

DNA Testing for Genealogists

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Currently (mid 2012), there are three basic DNA tests:

1. **Y-DNA** – carried only by men, who got it from their father. This is the DNA test used in SURNAME Projects because the DNA follows the all-male line (from the DNA donor back up his ancestry on the all-male/SURNAME line; and from any of these male ancestors back down any all-male line to the present). If two men have the same Y-DNA result, they have a common ancestor! The BARTLETT-DNA Project uses this test. There are 5 tests: Y-DNA 12, 25, 37, 67, and 111 (the number indicating how many sites or places or markers on the Y-DNA are examined. Y-DNA 37 is the best; Y-DNA 25 works. Y-DNA 67 and 111 might be helpful in certain cases, but in general do not provide much/any additional info; Y-DNA 12 is often not enough to be sure of a match.
2. **mtDNA** – carried by men and women, who got it from their mother. Note: men can not pass this mtDNA to their children. This is the DNA test used to trace an all-female line (from the man or woman donor back up their ancestry on the all-female line; and from any of these female ancestors back down any all-female line to the present. If two people have the same mtDNA result, they have a common ancestor. A problem is that the mtDNA may go back many hundreds of (or even a thousand) years without any change, so the common ancestor often is much farther back than our genealogies. This fact, coupled with the difficulties in tracing all-female lines (the surname changes with every woman), means the mtDNA is not often used for genealogy. If you have a BARTLETT wife in your all-female ancestry, you are invited to join the BARTLETT-DNA Project for mtDNA testing, so that we may learn her mtDNA. There are 3 tests: HVR1, HVR2, FMS (the first two examine small parts of the mtDNA; the Full mt Sequence (FMS) examines all 16,569 sites on the mtDNA – everything). If you want a test to see if two women have a common ancestor, any of these mtDNA tests will usually work. If you want to know about your Deep Ancestry (thousands of years ago), or from which of the “Seven Daughters of Eve” (google it) you descend, any of these tests will usually work. If you believe you descend (via an all-female line) from an American Indian, any of these tests will usually confirm that.
3. **Family Finder** – this test examines over 700,000 sites across all of your DNA (except the Y-DNA and mtDNA). Powerful computers then compare your result with all the other people who took this same test, looking for large “blocks” of DNA that are identical. If you and another person have a large DNA block in common, then you probably got the DNA from an ancestor you have in common – so you would be cousins. You must then compare your Ancestry with your matches to determine who the Common Ancestor is. This test works across all of your ancestry – it doesn’t matter how many males or females are in the line – it works equally for all ancestors. This test works very well for third to fifth cousins. Beyond that fewer and fewer cousins will show up as a match, but because you have so many distant cousins, you still get many matches. I’ve documented paper trails to four 10th cousins I’ve found with Family Finder. I highly recommend this test for every serious genealogist.

The company we use for testing is **Family Tree DNA** – www.familytreedna.com – one of the original

genealogy DNA companies, the one with the largest database for comparisons, and in my opinion the absolute best company for professionalism, quality, fairness, responsiveness, etc. FTDNA is used by over 80% of genealogists who do DNA testing – for many good reasons. Virtually any question can be answered (and then some) by reading their Frequently Asked Questions (click on the FAQ tab on their homepage). Read the Wikipedia article about Family Tree DNA to learn more about the company and its products. You can also use the search box for any SURNAME, to see if a project exists for your surname (or to visit the BARTLETT project). This is an easy (and free) way to see if any of your lines have already been tested.

When you order any of the above tests, FTDNA sets up for you a secure (password protected) webpage, where they post your results. They also post the names and emails of others in their database with matching DNA. They have several ways for you to post your ancestry list and/or tree or GEDcom. They will let you affiliate (join) several other projects if you want. They allow you to upload your results to publically available databases such as www.ysearch.org and www.mitosearch.org , if you want.

Both the Y-DNA and mtDNA tests also report your DNA Haplogroup (mine are E1b1b1a2 for Y-DNA and T2b6 for mtDNA). You can google your Haplogroup (the wiki articles are good), and learn when and where your all-male or all-female ancestry originated tens of thousands of years ago. The Family Finder does not report Haplogroups because each of us usually has many different Haplogroups in our ancestry (i.e. each of our ancestors may have had different origins).

The DNA test Kit includes all you need – just follow the directions. To collect the DNA sample, you will rub the inside of your cheek with a special swab (no pain, no blood). You then put the tip of the swab in a vial (provided); repeat this process; and put both vials in a mailer (provided) and mail it in. Then wait..... for about 4 weeks for your result.

When your results are posted, FTDNA will send you an email, with a link, and you can then see who you match and their email addresses. For Y-DNA (surname) projects, the project Admin will usually contact you about where you fit in the surname Tree. For mtDNA or Family Finder, you are pretty much on your own to contact your matches and compare information. You are encouraged to communicate the news of your DNA test, via email lists, message boards, etc.

You don't need to know any biology, or complex terminology, to use DNA as a tool in your genealogy. **Just remember that if two people have the same DNA, they share a Common Ancestor.**

Reread the paragraphs above about how the DNA is transmitted (Y-DNA is father to son; mtDNA is mother to children). If you have a question, draw a picture of your Tree and mark how the DNA is transmitted in each case. For the Family Finder test, the DNA is transmitted from each Ancestor to all their descendants!

When you take a DNA test, you really become a hero for your family lines, because you have now documented the DNA “signature” for your male and/or female lines. As noted in the Y-DNA and mtDNA paragraphs above, your DNA is the same as many people in your family Tree. Your results will benefit all who research the lines that share your DNA.

