



**ILLINOIS STATE POLICE
Division of Forensic Services
Forensic Sciences Command**

ESH Appendix 6 HAIR AND FIBER EVIDENCE PROCEDURE

█ In case of physical attack, hairs and fibers may be transferred between a suspect, a victim, or a scene. Microscopic examination of fibers may associate questioned evidence to a source fabric or material. For questioned hairs, microscopic examination may determine whether they are from humans or animals. Additionally, human hairs may be evaluated to determine if they are suitable for DNA submission.

With properly procured samples, the following determinations are usually possible:

	<u>HAIR</u>	<i>or</i>	<u>FIBER</u>	
	↓		↓	
	↓		↓	
	Animal		Natural	
		Human		Man-made
	↓		↓	
	↓		↓	
	Species		Type of fiber (wool, cotton, etc.)	
		Suitable for DNA submission (yes/no)		Type of fiber (polyester, nylon, rayon, etc.)
	↓		↓	
	↓		↓	
	Guard Hair Fur Hair		Consistent with Submitted Standards	
			Consistent with Submitted Standards	

█ **Hair Evidence:**

The microscopic root characteristics of human hairs may be evaluated to determine whether the hair may be suitable for submission to the DNA Section.

Fiber Evidence:

Trace evidence will be deferred for the analysis of fibers when standards are not submitted to the laboratory for comparison.

1. Suspected fibers should be sealed in a coin-type envelope or “druggist fold” paper packet and properly labeled. These fibers can be compared to the clothing, carpeting, etc. of each victim and each suspect and it may be determined whether they are the same type of fiber and whether they are similar or dissimilar in color.
2. Fiber Standards:
 - A. The article of clothing which is believed to be the source of the questioned fibers must be submitted.
 - B. The exhibit from which a questioned fiber is believed to have originated should be submitted as a whole, if possible. If not (i.e., carpets, furniture, etc.), a section of material should be cut from an area close to where the transfer is believed to have occurred.

Collection:

1. The collection of trace evidence is the integral first step in its analysis. The selection of a proper method to collect these materials is essential.
2. Taping or scraping and picking of an exhibit are the recommended methods to collect hair and/or fiber evidence. These techniques allow the collection of probative materials from the upper or outer surface of an exhibit (i.e. vehicle seat) instead of the copious amount of materials that may have been deposited over a period of time and have settled to lower levels, which would be collected in the vacuuming. Although vacuuming has occasionally been used in the past to collect these materials, it is not recognized by the Microscopy Section as a proper collection technique and should be avoided in the future.
3. Vacuuming collection of fine powders or metallic or plastic-type debris is acceptable when other methods are impractical; however, the vacuum collection of hairs and fibers is strongly discouraged.