



## Crime Against Women: Scientific Evidences, Preservation, Collection and Forensic Crime Investigation in Sexual Assault Cases

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### Abstract

Sexual assault cases are at the top of crimes, whether it's a matter of sexual assault with adult women or with innocent girl child of the age of 6 months, there is no discrimination in thought perception of Rapists. Committing Rape is considered as a sexual problem related to adulthood and need, but the rise in cases of Gang Rapes followed by brutal killings by Burning the body or treated it heinously as in the case of Nirbhaya we are not having any satisfactory answer about the mentality of need and commencement of brutality.

**Keywords:** Scientific Evidences; Sexual Assault Cases

### Introduction

Forensic Science is based on Lockard's principal of exchange of evidences between crime scene, criminal and victim. And it is strongly suggestive that if we search for the evidences there are enormous evidences attached to Rapists himself. Rapists often have the perception that if they destroy the female body by burning and other means they couldn't be caught. But in this paper we are highlighting about the various possible evidences which can be found with the criminal and it is not needed to check for the evidences on victim's body. This perception will going to change the mindset of criminal from destroying the victim to destroying his belongings, and it is very sure that however clever the Rapist he would be carrying evidences, and in attempt to destroy these evidences they will involve in creating other evidences.

### Primary requirements

It is high time when every woman if attacked will also do her best effort for struggle. The more one struggle the more is the transfer of evidences. First of all I recommend the use of safety gadgets of any type by the girls/ women. It will help them to get

sufficient time to get rid of unwanted situation. Second thing is to join all your energy centralized to get away of the unwanted circumstances. Third if any ways cannot runaway use anything in your bag as a weapon. Self defence yourself whether learnt or not. Use sand and sharp objects directly in the eyes of Rapists followed by HIT to the genital parts. If then unable to fight try to put as many as hurts to the Rapists. Every women need to break her weakness' and centralize her powers to fight and for self defence. Hurts which a women can cause to the Rapists is use of nails to scratch the skin, face etc of the Rapist, severe bite from teeth, snatching and pulling hairs, buttons, his belongings and thrown them away. Attacking behaviour of women is must to win the battle.

### Secondary requirements

DNA technique is very successful technique to detect the DNA present at crime scene. Important evidences are blood, saliva, sweat, urine, skin tissue and semen. If we studied we found every individual has specific fingerprint impressions, specific eye pattern and specific individual habits of walking, hence footprints, tyre marks etc are also good evidences. Specific habits include smok-

ing, drinking, drug addiction, taking Chewing materials as Gutkha etc. are becoming very significant in collection of and collaboration of Rapists to the crime. Use of toothpick, cigarette - butts, earwax, condom, clothes etc are very important evidences which a criminal gang cannot spoil. Besides every Rapist carries many cells of DNA of Victim with himself after Rape, which he never knows also becomes vital evidences.

Preservation, Collection and Analysis of evidences related to Sexual assault cases are the main steps for cracking of crime.

The honourable Minister of women and child development Smt. Maneka Gandhi showed concern on the rising sexual assault cases and little conviction of Rapists due to incorrect collection preservation of crime evidences.

In this paper we call every women to participate to know her rights and to know about to tell straight about the crime and possible evidences about the crime. As today the world is scared of the news of Rapes and brutal murders, it is high time to get the Criminals scared of the power of women.

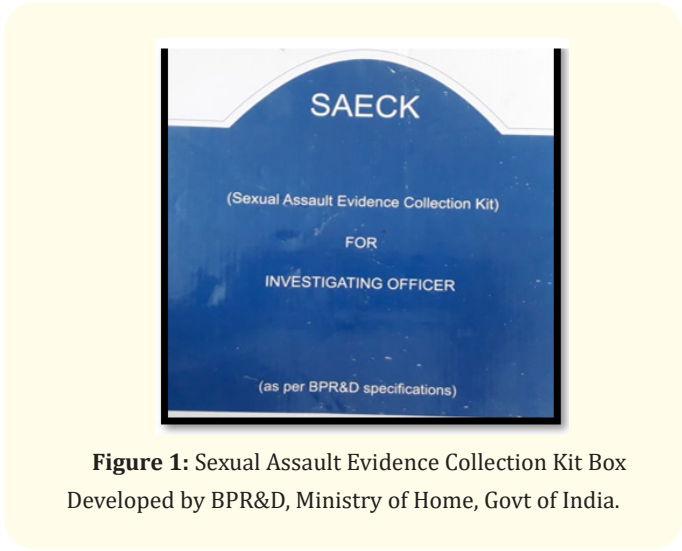
DNA is a heredity material which is found in every cell and determines individuality of a person. Every persons DNA is different, except for identical twins. DNA Profiling is a Forensic technique in criminal investigation that compares suspects DNA profiles from the crime scene evidences so as to assess the likelihood of their involvement in the crime. DNA evidence can be collected from blood, saliva, sweat, urine, skin tissue and semen.

Standard Operating Protocol for collection of DNA Evidence with Sexual Assault DNA Evidence Collection Kit is available at police stations. Its scientific use is very important.

1. Shoe cover, cap, hand gloves, Apron are used to protect examiner from the hazardous effects of biological evidences, simultaneously to protect the crime scene.
2. Alcohol swab for removing any adhere outside evidence.
3. Gauze swab is used for the collection of blood sample from the pool of blood present at the crime scene.
4. Cotton swab sticks used for the collection of blood, semen, and saliva
5. Foam tip swab provides extra large tip of size of swab

6. EDTA Vials liquid blood is collected in EDTA Vials for long preservation. EDTA prevents clotting of blood sample by chelating calcium, an essential component of coagulation of blood samples.
7. Sterile syringe reduces the chance of spreading of many diseases like STDs, AIDs and viral infection.
8. Sterile water is used to moisten the cotton swab which is used to lift the dried blood samples.
9. Ampoule of saline is use for serological purpose of blood group
10. Ampoule of phosphate buffer is use to maintain a constant ph of biological fluid. It prevents the degradation of DNA
11. FTA Card is a chemically treated filter paper designed for collection, preservation, and shipment of biological samples for subsequent DNA analysis. Special chemical lyse and inactivate bacteria and viruses and preserve their DNA for detection by PCR.
12. In this card no risk of spreading infectious agents due to chemicals involved.
13. Transportation at room temperature.
14. Filter paper used for collection of samples of saliva or any other evidences wet sand particles.
15. Sterile plastic container used for collection preservation of tissues, swabs or any liquid matter
16. Nails, hairs, pubic hair, head hair, bones, teeth etc are dried in air at room temperature taken on Filter paper or Butter Paper; preserved and packed and send for analysis.
17. Dry blood, Dry semen, Saliva scratched from surfaces, scratching taken on Filter paper put in cloth packets properly sealed.
18. Wet blood, Tissues, Organs and Foetus parts are collected separately in containers.
19. Comb is used to collect hairs, fibres from the victims' cloth parts as well from the clothes of suspects.
20. Scale is used to measure the dimension of evidences whenever required. It is also used during photography so that photos cannot be altered after investigation.
21. Nail cutter to take nail clippings and scrapings from the victim/ suspects

- 22. Biohazard disposable bag for secure disposal of biohazard waste such as syringe, gloves, shoe cover any other biological waste.
- 23. Evidence collecting envelopes are used for various purposes such as storage and transportation.
- 24. Scissor for cutting any material as cloth piece with a small stain present at the crime scene.
- 25. Forceps is used to pluck, picking, and lifting of nails, hairs, fibres as these are trace evidences.
- 26. Surgical blade for scraping of the blood stain from the unmovable items present at the crime scene.
- 27. Dropper is used for spotting the blood stain on FTA card.
- 28. Forensic Magnifier lens is used to search for trace evidences and their magnifying pictures and identification of fingerprints etc.

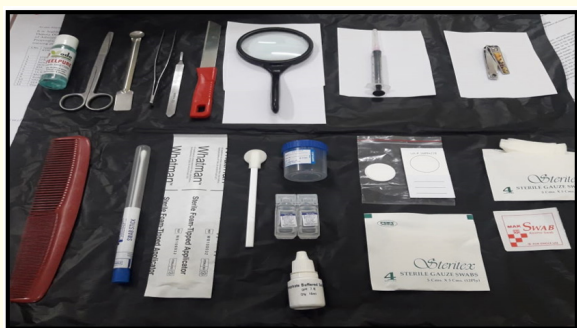


**Figure 1:** Sexual Assault Evidence Collection Kit Box Developed by BPR&D, Ministry of Home, Govt of India.

**SAECK Consists of following items:**

S.No.	Items	Qty.
1	Gloves	03
2	Face Mask	03
3	Gown	03
4	Cap	03
5	Shoe Cover	03
6	Bio-Hazard disposable bag	03
7	Hand Towels	03
8	Sterile Gauge	03
9	Filter Paper (Whatman)	05
10	Alcohol Swab	04
11	Hand Sanitizer	01
12	Forensic Magnifier Lens	01
13	Surgical Blades	01
14	Forceps	01
15	Scissors	01
16	Dropper	02
17	Syringe	02
18	Ampoule of Sterile Water	02
19	Ampoule of Saline	02
20	Ampoule of Phosphate Buffer	02
21	EDTA Vials	01
22	FTA Card with pouch (Whatman), with 2 driccant per card	02
23	Surface Swabs (foam tip application) (Whatman)	04
24	Cotton Swabs	05
25	Sterile plastic container	03
26	Evidence collecting envelopes	12
27	Butter paper	05
28	Sticker Sheet A-4	01
29	Tamper proof Tape	05
30	Stainless steel spatula spoon end for scraping evidence material	01
31	Scale	01
32	Comb	01
33	Nail cutter	01
34	SOP Instructions Book	01

**Figure 2:** Scientific Aids in Sexual Assault Evidence Collection Kit Box Developed by BPR and D, Ministry of Home, Govt of India.



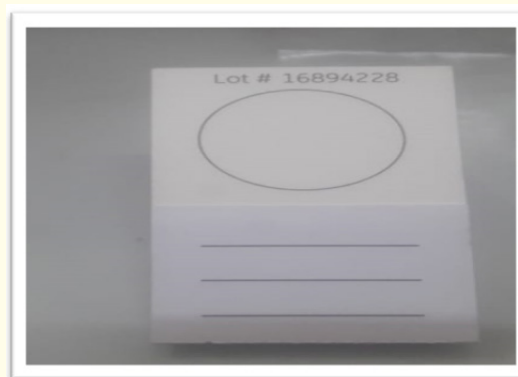
**Figure 3:** Scientific Aids in Sexual Assault Evidence Collection Kit Box Developed by BPR&D, Ministry of Home, Govt of India



**Figure 4:** Magnifying Lens, FTA Card, Knife, Forceps, Scissors, sterile foam tipped Applicator, Nail cutter, Paper, Filter Paper



**Figure 5:** Ampoule of phosphate buffer, normal saline for wetting of dried stains of blood and evidence.



**Figure 7:** FTA Card.



**Figure 6:** Paper Envelop, Seal, Syringe, Sterile Gauze swab, Sterile Plastic Container, FTA Card.

Any evidences recovered at crime scene in form of dried spots are collected via scratching through surgical blade taken by spatula collected on butter paper or filter paper dried further and packed in an envelope.

Any wet stains are taken by surface swab, sterile cotton swabs, cotton gauzes are used to put on the wet stains and coiled by forceps to get it soaked applying round on the surface and then air dried at room temperature preserved and collected in paper envelope (Figure 7).

Any tissues are collected in Plastic containers already sterilized by chemicals. To remain the blood sample as such it is required to keep it in EDTA Vials.

Foam tipped swabs are used to take dried and trace spots available on walls and beneath surfaces where it is difficult to collect evidence.

The sample of blood is collected via syringe or dropper and very little amount of the biological evidence is spotted three to four times on separate parts in the mid of FTA card circle. The collection of biological sample viz., sputum, saliva, semen in this way helps in subsequent DNA analysis. This card helps to maintain the desired DNA stored for a very long period of time without affected by bacteriological and viruses attack.

**Conclusion**

The sexual assault evidence collection kit is extremely useful for working forensic scientists at crime scenes, investigating officers of Police in cases related to sexual assault, medical jurist to collect blood samples and other relevant evidences from victim as well as of suspects.

The use of SAECK Kit helps the investigators to protect themselves from unwanted exposure of the dead decays, microbial activities, diseases etc and also to protect the crime scene from unnecessary evidences may be left at crime scene during investigation. The use of head cap, gloves, shoe covers and masks and Apron in this regards helps it completely. Proper preservation and collection of articles present in traces helps to correlate presence and involvement of culprit and innocence of suspects in malafide cases. Trace evidences as hairs and fibres of criminal at scene and on clothes of victim and vice versa helps to form chain of evidences and reconstruction of crime scene.

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