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DNA Technology Advancements

Recent advancements in DNA technology have improved law enforcement's ability to use DNA to solve old cases. Original forensic applications of DNA analysis were developed using a technology called restriction fragment length polymorphism (RFLP). Although very old cases (more than 10 years) may not have had RFLP analysis done, this kind of DNA testing may have been attempted on more recent unsolved cases. However, because RFLP analysis required a relatively large quantity of DNA, testing may not have been successful. Similarly, biological evidence deemed insufficient in size for testing may not have been previously submitted for testing. Also, if a biological sample was degraded by environmental factors such as dirt or mold, RFLP analysis may have been unsuccessful at yielding a result.

Newer technologies could now be successful in obtaining results. Newer DNA analysis techniques enable laboratories to develop profiles from biological evidence invisible to the naked eye, such as skin cells left on ligatures or weapons. Unsolved cases should be evaluated by investigating both traditional and nontraditional sources of DNA. Valuable DNA evidence might be available that previously went undetected in the original investigation.

If biological evidence is available for testing or retesting in unsolved case investigations, it is important that law enforcement and the crime laboratory work together to review evidence. Logistical issues regarding access to and the cost of DNA analysis will be a factor, as well as issues that relate to the discriminating power of each technology and that might affect the outcome of the results. Laboratory personnel can also provide a valuable perspective on which evidence might yield valuable and probative DNA results. Finally, if previously tested biological evidence produced a DNA profile but excluded the original suspect, revisiting those "exclusion" cases in the context of comparing them with DNA databases might prove to be very valuable to solving old cases.

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