Hairs and Fibers

In crimes where personal contact has occurred, especially if there was physical force, hair and fibers are frequently found as evidence. A cross transfer of hair and/or fibers between a victim and an assailant can provide supportive evidence of an association. In addition, hair recovered from the scene may serve to associate an individual with the scene. Fibers recovered from the clothing of the victim, suspect and crime scene can be compared to known textile materials to determine possible sources of origin.

If a hair is determined to be of human origin and is deemed probative to a case, DNA analyses may be performed on the root (if present) of the hair. Another form of DNA analysis (mitochondrial analysis) may be performed on the hair shaft if the root is absent.

NOTE: Mitochondrial DNA analysis is not available at the Wisconsin State Crime Laboratories. ***See Chapter 5, DNA Evidence and Standards*** ***for more details.***

I. Collection of Hair and Fiber Standards

It is necessary to obtain standard hair and fiber samples from all possible sources (suspect, victim and scene) for comparison with questioned hairs and fibers.

DNA analysis on hair roots has replaced microscopic hair comparisons. Pubic and head hair standards are still necessary for determining which foreign, questioned hairs may be subjected to DNA analysis. Due to the ease of head hair transfer and potential limited probative value, DNA analysis on hairs will be limited.

Head hair standards

Obtain at least fifty (50) head hairs by cutting them at the skin surface. These hairs should be collected from various areas of the head such as the crown, sides, front and back to assure that all shades of color and texture have been adequately sampled. The quantity of hairs

obtained from a deceased individual should be doubled and the hairs should be **pulled**. Place the hairs in a clean, properly labeled envelope and seal.

Pubic hair standards

Obtain at least twenty (20) pubic hairs by cutting them at the skin surface. The hairs should be collected from various areas within the pubic region. If this is a deceased individual, double the number of hairs to be collected and pull them. Place the hairs in a clean, properly labeled envelope and seal.

Known fibers

Known fibers should be obtained from all possible sources (clothing, drapes, rugs, etc.).

A. Submit the suspected source in total if possible. Place the source in a clean, properly labeled paper bag and seal. (See Chapter 20, Clothing and Fabrics.)

B. If it is not feasible to submit the source in total, a sufficient quantity should be taken to ensure that each color and kind of fiber involved has been sampled. Place the fibers in a clean, properly labeled envelope or glass jar and seal. (See Chapter 20, Clothing and Fabrics.)

II. Collection of Questioned Hair and Fibers

Pubic hair combings

(Usually collected in sexual assault cases and from homicide victims).

Place a piece of paper under the pubic region of the individual and comb through the entire pubic area to dislodge any foreign hairs or other material that may be present. Place the used comb onto the paper and fold the paper around the comb being careful not to lose any of the dislodged evidence. Place the wrapped comb in a clean, properly labeled envelope and seal.

Other Recovered Questioned Hairs and Fibers

Separately package the hairs and fibers collected from different persons and different locations.

A. When the amount of evidence is very small, extreme care should be exercised to avoid contaminating or inadvertently losing the material.

B. The hair or fiber should be placed on a piece of clean white paper, and the paper should be tightly folded around the hair or fiber. Place the paper packet in a clean, properly labeled envelope and seal.

Notes

Woods and Sawdust

Wood slivers and chips from doors, siding, or broken window frames, frequently adhere to suspect's clothing and may be related to their source. Large items of wood such as boards, logs, trees, or blocking may also be identified by appropriate Laboratory examination and comparison.

The investigator should consider the possibility of sawdust on shoes, in trouser cuffs, and in pockets of suspects who have recently left a crime scene such as a butcher shop, lumber yard, construction site, or similar location. Since sawdust is generally composed of many types of species, Laboratory findings of correspondence between samples from both the suspect and the scene may provide valuable information.

Caution: Observe laws relating to the collection of evidence.

Procedure

Damaged wood found at burglary sites should be submitted for comparison with recovered wood fragments from suspect's clothing and/or tools used to commit the crime. All clothing (including shoes) worn by the suspect at the time of the crime should be submitted to the Laboratory. See Chapter 20, Clothing and Fabrics for packaging procedures. If there are wood chips or sawdust at the scene, take several samples from different areas, package separately, mark and seal. Samples can be placed in small glass bottles or vials. Avoid use of envelopes since wood fragments may be damaged during transit if not protected in a rigid container. Package, seal and label the container. See Chapter 16, Glass.

Fig. 22-1
Fracture match of a wood fragment to a piece of wood used as a bludgeon.