

## **The Five Most Important Things to Know About Genetic Genealogy**

Mary Eberle, JD

www.DNAHunters.com

608-206-0641

Mary@DNAHunters.com

**15th Annual LACS Cultural Conference**

8-13-2021

Using DNA for genealogical research can be complicated. Let's step back and simplify things. These five important tips will help you focus and achieve your goals.

1. Start at Ancestry.com. It has the largest database of DNA testers, which means you'll likely have the most DNA matches there. Its testers also have the most family trees. They might not be perfect, but those trees should help you decipher how you're related to the matches. Ancestry also has excellent tools for working with DNA results. These include Common Ancestors and ThruLines™. And, yes, they don't have a chromosome browser. But that's OK.
2. Autosomal DNA (atDNA) is the best kind of DNA to use. Since 2015, I have used atDNA to find countless birth parents, grandparents, and more distant ancestors. There are several reasons that atDNA works so well. First, atDNA finds close relatives. This is in contrast to Y-DNA and mitochondrial DNA (mtDNA), where matches typically are more distant. For example, Y-DNA ancestors might be 3<sup>rd</sup> cousins—or they might be 9<sup>th</sup> cousins. You also might not get any Y-DNA matches (like my brother at the Y-67 level) or get matches with many different surnames.

The closeness of mtDNA matches can be 20 or more generations ago—too far back in time to help with most genealogical questions. The reason that Y-DNA and atDNA matches are more distant than atDNA matches is these DNAs change very slowly. Thus, for these matches, it can be hard to find your most recent common ancestor.

Also, atDNA covers all branches of your family tree going back 5-8 generations. In contrast, Y-DNA only covers the direct paternal line, and mtDNA only covers

the direct maternal line. Think about your tree—the vast majority of the branches are NOT on either of these direct lines.

In addition, most people test atDNA; thus, you'll have the most matches with atDNA when compared to Y-DNA and mtDNA. Good matches and good trees are what's needed to achieve family research goals.

3. You need to determine possible relationships to your matches instead of relying on what the DNA testing company says. The companies put matches into categories and some, like Ancestry, provide a list of possible relationships. However, even Ancestry doesn't consider all possibilities—like double cousins where two sibs from one family marry two sibs from another family. No company considers endogamy or pedigree collapse, where people are related on multiple lines. This makes them appear to be more closely related than they really are.

Also, almost always multiple relationships are possible. Most companies only list one possibility when there could be many possible relationships. This can be misleading and confusing.

The solution to this problem is to use DNA Painter's Shared cM Project tool to determine possible relationships.

(<https://dnapainter.com/tools/sharedcmv4>). It not only provides possible relationships, it tells you their probability. And, while the Shared cM Project tool does *not* account for endogamy or pedigree collapse, it at least warns users about it. *Please note that for using the Shared cM Project tool with matches from FamilyTreeDNA and 23andMe, you should subtract the amount of X-DNA shared with a match.*

4. It's important to fish in all ponds, that is, all DNA testing companies. You never know where that crucial match might've tested. Someone might've seen a TV ad for Company A. If you're not at Company A, you won't match them. Different matches test at different companies. Sometimes entire families have tested only at one company.

In addition, different companies have different tools. For example, Ancestry lacks a chromosome browser, but all other DNA testing companies (and

GEDMatch) have one. You don't need to test directly at all companies. Instead, you can transfer into several of them. For detailed advice on transferring from one DNA testing company to another, get my freebie, DNA Roadmap, at <https://dnahunters.com/NewRoadmap>.

5. Having a family tree is important. Assuming you can, on Ancestry, start with what you know—your parents, grandparents, etc. Ancestry does a great job (although not perfect) of suggesting records, like Census and vital records, for people in a family tree. This makes it fairly easy to build trees back in time. If you can, build all branches back to people born around 1750.

On Ancestry, attach your DNA to yourself in your tree. This lets Ancestry do some of the hard work for you. For example, Ancestry will provide Common Ancestors for DNA matches believed to share ancestors with you. You should verify Common Ancestors. For example, look at the Shared Matches to see if they are consistent with the Common Ancestors.

Based on your family tree (and more), Ancestry will provide ThruLines™. They show your ancestors from your tree, along with possible ancestors. Thus, you need to verify your ThruLines™ with records and the DNA matches that are linked to each ThruLine™.

Use DNA to help fill in the gaps in your tree. This will be much easier when you assign your known matches to specific ancestors. The easiest way to do this is through Ancestry's color-coding feature. You can also add notes to each match, such as MRCA<sup>1</sup>=John Smith & Jane Doe; 3C.<sup>2</sup> Using abbreviations lets more of your note appear in your match list (if you have that feature on Ancestry) and when you view an individual match.

#### Recommendations:

- Focus on these five most important things to know about DNA.
- It will save you time and money in accomplishing your using DNA research goals.

---

<sup>1</sup> MRCA stands for Most Recent Common Ancestor

<sup>2</sup> C stands for cousin; 3C stands for third cousin

Resources:

- DNA Painter's Shared cM Project tool to determine possible relationships. (<https://dnainter.com/tools/sharedcmv4>).

Freebies from DNA Hunters, LLC: These freebies will get you on the DNA Hunters mailing list too! Get one or get them all!

- **DNA Roadmap**, which has a DNA testing plan AND detailed instructions for transferring DNA from one company to another  
<https://dnahunters.com/NewRoadmap>
- **What Test Guide**, a quick guide with my advice on what test to order.  
<https://dnahunters.com/WhatTestGuide>
- **X-DNA Cheat Sheet**, showing the ancestors from whom a man and a woman can inherit X-DNA. This simplifies figuring out how X-DNA matches are related to a test taker, saving time!  
<https://dnahunters.com/XDNA> (*X-DNA is not one the five most important things to know about DNA. But it's something that can be useful. Indeed, I have two separate talks on it, and it helped me find my orphaned 2<sup>nd</sup> great-grandmother's birth parents.*)