The Next Generation

Through the combination of increased Federal funding and expanded database laws, the number of profiles in NDIS continues to increase dramatically. Additionally, the need for missing persons and disaster victim identification capabilities continues to grow. With these needs in mind, the FBI has developed the next generation of CODIS to be a user friendly, multi-functional software program capable of efficiently processing large databases. The software provides enhanced kinship analysis tools, for missing person cases, utilizing not only STR, Y-STR, and mtDNA information but also metadata – non-genetic information such as date of last contact, age, or gender - to assist in identification efforts.

The FBI Laboratory is committed to the support of the CODIS program. With the continued cooperation and collaboration of legislative bodies and all components of the criminal justice community - law enforcement, crime laboratories, victims, prosecutors and the judiciary - the future of DNA, CODIS, and NDIS holds even greater promise to solve crime and identify the missing and unidentified.

CODIS Unit
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DNA Casework Unit
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Federal DNA Database Unit
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CODIS Architecture

NDIS is the highest level in the CODIS hierarchy, and enables the laboratories participating in the program to exchange and compare DNA profiles at the national level.

SDIS allows laboratories within states to exchange DNA profiles.

DNA profiles originate at LDIS, and then flow to SDIS and NDIS.

The FBI Laboratory’s Combined DNA Index System (CODIS) blends forensic science and computer technology into an effective tool for solving crime.
Crime

CODIS generates investigative leads in cases where biological evidence is recovered from the crime scene. Forensic profiles are searched based on results obtained from nuclear DNA analysis using the 13 core CODIS STR loci. Matches made among profiles in the Forensic Index can link crime scenes together; possibly identifying serial offenders. Once a match is confirmed, police from multiple jurisdictions collaborate and share the leads they developed independently. Matches made between the Forensic and Offender Indexes provide investigators with the identity of a suspected perpetrator(s). Since names and other personally identifiable information are not stored at NDIS, qualified DNA analysts in the laboratories sharing matching profiles verify the match and provide the identifying information.

Missing Persons

In 2000, the FBI Laboratory developed the National Missing Person DNA Database (NMPDD) Program for the identification of missing and unidentified persons. STR, Y-STR, and mtDNA data can be entered into the missing persons indexes of CODIS. Enhancements to kinship analysis for missing persons data and mass disaster events were a top priority during the development of the Next Generation CODIS software. First implemented in 2008, these enhancements provide investigators with a powerful tool in the identification of missing and unidentified persons on a national level. Relatives of missing persons can be combined into Pedigree Trees for more thorough analysis. Metadata can be captured to allow non-genetic information to aid in the identification process. And the evaluation of multiple DNA technologies can assist in the reconstruction of maternal and paternal lineages. These aspects of CODIS have proven to be successful on both the national and international level assisting in Missing Person and Disaster Victim Identification programs.

For questions concerning missing persons case submissions, please contact the DNA Casework Unit at 703-632-8446.

National Missing Persons DNA Database

NMPDD uses Multiple Indexes in NDIS to enter DNA profiles that can be searched against each other.

Unidentified Human Remains

Biological Relatives of Missing Persons

Missing Persons

Pedigree Tree

For more information, please see the CODIS and NDIS Fact Sheet at http://www.fbi.gov/about-us/lab/biometric-analysis/codis/codis-and-ndis-fact-sheet.