

Implementation of a Buccal Swab Kit for the Collection of DNA Database Samples

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In 1994, Alabama passed legislation authorizing the collection of biological samples from individuals convicted of any felony offense and certain misdemeanor offenses. The collection of blood specimens from individuals incarcerated in state correctional institutions was begun in October, 1994. In order to collect biological samples from individuals who have been convicted, but not sentenced to confinement, a buccal swab kit was developed which can be used by non-medical personnel for the non-invasive, rapid, and consistent collection of samples suitable for DNA analysis. The collection of cellular material for DNA profiling consists of swabbing the inside of the oral cavity vigorously with the buccal swab, taking care to collect saliva as well. The swab is then pressed firmly against an FTA™ card to transfer the cells and liquid saliva onto the filter paper.

Beginning in February, 1998, the Alabama Department of Forensic Sciences launched a program in conjunction with the Alabama Board of Pardons and Paroles to collect DNA samples from all individuals currently serving a sentence of probation or parole. Each month, offenders report to their probation officer within the first three to five days of the month. During the reporting period, ADFS employees assist in the regional probation offices to collect buccal samples from all offenders supervised in that region. Once ADFS has assisted an office with its initial collection effort, the individual probation officers assume responsibility for collecting DNA samples from all individuals who did not report, as well as all future offenders added to their caseloads.

In the last seven months (February – August, 1998) over 7800 buccal samples have been collected for the Alabama DNA Database through state probation offices. While many of these have been collected by ADFS personnel, probation officers have assumed responsibility for the collections in a number of offices and are regularly using the buccal kits for this purpose.

A potential concern in the use of buccal samples was the possible interference of foreign substances that might normally be present in the mouth at the time of collection. To investigate this possibility, buccal samples were collected from an individual with known genotype following use of a number of different foreign substances (gum, candy, tobacco, etc.). In the samples analyzed to date, no common foreign substances have been found to interfere with the DNA analysis of buccal samples.

A second concern was the possibility that a number of samples might require recollection due to inadequate sampling by non-laboratory personnel. In an attempt to prevent this occurrence, training sessions on proper collection methods were provided to all probation officers. To date, over 2,600 samples collected by both probation officers and ADFS personnel have been successfully analyzed without requiring a single recollection.