

I've Had My DNA Tested... Now What?

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Why genetic genealogy? HOPE!!!

It can tell you:

- If you and another person are related /descended from the same individual
- If your traditional genealogical research is on the right track (or when to give up!)
- Ethnicity results for origins of ALL your family lines
- **HOWEVER**, if you don't want to know the answer, don't ask the question!



DNA and Y-chromosome basics:

- DNA (deoxyribonucleic acid) – double helix consisting of 23 pairs of chromosomes that can be found in the nucleus of every cell in the human body.
- 22 pairs of autosomes – a child receives half from their father and half from their mother.
- One pair of sex chromosomes – male has XY and a female has XX.

Autosomal testing:

- FamilyTree DNA, 23andMe, Ancestry.com & My Heritage are offering this type of test
- Tells you about the other 22 pairs of chromosomes & can tell you about siblings, cousins, aunts/uncles, nieces/nephews
- Generally can help you identify cousins back about 5 generations; some more distant
- Must try to discern which branch of the family you're related on, usually by comparing surnames/locations and the locations of the shared DNA on which particular chromosome

Non-paternity events (NPEs) – now more accurately called “misattributed paternity” happen for a number of reasons: an extramarital affair, a bride being pregnant with a child before marriage and groom is not the father, an undocumented or unofficial adoption, a son taking his stepfather's name, a surname change or patronymic naming system, or plain old bad data! Be aware that these circumstances can be revealed by a DNA test.

Tools for analysis:

- FamilyTree DNA
 - Use their chromosome browser to compare segments amongst those on your match list, the In Common With/Not In Common With functionality, and split matches into paternal and maternal matches by linking matches to their profile on your family tree.
- 23andMe
 - Use their DNA Relatives tool to narrow down your matches, Ancestry Composition Chromosome View for more specifics on ethnicity, and once you select a match, a chromosome view comes up that shows shared segments.
- AncestryDNA
 - Use the Shared Tree Hints, Shared Matches, DNA Circles & New Ancestor Discoveries (NADs) to help you. Watch for Genetic Communities to be released in the near future.
- LivingDNA
 - UK autosomal test that will give you more resolution on British and European ethnicities back 10 generations, as well as information on the mtDNA and Y-DNA origins.
 - Hoping to add matches in the future

- MyHeritage DNA
 - Match list with total shared cMs, number of segments and ethnicity profile (watch for more tools to come)
- GEDmatch
 - Free online tool with many options to compare raw DNA data across testing companies: One-to-one kit comparison, one-to-many kit comparison, admixture tools, phasing, predictions of eye color, *Are your parents related?*, 3D chromosome browser, etc.
 - If donate \$10 can access paid tools for one month (multiples of \$10 get you multiples of a month). These include: matching segment search, relationship tree predication, Lazarus, and a triangulation tool.
- Genome Mate Pro
 - Free tool for more advanced users. Can create a chromosome map and incorporates a lot of functionality of other online tools. Data is stored on your local computer, however, and you can compare across companies.
 - Includes a 200+-page User's Guide, YouTube videos, and a Facebook User's Group to help you get familiar with the program.

Want to learn more? Check out these Internet resources:

- Kelly Wheaton's Beginner's Guide to Genetic Genealogy (<https://sites.google.com/site/wheatonsurname/beginners-guide-to-genetic-genealogy>)
- Kitty Cooper's Chromosome Mapper: <http://blog.kittycooper.com/tools/my-graphing-or-mapping-tools/chromosome-mapper/>
- International Society of Genetic Genealogy (www.isogg.org) – especially the Wiki
- DNA Testing Adviser (www.dna-testing-adviser.com)
- FamilyTree DNA (www.familytreedna.com)
- Genographic Project (genographic.nationalgeographic.com)
- Ancestry.com's DNA Testing (dna.ancestry.com)
- 23andMe (www.23andme.com)
- GEDmatch (www.gedmatch.com)
- DNA Land (dna.land – yes, that's really the URL... ☺)
- Genome Mate (www.genomemate.org)

Bibliography:

- Aulicino, Emily, *Genetic Genealogy: The Basics and Beyond*, AuthorHouse, 2013.
- Bettinger, Blaine T., *The Family Tree Guide to DNA Testing and Genetic Genealogy*, Family Tree Books, 2016.
- Bettinger, Blaine T. and Debbie Parker Wayne, *Genetic Genealogy in Practice*, National Genealogical Society, 2016.
- Dowell, David R., *NextGen Genealogy: The DNA Connection*, Libraries Unlimited, 2014.
- Griffeth, Bill, *The Stranger in My Genes: a Memoir*, New England Historic Genealogical Society, 2016.
- Hill, Richard, *Finding Family: My Search for Roots and the Secrets in my DNA*, CreateSpace, 2012.
- Hill, Richard, *Guide to DNA Testing: How to Identify Ancestors, Confirm Relationships, and Measure Ethnic Ancestry through DNA Testing*, Atrax LLC, 2014.
- Kennett, Debbie, *DNA and Social Networking: A Guide to Genealogy in the Twenty-First Century*, The History Press, 2011.
- Wells, Spencer, *Deep Ancestry: Inside the Genographic Project*, National Geographic, 2007.