

DEPARTMENT GENERAL ORDER 06-14

OFFICE of the CHIEF OF POLICE
AMENDS/REPLACES: None

DATE: September 22, 2006

DNA EVIDENCE COLLECTION

I. PURPOSE.

DNA technology has become an increasingly powerful forensic tool for identifying or eliminating suspects through the use of biological evidence found at a crime scene. The following guidelines will provide direction in the identification, collection, preservation, and use of DNA evidence during criminal investigations.

II. DEFINITIONS.

CODIS – The acronym stands for “Combined DNA Index System” and is an electronic database of DNA profiles maintained by the FBI.

Contamination – The undesirable transfer of material to physical evidence (DNA) from another source.

Control samples – A material of a known source that presumably was uncontaminated during the commission of a crime (e.g. unstained section of sheet or carpet). The control sample should be taken adjacent to the biological stain being collected.

Cross contamination – The undesirable transfer of material between two or more sources of physical evidence.

DNA – Deoxyribonucleic acid. The molecule that encodes genetic material. DNA is a chemical substance contained in cells that determines each person’s individual characteristics.

DNA analysis – The process of testing biological evidence to determine DNA patterns or types. This testing can also be used to indicate parentage.

DNA profile – Each person (except identical twins) has a unique DNA profile. These are specific DNA sequences and where they're located within a molecule.

Elimination/Reference Samples – A term used to describe a sample taken for comparison purposes from a known source.

Polymerase Chain Reaction (PCR) – A DNA duplicating process that allows scientists to obtain genetic information from small or degraded specimens.

III. GENERAL INFORMATION.

DNA is the fundamental building block for an individual's entire genetic makeup. A person's DNA is the same in every cell.

There are two kinds of DNA in the body: nuclear DNA and mitochondrial DNA. Both can be used for DNA identification; however, nuclear DNA is the more powerful of the two. Nuclear DNA comes from the cell nucleus and is inherited from both parents. Mitochondrial DNA is inherited only from the mother.

Physical evidence is any tangible object that can connect a suspect to a crime scene. Biological evidence, which contains DNA, can be found anywhere at a crime scene. In addition, it is a type of physical evidence that is not always visible to the naked eye.

All biological evidence found at crime scenes can be subjected to DNA testing.

DNA evidence can be used to identify victims and perpetrators, witnesses, potential suspects, and accomplices.

DNA evidence is admissible in every state of the union.

DNA analysis is similar to fingerprint analysis, evidence collected from a crime scene is compared to a known sample. If each feature is not identical, the DNA evidence is determined not to be a match.

A. DNA sources

As DNA is a type of biological evidence, sources include saliva, semen, blood, bone fragments, teeth, skin cells, muscle tissue, brain cells, hair, urine, mucus, feces, and sweat.

B. Limitations of DNA

1. DNA cannot tell an investigator when a suspect was at a crime scene.
2. DNA cannot differentiate between identical twins.
3. As DNA evidence is highly sensitive, it is easily contaminated and/or degraded by environmental factors. In the case of the latter, these are: heat, sunlight, bacteria or mold.
4. DNA from close relatives is more similar than DNA from unrelated persons.

IV. FIRST RESPONDER RESPONSIBILITIES.

Protection of the crime scene, providing aid to victims, and the arrest of any suspects are the primary initial responsibilities of first responders. Once the scene has been secured, a log sheet should be established documenting who has entered the site. Access should be restricted to those officers with official duties to perform.

In an effort to avoid contamination of the scene, investigating officers shall not smoke, eat, drink, or drop any sort of litter while conducting their duties.

Evidence should only be moved if it will be lost or destroyed, and investigating officers should avoid touching anything unless absolutely necessary.

Similar to the routine search for fingerprints at crime scenes, first responding officers also need to be aware of, and scan for, evidence that may contain DNA. This can include items touched by a suspect such as a weapon, steering wheel, tools, etc. DNA transfer may occur through body contact with physical items.

Officers should communicate by cell phone or portable radio as phones present at the scene may contain DNA evidence.

Officers should document every action that is taken at the scene.

A. Precautions

Biological evidence may contain hazardous pathogens such as HIV and/or Hepatitis B virus that can cause potentially lethal diseases.

Officers will wear gloves, booties, and face masks as required, both to ensure their personal safety and to avoid contamination of DNA evidence.

V. COLLECTION/SEIZURE OF DNA EVIDENCE.

When collecting DNA evidence, investigators shall take precautions so as not to contaminate the evidence. Protective measures include but are not limited to:

1. Do not touch areas where DNA evidence is believed to exist.
2. Do not touch your face, nose, hair and mouth when collecting DNA samples.
3. Do not sneeze or cough near DNA evidence. Wear a face mask as needed.
4. Wear protective gloves and consider wearing a double layer of gloves. This will enable the bearer to change the outer pair while maintaining a protective barrier.
5. If instruments are needed, make sure they are cleaned after each sample is taken.

DNA evidence and/or comparative samples should be collected with Buccal Swabs or cotton swabs. Such evidence should be air dried and placed into a cardboard container.

When taking DNA samples, it's also a good procedure to include a control swab with the evidentiary swabs.

A. Types of Samples

1. Questioned or Unknown Samples.

Those collected from a crime scene, which can be any biological sample.

2. Samples from Unidentified Bodies.

Samples collected from unidentified bodies can include: blood, buccal swabs, hair, bone, teeth, fingernails, tissues from internal organs, muscle, and skin.

3. Reference Samples from Known Individuals.

The most common reference samples collected from known individuals are blood, oral/buccal swabs, and/or plucked hairs (e.g. head, pubic). Officers will utilize the department's "DNA Evidence Consent to Search" form to obtain DNA samples from cooperative individuals (Refer Attachment).

4. Secondary Reference Samples.

DNA samples that may be considered when individuals are unavailable or are reluctant to provide samples (e.g. bedding, clothing, underwear, toothbrushes, cigarette butts, condoms, razors, hairbrushes, tissues, etc.).

5. Reference Samples from Relatives.

Those collected from close relatives to identify or confirm the identity of a body that has not been identified through other means.

B. Packaging

DNA evidence should be placed into new paper or cardboard containers and sealed with evidence tape. Staples should not be used. In cases where evidence is wet it should be air dried prior to packaging.

C. Storage

DNA evidence should be stored in a cold environment. As the department does not currently possess such facilities, DNA evidence will be maintained at or less than room temperature, and will be delivered to the St. Louis County Police Laboratory in a timely manner.

D. Transportation

Similar to other evidence, DNA evidence will be transported in a manner to maintain the "chain of custody." Officers will also protect the evidence from contamination or degradation to the maximum extent possible. To this end, officers will not store DNA evidence in direct sunlight or a warm environment like a vehicle trunk.

E. Documentation

DNA evidence packages/containers shall be labeled in accordance with department procedures, and will additionally be documented via evidence/laboratory receipts and incident reports.

VI. DNA RELATED TRAINING REQUIREMENTS.

Sworn members of the department shall be required to undergo an initial computer-based training session in regard to the collection of DNA evidence. Regular patrol officers will be responsible to successfully complete the basic training lesson, while detectives and field investigators will be required to successfully complete both the basic and an advanced training course. Once primary training has been completed, sworn department personnel will then undergo periodic in-service training in DNA collection. Training records will be maintained by the commander of the Investigations and Support Bureau.

VII. SUBMISSION OF DNA EVIDENCE TO LABORATORY.

DNA evidence seized at a crime scene will be protected from contamination, properly packaged, and documented in similar fashion as other forensic evidence. The chain of custody will be maintained at all times.

DNA evidence, along with comparative samples (if any) will then be submitted to the St. Louis County Police Laboratory in a timely manner. It will be accompanied by the appropriate St. Louis County Police Department Evidence Sheet.

VIII. CODIS.

The combined DNA Index System is a database that is administered through the FBI and enables state and local crime laboratories to exchange and compare DNA profiles electronically. The CODIS uses two database files to generate investigative leads where biological evidence is recovered from a crime scene.

1. Convicted Offender File – DNA profiles of individuals convicted of certain crimes.
2. Forensic File – DNA profiles developed from crime scene evidence.

A match may link two or more unsolved cases, a solved case with an unsolved case, or two or more solved cases. Ultimately, a match can link multiple cases in multiple jurisdictions that have occurred over a period of time.

A. Limitations of the CODIS:

1. Not all correction facilities collect DNA samples of convicted offenders.
2. Convicted offenders are accidentally omitted from the collection

process.

3. Casework backlogs.

DNA samples from unsolved crimes will automatically be forwarded to CODIS by the St. Louis County Police Laboratory where they will be entered into the system and automatically scanned for matching DNA profiles.

BY ORDER OF:

THOMAS J. BYRNE
Chief of Police

TJB:dld

CALEA Reference: 83.2.7