

Using DNA to Identify Ancestral Origins

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Why Should You Use DNA for Genealogy?

- Test a hypothesis in your family tree by using descendants of ancestors and other relatives
- Confirm origins of ancestors
- Identify potential non-paternal events that may explain gaps in the paper trail

Types of DNA Tests Available

- Autosomal
 - Male and female lines tested.
 - Anyone can take the test.
 - Testing Companies: Ancestry, FamilyTree DNA, MyHeritage, 23andMe, Living DNA.
- Y-DNA
 - Direct male line is traced.
 - Only males can take test (Y-chromosome).
 - Recommend at least 37 markers (may require 67 markers or higher in groups if a large # of matches).
 - Testing Companies: FamilyTree DNA (recommended), Living DNA
- Mitochondrial
 - Direct female ancestral line is traced.
 - Anyone can take the test.
 - Testing Companies: FamilyTree DNA (recommended), Living DNA

Ethnicity Estimates

- Reference Panels used to determine your ethnicity
 - DNA samples from populations in a specific area
 - Each company has different sets of samples
- Algorithms used for assigning regions
 - May be put in a broader region
 - Labels may be confusing and not always accurate
- Timeframes
 - Usually about 500-1000 years ago
 - Ancestry and 23andMe may be within 500 years
- Overall, can be misleading or inaccurate
- May change over time.

Haplogroups

If you take a Y or mitochondrial DNA test you will be assigned a haplogroup. It is an ancient ancestral grouping that shows the migration path your ancient ancestors traveled on when they left Africa.

Your Family Tree

- Evaluate your tree and identify your gaps or brick walls
- Yours should include through your earliest known ancestors
- Do you have all births, marriages and deaths?
- Locations where they occurred?
- All Locations where family lived and moved to?
- All children and siblings?

Working with your Autosomal DNA matches

- DNA companies predict relationships
- Ask questions and be patient for answers
- Work together with your match and share information
- Always confirm with genealogical records
- May need to build out your match's tree and find more information
- Locations where they occurred?
- All Locations where family lived and moved to?
- All children and siblings?

Reviewing Your Y-DNA and mt-DNA matches

- Look for matches with genetic distance of 0 (exact match) or 1 (slight mutation)
- The greater the genetic distance between two matches, the further back the common ancestor. Prioritize matches with the lowest genetic distance.
- If matches took Family Finder test with FamilyTree DNA, look for them on your autosomal match list.
- Review the various reports and maps available through FamilyTree DNA to learn about the origins of DNA matches.

TIP: Upload your DNA to FamilyTree DNA, MyHeritage, Living DNA, and GEDMatch to view more DNA matches.

Genetic Genealogy Resources:

Websites

American AncestryTrees - <https://www.americanancestors.org/tools/american-ancestrees>

DNA Painter – <https://www.dnainter.com>

GEDmatch – <https://www.gedmatch.com>

Genealogical DNA Analysis Tool - <https://sites.google.com/view/genealogical-dna-analysis-tool>

International Society of Genetic Genealogists or ISOGG wiki: <http://www.isogg.org/wiki>

Shared cM Relationship Chart: <https://thegeneticgenealogist.com/2020/03/27/version-4-0-march-2020-update-to-the-shared-cm-project>

Shared cM Tool: <https://dnainter.com/tools/sharedcmv4>

Blogs

Blaine Bettinger: The Genetic Genealogist <http://thegeneticgenealogist.com/>

Debbie Parker Wayne: Deb's Delvings <http://debsdelvings.blogspot.com/>

Roberta Estes: DNAExplained - Genetic Genealogy <http://dna-explained.com/>

Judy Russell: The Legal Genealogist <http://www.legalgenealogist.com/category/dna/>

Kitty Cooper: Musings on genealogy and genetics <http://blog.kittycooper.com/>

Books and Articles

Angie Bush, *Genetic Genealogy Basics*. (Baltimore, Maryland: Genealogical Publishing Company, 2016).

Blaine Bettinger, *The Family Tree Guide to DNA Testing and Genetic Genealogy* (2nd Edition). (Cincinnati, Family Tree Books, 2019).

Christopher Challender Child, *Using DNA in Genealogy*. (Boston, New England Historic Genealogical Society, 2014).

Roberta Estes, *DNA for Native American Genealogy* (Baltimore, Maryland: Genealogical Publishing Co, 2021)

Colleen Fitzpatrick, *DNA and Genealogy*. (Fountain Valley, CA, Rice Book Press, 2005).

Brianne Kirkpatrick and Shannon Combs-Bennett, *The DNA Guide for Adoptees: How to Use Genealogy and Genetics to Uncover Your Roots, Connect with Your Biological Family, and Better Understand Your Medical History* (Brianne Kirkpatrick and Shannon Combs-Bennett, 2019).

Diahan Southard, *Your DNA Guide, the Book: Step-by-Step Plans to Connect You With Your Family Using Your DNA* (Your DNA Guide, 2020).

Debbie Parker Wayne, *Advanced Genetic Genealogy: Techniques and Case Studies*. (Cushing, Texas, Wayne Research, 2019).

Diahan Southard, *Your DNA Guide the Book: Step-by-Step Plans to Connect You with Your Family Using Your DNA* (United States, Your DNA Guide, 2020).

Tamar Weinberg, *The Adoptee's Guide to DNA Testing: How to Use Genetic Genealogy to Discover Your Long-Lost Family* (Cincinnati, Ohio, 2018).