

## GLOSSARY OF FORENSIC TERMS

*Please Note: This list of terms has been created from various sources used by SAFEs. It is not an exhaustive list, and terminology used in any particular program may differ from this, and may be determined by local practice, policy and procedure!*

**Abrasion-** Superficial damage to the skin. It is the scraping away of a portion of skin or mucous membrane, resulting when the skin contacts a rough object with sufficient force.

**Acid phosphatase-** an enzyme found in many tissues but is 500 to 1000 times more active in human semen than any other body fluid. May be used forensically as an indicator for the presence of semen.

**Acroposthitis-** Inflammation of the prepuce

**Acquittal-** A courtroom verdict in which a criminal defendant has not been found guilty.

**Adnexa-** The 'appendages' of the uterus, usually including the fallopian tubes, ligaments and ovaries.

**Adolescence-** Period of transition, from the beginning of puberty until sexual maturity.

**Adult-** The sexually mature individual: those 18 years and older

**Advocate-** A person who aligns themselves with the patient, providing emotional support, referral services for follow-up, contact with social services, legal assistance, arrangements for transportation, presence in court, and for other needs.

**Affect-** Externally displayed mood, emotional tone or feeling.

**Alleged-** An assertion before proving. A claim yet to be proven.

**Allele -** Any of several alternative forms of a gene or STR locus found at the same point on a particular pair of chromosomes

**Alternative light source-** A 450 nanometer visible blue light: when this light illuminates the skin, there may be an augmentation in the appearance of pattern injuries when viewed through colored blocking filters (Golden, 1994)

**Amenorrhea-** absence of the menses.

**Anal Canal-** Terminal portion of the large intestine, extending from the rectum at the dentate line to the anus.

**Anal dilatation-** Immediate opening (within 30 seconds) of the external and internal anal sphincters with minimal traction on the buttocks.

**Anal fissure-** A superficial break or split in the peri-anal skin...

**Anal fold flattening-** A reduction or absence of the anal folds: occurs normally when the external anal sphincter is partially or completely relaxed.

**Anal folds-** see peri anal folds

**Anal laxity-** Decrease in muscle tone of the anal sphincter, resulting in dilatation of the anus.

**Anorectal line-** the line where the rectal columns interconnect with the anal papilla: also called the dentate line.

**Anal skin tag-** A protrusion of perianal tissue that interrupts the symmetry of the perianal skin folds: does not smooth out with traction.

**Anal venous congestion-** Pooling of venous blood in the perianal tissues resulting in a purple discoloration, which may be localized or diffuse.

**Anteflexion-** the bending of an organ so that it's top is thrust forward.

**Anthropology (forensic) -** generally speaking, the forensic anthropologist is a skeletal biologist who applies what is known about human skeletal variation to the individual case by developing a profile (age, sex, ancestry, stature)

**Anus-** The anal orifice; the outlet of the large bowel, opening of the rectum.

**Appeal-** a request made after the end of a trial, asking a higher court to decide whether the trial was conducted properly.

**Areola-** The darkened area surrounding the nipple of the mammary gland.

**Arraignment-** first court appearance; the defendant may plead guilty, not guilty, or no contest.

**Autopsy** – The dissection of a corpse in order to gain medically relevant evidence, usually related to the cause and time of death. A medico legal (forensic) autopsy is ordered by the coroner or medical examiner, as authorized by law, with the statutory purpose of

establishing the cause and manner of death and answers other medico legal questions.

**Atraumatic-** not producing injury.

**Bacterial Vaginosis-** A condition in which the lactobacillus of the vagina are replaced with high concentrations of anaerobic bacteria, *Gardnerella vaginalis* and *mycoplasma hominis*; symptoms are vaginal discharge and malodor.

**Balanitis-** Inflammation of the glans penis.

**Balloon Technique-** a forensic examination technique which involves using a foley catheter balloon, inserted in to the vagina and inflated, to assess the hymen.

**Bayesian** - A method of combining the likelihood ratio with additional a priori information to produce an overall estimate of the strength of a piece of evidence, named after the Rev. Thomas Bayes, eighteenth century British mathematician. (1702-1761).

**Bindle-** a sheet of paper folded in such a way as to contain evidence in a secure manner.

**Biology (Forensic)** - Biology, the study of life, is fundamental to Forensic Science and Medicine. The boundaries and sub-divisions within are fluid, but its application to death and crime scene investigations is essential. Cellular and molecular biology, genetics (and other sub-specialties focusing on human populations) and biomedicine benefit - and benefit from - the investigation of practitioners of the Forensic Sciences.

**Biological Evidence** - Any type of biological matter including blood, urine, semen, feces, tissue, skin cells, decomposition fluid, saliva, tears, mucus, perspiration, vomit, and pus.

**Biometrics-** The use of physical features and characteristics such as face, fingerprints, handwriting, retinal patterns to identify a person because those features and characteristics are unique to that individual.

**Blood Spatter** - A wound that causes blood to flow provides Forensic scientists trained in the properties of blood and in analysis of its behavior with important information. For instance, from the diameter, shape and pattern of blood spatter, the position of the victim, and sometimes of the weapon or person wielding the weapon, can be determined.

**Bruise-** A blotchy, superficial discoloration due to hemorrhage into the tissues from ruptured blood vessels beneath the skin surface, caused by force, without the skin itself being broken; also called a contusion.

**Buccal sample/swab** - a sample collected by rubbing a sterile swab on the inside of the mouth or cheek. This transfers loose skin cells onto the swab, cells which can then be used to generate a DNA profile.

**Buttock-**either of the two fleshy masses formed by the gluteal muscles on the posterior aspect of the trunk.

**Bull's eye injury-** A patterned injury assuming the shape of the offending object, whether circular, oval or rectangle, there is a pale center with a hyper vascular or petechial surrounding area.

**Candidiasis-** Common fungal infection of moist areas of the body. Also known as a 'yeast infection'. Women with vulvo-vaginal candidiasis may experience genital itching or burning, with or without a "cottage cheese-like" vaginal discharge. Males with genital candidiasis may experience an itchy rash on the penis.

**Cervical os-** opening in the cervix leading in to the uterine cavity.

**Cervicitis-** Inflammation of the cervix.

**Cervix-** The neck of the uterus, penetrated by the cervical canal, it is about 2.5 cm in length, with a rounded surface that protrudes into the vagina; for descriptive purposes the rounded surface is divided in half at the cervical os, into the anterior and posterior cervical lips.

**Chain of Custody/Evidence-** A continuous succession of persons responsible for the evidence with the purpose to ensure there is neither alteration nor loss of evidence: the documentation of the chain of custody is a record of times, places, and persons who have been responsible for the evidence. Transfers should be kept to a minimum and when transfers are made, they should be documented carefully. All transfers of custody of evidence must be logged with: the name of the persons transferring custody-the name of the persons receiving custody-and the date and time of each transfer: the documentation may be attached to the evidence envelope.

**Chancere-** Primary lesion of syphilis. A true chancre begins as a papule which breaks down into a reddish ulcer, generally firm with little or no pain; frequently located on the external genitalia, it may be on the lips or fingers.

**Chlamydia-** One of the most common sexually transmitted diseases in the world, caused by Chlamydia trachomatis bacterium . It causes nongonococcal urethritis and PID (pelvic inflammatory disease), (blindness caused by flie not sex.)

**Chromosome** - a rod-shaped structure found inside most human cells. Consist mainly of long coils of DNA, and as such are the storage unit of DNA in the cell. Humans have 23 pairs of chromosomes; one set of 23 inherited from the father, the other set from the mother.

**CI(BS) Act** - the Criminal Investigations (Bodily Samples) Act 1995. This was originally passed in 1995 as the Criminal Investigations (Blood Samples) Act and was amended to its current form in 2003. The Act deals with regulations regarding samples for use on the National DNA Database.

**Clitoris-** erectile tissues structurally analogous to a male penis The outside portion of the clitoris, the clitoral glans, is entirely or partially covered by the clitoral hood or prepuce The clitoral body then extends several centimeters upwards and to the back, before splitting into two arms, the clitoral crura., Shaped like an inverted "V", these crura extend around and to the interior of the labia majora.

**CODIS** - CODIS stands for Combined DNA Index System, the Federal Bureau of Investigation (FBI) FBI Laboratory's database that enables federal, state and

local crime labs to exchange and compare DNA profiles electronically. This exchange makes it possible to link crimes to each other, and to convicted offenders. CODIS was made possible by the DNA Identification Act of 1994 that formalized the FBI's authority to create a national DNA index for law enforcement purposes. After CODIS identifies a potential match, qualified DNA analysts in the laboratories contact each other to validate the match.

**Coitus-** Sexual intercourse between man and woman by insertion of the penis into the vagina.

**Cold Hit** -The matching of physical evidence from a crime scene with no suspect to a sample from a database of DNA collected from convicted felons and arrestees results in a "cold hit."

**Colposcope** – a binocular instrument with a magnifying lens: it provides the ability to photo document genital injuries. Fifteen times magnification is commonly used, but the possible range is 5 to 30 times: the photographic record of the genital area is useful for consulting and as court evidence: it supports the physical findings: video camera recording may also be a feature: colposcopy magnification improves the identification of microscopic injury from 10% to to 30% without colposcopy to 87% with colposcopy (Slaughter, Brown, 1992); handheld magnifiers without camera are used by some to detect micro injury

**Condylomata acuminata-** Genital or perianal warts caused by the human papilloma virus (HPV)

**Condylomata lata-** Papules of secondary syphilis.

**Conjunctiva-** The delicate membrane lining the eyelids and covering the eyeball.

**Contusion-** bruise: An injury in which the skin is not broken, there may be discoloration, pain and swelling as a result of blood seepage under the surface of the skin.

**Copulation-** Sexual Intercourse: also called coitus, concubitus, oral copulation occurs with the entry of the penis into the mouth of the sexual partner

**Coroner** - A coroner is a public official, appointed or elected, in a particular geographic jurisdiction, whose official duty is to make inquiry into deaths in certain categories. The office of the coroner or "crownner" dates back to medieval days when the crownner was responsible for looking into deaths to be sure death duties were paid to the King. The coroner's primary duty in contemporary times is to make inquiry into the death, assigning a cause and manner of death and listing them on the certificate of death. The cause of death refers to the disease, injury or poison that caused the death. The coroner also decides if a death occurred

under natural circumstances or was due to accident, homicide, suicide or undetermined means or circumstances.

**Criminal Profiling** - Forensic psychologists and psychiatrists engage in two distinct types of profiling. Inductive profiling is the process of profiling criminal behavior, crime scenes, and victims from the known behaviors and emotions suggested by other criminals, crime scenes, and/or victims. Deductive profiling is the Behavioral Evidence analysis of a specific criminal, crime scene(s), and victim(s) exclusively from forensic evidence relating to the crime scene(s) and victim(s) of that offender alone.

**Cunnilingus**- Sexual activity in which the mouth and tongue are used to stimulate the female genitalia.

**Cut**- the dividing of the skin as a result of a sharp object coming against the skin with sufficient force to divide the skin: a cut is commonly confused with laceration, which is due to blunt force.

**Cyst**- fluid filled elevation of tissue.

**Dentate line**- Location where the rectal columns interconnect with the anal papilla; also called the ano rectal line.

**Diastisis ani**- A congenital midline smooth depression that may be V-shaped or wedge-shaped, and is located wither anterior or posterior to the anus: a result of failure of the fusion of the underlying external anal sphincter muscle.

**Diener** - (from the German for servant) - A morgue employee who is an assistant to the autopsy process.

**Double Helix** - In 1953, James Watson and Francis Crick discovered the molecular structure of DNA and its unique double helix, which appear as two coiled spiral forms connected by tiny "rungs."

**DNA** - Deoxyribonucleic acid is the basic unit of genetic information. The examination of DNA is becoming increasingly important to sophisticated criminal and death investigations.

**DNA Sequencing** - The process of deciphering the precise order of nucleotide bases in a DNA molecule.

**Dyspareunia**- painful coitus

**Dyspermia**- difficult or painful emission of sperm during coitus

**Ecchymosis** An irregularly formed hemorrhagic area of the skin: the color is blue-black, changing to greenish brown or yellow.

**Ectropion-** Exposed columnar epithelium from the cervical canal that appears as a symmetrical circumscribed redness around the cervical os: also called eversion.

**Ejaculation-** Forcible, sudden expulsion, especially expulsion of semen from the male urethra, a reflexive action that occurs as a result of sexual stimulation.

**Elderly-** typically those persons over age 65.

**Entomology (Forensic) -** The study of insects.

**Epididymis-** tube that passes from the testes to the vas deferens.

**Erosion (cervical)-** An alteration of the epithelium on a portion of the cervix as a result of irritation.

**Erythema-** Diffuse redness caused by capillary engorgement in the lower layers of the skin. It can occur with injury, infection or inflammation.

**Facial Recognition** - In 2001, Tampa police became the first in the US to use surveillance cameras (positioned in public areas) and facial recognition software to identify felons as well as runaways and missing persons in public places. The software creates a "map" of the face and then identifies 80 distinctive points. To achieve a match, 14 of those points must align with a database picture, often a mug shot.

**Facial Reconstruction** - Reconstruction of unidentified human remains is done by modeling clay, representing muscle, tissue and skin, over the skull. On the forehead, margins of the eyes, cheekbones, bridge of the nose, above the lips, and the chin, facial shape is closely related to skull contour. However, the shape of the eyes and eyelids, the tip of the nose, and the lips cannot be predicted from the skull, and these are important features in facial recognition. Advances in 3-D computer modeling are aiding in and may soon replace a sculpted facial reconstruction.

**Fellatio-** Oral stimulation of the penis.

**Felony-** Generally, a crime for which the maximum punishment is one year or more in jail. Additional penalties can include the following: fine, restitution, or probation. The definition varies by jurisdiction, but rape is generally a felony offense.

**Fingerprint** - The fingerprint is the unique skin-surface pattern of whorls and ridges that varies among all people. Fingerprints can be enhanced and compared using computed automated systems, such as AFIS.

**Forensic:** Dealing with the application of scientific knowledge to legal problems and legal proceedings as, for example, in forensic anthropology, forensic dentistry, forensic experts, forensic medicine (legal medicine), forensic pathology, forensic science, etc.

**Forensic Science** – The application of a broad range of sciences to answer questions of interest to the legal system. As practiced today, Forensic Science is a high-technology field using electron microscopes, lasers, ultraviolet and infrared light, advanced analytical chemical techniques, and computerized databanks to analyze and research evidence.

**Fornix-** vaginal- anterior and posterior spaces in which the upper vagina is divided: the spaces are formed by the protrusion of the cervix in to the vagina.

**Fossa navicularis-** cavity anterior to the posterior fourchette and posterior to the hymen.

**Friction-** the act of rubbing

**Frottage-** sexual activity without penetration, which can include any form of sexual rubbing, whether naked or clothed for arousal or orgasm.

**Gardnerella vaginalis-** pathologic bacteria; sexually transmitted.

**Gene** - a section of DNA that contains the genetic information contained in the DNA of an organism.

**Genital warts-** Also called venereal warts and condylomata acuminata: caused by the human papilloma virus (HPV).

**Genitalia** (external)- Also called the vulva in females it includes the mons pubis, labia majora, labia minora, clitoris, and vestibule of the vagina: the vestibule contains the urinary meatus, vaginal opening, and vestibular gland ducts.

**Gluteal-** pertaining to the buttocks.

**Gonorrhea-** Sexually transmitted infection caused by the gram-negative diplococci *Neisseria gonorrhoea*. May infect the urethra, cervix, rectum, pharynx, or eyes. Untreated, it may evolve in to bacteremia.

**Hair Microscopy** - In humans, hairs from the head, pubic region, arms, etc., possess characteristics that can determine their origin. Because hairs can be transferred during physical contact (particularly in crimes of violence, such as homicide and sexual assault) their presence can associate a suspect to a victim or a suspect/victim to a crime scene. The examination of human hairs in the forensic laboratory is typically conducted through the use of light microscopy. This examination routinely involves a two-step process—the identification of questioned hairs and the comparison of questioned and known hairs.

**Preliminary Hearing**- A legal proceeding that determines whether there is sufficient evidence for the defendant to stand trial as charged.

**Hemorrhoid**- Varicosities or swelling in the anal and/or rectal areas.

**Hepatitis B**- Caused by the Hepatitis B virus (HBV), transmitted through body fluids containing the virus. In 1981 a vaccine for use in preventing hepatitis B was licensed.

**Herpes genitalis**- A viral infection of the genital and anorectal skin and mucosa with herpes virus type 2: usually spread by sexual contact: there is itching and soreness followed by a small patch of erythema: a vesicle appears that erodes, resulting in shallow, small painful ulcers on red bases: these heal in about 10 days.

**Hymen**- A membranous collar or semi collar that surrounds the vaginal introitus and separates the external genitalia from the vagina: the outer surface is squamous epithelium and the inner surface is mucous membrane: all females have this structure, and there is wide anatomic variation in morphology:

Annular- (circumferential) the hymenal tissue forms a ring like collar around the vaginal opening.

Crescentic- The hymen has anterior attachments at approximately the 11 o'clock and 1 o'clock positions, in a crescent shaped pattern. There is no hymenal tissue at the 12 o'clock position.

Cribiform- The hymen which stretches across the vaginal opening, but is perforated with several holes.

Imperforate- The hymen with tissue completely occluding the vaginal opening.

Microperforate- There is a very small hymenal opening

Septate- the hymen has bands of tissue attached to either edge, creating two or more openings.

## Terms relating to the hymen

**Estrogenized-** Effect of influence by the female sex hormone estrogen, resulting changes to the genitalia: the hymen takes on a thickened, redundant, pale appearance.

**Fimbriated/denticular-** hymen with multiple projections along the edge creating a 'ruffled' or 'scrunchie-like' appearance.

**Redundant-** abundant hymenal tissue that tends to fold back on itself or protrude.

**Hymenal bump-** solid elevation of hymenal tissue; may be seen at the site where an intravaginal ridge attaches to the hymen.

**Hymenal cleft-** A nonacute transection of the hymen that does not extend to the vaginal wall; if the cleft is in the lower poles of the hymen, then it can be a healed partial transection or a congenital variation of normal. The cleft may be an angular or V-Shaped indentation on the edge of the hymenal membrane or curved creating a hollowed or U-shaped depression on the edge of the membrane (see also hymenal transection)

**Hymenal notch-** an indentation or depression at the edge of the hymen.

**Hymenal tag-** Tags of tissue projecting from the rim of the hymen. Most commonly occur in the midline.

**Hymenal transection-** a complete or partial tear or laceration through the width of the hymenal membrane extending to (partial) or through (complete) its attachment to the vaginal wall; if the transection is nonacute and does not extend to the vaginal wall, it is called a cleft; hymenal transections may be associated with acute and nonacute injuries. (Heger, 1996)

**intercrural intercourse-** also known as interfemoral intercourse, placing the penis between a partner's thighs, from the front or rear

**Introitus-** an opening or entrance in to a canal or a cavity as in the vaginal introitus.

**Impotence-** Partial or complete inability of the male to perform the sexual act or to achieve orgasm.

**Incest-** Culturally prohibited sexual activity between persons of close blood or other familial relationship.

**Inflammation-** a tissue response to injury to destruction of the cells with the following symptoms: redness, swelling, heat, and pain.

**Labia Majora-** Outer lips to the vagina: usually covered by pubic hair after menarche; a single lip is called a labium majus.

**Labia Minora-** Inner lips to vagina: in the adult they enclose the structures of the vestibule: a single lip is called the labium minus.

**Labial adhesion-** agglutination or fusion of the labia minora in the midline; most commonly occurs posterior to hymenal orifice; can also be seen anteriorly.

**Laceration-** an injury in the soft tissues resulting from ripping, crushing, overstretching, pulling apart, bending, or shearing: lacerations result from blunt force and are also called tears. Laceration is represented in the acronym TEARS by the T or tear: in contrast to lacerations, cuts come from sharp objects.

**Locard's Exchange Principle** - *Whenever two human beings come into contact, something from one is exchanged to the other*, i.e. dust, skin cells, hair etc. Named for Edmond Locard, b. 1877, who founded the Institute of Lyon's Institute of Criminalistics. Locard is also known for advancing the science of fingerprints. In 1910 he was authorized to start a small forensic laboratory in the Palais de Justice which he directed until 1951. There he worked on criminal identification methods including poroscopy- the microscopic examination of fingerprints; analyses of body fluids, hair and skin; and graphometry (handwriting analysis).

**Locus** - (Loci, pl.) The specific physical location on a chromosome. DNA profiling looks at ten STR loci

**Median raphae-** midline fusion external from the posterior fourchette toward the anus: not a scar; also called the midline commissure.

**Medical Examiner** - When acting in an official capacity, the physician medical examiner is charged, within a particular jurisdiction, with the investigation and examination of persons dying a sudden, unexpected or violent death. The role of a medical examiner differs from that of the non-physician coroner in that the medical examiner is expected to bring medical expertise to the evaluation of the medical history and physical examination of the deceased.

**Misdemeanor-** A crime punishable by one or more of the following: less than 1 year in the county jail, fine, probation, restitution or other punishment. The exact definition and penalty varies from state to state.

**Mitochondria** - Organelles found in the majority of cells in the human body. Each mitochondria contains DNA known as mtDNA which is inherited through the female lineage only.

**Mitochondrial DNA Testing** - in addition to nuclear or chromosomal DNA, each human cell contains the DNA of mitochondria. Typically, a circular molecule of single-stranded DNA consisting of about 50 gene sequences. In each cell, there are thousands of copies of mitochondrial DNA, but only two copies of nuclear DNA or chromosomal DNA. In cases in which there is not enough nuclear DNA to work with, scientists will instead use the mitochondrial DNA. Once a mitochondrial DNA profile is obtained, it can be compared to samples taken from maternal relatives (mother or siblings) - if they match exactly, an identification can be made.

**Mons pubis**- the rounded, fleshy prominence created by the underlying fat pad, which lies over the symphysis pubis in the female.

**Mounting Injury**-Injuries such as tears and abrasions occurring between 5 and 7 o'clock in the posterior fourchette where the penis first touches the perineum with the greatest force, causing the tissue to stretch and tear.

**Nabothian cysts**- retention cysts formed by an occlusion of the mouth of the nabothian glands on the cervix: may follow Cervicitis.

**Neovascularization**- new blood vessel formation in abnormal tissue or in an abnormal location.

**O'clock designation**- A method by which the location of structures or findings may be identified by using the numerals on the face of a clock: the 12 o'clock position is always superior: the 6 o'clock position is always inferior: the position of the patient should be identified when using this description.

**Odontology (Forensic)** - Odontology is the study of teeth. In a death investigation, identity has sometimes been established through analysis of the teeth and accompanying dental prosthetics, fillings and compounds.

**Pathologist** - A physician trained in the medical specialty of pathology, the branch of medicine that deals with the diagnosis of disease and causes of death by means of laboratory examination of body fluids (clinical pathology) cell samples, (cytology) and tissues (pathologic anatomy).

**Pathologist's Assistant** - Typically, a graduate of an associate or baccalaureate program which provides training in several areas of pathology, especially those that involve "hands-on" activities, such as autopsy dissections, dissections of specimens removed at surgery, specimen photography, and video applications.

**Penetration**- Process of entering within a part: the legal definition varies by jurisdiction; in one jurisdiction the legal definition is entering; however slight, a genital or anal opening by a penis, foreign object or body part; the definition of

oral copulation and masturbation require contact only (Office of Criminal Justice Planning, 1987)

**Penis-** Male sex organ composed of erectile tissue through which the urethra passes; composed of the shaft and glans; the glans may be covered by foreskin.

**Perianal folds-** wrinkles or folds radiating from the anus, which are created by contraction of the external anal sphincters.

**Perianal venous congestion-** the collection of venous blood in the perianal tissues creating a flat purple discoloration; may be localized or diffuse.

**Perianal venous engorgement-** Pooling of venous blood in the perianal tissues creating a bluish-purple *bulging* of the tissues; may be localized or diffuse.

**Perineum-** The external surface of the perineal body. Lies between the posterior fourchette and anus in the female and the scrotum and anus in males.

**PERK -** The Physical Evidence Recovery Kit, or PERK, is a kit used to collect evidence.

**Periurethral support bands-** Small bands lateral to the urethra that connect with periurethral tissue to the wall of the vestibule: these normal supportive structures are also called vestibular bands and support bands.

**Petechiae-** Small purplish, hemorrhagic spots on the skin or mucous membranes; may be singular or multiple.

**Polymerase Chain Reaction (PCR) -** When forensic scientists have only a miniscule amount of DNA to work with, such as saliva on a cigarette butt, this process is used to generate a sizable sample. Called PCR--or Polymerase Chain Reaction, the technique allows small pieces of DNA to be cloned. Put simply, in about 20 minutes the PCR process makes it possible to make millions of copies of the tiny original DNA sample so that there is more than enough DNA to test.

**PCR Amplification -** PCR stands for Polymerase Chain Reaction, and refers to a method for increasing small amounts of DNA into an amount that can be more easily analyzed. This is achieved through a copying process that is repeated many times, doubling the number of DNA molecules present at each stage.

**Posterior fornix-** vaginal cavity located beneath the cervix.

**Posterior fourchette-** A tense band or fold of mucous membrane at the posterior commissure of the vagina, connecting the posterior ends of the labia minora: (in the prepubertal child, this area is referred to as a posterior commissure because the labia minora are not completely developed to connect

posteriorly until puberty): the fossa navicularis is the cul-de-sac anterior to the fourchette and that which separates the fourchette from the hymen.

**Prepuce**- a retractable fold of skin over the glans penis or glans clitoris.

**Proctitis**- inflammation of the rectum, may be caused by diseases such as Chron's disease or by sexually transmitted infection

**Proctorrhea**- A mucous discharge from the anus.

**Prostate**- gland that produces semen.

**Prosecuting attorney** - a lawyer representing the state or the people in a criminal trial. The initiator of a court prosecution.

**Prosecutor's Hypothesis** - the prosecutor's hypothesis is assumed to be that the biological evidence seen in a case originated from the suspect. This assumption is used in statistical calculations that evaluate the value of a piece of evidence.

**Puberty**- the state of growth at which the reproductive organs become capable of functioning.

**Puncture**- a wound made by a pointed instrument.

**RFLP Testing** - RFLP, or Restriction Fragment Length Polymorphism, known alternatively as Single Locus Profiling (SLP) was adopted by crime labs in the late 1980's as the first form of discriminating DNA testing. An older method of forensic DNA analysis based on the different sized fragments that can be produced when a piece of DNA is cut by certain enzymes. Replaced by STR analysis due to the large amount of DNA required for it to work, as well as the long time needed for analysis.

**Rape**- The legal definition varies from state to state, but typically includes the following elements: (1) intercourse; (2) either by force, threat of force or with someone incapable of consenting. The crime of rape requires only slight penile penetration; full erection and ejaculation is not necessary; rape occurs to males and females. (Bureau of Justice Statistics, 1995; Burgess and others, 1995), between married persons, and persons of the same gender.

**Rectum**- The final, straight portion of the large intestine, terminating in the anus.

**SART- Sexual Assault Response Team.** A Multidisciplinary team that responds to victims of sexual assault. The goal of S.A.R.T. is to provide an effective, compassionate forensic medical exam to collect evidence and improve

prosecution rates, and to increase the level of safety and support available to victims.

**Scar**- Fibrous tissue that replaces normal tissue after the healing of a wound, as in an episiotomy scar.

**Sentence**- Penalty pronounced by the judge, based on testimony, arguments, legal requirements, precedence and probation department recommendations, there are often substantial differences in the penalty for like offenses.

**Sexual Assault**- The definition of sexual assault varies from state to state. Generally, sexual assault is more broadly defined than rape. According to the U.S. Department of Health and Human Services, sexual assault includes "inappropriate touching, vaginal, anal, or oral penetration, sexual intercourse that [one says] no to, rape, attempted rape, [and] child molestation."

**Sexual Coercion**- is the practice of compelling a person to involuntarily perform sexual acts by use of threats, intimidation or some other form of pressure or force. This may be accomplished by actual or perceived threat of harm physically or psychologically.

**Sexual Dimorphism** - Size and shape variation among human males and females, particularly of the bones of the pelvis and hip, is used by skeletal biologists to establish the basic typing of recovered human remains.

**Short Tandem Repeat (STR) Profiling** - A method of DNA profiling involving the analysis of short lengths of tandemly repeated DNA. This is the most common form of forensic DNA analysis. .

**Sodomy**- Acts of anal penetration

**Soft Tissue Decomposition** - Scientists, using information about weather and environmental conditions, can estimate time of death from analysis of the soft tissue decomposition.

**Skeletal Biologist** - One who studies population based variation in the human skeleton among contemporary groups as well as through time. Skeletal biologists work primarily with hard tissue remains - bones and teeth.

**Synechiae**- any adhesion that binds two anatomic structures through the formation of a band of tissue; a synechia can result in the healing process following an abrasion of tissues.

**Syphilis**- disease caused by the spirochete *trepemona palladium*. Characterized by sequential stages and years of latency; may affect any tissue; the initial lesion

appears as a red papule changing to a painless ulcer (chancre); the papules of secondary syphilis (chondylomata), which must be differentiated from condylomata acuminata.

**Tanner stages-** A classification system which is used to categorize secondary sexual development; the degree of sexual maturation defined by physical evidence of breast development and pubic hair in the female, the testicular, scrotal and penile size along with the location of pubic hair are used in the male ranging from Stage 1 (prepubertal child) to Stage 5 (fully mature adult). (Tanner, 1962)

**Toluidine Blue Dye-** 1% aqueous solution that dyes nucleated squamous cells in the deeper layers of the epidermis exposed by lacerations; deep blue uptake is interpreted as positive for injury. Inflammatory causes, as well as benign or malignant vulvovaginal disease permit dye uptake but in a diffuse pattern. (Lauber, Souma, 1982). Normal vulvar skin does not contain nuclei and therefore does *not* bind or uptake the dye. Toluidine blue dye is effective in dark-skinned people and does not highlight episiotomy scars (McCauley and others, 1987).

**Touch Evidence** - With the advent of ever more sensitive DNA analysis, forensic examiners are now able to analyze "touch DNA evidence" that relies upon processing the skin cells and amino acids found most commonly in fingerprints.

**Toxicology** - The science of toxins and their effects on the human body, including antidotes.

**Tool mark** –any mark which results from the forcible contact of an implement onto a softer surface. Just as each person possesses physical characteristics that are unique to them, so too can an object. A knife blade or bullet possesses distinctive marks from its manufacture or use that the trained Forensic scientist can analyze.

**Traction-** the gentle separation of folded tissue to assess the structure and determine injury.

**Trajectory** - the path a projectile makes through space under the action of given forces such as thrust, wind, and gravity. Ballistics and trace evidence experts can determine the trajectory of objects (ammunition, explosives, etc) by examining a body's entry and exit wounds.

**Trace Evidence** - Any type of physical evidence that may be collected from the crime scene, such as hair, fibers, soil, glue, paint, glass, or explosives residue. Trace evidence can sometimes be a source of DNA evidence. For example, an

explosive device made from an empty plastic soft drink bottle may yield DNA evidence if the mouthpiece of the bomb remains intact.

**Trial-** by judge or by jury where all evidence, information and testimony is presented; it is followed by a judgment of guilty or not guilty. If the defendant is found guilty, then a sentence can be imposed.

**Trichomoniasis-** an anaerobic, parasitic flagellated protozoan is the causative agent, and is the most common pathogenic protozoan infection of humans in industrialized countries. It is sexually transmitted and causes a burning and itching of vulva with yellow-green discharge; most infected males are asymptomatic.

**Ultraviolet Light** - Light-like radiation, invisible to the human eye, that causes certain substances to shine brightly. Forensic scientists use ultraviolet light to reveal the presence of substances that are otherwise undetectable.

**Urethra-**Opening to the bladder

**Uterus-** Reproductive organ composed of a cervix, corpus and fundus.

**Vagina-** Tubular structure with convoluted rugae that stretch anatomically from the hymen to the cervix; the vaginal rugae account in part for the ability of the vagina to distend.

**Vaginitis-** Inflammation of the vagina resulting from infection or postmenopausal changes; atrophic vaginitis is characterized by discharge, burning and soreness; there may be asymmetrical redness around the cervix and friable tissues that bleed with little or no trauma; local estrogen is used for treatment; in contrast, normal vaginal atrophy occurs with decreasing estrogen and is noninflammatory.

**Vas deferens-** Tube from epididymis to the urethra

**Venereal warts** (condylomata acuminatum) - the most easily recognized manifestation of infection by the human papilloma virus (HPV).

**Vestibular bands-** symmetrical bands lateral to the urethra (periurethral bands) or hymen (perihymenal bands) and connect to the vestibular wall.

**Vestibular papillae-** small elevations that are grouped and appear in the area of the vestibule; the papillae occur as a result of hormonally triggered changes that occur in minor vestibular glands at the transitional epithelium; papillae are most typical in adolescents.

**Vestibule of the vagina**- an almond shaped space between the lines of attachment of the labia minora; four structures open into the vestibule-urethral orifice, vaginal orifice, and the two ducts of the Bartholin glands.

**Vulva**- The portion of the female external genitalia consisting of the labia majora, labia minora, clitoris, vaginal vestibule, hymen, fossa navicularis and posterior fourchette.

**Vulvitis**- Inflammation of the vulva.

**Wood's Lamp**- an ultraviolet light, capable of fluorescing semen, some detergents and certain clothing fibers; needs to be used in a darkened room.

**Victim Assistance** - The focus after the crime has been included in a proposed amendment to the US constitution, for legislation to be enacted in a majority of states - which will provide that victims of crime have rights to reasonable notice and not to be excluded from all public proceedings related to the crime - parole hearings, crimes, trials, negotiated

Acknowledgments: Some of these definitions are based on material found in:

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<http://www.esr.cri.nz>

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Encyclopædia Britannica. 2006. Encyclopædia Britannica Premium Service. 6 June 2006

*Special thanks for the expert advice and reviewing assistance from:*

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IAFN President-Elect*

*Teresa P. Scalzo  
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