How to Use MyHeritage DNA Results to Enhance your Family Tree

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Genes & Genealogy

What type of test does MyHeritage offer?

MyHeritage offers autosomal DNA tests (both an ancestral only version and a health test) and has a fast-growing database of over 4 million testers. The collection method is via cheek swab and tests include both an ethnicity estimate and a DNA match list. They also boast some of the best DNA features and tools available across the different sites and you can transfer in raw data from other companies for free but there is a small charge to unlock important tools such as the chromosome browser and shared match lists.

What is autosomal DNA?

Autosomal DNA is a random blend of DNA passed down to us by all of our direct ancestors going back a number of generations – it covers all of our ancestral lines and we inherit 50% from our mother and 50% from our father. An autosomal test is a real all-rounder and the most popular test on the market but the inheritance patterns limit its reach to the past 5-7 generations.

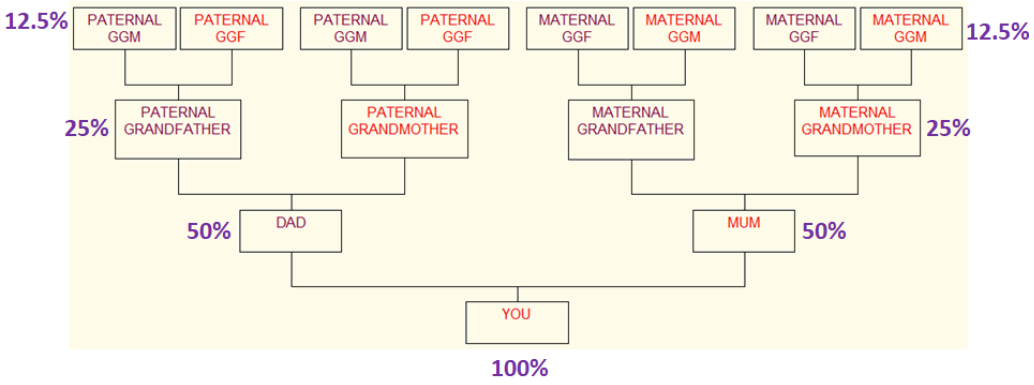
You can use Autosomal DNA testing to:

- Verify your tree
- Add new branches to your tree
- Learn about your ethnic make-up
- Break brick walls
- Identify unknown ancestors
- Connect with new cousins
- Test hypotheses/theories

How is autosomal DNA inherited?

- In the nucleus of every human cell there are 46 chromosomes (23 PAIRS overall) and this breaks down into 22 PAIRS of autosomes (the autosomal chromosomes) and one PAIR of sex chromosomes (X or Y)

- A woman receives two X-Chromosomes (one from both parents) and a man receives an X-Chromosome from his mother and a Y-Chromosome from his father
- While we inherit 50% of our autosomal DNA from each parent, we inherit progressively less from our ancestors as we go back in time: around 25% from grandparents, around 12.5% from great grandparents etc. It basically halves each generation but DNA inheritance is reasonably random so these percentages are variable.



CentiMorgans

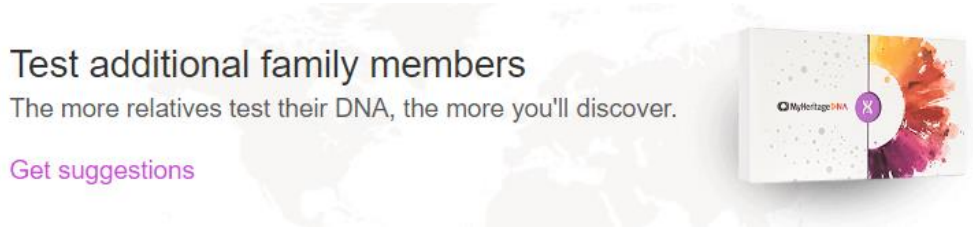
- centiMorgans are the default measurement used to convey how much DNA we share with matches; a centiMorgan is a unit of genetic linkage and usually abbreviated to cM
- The most important thing to remember about cMs is that the larger the number you share with a match, the closer the relationship with that match will be
- It's important to familiarize yourself with both the average number of cMs shared for different relationships and, even more importantly, the ranges involved as ranges of cMs for relationships can be broad. To explore ranges I recommend the Shared cM Project and to see all relationship probabilities I suggest using the Shared cM Project Tool on the DNA Painter website:
  https://thegeneticgenealogist.com/2020/03/27/version-4-0-march-2020-update-to-the-shared-cm-project/

  https://dnapainter.com/tools/sharedcmv4

Set Yourself Up To Succeed on MyHeritage!

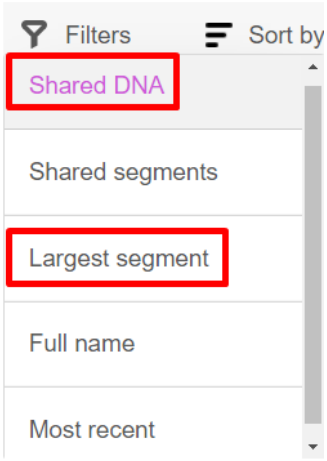
- To get the most out of DNA testing try to build your own tree out as extensively as you can (direct ancestors and collateral lines); the more developed your tree, the more connections you will be able to work out
- Don't separate out your ancestry into paternal and maternal trees as you can only link one tree to your results and you don't want half of your ancestors to be missing
- Make the tools and features on MyHeritage work for you! If you create or upload a tree you will receive Theory of Family Relativity Hints, Smart Matches and the highlighting of shared ancestral surnames
- Make sure you link the tester's DNA results to their correct place on your family tree – this is extremely important as you could end up with orphan branch duplicates otherwise and without the correct tree attached to the DNA, you will not be able to make the most of the tools on the site

- Test your older generation relatives; they have more DNA from your ancestors than you do so their DNA is extremely valuable for breaking brick walls and confirming your tree as well as the all-important narrowing process
- Test siblings if you have no older generation relatives and test cousins (especially cousins of parents) if no siblings; the more family members with unique DNA from your ancestors who test, the better your chances of finding and identifying useful matches



DNA Match List

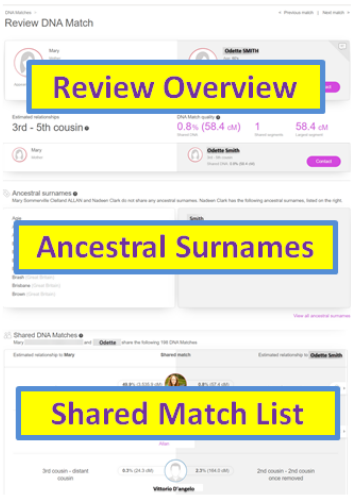
- MyHeritage's DNA Match List contains a plethora of information and is where you will find the filtering, sorting and search tools as well as crucial match information such as total cMs shared with the match, number of shared segments and largest segment
- MyHeritage provides the age and country of the match (if they have added this information and agreed to it being shared) and this can be very helpful at times
- You will also find the estimated relationship section here including a handy chart pointing out the probable relationships
- I frequently sort by the default "Shared DNA" or the helpful "Largest Segment" – the latter can be especially useful for separating out matches who share a similar amount of DNA as it's generally best to work with those with the largest segments

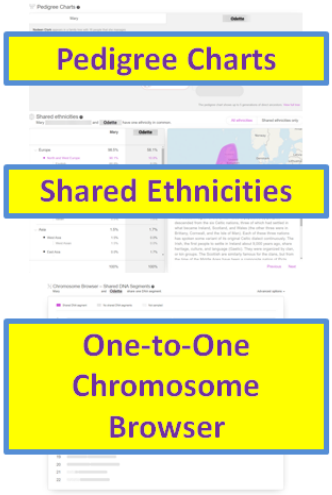


- It's a good idea to use the filters to help identify matches that are worth investigating: I filter by "Has Theory of Family Relativity", "Has Smart Match", "Has Shared Surname" and "Has Shared Place" regularly but I don't tend to filter by "Has Family Tree" simply because I don't want to bypass matches with no tree who may prove to be useful
- You can also filter by relationships, locations and ethnicities and you can use more than one filter at a time so long as it is in a different column. I encourage users to experiment with the different filters and see what they can glean from them.

Review DNA Match Page

- This is the page where you can deep dive into a particular match – I also call it the individual match page. It contains a section with an overview of the same details on the main match list followed by a section on "Ancestral Surnames", the indispensable "Shared Match List", "Pedigree Charts", "Shared Ethnicities" and finally the "One-to-One Chromosome Browser". Take your time with this page and make sure you don't overlook any clues.



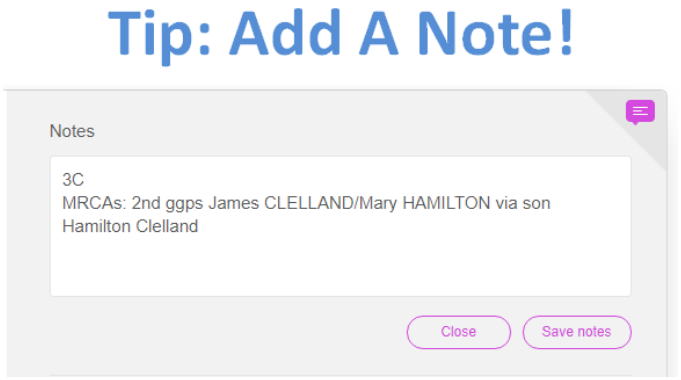


- The "Ancestral Surnames" section will highlight any surnames the tester and match have in common so long as both have correctly linked their trees to their DNA results
- The Shared Match list is so valuable and one of the most detailed available: it provides information on not only how much DNA the tester and shared match share with each other but also how much DNA the comparison match and shared match share with each other. My top tips here are to search the shared match list for any matches you know or have already identified as they can help with narrowing the match down to particular lines on your tree and also to look down the list on the comparison match side for any shared matches that share a larger number of cMs with the comparison match – it's always theoretically easier to find common ancestors between matches who share more DNA with each other.
- If a pedigree chart is displayed that means the match has linked their DNA to a person on their tree – in most cases hopefully they will have linked it to the correct person but it's possible they may not have or may have created and linked it to an orphan branch when uploading or activating their kit but there is a useful there buried there. A tell-tale sign of this is if the pedigree chart has just one person in it but there's a higher number of people in the attached tree. Always view the full tree and check the list view to see all entries in that tree – you might find clues here but be careful not to assume any relation with the tester unless you find a clear connection to your own ancestry
- Also always check the match's profile and Family Web Site pages and click back through to their tree from the site to check it in a different way
- Theory of Family Relativity and Smart Matches provide amazing clues as to how you might relate to your matches and I recommend checking out every one you receive but,

at the same time, take great care with them – treat them as clues to be investigated and never add anything to your tree without substantiating it via other sources

Research Organisation

- Use the notes facility to organise and keep track of your research
- Whenever you add a new note the colour change on the note icon will remind you as you scroll down your match list that you have previously looked at and worked on that particular match

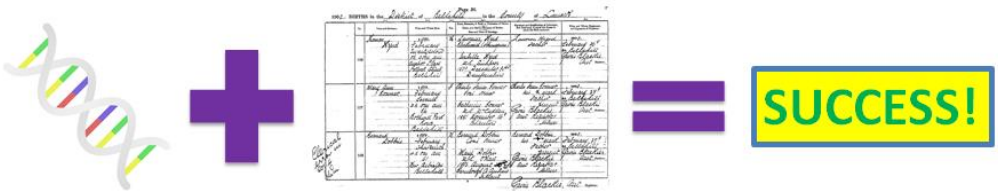


Once you've worked a match out and verified the paper trail connection add a note to show what you've worked out!

- It's also a good idea to create an independent spreadsheet to keep track of all your match findings and notes as matches will occasionally disappear and if they do your notes will go with them (e.g. matches could opt out of matching or delete their kit)
- Create a Master research tree to work on the trees of DNA matches until you identify the connection – create new orphan branches for each new match tree you work on and if you identify common ancestors transfer the new branch to your main tree

Best Practice Hints & Tips

- Combine DNA results with traditional research methods to get the best out of both – DNA on its own is not enough to solve mysteries, break brick walls etc



- Work on your highest matches first – start at the top of your MyHeritage match list and work your way down it
- Don't ignore matches with no trees or tiny trees – they could turn out to be really useful matches
- Contact your matches! Many won't respond but those that do could help you in many ways and you may find like-minded cousins with whom to collaborate

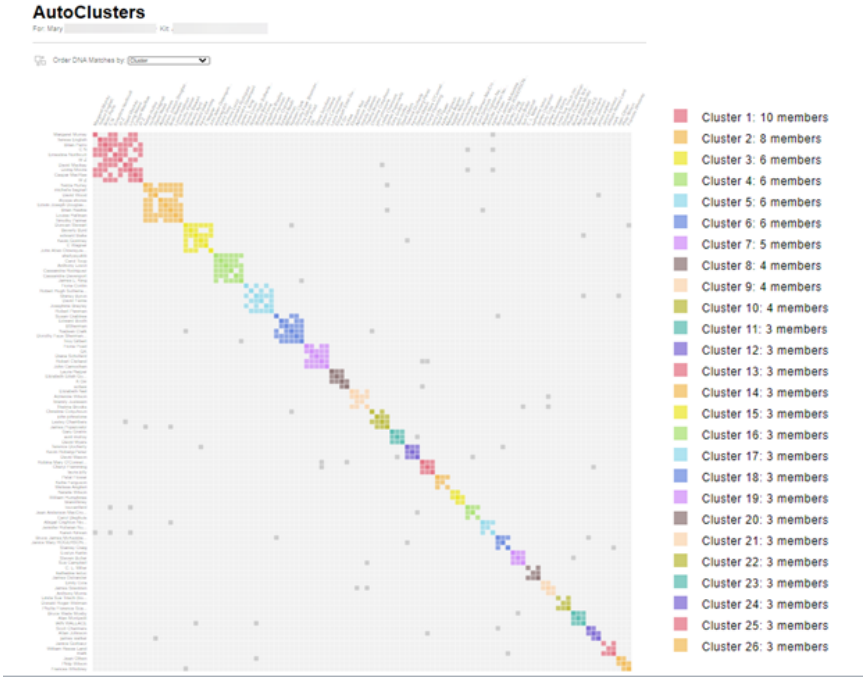
- Always study shared matches as they may hold vital clues to narrow down and work out a connection – this is especially important if you have recent unknown ancestry
- Search your match lists for common SURNAMES and common LOCATIONS - if a match has both you have a better chance of identifying the link
- Build out the trees of your matches – you just need a starting point! Many matches will have very small trees, private trees, wrongly linked trees or no tree at all but trees are vital for identifying connections so don't bypass those without developed trees. Don't just accept the tree is too small to find the link – be proactive and build it out yourself!
- Internet searching is your friend! Use google, social media and especially obituaries to identify matches
- Be wary of very common surnames – they can often turn out to be red herrings!
- Always take the age of your match into account when trying to differentiate between relationship possibilities but remember that genetic generations and age don't always correlate due to long generations and, in particular, older fathers in lines so always look out for these and factor them in when assessing relationship possibilities with a match
- Outliers exist but always investigate any potential outliers thoroughly and don't assume a known paper trail relationship is an outlier when it's more likely the paper trail is incorrect; confirmation bias has to be avoided in these situations
- Not all of your cousins will match you: any relative in the 2nd cousin or closer bracket should match 100% of the time but from 3rd cousins onwards the vagaries of autosomal DNA inheritance mean that some 3rd and many more distant cousins won't match you at all without there being an issue in your paper trail
- Be careful with tiny segments (particularly smaller than 7cM) as many will be false
- If you have widespread endogamy on your tree, unfortunately you will have to disregard relationship estimates as matches with multiples relationship pathways will simply share more DNA with you

DNA Tools

- MyHeritage offers detailed segment data via one-to-one and one-to-many chromosome browsers, segment data tables and automated triangulated segments. Additionally they provide the innovative AutoClusters clustering tool (created by Evert-Jan Blom).
- Chromosome browsers offer a visual representation of the segments of DNA shared with a match: they display the shared segments including the exact start and end points on the particular chromosomes on which they lie.
- The key point to remember about chromosome browsers is that they cannot differentiate between whether someone is matching on the paternal or maternal copy of a chromosome hence just one line is displayed to represent both copies. Think of that one line as an amalgamation of both copies.
- This means matches can match you on the same segment of DNA on a chromosome but not match each other i.e. one matches you on the paternal copy of that chromosome and the other on the maternal copy. This information can be very useful to narrow matches down to one side or another if you don't have parents tested but you do require some identifiable matches on at least one side of your ancestry to use it.
- The one-to-one chromosome browser is located at the bottom of the DNA Review page and solely compares the tester and the comparison match while the one-to-many

browser is located on the DNA Tools page and it is possible to compare up to seven matches with the tester using it.

- When a comparison and a shared match both match a tester on the same segment of the same copy of a chromosome, this is known as a triangulated segment and is useful information as it means the three people being compared share a common ancestor
- MyHeritage provide information on triangulated segments via their automated triangulated segment icon which is displayed on the shared match list and then again via highlighting these triangulated segments on the one-to-many chromosome browser
- AutoClusters is a fantastic tool that groups shared DNA matches that likely descend from common ancestors together in an eye-catching visual chart. It can be accessed via the DNA Tools page and the charts are very easy to generate. I highly recommend running AutoClusters for all tests on MyHeritage – you may well spot matches in common with a particular group of matches that you had overlooked before.



Resources

- To learn specifically about MyHeritageDNA I would strongly recommend spending some time on the DNA section of the MyHeritage Knowledge Base: https://education.myheritage.com/learn/dna/all/recent/
- The ISOGG (International Society of Genetic Genealogy) wiki is a fantastic, free resource full of information on any questions you may encounter and I would recommend making it a regular port of call when you want to learn about DNA: http://www.isogg.org/wiki
- There are lots of great blogs: http://isogg.org/wiki/Genetic_genealogy_blogs
- There are many DNA dedicated Facebook groups and these are three of the most active: https://www.facebook.com/groups/AncestryUKDNA (UK-based group) https://www.facebook.com/groups/geneticgenealogytipsandtechniques https://www.facebook.com/groups/isogg
- There are so many webinars out there especially the many excellent ones in the Legacy library – watch and re-watch to get a better understanding of how to use DNA
- Read, learn, practice, don't be afraid to ask questions or make mistakes and have fun!

If you enjoyed my webinar and would like to hear more from me I have a number of other long-form and TechZone presentations in the Legacy library. You can check them all out here:

Using DNA to Solve Adoption and Unknown Parentage Mysteries
23.4K views CC
by Michelle Leonard

Understanding DNA Shared Match Lists
2.5K views CC
by Michelle Leonard

What are DNA Outliers?
2K views CC
by Michelle Leonard

DNA Triangulation
5.8K views CC
by Michelle Leonard

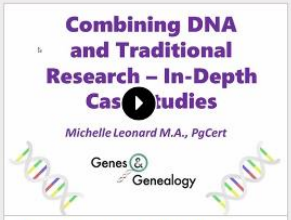
What Is DNA Segment Data?
6.8K views CC
by Michelle Leonard

What Is A Chromosome Browser?
1.4K views CC
by Michelle Leonard

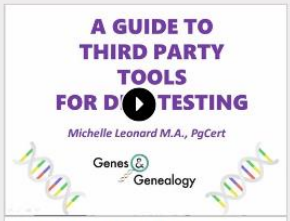
GEDMatch Segment Search Tool (Tier 1)
2K views CC
by Michelle Leonard

The Fromelles Genealogy Project: Reuniting WW1 Soldiers with their
675 views CC
by Michelle Leonard

Using GenomeMate Pro & Other Tools
1.6K views CC
by Michelle Leonard



Combining DNA and Traditional Research - In-Depth Case Studies
23.4K views CC
by Michelle Leonard

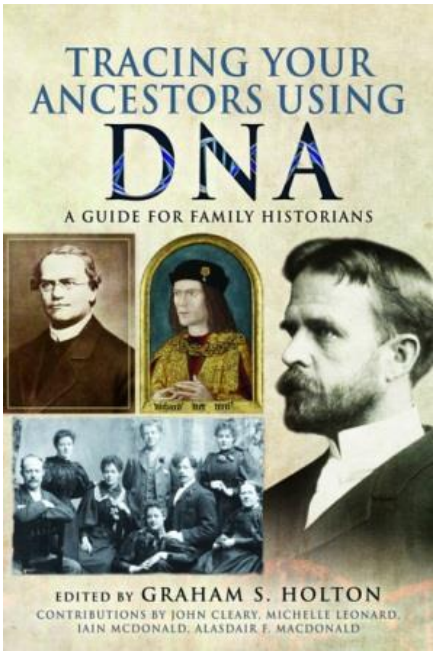


A Guide to Third Party Tools For DNA Testing
8.8K views CC
by Michelle Leonard

DNA is Dynamite - How to Ignite Your Ancestral Research
3.1K views
by Michelle Leonard

https://familytreewebinars.com/michelleleonard

Additionally the book I co-authored on using DNA for family history, "Tracing Your Ancestors Using DNA: A Guide For Family Historians", was published by Pen & Sword Books in June 2019:



It's available both in paperback and Kindle formats

Finally as the official genetic genealogist of #AncestryHour I am on hand most weeks to answer #DNA queries during #AncestryHour's live Twitter chats each Tuesday evening 7-8pm (GMT)

Contact & Social Media Links:

Email: michelle@genesandgenealogy.com
Facebook: www.facebook.com/genesandgenealogy
Twitter: www.twitter.com/genealogylass
LinkedIn: https://www.linkedin.com/in/michelleleonardgenealogist
APG: https://www.apgen.org/profiles/michelle-leonard
Ancestry Hour: http://www.ancestryhour.co.uk/michelle-leonard.html

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