

UPDATE – DNA FOR AGS

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The “X” Factor in DNA Analysis



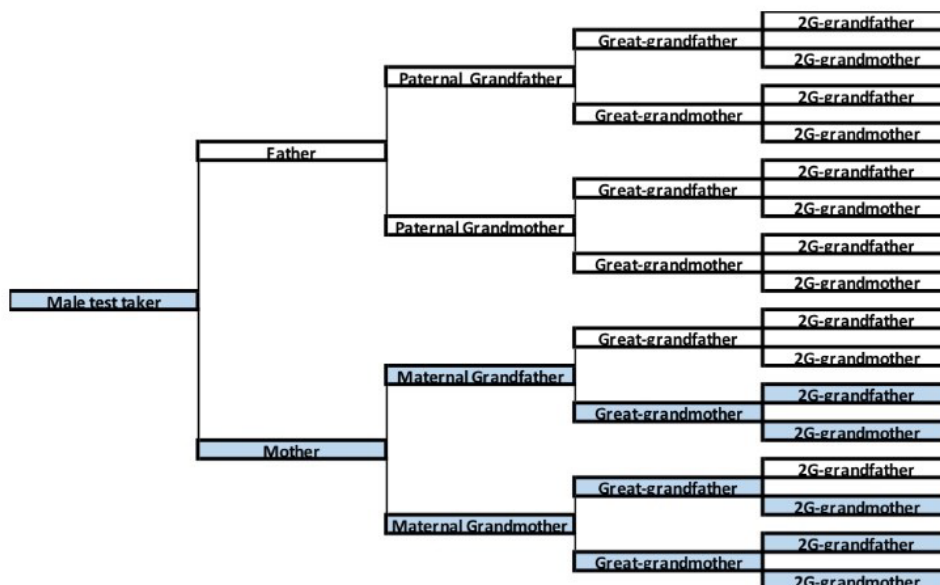
We’ve all been there. The long-awaited DNA test results have arrived and now we have thousands of matches to sort through. It would be nice if we could at least figure out which ones are maternal and which are paternal.

Tests that come from AncestryDNA, 23andMe, MyHeritage or Family Finder at FamilyTreeDNA are at-DNA or autosomal. Since we get half of our autosomal DNA from our fathers and half from our mothers, these matches are a mix and could come from either side of the family. In some cases, even both. This is particularly difficult for adoptees who have no idea who any of these people are.

Separating matches between the paternal and maternal side is a form of “phasing.” Fortunately, when we do an at-DNA test, the lab gathers “bonus” information we can use to help with this. It is called X-DNA results.

We inherit at-DNA on 22 chromosomes from each parent. In addition, we get the “X” chromosome. A female will get an X from her dad and an X from her mom. A male will get a “Y” from his dad and an X from his mom. This creates a unique inheritance pattern that works particularly well for males. See illustration chart.

X-DNA Inheritance Chart – Males



As you can see, if the test taker is male, an X match would have to be from the maternal side.

The next question is, how do we know if a match is an X match. If you did the Family Finder test at Family Tree DNA, then one of the columns of information on your match list will be “X-Match.” If a match is an X-match, it will state that right on your match list.

If you tested at 23andMe, you will have to dig a little deeper. From your match list click on one of your matches. This will bring up a second screen. Scroll down to “View DNA Details.” When you click on that, it will bring up a “chromosome browser.” This will be a picture that will show your 22 chromosomes plus the X chromosome. Colored areas on a chromosome represent matches. If there is a colored area on the X chromosome, then that person is an “X-Match.” Usually the bigger the colored area the closer the match.

Unfortunately, AncestryDNA and MyHeritage do not show this information. However, you can upload your raw data to GEDMatch from these services to identify X matches there.

While we always inherit X chromosome DNA from our parents and close DNA matches will usually reflect that as well, the further out the match, the less likely we will share X-DNA. So be aware that for men, all X-matches will be maternal, but not all maternal matches will be X. It is not perfect, but it is one way to help us narrow down that massive number of autosomal DNA matches.

For a more in-depth look at X-DNA, see *Genetic Genealogy in Practice* by Blaine T. Bettinger and Debbie Parker Wayne.