

ThruLines: Maximize Your Ancestry DNA Results

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ThruLines is a powerful tool created by Ancestry to help you discover how you could be related to those in your DNA match list. Using ThruLines it is possible to discover the common ancestor/s you share with your DNA match. There are a few steps to take to maximize your experience with ThruLines.

Overview

- Set Up for Success
 - Overview of Ancestry DNA Icons
- Benefits of ThruLines
 - View, Find and Verify DNA Matches
- How to Use Ancestry ThruLines
 - Prepare Your Family Tree with Accuracy and Link to your DNA
- What to Avoid
 - Confirmation Bias
 - Contamination
- Discovery and Connection
 - Finding Matches and Connecting
- Additional Resources
 - Ancestry Support, Legacy Tree, Webinars, Your DNA Guide – The Book

Set Up for Success

Once you receive your DNA results, follow these simple steps:

1. To use ThruLines, **you must** link your DNA to your Ancestry family tree. You will not be able to use this great ThruLines tool unless you link your DNA to your family tree.

Go to the **“Settings”** tab on the far righthand side of your DNA home page. Click Settings, then find **“DNA and family tree linking”** to connect your DNA to your tree.



Figure 1: Remember to link your DNA to your family tree (it's easy)!

1. If your family tree is “private,” you can make your DNA private and searchable for the best results.

2. Once you’ve linked your DNA to your tree, it may take up to 48 hours to populate your matches in ThruLines.

3. Then, go to the DNA tab and click “*Your DNA Results Summary*,” and next click “*Explore ThruLines*.” Or click “*ThruLines*” to go straight there!

4. You should see your parents, grandparents, great-grandparents, and up to 5th great-grandparents. Ancestry will use the information *you have provided* in your family tree, and their best effort is made to match you with other DNA testers in their database.

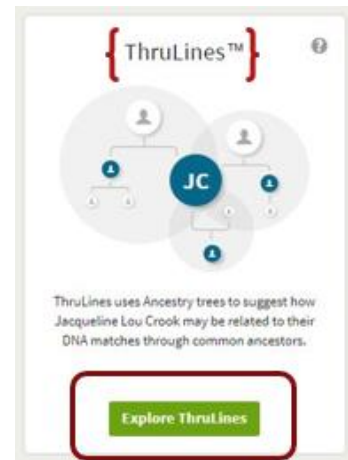


Figure 2: Using ThruLines can accelerate your genealogy research!

5. Hover your mouse over the ancestor’s name you would like to examine. You will see the number of DNA matches you have with that ancestor; then, click to evaluate the relationship paths.

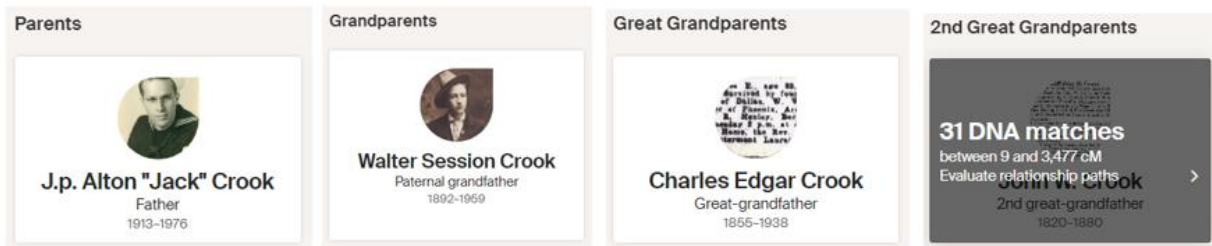


Figure 3: Hover your mouse over the ancestor you are researching. Click to see the DNA matches and find the relationship path!

6. The pathway to your common ancestor will be revealed if the same ancestors exist in each family tree. Ancestry will examine other trees in their database to make a relationship prediction. Then you can proceed to your traditional genealogy research to determine if this ancestor relationship is correct. *Remember, always verify what you have discovered.*

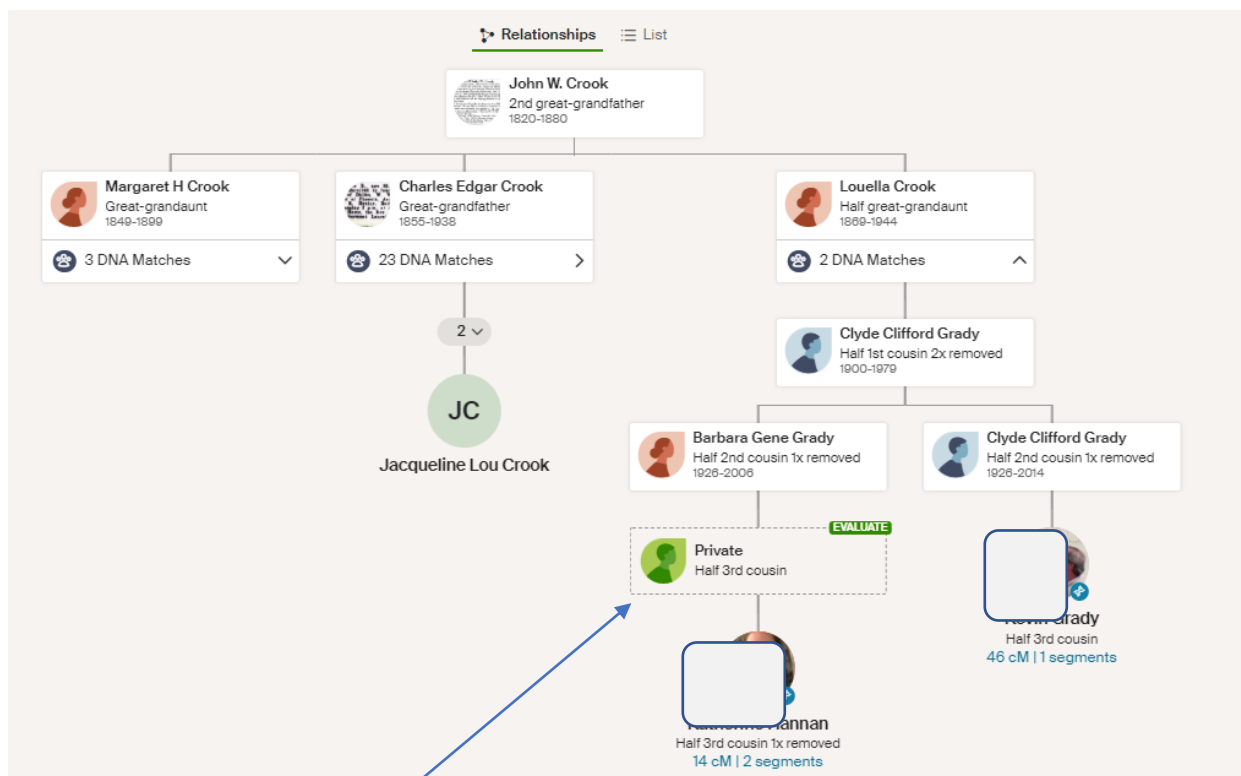


Figure 4: Ancestry ThruLines reveals DNA matches with new possibilities for family connections!

7. While examining ThruLines, you may see a potential ancestor surrounded by faint dashes. This possible ancestor is another opportunity for you to research Ancestry's prediction. *Always verify if that person belongs in your family tree.*

ThruLines has provided the following fantastic benefits

- Discovering your DNA matches and the potential common ancestor/s you share.
- The possibility of learning additional information about your ancestors through your DNA matches and finding new information they may have in their family tree.
- Ancestry makes it possible to view the relationship path for your common ancestors (IF your DNA match has an accurate family tree).
- A chance for you to **verify** the path of your DNA match to your common ancestor/s.
- Add additional relatives to your tree through these discoveries.
- An opportunity to connect with living relatives/cousins in your DNA match list.
- Collaboration with willing, new DNA cousins!

What to Avoid

Confirmation Bias – Encyclopedia Britannica describes confirmation bias as: “The tendency to process information by looking for, or interpreting information that is consistent with one’s existing beliefs.

How to avoid confirmation bias while analyzing your DNA matches:¹

1. Are there any additional ancestors you may have in common?
2. Check how many centimorgans (cM) you share. Is the relationship feasible?
3. Is what you believe consistent with the genetic relationship?
4. Create Genetic Networks with your DNA matches.

Contamination – Webster’s 1828 Dictionary describes contamination as “The act of polluting, defile; corrupt.” (Yikes)!

Avoid adding unnecessary information into the Ancestry database that is NOT required or requested. These fields have been programmed to receive your data for the best results. Avoiding contamination will help search engines work faster for everyone! Follow their guidelines:

1. First and middle name ONLY
2. Last name – ONLY (maiden name for female)
3. Follow the birthday format (DD MMM YYYY)
4. Birthplace (City, County, State, Country) – Ancestry will begin to ‘populate’ once you start typing in the city. Watch how it will begin to fill in the information below. Choose the correct city, county, state, and country instead of adding your notes in this field.
5. Use the tools Ancestry has provided to include additional information, such as variations in last name spellings.
 - a. Add “**Comments**,” which is found under your ancestor’s name, birth, and death information. Everyone can see your comments if your tree is public.
 - b. Add “**Notes**” *if private for only you to see* or someone you’ve invited to be an “editor.”

Discovery and Connections

- Connect with your DNA matches
- Send a message through Ancestry
- Offer to assist and share information
- Learn more about your common ancestors

¹ Diahn Southard, “*Improve DNA Match Relationships: Avoid Confirmation Bias*,” updated March 2020. (<https://www.yourdnaguide.com/ydgblog/confidence-intervals> : accessed May 12, 2023).

Additional Resources on ThruLines

Ancestry.com, “AncestryDNA ThruLines” Ancestry Support, April 14, 2022 (<https://support.ancestry.com/s/article/AncestryDNA-ThruLines> : accessed May 12, 2023).

Ibid: “Making the Most of AncestryDNA Matches” (<https://support.ancestry.com/s/article/Making-the-Most-of-AncestryDNA-Matches> : accessed May 12, 2023).

Crista Cowan, The Barefoot Genealogist “What are Ancestry ThruLines,” May 25, 2019 (https://youtu.be/nVcHgKK_ztq : accessed May 12, 2023).

Crista Cowan, “Ancestry® Genealogist Crista Cowan Works with ThruLines,™” March 18, 2020 (<https://youtu.be/68llobGfAlg> : accessed May 12, 2023).

LegacyTree Genealogists, “Using AncestryDNA’s ThruLines to Further Your Genealogy Research” (<https://www.legacytree.com/blog/ancestrydna-thruLines> : accessed May 12, 2023).

Diahan Southard, “Your DNA Guide the Book, Step by Step Plans to Connect with Your Family Using Your DNA” (Your DNA Guide, 2020), p. 107-109, 135, 200, 223.

DNA and Third-Party Tools Resources

Ancestry.com -Shared Matches <https://support.ancestry.com/s/article/AncestryDNA-Shared-Matches> : Grouping and Filtering DNA matches
<https://support.ancestry.com/s/article/Grouping-and-Filtering-AncestryDNA-Matches> : Making the Most of Your DNA Matches
<https://support.ancestry.com/s/article/Making-the-Most-of-AncestryDNA-Matches> : All links checked May 12, 2023.

23andMe.com - Sorting and Filtering DNA Matches (<https://customercare.23andme.com/hc/en-us/articles/212170718-Sorting-and-Filtering-DNA-Matches-in-23andMe-DNA-Relatives> : accessed May 12, 2023).

GEDmatch.com – Check out the “Applications, Education, DNA Diaries (testimonials and articles), and the About” tabs (<https://www.gedmatch.com/> : accessed 18 Jan 2023).

GEDmatch.com for Beginners, “What is Gedmatch? How Does it Help Genetic Genealogists?” by Andrew Lee, *Genetic Genealogy Explained* (<https://www.gedmatch.com/education/what-is-gedmatch/> : accessed 18 Jan 2023).

Blaine T. Bettinger, “The Family Tree Guide to DNA Testing and Genetic Genealogy,” Second Edition (Family Tree Books, Cincinnati, Ohio 2016 and 2019) Glossary, p. 234-238. What is Autosomal DNA, p. 52. GEDmatch.com, p. 160-172.

Diahan Southard, *"Your DNA Guide the book,"* published 2020, glossary p. 235-238. Finding the generation of connection, p. 147. Genetic Network, p. 209. Known Match, p. 209.

Diahan Southard, Your DNA Guide, *"How to Transfer Your DNA to Other Companies,"* (<https://www.yourdnaguide.com/transferring> : accessed 2 Mar 2023)
Louise Coakley, "Tips for Using GEDmatch" 11 Dec 2015 (updated 21 Oct 2022) <https://genie1.au/tips-for-using-gedmatch/> : accessed 17 Jan 2023.

International Society of Genetic Genealogy Wiki

Genetic Glossary https://isogg.org/wiki/Genetics_Glossary
Autosomal DNA https://isogg.org/wiki/Autosomal_DNA
DNA Testing Comparison Chart
https://isogg.org/wiki/Autosomal_DNA_testing_comparison_chart : all accessed 7 Feb 2023.

The Genetic Genealogy Standards were presented during the First Annual SLIG (Salt Lake Institute of Genealogy) Colloquium in Salt Lake City, Utah on January 10, 2015 (<http://www.geneticgenealogystandards.com/> : accessed 9 February 2023).

Marc McDermott, GenealogyExplained.com, "Choosing the Best DNA Tests," December 31, 2022 <https://www.genealogyexplained.com/dna-testing/best-dna-test/> : accessed March 31, 2023).

A Few Favorites

Legacy Family Tree Webinars – Free webinars, paid webinars, categories by topics and speakers, and more! (<https://familytreewebinars.com/> : accessed May 15, 2023).

Random Acts of Genealogical Kindness – A resource guide to the U.S. State-by-State, County-by-County, with research assistance available (<https://raogk.org/> : accessed May 15, 2023).

Immigrant Ships Transcribers Guild – A searchable, excellent resource for ship records! (<https://immigrantships.net/> : accessed May 15, 2023).

Texas State Library and Archives Commission – Archival resources, public records, and library materials with online search tools (<https://www.tsl.texas.gov/> : accessed May 15, 2023).

JSTOR, Search journals, books, images, and primary sources (<https://www.jstor.org/site/collection-list> : accessed May 15, 2023).

TARO, Texas Archival Resources Online - Consists of the collection descriptions or “finding aids” that archives, libraries, and museums create to assist users in locating information in their collection. (<https://txarchives.org/home> : accessed May 15, 2023).

Computer Hope – **FREE computer assistance!** (<https://www.computerhope.com/> : accessed May 15, 2023).

Genetic Genealogy DNA Terminology

Autosomal DNA (atDNA) – Autosomal DNA is the most popular DNA test that allows genetic genealogists the ability to determine shared DNA between paternal and maternal DNA matches up to 4-6 generations.

Autosomal DNA (atDNA) Inheritance – A child’s DNA is inherited from both parents, with approximately 50% DNA from each parent. However, not ALL of the parent’s DNA is inherited, meaning less DNA is inherited from ancestors at each generation.

Best DNA Match – The DNA match that has the best-known verified relationship to the ancestor you are trying to locate.

Centimorgan (cM) – A centimorgan is a way to measure how much DNA you share with someone. The more cM’s you share, the closer you are related. Centimorgans are how we measure genetic relationships.

DNAPainter.com is an essential tool for genealogists to make sense of autosomal DNA data. Chromosome mapping, the Shared cM tool, and cluster auto painter are segments of DNA to chromosomes. We can begin to see which ancestors gave us which pieces of DNA and how new matches are related. **Note:** Use the tab “*Figure out how you’re related to a DNA match.*” Then, add the amount of cM’s to determine the best relationship probability to your DNA match. <https://dnapainter.com/tools/sharedcmv4>

“Dot System” is “**Create a Custom Group**” under the “**Add to Group**” +Tab in your “**Shared Matches**” – For AncestryDNA users. A system Ancestry uses to **allow users to create multiple “Genetic Networks,”** one for each ancestral couple. Using the “Dot System,” each ancestral couple up to the 4th great grandparents can be split into new Genetic Networks. This Network is used to determine an unknown or missing relative. **NOTE:** *This “Dot System” process is accomplished ‘manually’, is labor intensive and is not automatically ‘populated’ by Ancestry.com.*

GEDmatch.com – GEDmatch is an effective 3rd party tool for testers from 23andMe, Ancestry.com, FTDNA, LivingDNA, MyHeritage, and smaller testing sites. Testers download their raw DNA from their testing site, then upload their DNA file to GEDmatch, allowing testers to find additional DNA matches from other testing sites (without needing to purchase more DNA test kits).

The free tools available, such as “One to Many,” will compare a single test kit to find DNA matches from the entire database. There are many additional benefits of using GEDmatch.com. Note: GEDmatch is not a DNA testing site.

GEDmatch.com “Auto Cluster Analysis” – Auto Cluster organizes matches into shared match clusters that likely represent branches of your family. Each colored cell represents an intersection between 2 matches that both match you, most likely on the same ancestral line. GEDmatch can create a visual chart of your shared match cluster.

GEDmatch.com “Phasing” – A tool provided by GEDmatch.com to extract an unknown (or unavailable) parent’s DNA. Phasing needs only ONE parent’s DNA data uploaded to GEDmatch, and one child’s DNA data uploaded to GEDmatch. Phasing will then populate a GEDmatch kit number for the missing parent’s DNA.

GEDmatch.com “Shared Match Triangulation” is also called **“Shared Match Clustering”** – A technique used to tentatively identify an ancestor (or ancestral couple) responsible for the shared DNA among three or more of his descendants. It requires using DNA as well as traditional genealogy research.

GEDmatch.com “Triangulation” – This tool identifies “triangulation groups” from among the matches of a GEDmatch kit. A triangulation group is three or more GEDmatch kits that all share a segment of DNA in common with each other.

GEDmatch.com “Triangulation Groups”– This tool groups triangulated matches together.

Generation of Connection – Finding the “Generation of Connection” or the “MRCA” (Most Recent Common Ancestor) of you and your DNA match is one of the most effective ways to discover your unknown ancestor.

Genetic Distance – The number of differences between two sets of results. A genetic distance of zero means there are no differences in the results compared to one another. This suggests a probability of them sharing a common genetic ancestor in a more recent time period.

Genetic Genealogy – The practice and study of using DNA in genealogical research.

Genetic Network – Find your “Genetic Network” using DNA matches that all connect through a common ancestral couple.

***Splitting* Genetic Networks** – The process of splitting each genetic Network into separate “Genetic Networks” for each generation of ancestral couples. Each set of grandparents, great-grandparents, 2nd, 3rd, and 4th great-grandparents with their own genetic Network.

Known Match – A DNA match with a known genealogical relationship to you.

Mitochondrial DNA (mtDNA) – DNA inherited from your maternal side (your mother, her mother, her mother, etc.) Both men and women can take a mtDNA test. However, only women pass mtDNA to their children.

Most Recent Common Ancestor (MRCA) – The MRCA is the closest ancestor that connects you to another person. (The MRCA of your first cousin is the grandparents you share).

Shared cM Project – The Shared cM Project is an interpretive tool to help estimate the likelihood that you are related to a DNA match at a particular generation based on the centimorgans shared.

Shared Match Tool – A filter to help find matches in your match list that can help with your DNA research question or goal. On Ancestry.com, click on your Best Match, then on the tab “Shared Matches.” At AncestryDNA, this will only include 4th cousins or closer to BOTH you and this Best Match.

Y-chromosomal DNA (Y-DNA) – The Y-chromosome (one of the two sex chromosomes) is inherited from the father and passed to the son. Only males inherit the Y-chromosome, and only males should take the Y-DNA test. Testers can purchase a Y-DNA test from FamilyTreeDNA. The Y-DNA test reveals information about the male test-takers Y-chromosome.