

Autosomal DNA as a tool in Genealogy Research

No matter which DNA company you use

Manage your personal profile such as your name, location, age range, research interests, notification preferences, etc.

Manage your DNA test settings Options vary by DNA company but choices may include your DNA display name, private vs. public data, opt in/out of law-enforcement access, choose whether to display your ethnicity to matches, decision on whether to post and share your tree, arranging for someone else to view or manage your DNA results, and an option to download your raw DNA data.

Important: If you do decide to post your tree, make sure you link yourself to the tree in your DNA test settings.

DNA Matches

What is the Value of your DNA Match List?

1. Connect with members of your genetic family
2. Exchange family information with these relatives
3. Discover unexpected relatives and figure out their connection to you
4. Add evidence to support or challenge the accuracy of your paper tree
5. Analyze (and perhaps solve) some long-standing family mysteries
6. DNA match lists are way more entertaining than a jig-saw puzzle (and new puzzle pieces are added every week).

DNA Match List Analysis Tools which your DNA test company provides

Some of these tools are available on all DNA company sites, others are unique to one company or another

- Centimorgans (cMs) – a measure of how much DNA you share with a match (on 23andme multiply % of DNA shared x 75 to get approximate cMs, e.g. 3.4% DNA shared x 75 = 255 cMs)
- Ethnicity – yours vs. your match's
- Migration Groups – Genetic Groups – Regional Detail
- Ancestral names in the trees of your DNA matches
- Birth locations of your DNA match's posted ancestors
- Ability to study the posted trees of your DNA matches
- Shared Matches (AKA *Relatives in Common*) – shared matches help you group and identify your matches
- DNA Match hints (*ThruLines, Common Ancestors, Theory of Genetic Relativity*, DNA segment triangulations)
- Filters (search by username, ancestral name, ancestral locations, presence of trees, family line, hinted matches, etc.)
- Chromosome browser and segment data
- X-chromosome detail
- Tags (ability to make a note about a match, mark a "favorite", or (on Ancestry.com) ability to label and color code matches for whatever purpose you desire and then filter your list by those group labels.
- Ability to email or in-mail your DNA matches
- Ability to tag your DNA matches and MRCAs (Most Recent Common Ancestors) in your posted tree
- Ability to directly link a match to that person in your posted tree (Ancestry only)

A Sampling of 3rd Party DNA Match Tools

The Shared CM Tool under the “tools” menu at www.DNAPainter.com. Type in the total cMs (centimorgans) of DNA you share with a cousin match to see the relationship possibilities and probabilities which have been compiled based on Ancestry’s analytics plus real-user experience. Free.

What are the Odds? Tool, also located under the “tools” menu at www.DNAPainter.com. A cool tool which lets you hypothesize ways in which a mystery DNA Match might fit into a family that you believe they are somehow related to. Provides probabilities (including 0!) for each hypothesis based on the cMs of DNA they share with each of the other tested members on the tree. Free. If you register (still free) WATO will store your work for you.

The DNAGedcom Client App subscribe to and download at www.DNAGedcom.com. As one of a suite of tools (some paid/some free), this app allows you to download for use in a spreadsheet or in their companion tools) everyone on your match list, ancestor data from their connected trees, and shared matches for each match from Ancestry DNA, 23andMe, FTDNA, MyHeritage, and GEDmatch. The Client

International Society of Genetic Genealogy at <https://isogg.org>. An excellent, regularly updated set of resources including their Wiki autosomal DNA Port at https://isogg.org/wiki/Portal:Autosomal_DNA

GEDmatch at gedmatch.com A website for genealogy research. Anyone can upload their DNA file from a testing site and use tools to compare their results with others who have likewise uploaded their DNA data.

Some Do-It-Yourself Tools

- Keep track in your offline genealogy records of matches you’ve found to a shared common ancestor(s). So, for instance, if a new cousin pops up who you have determined to be your 3rd cousin and the MRCAs (*Most Recent Common Ancestors*) are Tobias Embretsen Galten and Ragnhild Marie Jonsdatter – make a note on each of those ancestors in your tree that will help you find the match again and evaluate how much evidence you have gathered to support your conclusion that this ancestral line is correct.
- Try keeping track with colors on a pedigree chart (for instance, a fan chart) of the MRCAs you have matches for. This helps you visualize the areas in your pedigree that are not yet supported by DNA evidence.

A Selection of DNA-Related Facebook Groups.

These are all closed and moderated groups. Search for the page and request to join:

- **Genetic Genealogy Tips & Techniques** Admins include experts Blaine Bettinger, Paula Williams, and Leah LaPerle Larkin. A well-moderated “keep comments positive” group “all about maximizing your testing dollars and wringing every bit of information out of your DNA test results.
- **DNA Detectives** Volunteer collaborative help for those using DNA to seek biological family and solve parentage questions

Note: There are many other DNA-related Facebook groups. To find a group that is geared to your ethnicity (e.g. Norwegian or Native American), your geographic location, adoption-related searches, or to a specific testing company – from the search box at the top of your Facebook page, type “DNA” and then filter the results by clicking on “Groups” in the main menu.

A Snapshot of Differences Between the Primary Consumer DNA Testing Companies

For a frequently updated (and much more detailed) comparison than below, I highly recommend the Autosomal DNA testing comparison chart by Tim Janzen on the International Society of Genetic Genealogy Wiki. The URL is: https://isogg.org/wiki/Autosomal_DNA_testing_comparison_chart

23andMe www.23andme.com

- Cost in US: \$99 for Ancestry & Traits, \$199 for Health and Ancestry (+shipping cost)

- You cannot upload your raw DNA data from another company
- 12 million users in the database
- Chromosome browser for shared segment comparison if match agrees to share genomic data + x *chromosome data*
- No integrated records genealogy database
- Users cannot upload their trees or create trees on site (23andMe creates a minimal tree that the user can modify)
- Notes you make about a match are not visible on the match screen.

Family Tree DNA www.familytreedna.com

- Cost in US: \$79 for lifetime of platform (+shipping cost)
- Projects are supported (e.g. surname or geographic groups)
- You can upload your raw DNA from another company to Family Tree DNA
- Email addresses of all matches are listed
- 1.4 users in the database
- Chromosome browser for shared segment comparison for all matches
- X chromosome data is reported
- YDNA and mTDNA test available in addition to autosomal DNA
- No integrated genealogy records database
- Users can upload their family tree to the site or create it onsite
- Personal notes from your match screen require a click to open

Ancestry www.ancestry.com

- Cost in US: \$69 / additional for some features (+shipping cost) / Ancestry recently dropped health options
- You cannot upload your raw DNA data from another company to Ancestry.com
- 20 million users in the database
- No chromosome browser – just total CMS, segment count, and longest segment provided
- No X chromosome data provided
- Excellent tools for color coding matches for group filtering. Ability to link a match to your online tree
- Automated identification of shared surnames and ancestors between match's family trees Notes you create about your match are visible to you on the matches screen
- Integrated genealogy database – but \$\$ records subscription is required to access
- If a match has a public tree on the site, you can view basic pedigree info on 7 generations.
- You can create you own family tree (free) – but access to to the public trees of non-matches requires a paid \$\$ subscription

MyHeritage www.myheritagedna.com

- Cost in US: \$69 (+shipping cost)
- You can upload your raw DNA from another company to MyHeritage
- 4.5 million users in the database
- Chromosome browser for shared segment comparison for all matches
- No X chromosome data provided
- If a match has a public tree on the site, you can see basic pedigree information. (Access to full trees requires a paid \$\$ records subscription)
- Personal notes indicated on your match screen require a click to open
- You can post a limited-size family tree for free. To build a larger tree, you must have a paid \$\$ membership

Living DNA www.livingdna.com

- Cost in US: \$99 for ancestry, Wellbeing and Ancestry \$179 (+shipping cost)
- You can upload your raw DNA from another company to Living DNA
- 300 thousand users in the database
- No X chromosome data is provided
- No integrated genealogy records database
- Family Tree feature scheduled for launch in 2021
- Shared DNA Detail Info “coming soon”
- Person notes about your match require 2 clicks to get to

A sample idea for using the “Add/Edit Group” color tagging feature on Ancestry.com

In 2019 Ancestry added a new feature which allows users to assign one or more of 24 possible color-coded tags to each person in your DNA match list. These group tags are customizable (you name each tag) and they are private to you and to anyone who you’ve set-up as an authorized viewer of your DNA... but nobody else sees them. The great thing about these tags is that, once you’ve assigned them, you can use the “Groups” dropdown on the DNA Matches menu, to look at everyone in you match list who belongs to a Group you’ve set up. For instance, if you created a group called “Embretsen Family Line” then you can call up that specific group of matches to work exclusively with your Embretsen matches. Also, when you look at the “shared matches” of a brand new match who you don’t know, the color codes on the shared matches that you’ve already coded are a great visual hint about how this new match might fit into your family.

There are an infinite number of ways you can use these 24 group tags (everyone’s research interests are unique) but, to share one idea – here’s I have decided to use them. Note that Ancestry sorts the tags alphabetical order by default, so to force them into the sequence I want them to appear, I start the name of each tag with a 2 digit number (e.g. 01).

- The “Star” tag is the only “native” tag – Ancestry provides it automatically. I use it to mark matches that I’ve fully identified (*i.e.* if I know that a certain match is my 3rd cousin through my Embretsen line).
- I use 2 tags (pink and blue!) to mark a match as maternal or paternal
- I use 4 tags to specify which quadrant (e.g. Grandparent line) a match fits into (if I am confident)
- I use 8 tags to specify which great-grandparent line a match fits into (if I am confident)
- I use one tag to mark an “ambiguous” match (*i.e.* someone who seems to match me through 2 completely different family lines)
- I use one tag to mark “insufficient matches” –(*i.e.* those who don’t match anyone else or who only match one other match... not enough for me to see a pattern).
- I use a “rejected” tag to mark an Ancestry.com hinted “Common Ancestor” or “ThruLine” match that I believe is wrong (*e.g.* the trees they are based on, in my opinion, are not accurate).
- I use one or more tags to mark a specific family line I’m having trouble with and want to study further (in my case, it’s the Pribble Family!)

Fully Identified Matches	My 8 Great Grandparent Lines	My Utility & Miscellaneous Tags
<input type="checkbox"/> ★ Starred matches	<input type="checkbox"/> 07 P Rasmus P Hansen+	<input type="checkbox"/> 15 Insufficient Matches
Maternal / Paternal Lines	<input type="checkbox"/> 08 P MK Larsdatter+	<input type="checkbox"/> 16 Ambiguous!
<input type="checkbox"/> 01 Paternal	<input type="checkbox"/> 09 P Tobias Embretsen+	<input type="checkbox"/> 17 Rejected Theory
<input type="checkbox"/> 02 Maternal	<input type="checkbox"/> 10 P Ragnhild Jonsdatter+	<input type="checkbox"/> 18 Pribble Puzzle!
My 4 Grandparent Lines	<input type="checkbox"/> 11 M Algernon Gould+	<input type="checkbox"/> 19 Wild Card
<input type="checkbox"/> 03 P Alfred Ramussen Q	<input type="checkbox"/> 12 M Mary A Henderson+	Spare tags for Special Projects
<input type="checkbox"/> 04 P Marit Tobiasdatter Q	<input type="checkbox"/> 13 M Richard R Harris+	<input type="checkbox"/> ●
<input type="checkbox"/> 05 M Sidney Ross Gould Q	<input type="checkbox"/> 14 M Anna M Pribble+	<input type="checkbox"/> ●
<input type="checkbox"/> 06 M Grace Harris Q		<input type="checkbox"/> ●
		<input type="checkbox"/> ●
		<input type="checkbox"/> ●