

ALL PATERNITY TESTS ARE NOT EQUAL

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DNA testing has been used to resolve cases of questioned paternity and family relationships for over 20 years. Amidst the negative social stigma and media sensationalism often associated with DNA paternity tests, what is often overlooked is that the outcome of a paternity test can impact the lives of its participants and their families profoundly and permanently, perhaps more so than any other laboratory test result that they will ever obtain. Unlike “clinical” laboratory tests ordered by your doctor to assess your health, paternity tests, in most states, are considered “forensic” laboratory tests, are governed by different regulatory agencies and standards, and are performed mostly by non-clinical laboratories. Not surprisingly, most healthcare professionals are unfamiliar with providers of paternity testing services, leaving most patients on their own to find a reputable one. Such patients often turn to the Internet for help, and quickly find themselves overwhelmed with options—some good, and some, well...not so much. Unfortunately, because most people can’t tell the difference, they often just choose the least expensive test they can find. This can be a costly mistake.

Since 1997, I have been providing DNA paternity testing services and education in the public and private sectors. As a former director of a paternity testing laboratory accredited by AABB (formerly the American Association of Blood Banks) and a past member of the AABB Relationship Testing Standards Committee, I know what is required to ensure that paternity test results are trustworthy, and I understand the issues that can produce paternity test results that are not trustworthy. In this article, I hope to help readers understand and appreciate the most important points to consider and evaluate when seeking a paternity test, so that they might make a more informed decision, and obtain a test that they can trust.

Trustworthiness of a paternity test depends primarily on two factors: (1) the level of confidence or certainty that the samples collected and submitted to the laboratory are those of the intended participants, and (2) the level of technical competence of the laboratory performing the DNA analysis. Depending on the type of test one chooses, as well as the test provider one chooses, these factors can vary dramatically.

CHAIN-OF-CUSTODY (COC) PATERNITY TESTS. Sometimes called a “legal”, “legally-admissible”, or “legally-defensible” test, a COC paternity test is one in which neutral third parties with no interest in the test outcome (1) obtain informed consent and positive identification (typically using photographic identification) for all tested parties, (2) collect, label, and package all samples in a tamper-evident manner, (3) transport the samples to the laboratory, (4) receive and test the samples at the laboratory, and (5) document each stage of the testing process to ensure that a verifiable chain-of-custody is maintained. Most laboratories performing COC tests hold one or more certifications or accreditations that reflect proficiency in various aspects of their testing procedures. In the United States, the most widely recognized accreditation program specific for paternity testing laboratories is that established and administered by AABB. Through regular inspections—or assessments—AABB ensures that accredited labs adhere to published standards for quality control and quality assurance in COC paternity testing, encompassing parameters such as qualifications and training of staff, procedures for sample identification and chain-of-custody, technical proficiency in laboratory analysis and data interpretation, validation of tests and instrumentation, and problem resolution, among others. AABB is approved by the U.S. Secretary of Health and Human Services as a body whose accreditation, in most states, qualifies a laboratory to perform chain-of-custody paternity testing for civil court cases (mostly family law matters, such as child support enforcement or child custody). If test results are intended to be presented as evidence in civil matters to any government entity (including family courts, the IRS, U.S. Citizenship and Immigration Services, Social Security Administration, and the U.S. military), or other official tribunal

(such as an Indian tribal council), then tested parties are best advised to obtain a COC test and to ensure that the testing laboratory is AABB-accredited. In so doing, test participants can be confident that their results are not only trustworthy, but also legally-defensible and unlikely to face judicial challenge or rejection. While some paternity testing labs hold other accreditations that may provide additional assurance of reliability, AABB accreditation is considered the gold standard in the industry. [Note: In the State of New York, paternity tests must be ordered by a court or physician and performed only by laboratories certified by the New York State Department of Health.] As one might expect for tests that must comply with strict regulatory requirements, COC tests performed by accredited laboratories are not only the most trustworthy type of paternity test, they are also the most expensive typically ranging from about \$400 to \$600, or more depending on the particular testing situation.

NON-CHAIN-OF-CUSTODY (NON-COC) PATERNITY TESTS. Sometimes called a “personal knowledge” or a “peace-of-mind” test, a non-COC paternity test is one in which the identity of the tested parties is not independently verified and sample chain-of-custody is not maintained. Two distinct kinds of non-COC tests are available. I’ll refer to these as (1) “home tests”, in which samples are collected by the test participants themselves using a test kit sold in some drug stores or through the Internet, and (2) “office tests”, in which samples are collected by a neutral third party, typically in an office or clinic setting. Test seekers choose non-COC tests for various reasons. Some feel that a COC test is not necessary for their particular situation—that they only want to know for their own peace-of-mind. Others choose a non-COC test because they want to do the test without the knowledge or consent of a particular individual—such as a spouse, partner, or child (perhaps even one of the tested parties themselves!). Still others end up choosing a non-COC test instead of a COC test because they don’t fully understand the differences and because a non-COC test is less expensive—sometimes MUCH less expensive—than a COC test. Unfortunately, “less expensive” can also mean “less reliable” and “more problems”, as I will discuss below. Because of the potential problems, limitations, and risks associated with non-COC tests, people who are “shopping” for a paternity test are advised to consider these cheaper tests with caution.

Lab Qualification Concerns. A frightening reality regarding non-COC paternity tests is that there are no regulatory or accrediting agencies overseeing these tests. This means that labs performing non-COC tests need not be AABB-accredited, or certified in any way, and need not adhere to any industry standards for quality assurance. While lack of accreditation does not necessarily mean that a lab’s test results are unreliable (indeed, there are some good labs who choose not to seek accreditation), I believe that it adds a layer of uncertainty that is beyond the ability of the average consumer to evaluate or to control. In other words, it can be difficult, if not impossible, for most consumers to tell a “good” unaccredited lab from a “bad” unaccredited lab. Although AABB accreditation encompasses only COC tests, I personally believe that most AABB-accredited laboratories that perform non-COC tests apply the same testing procedures and quality assurance criteria to all samples they test, after the samples are received at the lab. For this reason, I believe that AABB accreditation is a consumer’s best available assurance that their non-COC test samples will be analyzed accurately. It is important to understand, however, that while a technically proficient laboratory may ensure that non-COC samples are tested accurately after they are received, the lab cannot control for the events that happen before these samples are received at the lab—namely, the sample collection and identification process...

Home Test Concerns. In a home paternity test, tested parties (1) purchase a sample collection kit in a drugstore or over the Internet, (2) swab the inside of their mouth cheeks and/or those of a tested child (or submit other samples, such as hair follicles, blood stains, or fingernails), (3) place the swab (or other) samples in an envelope labeled with the name of the tested party, (4) seal the sample envelopes with tape, and (5) mail the sample envelopes to a lab for testing. Home tests are the least expensive option, ranging from about \$79 to \$279. Personally, I am not a big fan of home test kits. To me, home test kits are like Pandora’s Box—they are very tempting, but they contain lots of hidden demons.

First, as discussed above, the qualifications and reliability of the lab may be questionable or unclear to the consumer. Second, tested parties often make sample collection errors. In some cases, samples are poorly collected, possibly contaminated, and may fail to produce a reportable result, while in other cases samples are mixed up during the collection process and may produce an erroneous result. In either case, their money is wasted, and they may have to pay for another test. Third, because there is no verifiable positive identification and chain-of-custody for collected samples, consumers are not protected in the event of a lab error and have no legal recourse against the lab. In these cases, their money is wasted, and they may have to pay for another test. Fourth, because samples are not collected under a strict, verifiable chain-of-custody, the test results are not legally defensible. Because clients must often redo their test using legally-defensible methods, their money is wasted, and they have to pay for another test. A final and rather serious concern associated with home test kits is their potential for misuse and fraud through misrepresentation of one or more of tested parties. In other words, because samples are not collected under a strict chain of custody by a neutral third party who verifies the origin of the samples, it is possible for a home test participant (or other person with access to the kit) to intentionally switch samples or submit samples of one individual in place of those of another, in order to obtain a DNA test report stating a desired result. To illustrate this last point, consider the following two cases.

Home Test Fraud Case #1. Imagine a situation in which an alleged father (Joe) and mother of a child purchase a home test kit, properly collect cheek swab samples from Joe and the child, and properly label the two envelopes containing their samples. Joe then places the tape-sealed swab envelopes in a Priority Mail envelope, and politely tells the mother that he will take the package down to the post office to mail it out. On the way to the post office, however, Joe stops at his buddy Mike's house, where he opens the priority mail envelope, opens his swab envelope, removes his swabs, and replaces them with swabs he collected from Mike using another home test kit. Joe then places the two swab envelopes—containing the swabs from Mike and the child—in a new Priority Mail envelope, and mails the envelope to the lab. In this case, Joe intentionally misused a home test kit to obtain a test result report stating that he was not the child's biological father. From this example, it is clear that results obtained using a home test kit result are only as trustworthy as the person who mails the samples to the lab. It is ironic that such stories like this really do happen, when you consider that it is the lack of trust in a relationship that leads many people to seek a paternity test in the first place. The only sure way to prevent this type of situation from occurring is for both the mother and alleged father to not only witness the sample collections, labeling, and packaging, but to then transport and mail the package together.

Home Test Fraud Case #2. Imagine another situation in which a married woman has an affair resulting in the birth of a child. The mother, her child, her husband, and her boyfriend submit to a COC paternity test by an AABB-accredited lab. The test results exclude her husband, but not her boyfriend, as the child's biological father. The COC test is repeated using newly-collected samples from the mother, her child, and her boyfriend, and once again her boyfriend is a match. A few years later, the case goes to court, at which time the mother presents paternity test results—obtained from a home test kit—stating that her husband is the biological father of the child. However, an expert witness' comparison of the DNA profile obtained for the child tested with the home kit with the DNA profile obtained for the child tested in the COC test revealed that the two DNA profiles reported for the child were different. That is, the child whose sample was tested in the home kit was not the same child whose sample was tested in the COC test. Moreover, it was apparent from the DNA profiles that the sample submitted for the child in the home test kit was collected from one of the mother's other children (whose father was her husband) but was labeled with the name of the child in question. In this case, the mother and her husband intentionally misused a home test kit to obtain a test result report stating that the husband was the child's biological father. This story is true. I was Director of the AABB-accredited lab that did the COC test and I testified at the court hearing where the fraudulent home test results were introduced.

To help minimize misuse of non-COC paternity test results (from both “home tests” and “office tests”), some laboratories include on their test result reports a statement to the effect that the samples were not collected under a strict chain of custody, that the identity of the tested parties has not been verified, that the test results may not be defensible in a court of law. However, not all laboratories employ such a practice, and even when they do, such statements could go unnoticed and potentially fool an unwary beholder—perhaps even a court judge—into believing that the test results are valid.

Office Test Concerns. In a non-COC “office test”, samples of the tested parties are collected by a third party with no interest in the test outcome; however, test participant identification need not be verified and sample chain of custody is not maintained. In general, “office tests” are more expensive than “home tests”, but less expensive than COC tests. Like “home tests”, the validity of “office tests” may be questionable due to issues related to the lack of regulatory governance and the lack of a chain-of-custody for these tests. These common traits of non-COC tests aside, “office tests” are, in my opinion, superior to “home tests”, for the following reasons. First, because the collection process is performed by a trained sample collector and witnessed by the tested parties, “office tests” provide greater assurance that samples are properly collected and that sample mix-ups do not occur. Second, because the sample collection process is performed and controlled by a neutral party, “office tests”, if done properly, can minimize, or even eliminate, incidents of fraud and misuse of fraudulent test results. This is best achieved when test providers follow certain practices (or, at the very least, point out the advantages and disadvantages of their own practices). The first important practice is to require that all tested parties be present at the same time for their sample collections, so that they can witness the sample collections and have no doubts as to whose samples were sent to the lab. While this practice is an effective fraud deterrent in most non-COC cases, it is not foolproof: in a manner similar to that described in my true home test kit horror story above, fraudulent misrepresentation of tested parties can still occur and, unfortunately, be difficult to discover or to prove, since there is no sample chain-of-custody. The second practice to prevent misuse of potentially fraudulent non-COC test results is to state only the first names of the tested parties on test result reports, or to eliminate the names of the tested parties from test result reports altogether. It is difficult to imagine that even an inexperienced judge or tribunal would consider such test results to be valid and defensible evidence.

In this article, I have discussed the most common paternity testing options available to consumers and some of the factors that I believe are important for those seeking a private paternity test to understand and to consider before making their choice. I hope that you have found this discussion both informative and helpful. I have specialized in DNA paternity testing since 1997, and I have represented laboratories with the highest caliber of experience, qualifications, and integrity in the industry. I know that the outcome of a DNA paternity test can completely change the course of a life—sometimes many lives—because I have witnessed it first-hand. The bottom line is that all DNA paternity tests are NOT created equal. If you are seeking a paternity test, then your highest priority should be getting a test that you trust, even if that means spending \$400 or more for a COC test. If you decide that a non-COC test is the best choice for your personal situation, please take the time to consider the potential problems, limitations, and risks of your options, so that you can take proactive steps to minimize the concerns and maximize your confidence in the test results. Otherwise, that \$99 paternity test could cost you a whole lot more in the long run. And I don’t just mean more money.