



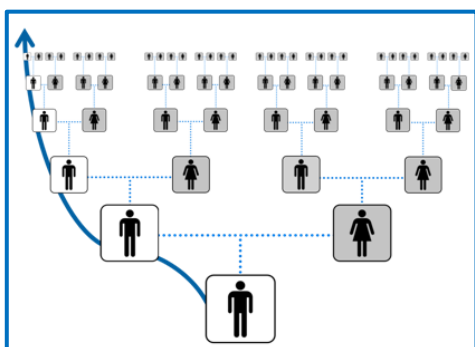
## | Understanding Your Y-DNA37 Results |

Thank you for testing at Family Tree DNA.

Your Y-DNA37 results are complete. These results are the first step in understanding your genetic ancestry through your direct paternal line.

This guide will explain how your results help with genealogy and distant ancestry as well as how to use your myFTDNA personal account.

### The Direct Paternal Line



Your direct paternal lineage is the line that follows your father’s paternal ancestry. This line consists entirely of men. Your Y-Chromosome DNA (Y-DNA) can trace your father, his father, his father’s father, and so forth. It offers a clear path from you to a known, or likely, direct paternal ancestor.

Note that you and your matches may share ancestors on other parts of your family tree; however, those matches are a coincidence.

### Matching for Genealogy

Your Y-DNA may help you find genetic cousins along your direct paternal line. For Y-DNA37 results, we report your results for STR markers. STR marker values change slowly from one generation to the next resulting in distinctive sets of results.

| Steps | Probability that the MRCA lived no longer than this number of generations ago. |     |     |
|-------|--|-----|-----|
|       | 50%  | 90% | 95% |
| 0     | 2  | 5   | 7   |
| 1     | 4  | 8   | 10  |
| 2     | 6  | 12  | 14  |

MRCA = Most Recent Common Ancestor

We compare your set of results to those of other men in our database. The range of possible generations before you share a common ancestor with a match is wide. Your Y-DNA37 exact matches (0 Steps) may be recent, but they may also be hundreds of years in the past. Your matches that have one marker difference (1 Step) may be even more distantly

related. We show this in the table above.

The wide range in the test results does not prevent those results from being useful. You can use this clear paternal line to provide evidence to support a relationship. You first trace two or more male lineage descendants of a single man utilizing traditional genealogy research. The descendants then test their Y-DNA. If they are exact matches, it is evidence that supports the relationship. Not matching usually disproves the relationship.

Planned comparisons are the best choice. However, you can still find your common ancestor with matches. To do so, use your known paternal genealogy. For each match, look first for a shared



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surname if you come from a culture where surnames have followed paternal lines. Then look for common geographic locations on the direct paternal line. Work through each of your ancestors on this line as well as their sons, their sons' sons, and so forth.

**Comparing genealogical records is vital when using Y-DNA matching to help you in your research. You need to enter all that you know about your direct paternal line in your myFTDNA account. See the “Quick Steps” reference page for step-by-step instructions on how to set up your account and access your matching information.**

### The Science of Your Direct Paternal Line

Your Y-Chromosome is a sex chromosome. Sex chromosomes carry the genetic code that makes each of us male or female. All people inherit two sex chromosomes. One comes from their mother and the other from their father. You and other men receive a Y-Chromosome from your father and an X-Chromosome from your mother. Men and only men inherit their father's Y-Chromosome. Thus, it follows the same path of inheritance as your direct paternal line.

STR markers are places where your genetic code has a variable number of repeated parts. We report your STR marker results as the measured number of repeats for each marker. In the example below, the marker DYS393 has 12 repeats.

| Marker | DYS393 | DYS390 | DYS19** | DYS391 | DYS385 | DYS426 | DYS447 | DYS437 | DYS448 | DYS442 | DYS438 |
|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| Value  | 12     | 23     | 12      | 10     | 16-16  | 11     | 24     | 13     | 19     | 13     | 11     |

Over many generations, the number of repeats in each STR marker changes. The number of repeats may go up or down. These changes create the patterns (haplotypes) of individual lines. This process is random. It is not possible to predict that any one marker will change between any set of generations. We do know though how often on average these random changes happen. Thus, we can estimate how closely related two men are by using the similarity of their results.

### Your Ancestral Origins

Our Y-DNA marks the path from our direct paternal ancestors in Africa to their locations in historic times. Your ancestors carried their Y-DNA line on their travels. The current geography of your line shows the path of this journey. Your Y-DNA37 results use two ways to explore your paternal origins.

The first method uses your main (backbone) branch on the paternal tree. This is your Y-DNA haplogroup. Scientists study the history of populations across geography and time using Y-DNA. They use both the frequencies of each branch in modern populations and samples from ancient burial sites. With these, they are able to tell us much about the story for each branch. This traces back hundreds, thousands, or even tens of thousands of years. Your branch on the tree tells you where your paternal ancestors are present today and about their likely migration paths. We review what scientists know about your Y-DNA Haplogroup on the *Y-DNA – Haplogroup & SNPs* page of your myFTDNA account.



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The second method uses your haplogroup with your STR marker results. We use these to match you to others in our database. These matches are more likely to share your line in historic times. Country frequencies thus reflect your ancestors' recent history. Both the *Y-DNA – Haplogroup Origins* and the *Y-DNA – Ancestral Origins* pages show this information.

**See the “Quick Steps” reference page for step-by-step instructions on how to access this information.**

### Privacy and Courtesy Standards

#### Privacy

Family Tree DNA cares about your privacy. When you use our internal database, we can assure your privacy. Please use caution if anyone asks you to export your results to other databases not endorsed by Family Tree DNA. Be sure you have confidence in the privacy protections of whoever is requesting your data. You should not ever share your kit number and password outside of Family Tree DNA.

#### Courtesy Standards

Family Tree DNA would like genetic genealogy and DNA testing to be an enjoyable experience for all. We ask that our customers treat each other, project administrators, and Family Tree DNA staff with courtesy and respect. When your matches reach out to you, please respond to them. Even an answer of “I don’t know” is better than no answer. At all times, respect the privacy of others. Everyone has his or his own comfort level for sharing genetic information. The best policy is to ask before doing.

#### Resources

##### Useful links:

**myFTDNA 2.0 User Guide: Y-DNA** - <http://www.familytreedna.com/faq/answers.aspx?id=48>

**Understanding Results: Y-DNA STRs** - <http://www.familytreedna.com/faq/answers.aspx?id=9>

**Understanding Results: Y-DNA Haplogroups & SNPs** - <http://www.familytreedna.com/faq/answers.aspx?id=26>

**Understanding Results: Y-DNA TiP - (Family Tree DNA Time Predictor)**  
<http://www.familytreedna.com/faq/answers.aspx?id=51>

**Understanding Results: Walk Through the Y (WTY)** - <http://www.familytreedna.com/faq/answers.aspx?id=27>

**Y-DNA Library of Scientific Papers** - <http://www.familytreedna.com/y-dna-papers.aspx>

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**Glossary (complete)** – <http://www.familytreedna.com/faq/answers.aspx?id=21>

### Common Terms

**Genetic Cousins** - These are individuals whose DNA test results match one another indicating shared genetic ancestry.

**Haplogroup** - A haplogroup is a major branch on either the maternal or the paternal tree of humankind. Haplogroups are associated with early human migrations. Today, these designations can be associated with a geographic region or regions.

**Haplotype** - A Y-DNA haplotype is the set of values for a group of Y-DNA STR markers. Two individuals that match exactly on all markers have the same haplotype.

**MRCA (Most Recent Common Ancestor)** - The ancestor shared most recently between two individuals.

**Mutation** - Mutations are changes to your DNA code. They are natural copying errors. One analogy is to think of a copy machine that is making many copies of a page. Occasionally, it will make a mistake; an **e** might look more like an **o**, for example. This is a mutation. If you then take that page with the **o** and copy it, it will pass on its mutation to all of its descendant copies. Note, the term *mutation* in this sense does not refer to anything medical.

**Mutation Rate** - A mutation rate is how often on average DNA changes. This can be either for a specific STR marker or for a length of genetic code. It is how often small copying errors happen. Note, the term *mutation* in this sense does not refer to anything medical.

**Polymorphism** - A Polymorphism is a mutation that has reached a greater than 1% frequency in a local or global population. In genetic genealogy, we most often use it to describe backbone branch defining mutations. These are related to backbone haplogroups. Note, the terms *polymorphism* and *mutation* in this sense do not refer to anything medical.

**Polymorphism Rate** - A polymorphism rate is how many polymorphisms a given length of DNA is likely to have. It and the mutation rate are related, but it is a measurement of the expected number or polymorphisms for a given length of DNA rather than how often they occur. Note, the terms *polymorphism* and *mutation* in this sense do not refer to anything medical.

**STR (Short Tandem Repeat)** - A short DNA motif (pattern) repeated in tandem. ATGC repeated eleven times would give the marker a value or allele of 11.

**TMRCA (Time to Most Recent Common Ancestor)** - The amount of time or number of generations since two or more individuals have shared a common ancestor. Since mutations occur at random, the estimate of the TMRCA is not an exact number (i.e., 7 generations), but rather a probability distribution. For Y-DNA, as more STR markers are compared the TMRCA estimate becomes more refined.

**X-Chromosome** - One of the two sex chromosomes, X and Y. X is the sex chromosome that is present in both sexes, singly in males and doubly in females.

**Y-Chromosome** - One of the two sex chromosomes, X and Y. The Y-Chromosome passes down from father to son. Females do not receive it. As the Y-Chromosome is passed on through the paternal line, it is valuable for surname and male lineage based genealogy studies.



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### Genealogy Quick Steps

#### Entering Your Ancestry Information

Your **myFTDNA** account has two places for you to enter ancestry information. They are the *My Account – Most Distant Ancestors* page and the *My Account – GEDCOM/Family Tree* page. After you enter information, you will be ready to access and contact your matches.

The *My Account – Most Distant Ancestors* page is where you enter basic information about your most distant known ancestor (MDKA) on your direct paternal line. To do so:

1. Log in to your **myFTDNA** account. (<https://www.familytreedna.com/login.aspx>)
2. On the top menu bar, find the *My Account* menu.
3. From the *My Account* menu, select *Most Distant Ancestors*.
4. On the *My Account – Most Distant Ancestors* page, look for the *Direct Paternal* area in the *Most Distant Ancestors* section.
5. In the *Direct Paternal* area, select the *Country of Origin*. If you are not sure of this, select *Unknown*.
6. In the *Direct Paternal* area, enter the name, date of birth, and date of death of your most distantly known direct paternal ancestor in the *Name* field.
7. Click the Save button to save your changes.
8. On the *My Account – Most Distant Ancestors* page, find the *Direct Paternal* area in the *Ancestral Locations* section.
9. Click the *Add Location* button to launch the *Ancestral Locations Map* wizard.
10. In the *Paternal Location* section, click the blue *Edit Location* button.
11. Follow the steps to add your direct paternal most distantly known ancestor's location. This is usually the place where she was born. If you do not know that, it can also be where she was married or where she died.

The *My Account – GEDCOM/Family Tree* page is where you upload an electronic file of your pedigree. GEDCOM is the standard format for sharing electronic pedigree information, and almost all genealogy software packages are able to export to standard GEDCOM format (.ged). To upload your file:

1. First, you must export your GEDCOM file from the software in which you developed your family tree (you should be able to do this by clicking on File in that program and then Export to save this file to your computer). **Please note that Family Tree DNA does not host or offer customer support for any GEDCOM software.**
2. Log in to your **myFTDNA** account. (<https://www.familytreedna.com/login.aspx>)
3. On the top menu bar, find the *My Account* menu.
4. From the *My Account* menu, select *GEDCOM/Family Tree*.
5. On the *My Account – GEDCOM/Family Tree* page, look for the *GEDCOM* section and the *Next* button.
6. Click on the *Next* button to start the *GEDCOM Upload* wizard.

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### Accessing Your Matches

You may view your Y-DNA Full Sequence matches on our website by following these steps:

1. Log in to your **myFTDNA** account. (<https://www.familytreedna.com/login.aspx>)
2. On the top menu bar, find the *Y-DNA* menu.
3. From the *Y-DNA* menu, select *Matches*.

The *Y-DNA – Matches* page has two sections. The top *Filter Matches* section is where you can change the testing level and filter for specific parameters. The bottom *Matches* section is where you can view your matches. To view your most recent Y-DNA37 matches:

1. In the *Filter Matches* section, change the *For:* field to Y-DNA37.
2. Click the orange *Run Report* button

By default, your most recent matches will be at the top of the report. You can read about additional settings for the Y-DNA – Matches page by clicking on the blue page Help button at the top of the page.

### Ancestral Origins Quick Steps

#### Y-DNA Haplogroup Information

To find information about your paternal branch (haplogroup):

1. Log in to your **myFTDNA** account. (<https://www.familytreedna.com/login.aspx>)
2. On the top menu bar, find the *Y-DNA* menu.
3. From the *Y-DNA* menu, select *Results*.
4. On the *Y-DNA – Haplogroup & SNPs* page, description of your haplogroup.

#### Haplogroup and Ancestral Origins Information

To find information about your more recent ancestral origins, begin with the Y-DNA – Haplogroup Origins page:

1. Log in to your **myFTDNA** account. (<https://www.familytreedna.com/login.aspx>)
2. On the top menu bar, find the *Y-DNA* menu, and then select *Haplogroup Origins*.
3. On the *Y-DNA – Haplogroup Origins* page, look for blue *Help* button. The help section describes how to interpret the table of populations and frequencies on the page.

Next, check the Y-DNA – Ancestral Origins page:

1. Log in to your **myFTDNA** account. (<https://www.familytreedna.com/login.aspx>)
2. On the top menu bar, find the *Y-DNA* menu, and then select *Ancestral Origins*.
3. On the *Y-DNA – Ancestral Origins* page, look for blue *Help* button. The help section describes how to interpret the table of populations and frequencies on the page.