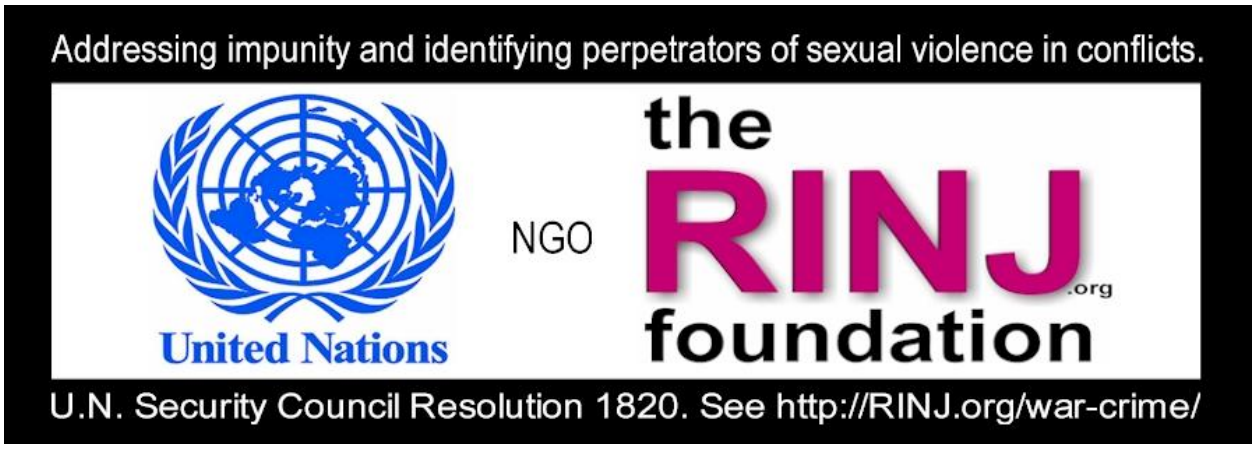
The RINJ Foundation



DNA testing in order to extract a profile

Semen confirmatory tests will not alone help identify the perpetrator. In order to do this, investigators need a DNA profile. A DNA profile is essentially a set of numbers which will highlight the polymorphic regions on a person's DNA; these regions are unique to the individual and a complete DNA profile can help accurately discriminate between different people. No two individuals can have the same exact DNA profile (with the exception of monozygotic twins). Once the DNA profile has been extracted it can be compared to the DNA profiles of any suspects to look for a match. In cases where no match is found, investigators and police might run a search in a DNA database. A DNA database will contain the DNA profiles of convicted criminals (the criteria for adding a person's DNA profile into a government DNA database vary from country to country; moreover, there may be a time frame after which a DNA profile will be removed from the database). The USA has CODIS (the Combined DNA Index System), compiled and run by the FBI, as well as the National DNA Index System (NDIS). If a DNA profile extracted from a sample at rape scene is matched with a DNA profile in CODIS or NDIS, the identity of the suspected perpetrator may be known. However, a match between two DNA profiles does not necessarily confirm the person is guilty of the crime and is the true perpetrator. Other evidence will be needed to support the case.

Preserving evidence

Following rape or assault, the victim's first instinctual reaction is to shower or wash — metaphorically, physically and psychologically cleansing themselves of the abuse suffered but in the process, also washing away any DNA evidence. Victims should refrain from changing clothes, washing, drying or brushing their hair; move, discard or touch any object the offender may have handled or clean the area in which the incident took place. At this point the preservation of DNA evidence is pivotal and washing away the evidence could hinder investigations, making it very difficult to have any tangible evidence an assault did take place. It is not uncommon for victims to feel uncertain about whether to report the crime — if they choose not to do so they should immediately opt for a medical forensic examination in a hospital (usually carried out by a sexual

assault nurse examiner (SANE) or sexual assault forensic examiner (SAFE) who can store DNA evidence appropriately). The forensic medical examination can be quite taxing for the victim as it can take several hours to complete. The victim does, however, have a right to refuse any aspect of the examination they are not comfortable with. A full examination of the body is recommended and samples of hair, urine, vaginal swabs or blood may be taken. Any injuries sustained as a result of the assault will also be documented, described and photographed. Medical measures to prevent disease, known as post-exposure prophylaxis (PEP), may also be taken. Post-exposure prophylaxis may stop a virus from becoming established in the body of a person who has recently been exposed and enable the body to provide protection against the virus. One of the main diseases for concern in cases of rape or sexual assault is HIV. Antiretroviral drug treatment is used in such cases.

DNA Rape Test Kit explained

A DNA rape kit enables collection of biological material in cases of rape or sexual assault and may be used in cases of rape or sexual assault. A kit can also be referred to as a sexual offense evidence collection (SOEC) kit or Physical Evidence Recovery Kit (PERK). The kit is normally used by forensic experts to collect samples from the body of the victim. Inside the kit, one finds slides, swabs, white sheets, plastic bags and other items which can be used to store, analyze or preserve samples of semen, body fluids or hairs. The kits used are the essential tools provided to the victim and are used to collect whatever forensic biological evidence that may have been left. The evidence is most often semen collected either directly from the body of the victim — from the body itself or from non-living items such as undergarments or sheets. In a given situation, the material can be collected and analyzed by a forensic technician and then sent for examination in a laboratory. In an ideal case, the forensic samples collected, meaning the semen, saliva, skin or other biological material, are provided to a laboratory, which can then administer a full DNA analysis. The results in some cases can be used by law enforcement officers or a legal entity to bring the assailant to justice or provide cause for arrest.

Proving a sexual assault with DNA

While the forensic testing of genetic material can resolve many legal situations, it is not always a simple task. The tests performed by laboratories on DNA are only available to identify a person or persons who have provided their samples for analysis. There is currently no central database that contains all human beings' genetic information. The reality is that technology can provide a match only: meaning if there is a forensic sample and there is a separate test performed on a suspect, the analysis can only tell if the two are a match or not.

Recently, new options have surfaced to assist in identifying an unknown assailant. However, it's a small sample when compared to the population at large. In many places around the world — in the United States for instance — a person charged or convicted with a crime (depending on the state in question) will be forced to submit their DNA to a

criminal database. When a law enforcement agency is investigating a given sexual assault it is possible that they can compare their forensic samples to the database in hopes of finding a match. In other cases once there is a suspect found or identified, testing of this person can be required in order to prove or disprove their involvement in the crime. This technology is relatively new and laws protecting citizens from agencies looking at database DNA are constantly evolving.

For how long can DNA forensic evidence be kept?

DNA is relatively stable. It is most likely that forensic samples collected from a rape victim will yield results: however, time factors, chemical factors (such as washing using soaps and detergents), external factors (such as temperature and humidity) and internal factors (other bodily fluids) may affect the validity of a sample. The earlier samples are collected and tested the higher the chances of yielding solid, reliable results. The following are just some guidelines as to how long different DNA samples may remain viable:

- DNA from fingers in vagina — up to 12 hours.
- DNA from a penis — most likely to obtain a profile from the victim within the first 12 hours.
- DNA from skin to skin contact (e.g., on bruises, or from kissing) can be detected up to two days. This includes detection of body fluids, cellular material and lubricant. If by chance, the person has not bathed or showered then the Forensic Science service says that the relevant area can be swabbed up to 7 days after the incident.
- Fingernail scrapings — two days.
- Oral (saliva and mouth swabs) — two days.
- Lubricant from a condom — up to 30 hours.
- Anal — up to three days.
- Vaginal — up to seven days.
- Fibers of anything put on the head can last up to seven days.
- Semen can be detected on clothing despite washing.

In some cases of assault, the assailant may not have ejaculated, meaning no semen will be present on the victim’s body, and genetic evidence from semen cannot, thus, be extracted. In such cases all semen tests will fail. Alternative genetic evidence linking the perpetrator to the victim could be collected, including saliva samples from places where the assailant has licked the victim or cells from the perpetrator's penis that have been left behind in the victim's vagina.