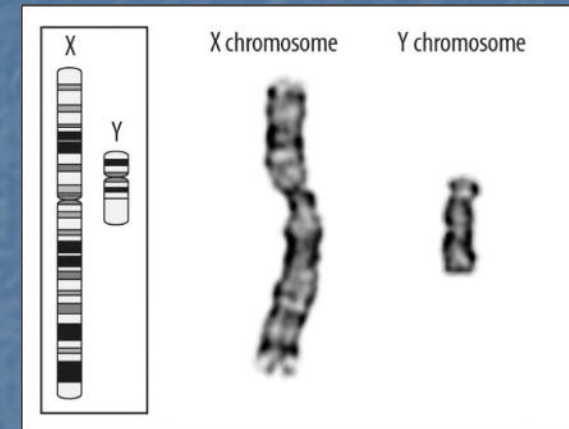
## (Relationship Analysis DNA Reports - Trios)

•**Match** - Based on a comparison between the above listed standards and the presence of the obligate paternal allele(s) at each locus tested, NAME cannot be excluded as the biological father of NAME. It is X times more likely that NAME is the biological father of NAME as opposed to a random, unrelated man from the relevant United States populations. The probability of paternity (assuming 50% prior probability) is greater than 99.99%.

**Exclusion** - Based on a comparison between the above listed standards and the absence of the obligate paternal allele at X loci, NAME can be excluded as the biological father of NAME.

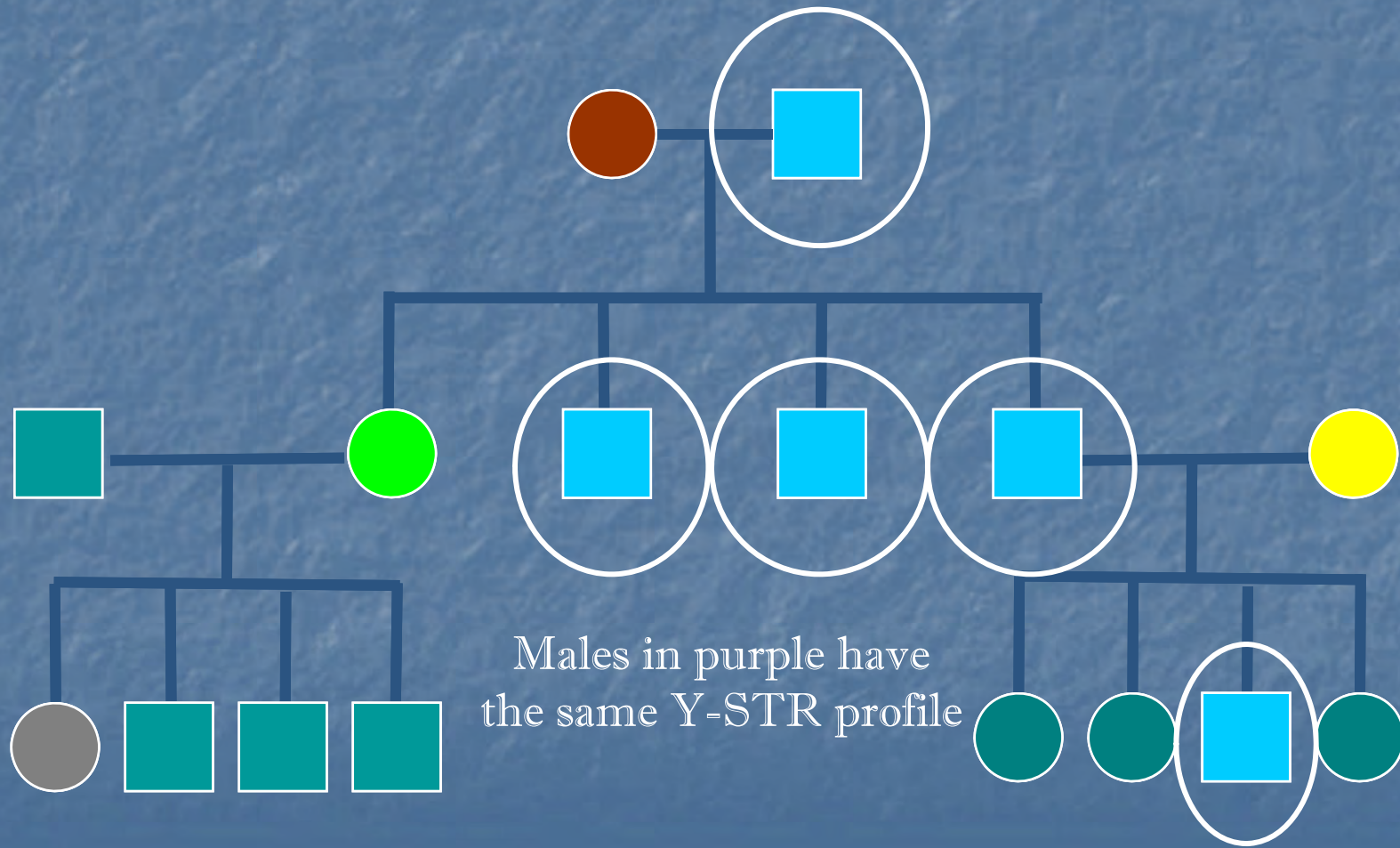
# Y-chromosome STR Analysis

- Started processing Y cases at the Central Lab in 2012
  - We are still in the process of seeing which types of cases benefit from Y-STR testing and what kinds of results we are getting from various samples
- Male specific (from the Y chromosome)– ignores presence of female DNA
- Helpful in cases where the male component may be masked by overwhelming female component
- Qualifying samples would include but are not limited to: small number of sperm cells, vasectomized or azoospermic males, large time lapse from incident to examination, fingernail swabs.
- Not helpful for cases with good autosomal STR results
- Can be used to exclude potential suspects





# Forensic Biology Casework (Y-STR DNA Analysis)



# “Disadvantages” of Y's

- Paternal lineage possess the same Y profile; therefore fathers, sons, brothers, uncles and paternal cousins cannot be distinguished from one another
  - “The Y-STR profile from Item 1 matches John Doe (and his paternal relatives)...”
- Statistics are 1 in hundreds or thousands instead of quadrillions and quintillions – Y's use the counting method vs. product rule like autosomal STRs since Y's are inherited on the same chromosome
- Difficult to deconvolute mixtures unless there is a clear difference in the ratio of the contributors

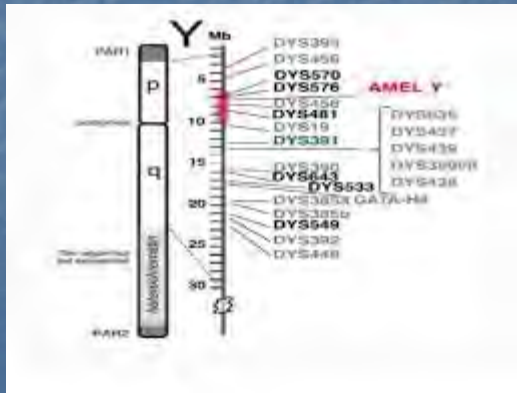


# Familial Searching

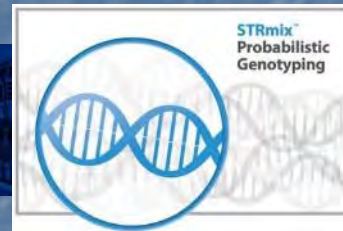


Case Acceptance Policy Not all cases will be considered for familial searching. Cases identified by the laboratory or written requests will be evaluated by the Familial Search Committee for suitability for searching. The following criteria must be met for a case to be considered.

- 1. Must be an unsolved violent crime, sexual assault, unidentified individual or a case in which public safety is at risk.
- 2. Investigating agency must have exhausted all leads including DNA profile comparisons to any suspect reference standards.
- 3. The forensic DNA profile must meet all criteria specified in the DNA evaluation section.
- 4. If the CODIS search provides a potential lead the investigating agency will review with the KSP laboratory or KSP intelligence analyst all case information that may be useful for identification. This case information will not be retained by the laboratory. It should include but is not limited to:
  - Physical description of perpetrator (height, weight, eye color, hair color, scars, tattoos, accent, or any other identifying information)
  - Age
  - Ethnicity
  - Modus operandi
  - Time and location of crime
  - Vehicle and/or transportation used
  - List of excluded subjects along with justification of exclusion
  - Other potentially related crimes
- 5. Prior to the release of the name of the offender or any information obtained by the KSP criminal intelligence analyst, the investigating agency and prosecutor will meet in person with KSP laboratory personnel. The in-person meeting can be waived for the investigating officer and/or prosecutor if they have received results from a prior familial search.
- 6. Investigative agency will pursue any investigative leads provided as a result of the familial search in a timely manner with the understanding that the offender name provided is not the perpetrator. KSP laboratory will be provided with updates on the investigation and should a suspect be developed, suspect standards will be submitted for comparison to the evidence profile.



# New Technologies



Probabilistic Genotyping



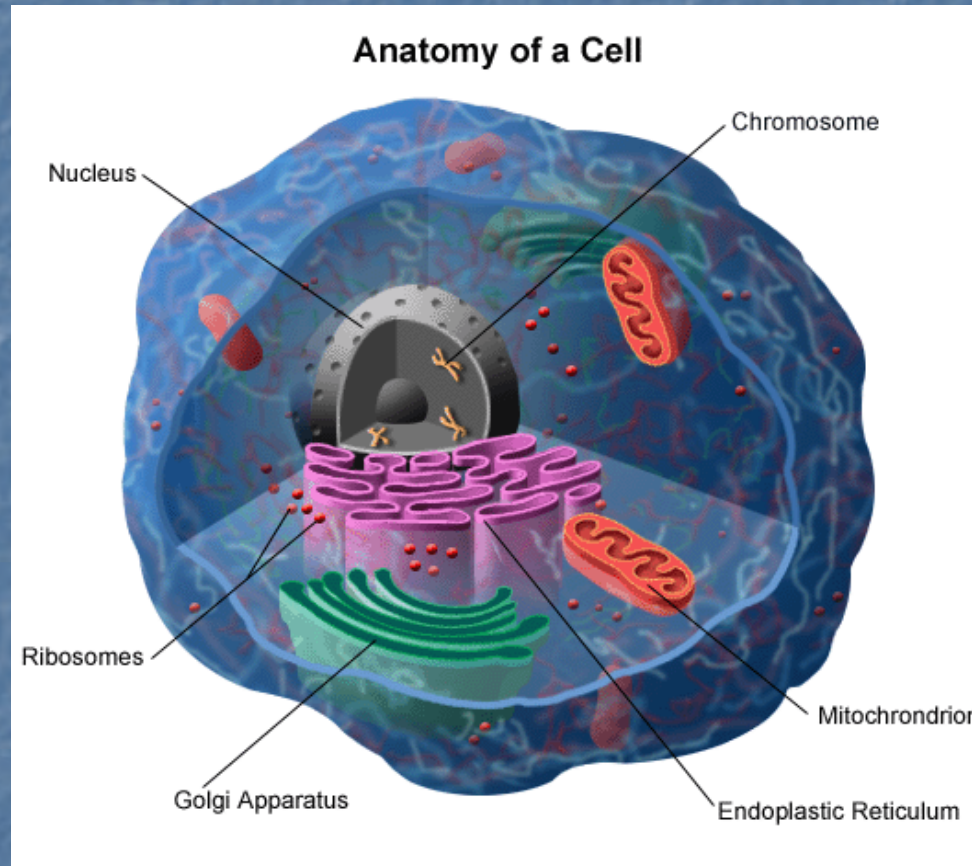
Next Generation Sequencing

## Genealogy





# DNA 101



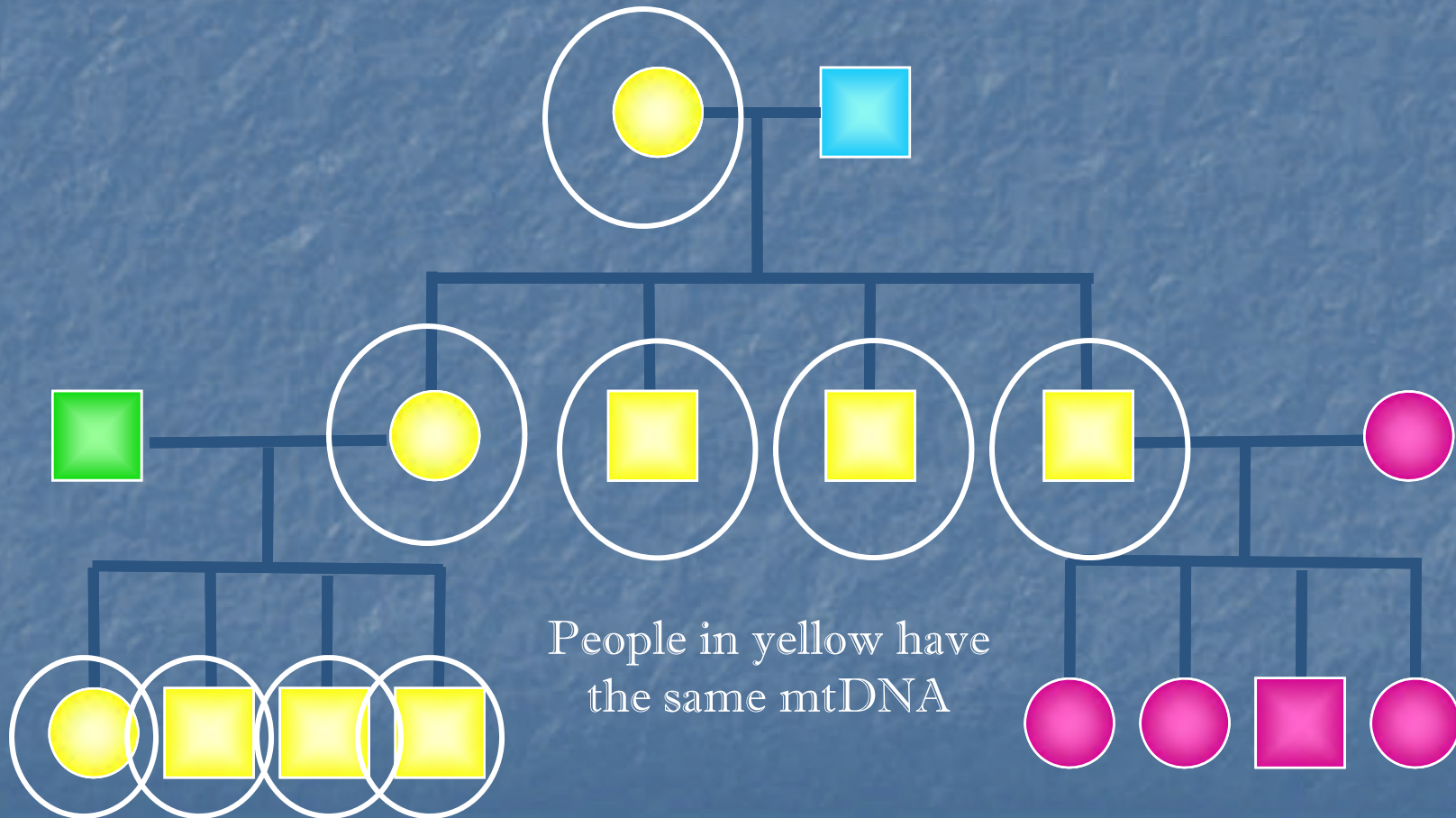
<http://www.firetown.com/wp-content/uploads/2014/05/overview-of-chromosome-abnormalities-125933.gif>

# Forensic Biology Casework (Trace - Hair)

- Cases being revisited
  - mtDNA and nDNA may not have been available
- When DNA isn't enough
  - nDNA possible if root present
  - mtDNA wouldn't distinguish between certain relatives; hair comparisons may be able to



# Mitochondrial DNA Analysis



# Mitochondrial DNA Analysis

- FBI will do for free if case is accepted. Analysis performed at Quantico.
- Private labs charge about \$1300/reference and \$2600/evidence sample.



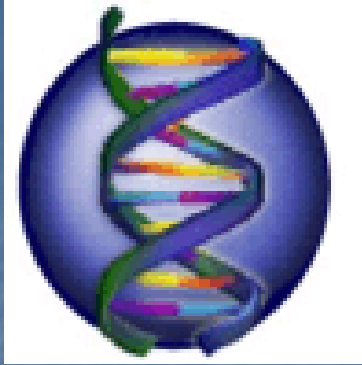


# The Facts...

mtDNA and Y-STR tests are less discriminating than the nuclear DNA

1 person in 1000's

- mtDNA or Y-STR testing generally used as a last resort, no other probative results
- analysts will do their best to advise an agency if they believe additional analyses would be beneficial; cases suitable for Y-STR analysis will be analyzed as appropriate



# CODIS

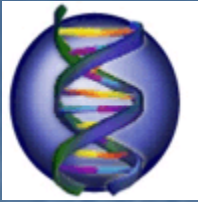
## Combined DNA Index System

- FBI created and maintains CODIS
  - It is a software program
    - Allows storage/searching of DNA profiles
    - The general term for the “DNA Database”
  - All participating states must abide by FBI procedures for data to be included in the DNA database.
  - <http://www.fbi.gov/about-us/lab/biometric-analysis/codis>

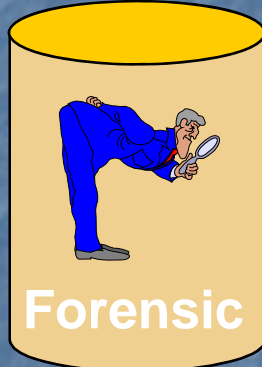


# CODIS - The DNA Database

- Database stores DNA profiles. Similar to AFIS, which stores fingerprints.
- Connects states so the forensic community can compare DNA profiles
- Used to generate investigative leads for law enforcement



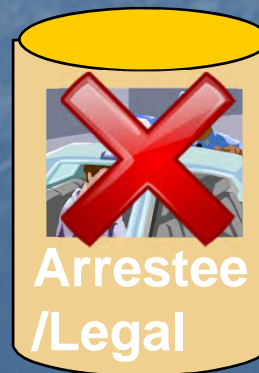
# CODIS Database- Entry



NDIS Federal Law



*KY law*



State (SDIS)



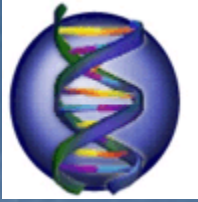


## ***Myth-Personal offender information is stored in CODIS.***

- Only the DNA profile from the offender is in CODIS.
- No names, no addresses, no pictures
- No medical information

13  
30  
10,11  
10,12  
14,15  
8,9,3  
11  
11,12  
19,23  
14,15  
17,18  
8  
15,19  
X  
11  
23,24





# Current Database Size

- **Offender Profiles**
  - **NDIS – 14,305,912**
  - **Arrestee – 4,305,472**
  - **SDIS – 208,643**
  
- **Forensic Profiles**
  - **NDIS – 1,096,398**
  - **SDIS – 10,914**



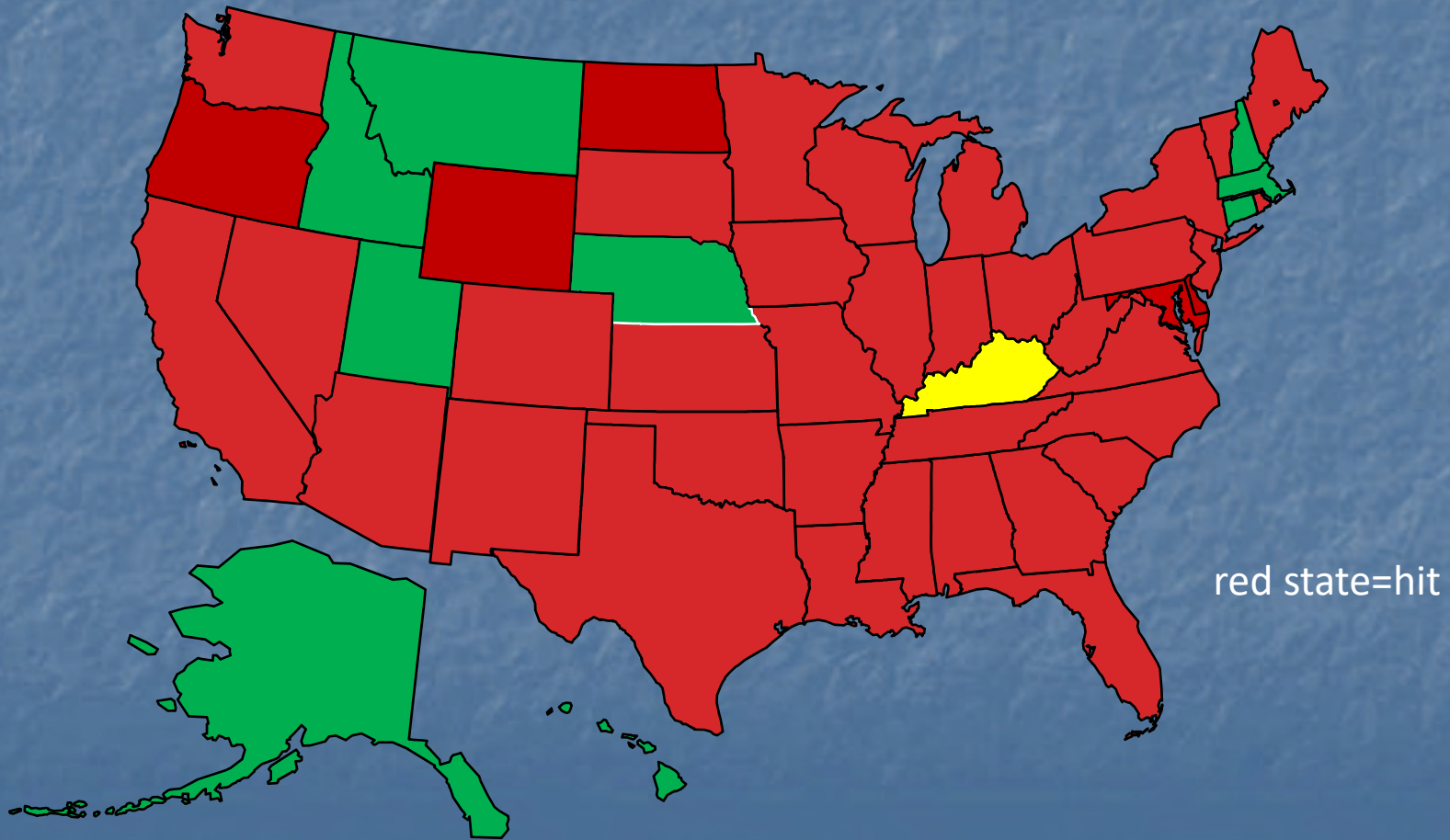


# Current Hit Updates

- 2015 Hits
  - Offender/Forensic - 343
  - Sexual Assaults - 40
  
- 2016 Hits
  - Offender/Forensic - 347
  - Sexual Assaults - 70
    - DANY – 7
  
- 2017 Hits
  - Offender/Forensic - 536
  - Sexual Assaults/Violent Crimes – 242
    - DANY – 192
  
- 2018 Hits
  - Offender/Forensic – 590
  - Sexual Assaults/Violent Crimes - 263
    - DANY – 210

# Kentucky Hits

Over 1,700 hits to date (>1500 offender hits)





# Laboratory FYI's

- All KSP Labs were accredited by ANSI National Accreditation Board (ANAB) under the ISO/IEC 17025:2017 Standards in 2020
- All KSP Labs were accredited by the American Society of Crime Laboratory Directors – Laboratory Accreditation Board (ASCLD-LAB) under the ISO/IEC 17025:2005 Standards in March Since August 2005, the Jefferson, Northern and Central Labs were accredited by ASCLD-LAB under the Legacy Standards
- Both the Forensic Biology Casework and DNA Database sections are compliant with the FBI's Quality Assurance Standards
- Analysts are not required to be "certified"; however several analysts are certified in their respective disciplines

# Forensic Biology Case Acceptance Policy



## 1. Service

- 1.1. Forensic Biology Analysis will be performed for official state or federal criminal justice agencies within the Commonwealth, including but not limited to, the Kentucky State Police, local Police Departments, County Sheriff's offices, Kentucky Prosecutorial Offices, and the Department of Public Advocacy. Generally, analyses will be limited to criminal investigations.
- 1.2. Analysis will be limited to cases that are related to a criminal investigation in the Commonwealth of Kentucky.

## 2. Priority

**Analysis of evidence will proceed based on the Priority Category, the Laboratory Submission Date and the completeness of the information necessary to process the evidence.**

- 2.1. Category 1 priority cases include Sexual Assault and active Homicide Investigations.
- 2.2. Category 2 priority cases include all other active Violent or Property Crimes Investigations.
- 2.3. Category 3 priority cases will include all Cold Case Investigations.
- 2.4. Category 1 and 2 priority cases will be processed concurrently. At least 60% of the currently qualified DNA analysts will be primarily assigned to process Category 1 priority cases.
- 2.5. Request to Expedite Analysis should be limited to Category 1 cases. If approved, the status of these cases will be classified by two types:
  - 2.5.1. Urgent Expedited Status - These cases will be given top priority in the Laboratory for both the analysis and the technical review. These cases will be completed posthaste.
    - 2.5.1.1. These requests should be limited to cases with exigent circumstances e.g., grave public threat, imminent danger to the life of the involved parties, suspected serial offender.
    - 2.5.1.2. Urgent Expedited Status shall be approved by Laboratory Management and documented in the case narrative.
  - 2.5.2. Expedited Status - These cases will be moved to the top of the pending case list and will be processed in the next available batch for analysis and technical review. These cases will typically be completed within 90 days of the expedited status approval.
    - 2.5.2.1. These requests should generally be limited to cases with pending jury trials or juvenile custodial concerns.





# SAFE Toolkit

- KY General Assembly enacted law in 2010
- Hospitals and other sexual assault examination facilities are required to perform exams, even if the incident not reported to law enforcement
- Kits must be stored for at least 1 year to allow for delayed reporting
- KSP SAECK is a component of this toolkit

# Sexual Assault Evidence Kit Survey – Law Enforcement Agencies

Question 7 - What are the primary reasons your agency does not request a crime lab test of each sexual assault evidence kit it receives? Check all that apply.

- Victim informed police the crime did not occur **62%**
- Victim declined to file a complaint **57%**
- Other (please explain) **41%**
- Prosecutor advised it was not necessary **31%**
- Investigator suspected the act was consensual **21%**
- DNA evidence was not needed to convict **18%**
- Investigator had no suspects **11%**
- Victim filed complaint against spouse or former spouse **4%**
- Delivering to the KSP lab is cost prohibitive or creates logistical issues **1%**



# Some of the Benefits

- Provides answers to each victim
- If a DNA profile is obtained it will be entered into CODIS and routinely searched
- This profile may be linked to
  - an offender
  - another case with a known suspect
  - another or multiple unknown suspect cases
- A case that didn't have a solid witness may be linked to another case, now making it prosecutable



# Robert Smallwood

By passing serious DNA legislation, law enforcement officials can catch criminals sooner, prevent crimes, save money and use DNA in its full potential," Segish wrote on her website, [dna.gov](http://dna.gov). "Collected at the same time as fingerprints, DNA testing only requires a simple cheek swab upon arrest. That's why Congress and over half the states have already passed laws for DNA arrestee testing."

#### A PERFECT EXAMPLE

Lexington Division of Police Lt. James Carless said Robert Smallwood is a perfect example of how an arrestee database could help in Kentucky.

"This DNA had been collected earlier, he would have certainly been identified much, much sooner," Carless said. "That's

a 15-year period we're going through now. And I think it's maybe a cheap shot for me to blame it on Viola Greene in 1985 since we were really in the first few years of DNA, but somewhere in that 15 year period, if we would have collected it sooner than he would have been identified."

In 1998, when another woman came forward and alleged Smallwood raped her, he was arrested and charged with first-degree rape, first-degree sodomy and first-degree unlawful imprisonment. But, a jury found Smallwood not guilty of the charges in June of 1999.

Six months after the acquittal, 48-year-old Doris Roberts was found dead in her couch by her husband. Doris had been physically assaulted, raped and strangled. Investigators retrieved a cupkin that had

been stuffed in her mouth that had an unknown DNA profile on it.

Two and a half years later, 26-year-old Steven Allen was found dead in a parking lot. She had been raped, strangled and had high levels of cocaine in her system, Carless said. In April 2005, police found 35-year-old Erica Butler brand, raped and murdered in her bed. This time, though, another male in the house had seen Smallwood and was able to tell police the suspect was a black male.

In the time between Smallwood's rape arrest in 1998 and Erica's murder in 2006, Smallwood had been arrested six other times on crimes that included drug charges, had spent time in both the local jail and state prison and had two more RPO's filed against him by his wife. Erica was killed

shortly after Smallwood's release from prison.

"The discovery of Erica's body in 2006 left investigators worried. They knew from the similarities it was possible her case could be connected to Doris and Steven's cases, Carless said, and they were right. In September 2006, the KSP lab linked the DNA collected in the three murders to the same, unknown offender profile.

"The first one came in that we had a foreign DNA profile," Carless said of DNA evidence from Doris Roberts' case. "The second one [Roberts'] came in, which alarmed us, because it linked two cases. But, we kind of had to examine it, go through it and weigh it and [conduct] interviews, try to locate and determine who the suspect is. By the time the third

and fourth case came in, we were very concerned at that point. Then we know we had a serial killer."

Lexington investigators previously had created a cold case team to study old cases for new leads. Carless said the team looked at several suspects for the city's first serial killer before they identified Smallwood. With his DNA already in the department's evidence room from an earlier case, it was sent to the central lab for comparison with the unknown DNA profile.

It was a match. But, not just in the three murders. Investigators were surprised to link Smallwood all the way back to Viola Greene's 1983 rape and assault, too.

"We would have never linked Viola Greene to these other homicide cases [without DNA]," Carless said. "Because

number one, the time that had elapsed, number two, the difference in ages and those type of things. There would be no logical reason to really bring those together."

Typically, Viola never got to know justice had been served in her rape all those years earlier. She passed away of natural causes before Smallwood ever was identified, Carless said.

"Even though these victims have deceased, the act of the law still reaches out and grabs that criminal, even after death," he said.

#### PREVENTING CRIME

Several jurisdictions have conducted studies based on cases like Smallwood's, to determine the probability of crime prevention and cost savings of expanding DNA

## Criminology of a Killer









# DNA Expansion from SAFE Act

4.5 million dollars awarded for lab expansion to meet the 2018 (90 days) and 2020 (60 days) turn around times (funding through budget bill from the Attorney General's Risperdal settlement)

## People

- Multiple Analysts

- 2 FB Techs

- 3 Evidence Techs

## Space

- Occupied

## Equipment

- Purchased

## Sections

- Reorganized



© Can Stock Photo - csp2478805



# SB63 Evidence Retention

- Specific to ALL Biological (DNA) Evidence, **NOT JUST SAECKs**
- Destruction of evidence under KRS 524.140 is in violation of KRS 524.100, tampering with physical evidence which is a **Class D felony**
- KRS 524.140 (Disposal of evidence that may be subject to DNA testing) was amended to include the following:

- **No item .....shall be disposed of prior to trial of a criminal defendant unless:**
  - (a) The evidence has been in custody not less than **fifty (50) years**; or
  - (b) The evidence has been in custody not less than **ten (10) years**; and
    - 1. The prosecution has determined that the defendant will not be tried for the criminal offense; **and**
    - 2. The prosecution has made a motion, before the court in which the case would have been tried, to destroy the evidence
- **No item .....shall be disposed of following the trial unless:**

**DO NOT DESTROY**

**Per KRS 524.140**

(effective April 8, 2016)

*prior to trial*

reference (2)(a) not less than **50 years**

reference (2)(b) not less than **10 years**

*following trial*

reference (3a-d)

# DANY Grant

## Submit the Kit- KSP's Sexual Assault Kit Initiative

*Kentucky State Police Forensic Laboratory Receives \$1.9 Million to Clear the Shelves and Analyze the Sexual Assault Collection Kits (SAECK) from All Kentucky Law Enforcement Agencies.*

The Kentucky State Police Forensic Laboratory has been awarded more than \$1.9 million to outsource and analyze up to 3,300 backlogged sexual assault kits. This grant funding, provided from the District Attorney of New York County (DANY), comes as part of the \$38 million grant (with funds from forfeitures) that will assist 20 states facing sexual assault evidence backlogs. Additionally, the Bureau of Justice Assistance will provide \$41 million in similar funding.

- District Attorney of New York provided funding through a competitive grant application process
- \$1,973,400 allotted to KSP for the testing of sexual assault evidence collection kits by a vendor laboratory
  - Contract for testing awarded to Sorenson Forensics in Utah
  - \$624/kit



# DANY Grant

- ~3,200 kits were shipped by April 2017
- Results of testing will be reviewed by KSP Laboratory to determine CODIS eligibility
- Notification regarding the status of each DANY kit will be made to the Law Enforcement Agency with along with the Commonwealth Attorney, KASAP, and the Attorney General
- Law Enforcement Agency and Victim's Advocate will utilize notification protocol to advise Victim of kit status

## Other Sexual Assault Kits to Submit

You should also re-submit any kit that meet the following criteria:

- Kit was requested to be returned unexamined
- Positive serological results that were not forwarded for DNA analysis
- Evidence was forwarded but analysis was suspended prior to DNA analysis commencing

***Please Note:** Additional information will be needed prior to resubmission of these kits. If your agency has such cases, an inventory request form can be emailed to your jurisdiction upon request.*



## Other Sexual Assault Kits to Submit

- KSP Investigators are going back to cases that had positive serology results from the 70's, 80's and 90's
- Asking these kits to be sent back in so that we can attempt DNA.
- Some of these cases are thought to be serial offenders.



# Resources



## Focus on Forensics

OCTOBER 2015



**SPECIAL POINTS OF INTEREST:**

- Get details about the sexual assault initiative.
- The continuing lab history series focuses on "serology"
- Follow the evolution of the sexual assault evidence collection kit
- Sign up now for the Laboratory Basics workshop!

**INSIDE THIS ISSUE:**

- Lab History: Part 8
- SAECK
- Lab Basics: Seeking opportunity
- Discussion for SAECK information
- Description of Evidence
- Submission of Forensic Biology and DNA Acceptance
- Submission of General Forensic
- Laboratory Case number system

**In light of the recent news reports regarding the sexual assault kit backlog nationwide and Kentucky's own investigation into the backlog, this newsletter is devoted to providing information on Sexual Assault Evidence Collection Kit (SAECK) testing. We hope to provide information on how the KSP laboratory plans to address the backlog as well as to provide useful information to those of you dealing with investigations or the legal side of those cases.**

### Submit the Kit- KSP's Sexual Assault Kit Initiative

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**How It Began . . . . .**

In 1999, New York City discovered approximately 17,000 sexual assault evidence collection kits (SAECK) in their storage facilities. From 2000 to 2003 they were able to eliminate this backlog, which resulted in 49 indictments. They have now vowed to assist other jurisdictions to eliminate sexual assault backlogs and prevent future backlogs. The City of Detroit discovered a similar problem of more than 11,000 kits in 2009. They proceeded with analysis of these kits (currently 10,000) resulting in 2,478 matches in the Combined DNA Index System (CODIS) including the identification of 469 serial rapists and have obtained 21 convictions. In 2010, Illinois signed into law the Sexual Assault Evidence Submission Act which resulted in the receipt of 4,000 previously untested kits (as of 2013) from which there were 927 CODIS matches. In 2013, the City of Houston discovered more than 6,000 kits, analysis of which has resulted in 850 CODIS matches. The stories go on and on and on— now with your help, the KSP Forensic Laboratory will begin the process of eliminating the SAECK backlog in Kentucky.

More than a decade ago, the KSP Forensic Laboratory started receiving federal funding to assist with the processing of backlogged cases. Initially, the funding was limited to sexual assaults with unknown suspects and throughout the years now encompasses any backlog case. As these changes occurred, we encouraged the submission of all sexual assault cases in order to prevent having hundreds, or even thousands, of kits on the shelves of the more than 450 agencies which the KSP Laboratory serves. However, we now realize this may not have been understood by all of the jurisdictions we serve.

Because of what we had observed from other jurisdictions in the nation, KSP Forensic Laboratory personnel began requesting information from some of the larger Kentucky agencies in 2012 to determine what, if any, backlog of previously unsubmitted SAECK existed. In 2015, the Kentucky Legislature passed Senate Joint Resolution 20 (sponsored by Senator Harper-Angel) directing the Kentucky's Auditor's Office to conduct an audit and determine how many un-submitted kits are still on the shelves of Kentucky law enforcement agencies. In the [audit report](#) State Auditor Adam Edelen indicates that 3,090 sexual assault kits are awaiting testing statewide, both on the shelves of law enforcements agencies and at the lab. The grant funding obtained by the laboratory allows for up to 3,300 kits to be tested, so this backlog should be eliminated using the DANY grant funding.



# Resources

KSP Lab Newsletter – Focus on Forensics <http://www.kentuckystatepolice.org/labs.html>

SAFE Exam [http://www.kasap.org/SAFE\\_exam.html](http://www.kasap.org/SAFE_exam.html)

Illinois Law <http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=096-1011&print=true&write=>

Texas Law <http://www.capitol.state.tx.us/tlodocs/82R/billtext/pdf/SB01636F.pdf#navpanes=0>

Debbie Smith Act <https://www.govtrack.us/congress/bills/113/hr4323>

Katie Sepich Act <https://www.govtrack.us/congress/bills/112/hr6014/text> (NOT enacted in KY)

Natasha's Justice Project <http://natashasjusticeproject.org/>

Solving Sexual Assaults: Finding Answers Through Research <https://www.ncjrs.gov/pdffiles1/nij/238483.pdf>

Untested Evidence in Sexual Assault Cases: Using Research to Guide Policy and Practice [http://www.ncdsv.org/images/SAR\\_Untested-evidence-in-SA-cases-using-research-to-guide-policy-and-practice\\_Jan-Feb-2013.pdf](http://www.ncdsv.org/images/SAR_Untested-evidence-in-SA-cases-using-research-to-guide-policy-and-practice_Jan-Feb-2013.pdf)

The Tragedy of Rape Kit Grandstanding, *Crime Lab Report*, Volume 8, Number 3

Webinar: Best Practices for the National Response to Sexual Assault Investigation <https://www.forensiced.org/training/viewcourse.cfm?moduleid=8C855F77-D964-46F0-BE0C-574FA873809E>

Victims of Crime <http://www.victimsofcrime.org/>

Laws About the Sexual Assault Kit Backlog

<http://www.victimsofcrime.org/our-programs/dna-resource-center/untested-sexual-assault-kits/sexual-assault-kit-backlog-laws>

Into the Lab: Mandatory Testing of Sexual Assault Kits

<http://www.victimsofcrime.org/top-links/events/2014/04/25/default-calendar/into-the-lab-mandatory-testing-of-sexual-assault-kits>

Untested Rape Kits: the Issue, the Impact, and the Response

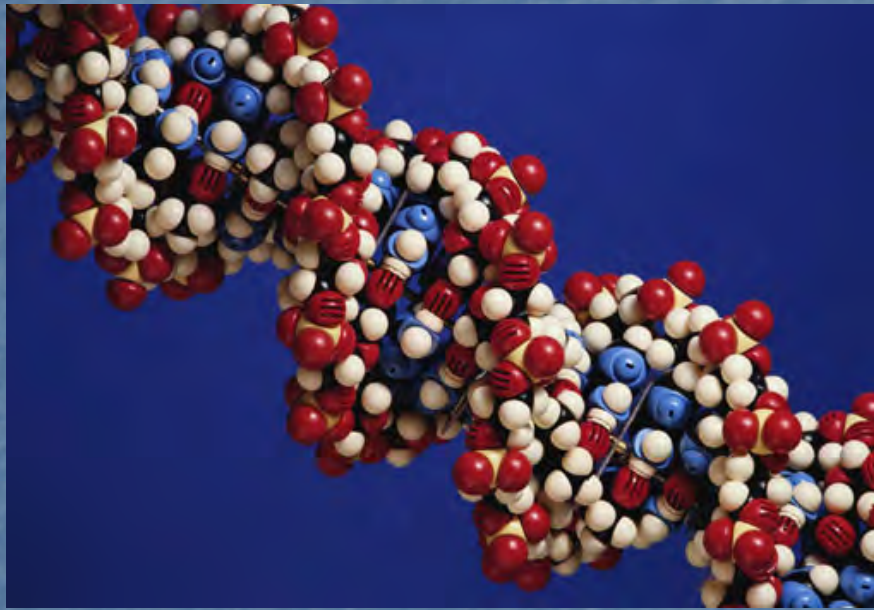
<http://victimsofcrime.org/our-programs/dna-resource-center/training/archived-webinars/2014/06/25/default-calendar/untested-rape-kits-the-issue-the-impact-and-the-response>

Rape Kit Action Project Fact Sheet

<http://victimsofcrime.org/docs/default-source/dna-resource-center-documents/rkap-talking-points---ncsl-revisions.pdf?sfvrsn=2>

KY Auditor's Report [http://apps.auditor.ky.gov/Public/Audit\\_Reports/Archive/2015victimsmatterreport.pdf](http://apps.auditor.ky.gov/Public/Audit_Reports/Archive/2015victimsmatterreport.pdf)

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If you ever have  
any questions,  
please call.

We're happy to  
help anytime!

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