

Overwhelmed by DNA Results?

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REVIEW: Who Tests DNA? Is DNA Testing Safe? How do Companies Differ?

LIVING people test DNA!

The oldest living person provides the closest connection to the ancestors you want to find!
Safety?

The U.S. Genetic Non-discrimination Act of 2008 prohibits companies sharing your DNA with police, government, insurance, employers, doctors, etc. without your permission!

Testing Companies:

1. Ancestry DNA <https://www.ancestry.com/dna/>
2. My Heritage DNA [based in Israel] <https://www.myheritage.com/dna/>
3. 23&Me DNA <https://www.23andme.com/?myg=true>
4. Family Tree DNA (FTDNA) <https://www.familytreedna.com/>
5. Living DNA [based in UK] <https://my.livingdna.com/>

Not Every Testing Company Identical:

4/5 testing companies test only atDNA.

YDNA and mtDNA testing and matching ONLY available at FTDNA.

Ancestry and 23&Me require testing on their site. Others allow importing DNA results.

Genealogy records are ONLY available at Ancestry and My Heritage.

Medical results are ONLY available at 23&Me; others have “life” information.

What is DNA?

- DNA is material in the 23 chromosomes inherited by humans from ancestors.
- We inherit half our DNA from each biological parent.
- Everyone’s mix differs. Siblings’ DNA is NOT identical, except for identical twins.
- Our cousins share a small amount of the same DNA.

Types of DNA

- **Y-DNA**
 - Males ONLY inherit Y from father.
 - Identifies father’s, father’s, father’s line only.
 - Research in early centuries; surname projects.
- **mtDNA**
 - Material outside cell nucleus; NOT=X-DNA.
 - Males & females inherit; ONLY females pass down.
 - Identifies mother’s, mother’s, mother line only.
- **X-DNA**
 - Males inherit XY from mother & father; Females inherit XX from mother & father,
 - X DNA could be from one of many female lines, NOT a specific line like mtDNA.
- **atDNA**
 - We inherit from each ancestor back to 2G-GP (generation5); beyond=inherit randomly.
 - LIMITATION of atDNA=6th generation & beyond you match only ½ your cousins.
 - Due to different DNA mixes we use known 1st-3rd cousins to help ID 4th-6th cousins.

Genealogy & DNA Interact:

Keys to Accurate Genealogy Research

- ❖ Focus on one question for a single one ancestor.
- ❖ Verify with historical records—names, dates, places, and connections.
- ❖ Take careful notes, including citations.
- ❖ Analyze each piece of evidence in a record.
 - Was it provided at the time of the event?
 - Who provided it—eyewitness or second-hand?
 - Was it accurate, biased, or untrue?
- ❖ Write explanations to clarify all inconsistencies.

Genealogy and DNA Support Each Other

- DNA indicates a strong relationship between two people, much more than a typical clue. GENETIC DNA ALONE DOES NOT PROVE A RELATIONSHIP.
- You still find records verifying how long ago and through whom you're both related.
- DNA confirms the genealogical relationship.
- Like genealogy, DNA focuses on one question, needs a plan, and careful notes.

Using DNA:

DNA's Goal is to Create a Triangle Shared Matching Between You, a Known Relative, and an Unknown Match.

- Matches are measured by a unit called centimorgans (cM). The higher the cM amount, the closer the match.
- Matches are identified as related to you through a Most Recent Common Ancestor; MRCA, the earliest couple from whom both matches descend, sharing ancestry.

Using Testing Companies

- Results = c10-20,000 matches total, not millions. Still, you need to sort!
- First locate and identify KNOWN relatives in your match list.
- Then identify known relative's MRCA with you using colored dots or noting exact relationships in each matches' notes.

Most Genealogists Test atDNA. What Genealogy Questions can atDNA Answer?

1. Unknown or missing ancestral parent.
2. Adoptees' biological parents.
3. Misattributed parental events (MPE)—unexpected relatives.
4. More cousins.

Steps for Answering Genealogy Questions with DNA Suggested by Diahan Southard

1. Define your question and the unknown match (U1) to identify.
Ask: Who is the missing parent of U1? or simply How is U1 related?
2. On your match list, open U1 and compare trees, surnames, places, or Common Ancestors.

MAKE YOUR TREE PUBLIC! PUBLIC is ONLY AVAILABLE to the thousands matching you, WHOM YOU DESIRE!

No tree, unlinked tree, or private tree? Identify more known matches or in Ancestry, use the “Thru Lines” for more suggestions.

3. Estimate U1’s age and generation based on what’s on his page.

4. Determine your MRCA shared with U1.

Use the Shared cM Project’s Chart at DNAPainter <https://dnainter.com/>

At this point, the MRCA relationship identified = probable, not definite; don’t confirm yet!

5. Open U1’s shared matches with you.

Check for a triangle between you, your known ancestor, and U1.

6. Contact U1:

Email your name and preferred contact info.

Include the name you match on which DNA company (the person you’re emailing may manage several entries on more than one company; you need to tell them which one!)

Are you interested in working together to verify our connection with genealogy?

Please reply, even if not interested.

Later add:

Your possible relationship—eg: second cousin.

Your direct-line names—you, parent, grandparent.

Possible MRCA couple’s name, relationship to you, and their residence at the time.

Are any of his/her immediate relatives also tested in this company, who may be on your joint shared match list?

Many Tools are Available to Make DNA Analysis Easier:

Are Your Parents Related Tool Available in the Free Version of Gedmatch

Learn if you may have endogamy in your DNA; it complicates DNA analysis.

Gedmatch, a comparison DNA company: <https://app.gedmatch.com/select.php>

Cluster tool only in paid version.

Cluster Tool Available from Several Sources:

Sorts DNA databases into many groups sharing surnames, which, as long as you can identify at least one known member of each group, may help split MRCA couples.

Genetic Affairs: <https://geneticaffairs.com/>

Free version Cluster tool; but only uploads from FTDNA or 23&Me.

My Heritage: <https://www.myheritage.com/dna/autoclusters>

Cluster tool included in the premium and all higher level paid annual subscriptions.

What Are The Odds (WATO) Tool;

Another DNAPainter Tool: <https://dnainter.com/>

Test probabilities of various possible hypotheses for which ancestor actually was the missing parent of U1 match; answer your DNA question.

Many Other Tools Available:

On DNAPainter =15 tools now. Try them all.

Many sites have useful short how to videos.

Google “DNA tools” for other sites; some better than others.

**Proceed to Splitting a MRCA Couple—Combine Quick DNA and Quick Genealogy:
Quick DNA, Using Example Althaus-Edwards MRCA Couple:**

1. The MRCA=a couple. From which of the couple did U1 descend?
 - a. E.G: MRCA=Althaus-Edwards.
 - b. A generation back were the couples Althaus-Schär or Edwards-Dickmeyer.
 - c. Identify from which earlier line all other shared matches descend.
2. Create a spreadsheet of everyone on the original shared match list of U1 and you. In the spreadsheet, indicate MRCA of all shared matches already identified as KNOWN, either with their known Althaus(A) or known Edwards(E) couple.
3. For each KNOWN E from original shared match list #2, open a new shared match list.
4. In the spreadsheet #2 check off all who also appear on new shared match list #3, as likely Edwards matches.
5. Repeat steps #3 and #4 for each KNOWN E match from original list.
6. Any remaining UNKNOWNNS on the spreadsheet probably have a MRCA from an A line. Check by repeating steps #3-5 for KNOWN A matches from original list.

Quick Genealogy: Verify the Genealogy Connection of Each Match Shared by You and U1.

1. On your own family tree work from each MRCA down to all present descendants.
2. All censuses to 1950 for every descendant of MRCA. Then marriages, deaths, etc.
3. Identify post-1950 descendants using:
 - a. Newspaper death and marriage articles.
 - b. Names on Facebook or other social media.
4. Alternatively: work back from EACH shared DNA match towards his/her ancestors and the MRCA connection with you using the DNA steps above.
5. Or, very, very skeptically, examine online trees at Familysearch and Ancestry for clues, then VERIFY with genealogy records.

Still Uncertain? Forget Quick!

Use all genealogy records for all related people, including associated (FAN) people.
DO THOROUGH GENEALOGY FOR EACH SHARED MATCH!

CONCLUSIONS: Like Genealogy, DNA Has a Process; Don't Be Overwhelmed, Use It!

- Begin by identifying all known matches in your DNA matches list.
- 1) Identify an Unknown match and Ask a question,
 - 2) Compare trees etc.,
 - 3) Approximate unknown's age/generation,
 - 4) Use the Shared cM Chart to identify likely MRCA,
 - 5) Open Shared Matches Tab,
 - 6) Contact unknown.
- Try using DNA tools to help.
 - Apply quick DNA analysis to split shared matches of a MRCA couple into two families.
 - Do Genealogy to confirm each shared DNA match.