'Touch' DNA offers hope in cold investigations

By Kevin Johnson, USA TODAY

For 35 years, Anne Arundel County, Md., police have been baffled by the murder of a 17-year-old girl whose battered body was discovered in an abandoned quarry near the suburban Washington city of Bowie.

Last month, David Cordle, chief investigator for the county's State Attorney's Office, attended what would have been Donna Dustin's 35th high school reunion in pursuit of information about her death. His visit produced 18 leads, two new names — but no definite answers.

Cordle has not given up hope. The investigator has submitted evidence for new forensic testing using a DNA technique that in July cleared JonBenet Ramsey's family in her death.

The success of the little-known method in her case is triggering requests for the test from law enforcement officials seeking similar breakthroughs in unsolved crimes. Private and state-run laboratories report increases of up to 20% in use of the technique called "touch" DNA.

Analysts scrape or swab surfaces such as clothing or food to try to get enough microscopic cells to identify or rule out suspects in violent crimes, robberies and burglaries. Unlike other DNA methods, touch DNA is used on surfaces without a visible stain, such as blood, but that investigators suspect might contain genetic material.

Experts say the technique can provide a powerful tool to develop fresh leads in unsolved cases, some of which are decades old.

"In select cases, this has the potential to find a person's DNA when it couldn't be found before," says Gregory J. Davis, professor of pathology and laboratory medicine at the University of Kentucky College of Medicine. "It has great potential for prosecutors who may be able to confirm a suspect's location at the time of the crime and for defense attorneys who may argue that their client was nowhere near the scene of the crime."

Cordle, past president of the Mid-Atlantic Cold Case Homicide Investigators Association, said he decided to seek the "touch" DNA testing after he attended the association's conference last month in Annapolis, Md., which featured the analyst who oversaw the method's use in the Ramsey case. "Some people think it's a shot in the dark," he says. "But if you don't have anything else, why not go for it?"

Rise in interest

Though some laboratories have used touch DNA since early this decade, forensic analysts and police officials say investigators are just learning about it.

At Bode Technology Group, the Lorton, Va., firm that performed the Ramsey test, analysts are fielding about 30% more calls from investigators inquiring about touch DNA and about 20% more requests for testing, says Angela Williamson, Bode's director of forensic casework.

Since the Ramsey results were made public, Williamson says, touch DNA tests at her firm have advanced at least 10 "major cases." In half of those, the results helped rule out possible suspects. In the other half, profiles for potential suspects were developed, she says.

Orchid Cellmark, based in Princeton, N.J., also has seen a rise in touch DNA cases. Touch testing there jumped from about

3% of overall cases two years ago to about 15% now, says Robert Giles, executive director of research and development.

In Texas, the state Department of Public Safety has received dozens of requests, says Brady Mills, assistant director of its crime lab services.

The success rate is unclear. Pete Marone, director of Virginia's Department of Forensic Science, says his laboratories curtailed touch testing in 2004 after analyses produced mixed results.

He says investigators submitted evidence for testing without considering what would work best. Analyses of doorknobs and other common surfaces yielded multiple or partial genetic profiles that often did not advance investigations.

Marone's labs began requiring more specific requests. Touch DNA tests have steadily increased in the past year, and he says they are yielding better results.

Ramsey developments

Like Cordle, Boulder District Attorney Mary Lacy learned about touch DNA at a conference.

Within weeks of the August 2007 gathering, sponsored by the Justice Department, prosecutors decided to consider new testing in the Ramsey case, a statement by the Boulder district attorney's office says.

Williamson, who supervised the Ramsey testing at Bode, says analysts spent hours with Boulder authorities to review evidence gathered 12 years earlier.

Evidence supported the "likelihood" that JonBenet's attacker removed her clothing and then redressed her, the statement says. Analysts scraped the waist areas of long johns JonBenet had on when her body was discovered in the basement of her home Dec. 26, 1996. Williamson says they were able to retrieve enough cells to produce an unidentified male profile.

The findings did not resolve the murder, but they excluded the 6-year-old's parents and brother. Lacy cleared the family and apologized for the suspicions that made their lives "an ongoing living hell."

Davis worries the Ramsey case will spur "unrealistic" expectations about touch DNA. "We have to be cool-headed, scientific and look at its limitations," he says.

Yet Cordle and others hope for similar results in cases that have dogged them for years. "Word is spreading, and lots of agencies are responding," Cordle says.

In Charlotte, a panel is reviewing about 400 cold cases dating to the 1970s. Police Capt. Paul Zinkann says experts are deciding whether relatively new forensic techniques, including touch DNA, could be applied to some of the cases.

Among those under consideration is the unsolved murder of women's rights activist Kim Thomas, 32, who was stabbed multiple times at her Charlotte-area home in 1990.

Zinkann says a decision on whether to seek touch testing in her case will be made after a review of the evidence.

Cordle, who took on the Dustin case in 1997, acknowledges that inquiry has been "very frustrating." He declines to identify the evidence he submitted for testing but hopes for a long-sought breakthrough when the results are known in November. "We may never be able to resolve some of these cases," he says. "If we don't try, we'll never know."

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