

# 3 DNA Tests = 3 Times the Fun

Diahan Southard

Author of [Your DNA Guide--the Book](#)

Creator of [Your DNA Guide--the Academy](#)

[www.yourDNAguide.com](http://www.yourDNAguide.com)

[info@yourDNAguide.com](mailto:info@yourDNAguide.com)

DNA testing has no doubt become the hottest topic of discussion in genealogy--if not in general! Many people are testing just out of curiosity to find out what mix of DNA they have. The kind of test they are taking is called an autosomal DNA test, and covers both their mom's side and their dad's side. But there are actually three kinds of DNA tests you can take for your family history.

Let's go over the results you receive from the three main test types and determine if it will be useful to you in your genealogy.

Note: All of the genetic genealogy tests are administered via the regular mail. The DNA test kit arrives in your mailbox with everything you need to collect the sample and return it back to the laboratory. The collection method is a cheek swab or a saliva sample, which are painless and simple to administer for most people.

No matter which kind of test you take, once the DNA sample is submitted to the laboratory for testing and it is processed, you get two different kinds of results from the testing company: ethnicity results describing your ancestral origins, and a list of individuals in the database who have some kind of genetic relationship to you. It is then your job to work with the other individuals in the database to use genetic and TRADITIONAL genealogical methods to figure out how you are related.

## Test Types 1 and 2: YDNA and mtDNA

*Only available at [www.FTDNA.com](http://www.FTDNA.com)*

The YDNA test can reveal information about your direct paternal line. Only males can take the test, so if you are a female, you will need to use your powers of persuasion to get a brother, father, uncle, or cousin to test for you.

The mtDNA test traces your mother's mother's mother's line. Both males and females can take this test to represent their own mtDNA lines.

With the YDNA and mtDNA tests, the ethnicity portion is called a haplogroup, or a deep ancestral group. It can act like a molecular GPS to help you determine the ancient origins of your direct paternal or maternal line. Most genealogists find this information interesting, but not particularly genealogically valuable without additional testing.

[YDNA and mtDNA Haplogroup Maps of the World](#) (Go ahead, take a look! It's interesting!)

### *DNA Profile*

Your YDNA and mtDNA profiles work to help you verify and extend your paternal and maternal lines respectively. Because of the way this kind of DNA is inherited, a living person tested today can almost exactly represent every ancestor on a direct maternal or paternal line for at least 8 generations, and with only a few differences after that point. This means that you have an original document from 8 generations ago right inside of you!

The power of mtDNA and YDNA testing is in finding matches to your DNA profiles. A match indicates that you could share common ancestry with that person- you are genetic cousins! A good match on the YDNA is anyone having 3 or fewer differences from your profile. A good mtDNA match will share your profile exactly.

Don't have many good matches in your YDNA or mtDNA? There may be some things we can do to look for more, or to explain why. But, unfortunately, patience is a virtue that's often required with this kind of testing. This database is growing, and sooner or later you are bound to find a relative.

## Test Type 3: Autosomal DNA

Available at Family Tree DNA (FTDNA.com), 23andMe.com, AncestryDNA, MyHeritage, and Living DNA.

Autosomal DNA (atDNA) testing is the newest but most popular tool available to genetic genealogists. Unlike the male Y chromosome and the female-inherited mitochondrial DNA, which are both limited to single lineages in your pedigree chart, atDNA can potentially provide information on your matches or ancestors on both sides of your family tree.

Autosomal DNA is currently limited in its genealogical reach as it can only help you back about 6 generations. (We are limited to so few generations because of the way autosomal DNA is shuffled and halved at each generation.)

Important Principle: [Your genetic pedigree is different from your genealogical pedigree](#). Testing companies can find your second cousin 99% of the time, but [only 50-60% of your fourth cousins will be found](#).

#### **Take-home message:**

There are more relatives in the database who cannot be found with your test. If you test more people (siblings, cousins, etc.) then you increase your chances of finding all of your relatives. [Read tips for getting your relatives to take a DNA test](#).

**Get inspired!** [Read stories on our website](#) about how genealogists are using DNA testing (all 3 kinds!) to build their family trees and solve old family mysteries.

#### **To sum up:**

##### mtDNA

- Describes ONLY your direct maternal line.
- If you are ordering, consider the FMS test from Family Tree DNA.
- Anyone can be tested.
- Your maternal haplogroup can give you clues as to the origins of your maternal line.
- Your mtDNA profile is used to find matches in the database.
- Only EXACT matches should be considered further investigation (most of the time).

##### YDNA

- Describes ONLY your direct paternal line.
- If you are ordering, consider the 37 or 67 marker test from Family Tree DNA.
- Only males can be tested.
- Your paternal haplogroup can give you clues as to the origins of your paternal line.
- Your YDNA profile is used to find matches in the database.
- Only matches with three or fewer differences (at the 37 or 67 marker level) should be considered further investigation (most of the time).
- You maximize the benefit of YDNA testing when you participate in a family surname project (do your homework!)

##### Autosomal DNA

- Can potentially provide information about all of your ancestors back about 6 generations.
- If you are ordering, there are five companies to choose from (see below), but currently the best route is to test first with AncestryDNA, then [transfer to the other companies](#) (except 23andMe, where you would have to physically test).
- Anyone can be tested. Capture the DNA of your oldest living relatives first.
- Your ethnicity (admixture) results can give you clues as to the origins of your family lines and are based on three factors: Reference Populations, Fancy Math, and Time. [Get a free downloadable guide to understanding your ethnicity results](#).

#### Testing Companies

There are five major genetic genealogy testing companies. Only one, Family Tree DNA, offers YDNA and mtDNA testing. All others only offer autosomal (though 23andMe and Living DNA do provide limited YDNA and mtDNA information). Each has its own niches, so you should investigate each company to help you determine which might be

the best fit for you and your genetic genealogy needs. Read and bookmark our [review of DNA testing across all 5 companies](#).

### Next Steps with Your DNA Guide

[Sign up for our free monthly email newsletter](#) to keep up with DNA testing news, free tips and inspiring stories.

**Explore our must-have, inexpensive quick reference guides! Purchase at least 3, and you'll automatically receive 20% off them all!** We have guides for: autosomal DNA, YDNA, mtDNA, four of the major testing companies (AncestryDNA, MyHeritage DNA, 23andMe and Family Tree DNA--Family Finder test) AND our most popular quick reference guide, Finding an Ancestor Using Your DNA.

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