

Y-Line DNA Results - What Do They Mean and What Do I Do With Them?

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DNA testing for genealogy celebrated its 10th anniversary this year. Most of us, by now, are familiar with Y-line DNA testing. These families are relatively easy to follow because the Y chromosome also follows the paternal surname. If a male Estes tests, for example, then his Y chromosome, and therefore his test results, should be the same as his father, his grandfather and so on, with maybe a mutation or two on upstream. The Y chromosome follows the surname so the genealogy is easy - or as easy as genealogy ever gets.

This is actually where the challenge begins. How can we use these DNA results to further our genealogy?

What does it mean when we match someone? What do mutations mean from a genealogy perspective? And what can we do to further our research?

DNA is a wonderful tool in the genealogists toolbox, but it's not an absolute answer. Let's look at the information we received from Family Tree DNA relative to Y DNA and see what is to be learned.

The first thing most people want to know is if they are Indian, African or European. Generally, this is quite straightforward and easy to determine. The haplogroup gives us that answer. Haplogroups C and Q are Native American. However, not all C and not all Q subgroups are native. In particular, haplogroup Q1a1a is Native, and Q1a1 may be in some instances. Haplogroup C3 is also Native.

Haplogroups A, B and E are African, but subgroup E1b1b is also Mediterranean. Haplogroup O is Asian. The rest are found in Europe, or are rare and not isolated to any one location. Occasionally haplogroups C and Q are also found in Europe.

Haplogroups are assigned based on a certain type of mutation found in your DNA. This type of mutation is called a SNP (single nucleotide polymorphism) and is used only to determine haplogroups. These are available to be tested at Family Tree DNA via the deep clade tests.

A different type of mutation is used to compare your results genealogically. These mutations are called STR (short tandem repeat) mutations. These are the results you see when looking at your results page at Family Tree DNA or any other testing company. Now is probably a good time to point out that not all testing companies "count mutations" in the same way, so your results from Family Tree DNA and another testing company may not be comparing apples to apples without a conversion.

The values shown look something like this:

DYS
393
13

In this case, the DYS in the name of the allele, or location, which is 393. This individual has a value of 13 in that location.

This means that he has 13 repeats of the same DNA in that location. Think of this as a stutter. In some cases, you lose a copy, so you will only have 12, or you may gain a copy, so you will have 14. This is how the Y-line DNA changes over time. These particular allele locations have been selected because they tend to accumulate changes over a relatively short period of time. Now short in this instance is relative - meaning over hundreds of years. The SNP locations used to determine haplogroups are extremely stable, and if they mutate, it's a once-in-the-history-of-mankind type of event.

When you combine all of your locations together, it creates a unique DNA signature for you - well - almost unique. Better stated, it creates a unique DNA signature for your family. In the Estes family, we are fortunate to have several rare values so we can easily tell who is a member of our family, genetically, by comparing our unique DNA signature.

This works well in Y-line DNA because the surname is also passed on in the same way the Y chromosome is - male to male in perpetuity. Here's an example of my own Estes line, beginning with my grandfather.

Name of Ancestor	Birth Date	Birth Location	Death Date	Death Location	Spouses Name
William George Estes	1873	Claiborne Co., Tn.	1971	Harlan Co., Ky	Ollie Bolton
Lazarus Estes	1845	Claiborne Co., Tn.	1919	Claiborne Co., Tn.	Elizabeth Vannoy
John Y. Estes	1818	Halifax Co., Va.	1895	Montague Co., Tx.	Ruthy Dodson
John R. Estes	1787	Halifax Co., Va.	1885	Claiborne Co., Tn.	Nancy Ann Moore
George Estes	1763	Amelia Co., Va.	1859	Halifax Co., Va.	Mary Younger
Moses Estes	1742	Amelia Co., Va.	1813	Halifax Co., Va.	Luremia Combs
Moses Estes	1711	King & Queen Co., Va.	1787/88	Halifax Co., Va	Elizabeth ? possibly Webb
Abraham Estes	1647	Nonington, Kent, England	1720	King & Queen Co., Va.	Barbara ?
Sylvester Estes			Bef		Ellen Martin

Name of Ancestor	Birth Date	Birth Location	Death Date	Death Location	Spouses Name
			1649		
Robert Estes	C 1555	Ringwoud, Kent, England			Anne Woodward
Sylvester Estes	1522	Deal, Kent, England	1579	Deal, Kent, England	Jone ?
Nicholas Ewstas	1495	Deal, Kent, England	1533	Deal, Kent, England	Anny ?

Be open to surnames being spelled variantly. Estes is spelled Eastes, Estis, Eustace, Ewstas, and other ways. There are also Easter men who are Estes descendants, but there is an entire group of Easter men, also found living near Halifax County, Virginia at the same time as our Estes men, and they are not from the Estes line.

The Estes DNA has changed somewhat over time. Using a method called triangulation, we know what the DNA signature of Abraham Estes looked like. We determined this by using the DNA of three of his sons descendants. Knowing this, we can then determine specific mutations that have developed in his various sons lines.

Abraham had 8 sons. The descendants of his son Elisha match the original Abraham DNA signature, so there have been no mutations in that line that have been discovered to date. However, in his son Moses' line, the value of location 458 is 17 in all 4 individuals who have tested, as opposed to 18 in Abraham's DNA signature. So the value of 17 at 458 is a line marker mutation for the Moses Estes line. For those who don't know their genealogy, line marker mutations can be a very important clue.

How can we use this information to further our genealogy? First, look at the lines you don't match. The Estes line is rather unique because other than undocumented adoptions, there appears to be only one source of this surname, in Kent, England. However, in my Moore line, there are almost as many different DNA lines as there are Moore men. In the case of the Moore DNA, discovering which lines you DON'T match is as important as knowing who you do match. This information can save you years of barking up the wrong genealogy tree.

Second, and this probably goes without saying, but contact your matches. Put together a simple to read chart, something like the example above, and send it to those you match. Locations are important too, so don't neglect those. Your matches may have information that may help you immensely, including information about your ancestors overseas homeland. In the case of my Moore line, I'd give almost anything to match someone overseas.

Other data bases hold clues and possible matches as well. You can enter your DNA information at Sorenson at www.smqf.org. Sorenson does not facilitate matches with individuals, but they do provide a genealogy along with the DNA information. If you find a line you believe you connect to, you can then peruse the various forums such as

www.rootsweb.com lists and boards and www.genforum.com boards to find information about that line or someone who connects. You can also check for genealogy information at www.familysearch.org and if you are a subscriber, at www.ancestry.com as well.

Another DNA resource is www.ysearch.org. You can upload your information directly from your Family Tree DNA matches page to YSearch. The key here is that you are looking for people who did not test at Family Tree DNA, as your results are already being compared to those who did. Sometimes the information found here for those who you match at Family Tree DNA is important as well, as participants can enter their oldest ancestor and some additional information not available through Family Tree DNA directly.

A final resource is www.ancestry.com. Click on the DNA tab at the top and enter your DNA information. Unfortunately, Ancestry does a very poor job of both haplogroup assignment and matching. They show a wide variety of matches with far more mutations that are practical, but better to have too much information rather than too little. Once your matches are displayed, click on "download". A spreadsheet will open, and you can easily review the results to eliminate nonrelevant matches. You will have a small subset remaining. Use that subset to initiate contacts with those individuals. To do that at Ancestry, click on the name of the individual, and then click on "contact" and a message form will appear. You cannot contact them directly, but a message will be sent to them through Ancestry and they can choose to respond or not. I always put my own e-mail address in the message hoping they will contact me directly.

The great thing about DNA is that even if you don't have any matches today, your DNA is out there "fishing" for you every day, 24X7. One day you'll receive a match notification from Family Tree DNA, and you never know what tidbit of information your match may have that will help one of your brick walls fall. Be sure to check the alternate data bases regularly. While Family Tree DNA notifies participants of matches, the others don't, so check your matches when you change your smoke detector batteries. Your ancestor may be waiting for you!