



## **Genetic Genealogy Demystified: Reading and Understanding Your Family Tree DNA Results Part 2: Family Finder**

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**You've taken the plunge and ordered a genetic genealogy DNA test from Family Tree DNA, but now that you have your results, you don't understand them? This webinar is for you! Join us to learn how to read and understand your Family Finder results from Family Tree DNA.**

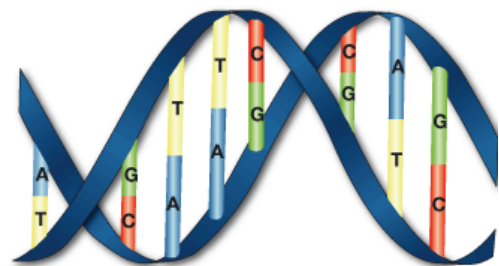
### **Review of DNA Basics**

 Our DNA consists of:

- 46 chromosomes (23 pair)
  - 22 pair = autosomal chromosomes (autosomes)
  - 1 pair = gender chromosomes (X,Y)
- Mitochondrial DNA (mtDNA)

 DNA is made up of four (4) bases (nucleotides):

- Adenine
- Cytosine
- Guanine
- Thymine



Thymine (Yellow) = T    Guanine (Green) = G  
Adenine (Blue) = A    Cytosine (Red) = C

**DNA Sequence** – A string of consecutive bases

Example: TAGCAAAGTCCCATGCCCCAGTCAGTCGGGA

**Single Nucleotide Polymorphism (SNP)** – Base change at a single location in the DNA

Example: C → G, or A → T

## DNA Inheritance

- ✎ We each inherit approximately 50% of our DNA from each parent.
- ✎ DNA inheritance is random. Siblings inherit a different random 50% from each parent, with the exception of identical twins, who inherit the exact same DNA.
- ✎ Autosomes: Both men and women inherit one of each of the 22 pair of autosomes from each parent.
- ✎ Y Chromosome: Inherited by men only, via their direct paternal line (father's father's father etc)
- ✎ X Chromosome: Men inherit one from their mother; women inherit one from each parent.
- ✎ Mitochondrial DNA: Inherited by both men and women via their direct maternal line (mother's mother's mother, etc)

## Reading & Understanding Family Finder Results

### Highlights

- ✎ Discover connections to descendants of your sixteen (16) great-great-grandparents
- ✎ Determine degree of relationship with matches
- ✎ Great test for adoptees
- ✎ Population Finder tool determines percentages of different global populations that comprise your ancestry.

### Affymetrix vs Illumina

- ✎ Family Tree DNA converting from Affymetrix to Illumina OmniExpress.
- ✎ All customers tested on Affymetrix will be converted to Illumina at no charge.
- ✎ All new Family Finder orders will be processed on Illumina.
- ✎ Illumina includes approximately 710,000 SNPs; Affymetrix included 500,000 SNPs.

### How Does Family Finder Work?

- ✎ Starts with a microarray chip that returns results for approx 710,000 pairs of SNPs (Illumina) on your 22 autosomal chromosomes.
- ✎ Each pair contains one value inherited from your mother, and one inherited from your father. It's not possible to tell which value came from your mother or father without comparing to other known family members.
- ✎ Your results are compared to Family Finder results of other customers in the FTDNA database.
- ✎ Your relationship with a match is calculated based on shared linked segments of DNA known as Haploblocks.
- ✎ Two people from the same population may have some DNA in common even though they're not *recently* related. Those shared segments are usually very small, while larger shared segments tend to be indicative of recent shared ancestry. This concept is known as Identity By Descent (IBD).

## Matching Using ½ IDB

- Family Finder clusters SNPs into sequential blocks of 50 to 100 SNPs long.
- SNP blocks are evaluated for matching. SNP blocks may be half-identical or non-identical. Half-identical means that one of the values for each SNP matches between the two people being compared.
- DNA segments are considered ½ IDB if it contains at least 500 half-identical SNPs.
- The quantity and size of shared ½ IDB blocks are used to determine relatedness. The largest shared ½ IDB block between two people must be at least 5 cM long to be considered a match. Additional supporting segments help confirm the relationship and refine the degree of relatedness. A block that is 10 cM or larger indicates conclusive shared ancestry.
- A centiMorgan (cM) is a measurement of how likely a segment of DNA is to recombine from one generation to the next.

## Family Finder Matches

- View names of your matches
- Email your matches
- Enter private notes about each match
- View a GEDCOM (Family Tree) for each match, if uploaded
- Suggested relationship
- Relationship range
- Total shared cM
- Length of longest block
- Assign known relationships
- Compare ancestral surnames
- Filter on suggested relationship, match name, ancestral surname.

Filter Matches By: Relation:   Exact Spelling for Surname Matches  Hide 3rd Party Results

Advanced Filters: Name:  Ancestral Surnames:

Export To File:

## Chromosome Browser

- View matching segments graphically or numerically
- Choose smallest blocks to display: 1, 3, 5 or 10 cM
- Export data to Excel
- Compare up to 3 matches at a time
- View details page for each match and enter private notes

## Known Relationships

- View and edit known relationships that were assigned on the Family Finder Matches page

**Family Finder**

**Affymetrix**

- Matches
- Chromosome Browser
- Known Relationships
- Population Finder
- Download Raw Data

**Illumina OmniExpress**

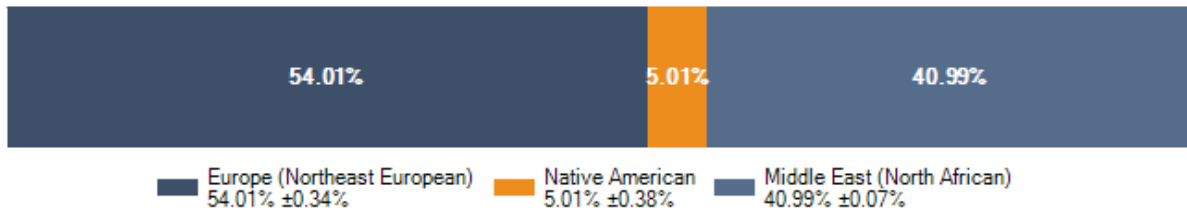
- Matches **NEW**
- Chromosome Browser **NEW**
- Known Relationships **NEW**
- Population Finder **NEW**
- Download Raw Data **NEW**

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Optional Views  
▶ View this data in a table  
▶ Download to Excel

## Population Finder

- 🔍 Determines your biogeographical ancestry — the story of your personal genetic history — by comparing your autosomal DNA to Family Tree DNA's world DNA population database.
- 🔍 Your Population Finder results consist of up to four out of seven continental groups.\* For each, the percentage of your genome that matches is shown.



\* The seven continental groups are based on genetic similarity and do not precisely match geographical continents.

## Download Raw Data

- 🔍 Download your Family Finder Matches in Excel (XML) or CSV format
- 🔍 Download your raw SNP results

## Making the Most of Your Genetic Genealogy Experience

Receiving, reading and understanding your results shouldn't be the end of your genetic genealogy experience. Here are some ways you can make the most of this experience:

- 🔍 **Share.** Your myFTDNA account has fields to enter your Most Distant Known Ancestor's (MDKA) name and location, as well as all the surnames in your ancestry. You can also upload a GEDCOM of your family tree. Entering all this information will enable your matches to learn something about your genealogy before they even contact you.
- 🔍 **Communicate.** Don't be afraid to email your matches, and definitely respond to emails that you receive from your matches! All customers can choose whether to sign the green release form that Family Tree DNA provided with your swab kit, which gives FTDNA permission to provide their name and email address to matches. So everyone who you see on your Matches page has signed this form and given permission.
- 🔍 **Participate.** Family Tree DNA has over 6,000 different projects which focus on surname, geography, heritage or haplogroups. Projects are all run by volunteer administrators and are free to join. Joining projects is the best way to stay informed about news related to the topic of the project, and you have the added benefit of getting support and assistance from your project administrator.
- 🔍 **Be Proactive.** No project for your surname yet? Start one and recruit other people with your surname to get tested. You don't have to be an expert on genetic genealogy to start a project.

- 🔍 Learn. Keep learning about genetic genealogy by attending Relative Roots Webinars, visiting the International Society of Genetic Genealogy website, and joining discussion forums and email lists that discuss genetic genealogy. Project administrators are also invited once a year to attend a conference hosted by Family Tree DNA in Houston.
- 🔍 Test More. Upgrading existing tests, ordering new types of tests, and/or testing other family members all have the potential to enhance your Genetic Genealogy experience. Higher level tests refine results, each type of test has a different purpose, and testing other family members may help you target a specific ancestor that your own results do not.

## Websites

### 🔍 Relative Roots

- <http://www.relativeroots.net>
- <http://www.facebook.com/RelativeRoots>

### 🔍 Family Tree DNA

- <http://www.familytreedna.com/>
- <http://www.facebook.com/FamilyTreeDNA>

### 🔍 International Society of Genetic Genealogy (ISOGG) – it's free to join!

- <http://www.isogg.org>

### 🔍 Genetic genealogy mailing lists and discussion forums:

- <http://forums.familytreedna.com>
- <http://www.yahogroups.com/group/ISOGG>
- <http://www.yahogroups.com/group/DNA-Newbie>
- <http://www.dna-forums.org>
- <http://lyris.jewishgen.org/ListManager> (JewishGen)
- <http://lists.rootsweb.ancestry.com/index/other/DNA/GENEALOGY-DNA.html>

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