DNA TEST KIT SHOWDOWN

Presented by Kate Mills
Algonquin Area Public Library
Thursday, July 27, 2023

Y DNA?

Reasons to Test

- Preserve your elders' DNA information
- Learn about family health history or genomic medicine
- Further your genealogy research
- Help with adoption research
- Curiosity, fun (there are even DNA tests for dogs and cats)

Reasons Not to Test

- Privacy
- Security
- Health Scare
- Use by Law Enforcement
- Finding Out Something You Didn't Know/Don't Want to Know

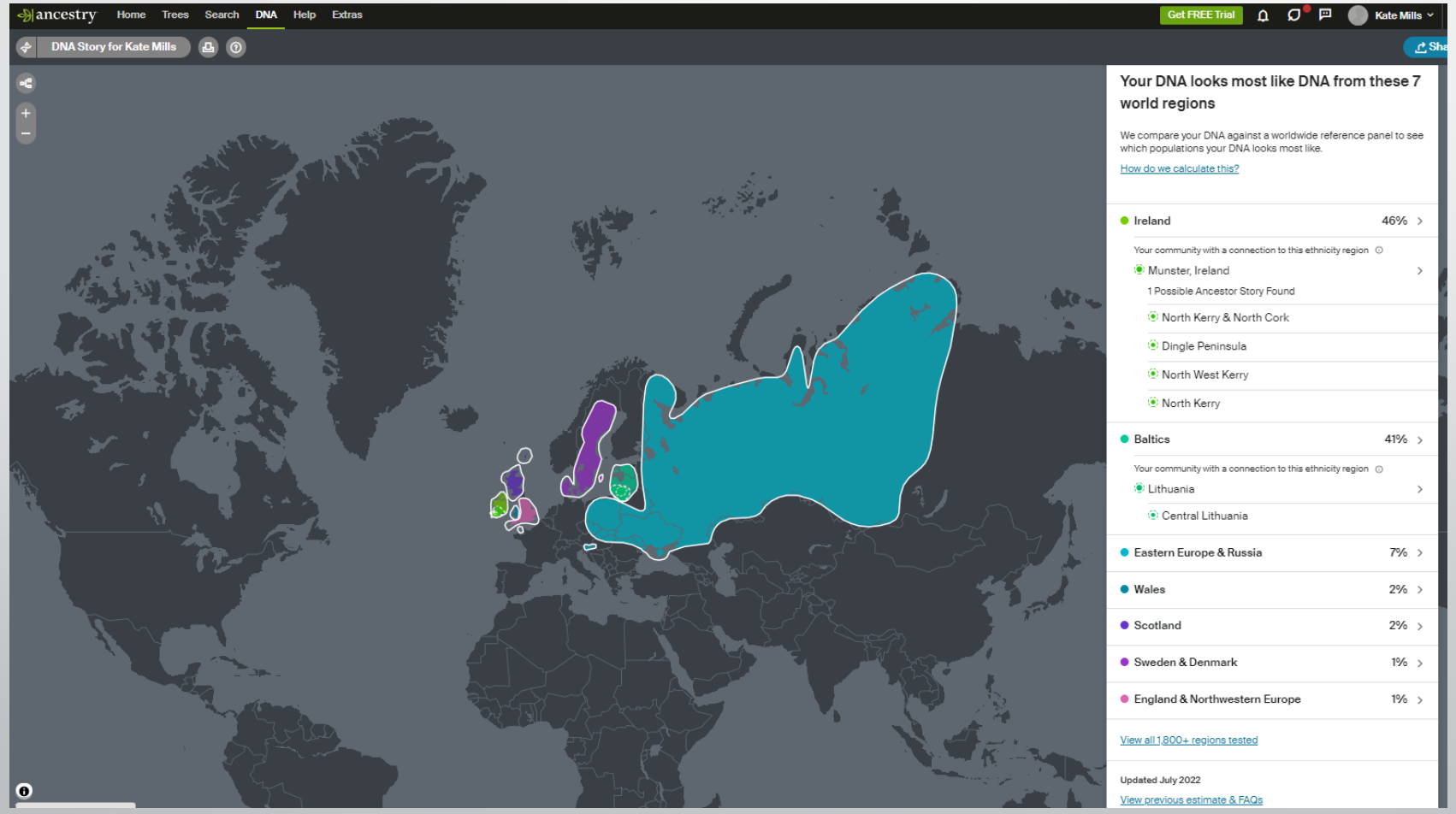
DNA Definitions
(the only science in the program!)

- Y (yDNA) Chromosome passed from father to son for paternal, male lines.
- X Chromosome, women inherit from both parents, men from their mothers.
- Chromosome painter, displays your ethnicities across your DNA.
- Chromosome browser displays segments of identical DNA shared by two people.
- Mitochondrial (mtDNA), passed on to both men and women from their mothers.
- Autosomal (atDNA), confirms known or suspected relationships, connects cousins, determines ethnic makeup, the standard test for most DNA kits.
- Centimorgan (cM), A centimorgan is a unit of genetic measurement that is used to describe how much DNA you share with your relatives. The more centimorgans you share with someone, the more closely you are related.
- Haplogroup is a genetic population or group of people who share a common ancestor. Haplogroups extend pedigree journeys back thousands of generations.

AncestryDNA

- Ancestry
- Saliva Sample
- Results 6-8 Weeks
- DNA Matching
- App: Yes, Storymaker Studio is a new feature for photos/stories
- Largest database, approx. 23 million
- Tests: AncestryDNA: $99; AncestryDNA + Traits: $119; Package Deals include a subscription to Ancestry: $100-$199

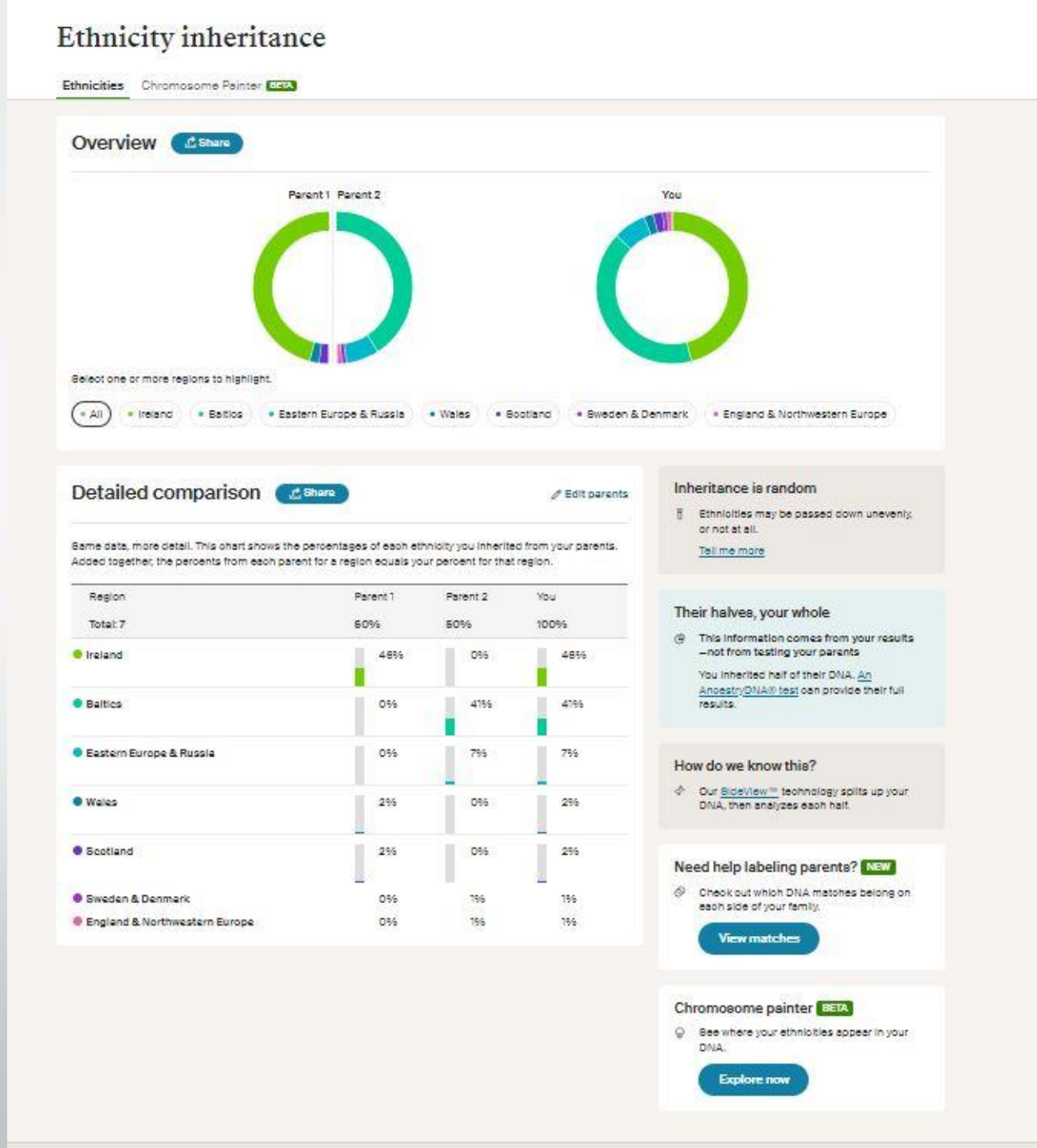
Kate's 6th Ancestry Ethnicity Results



Ancestry Ethnicity Inheritance By Parent

This chart shows the percentages of each ethnicity you inherited from your parents. Added together, the percentages from each parent for a region equals your percent for that region.

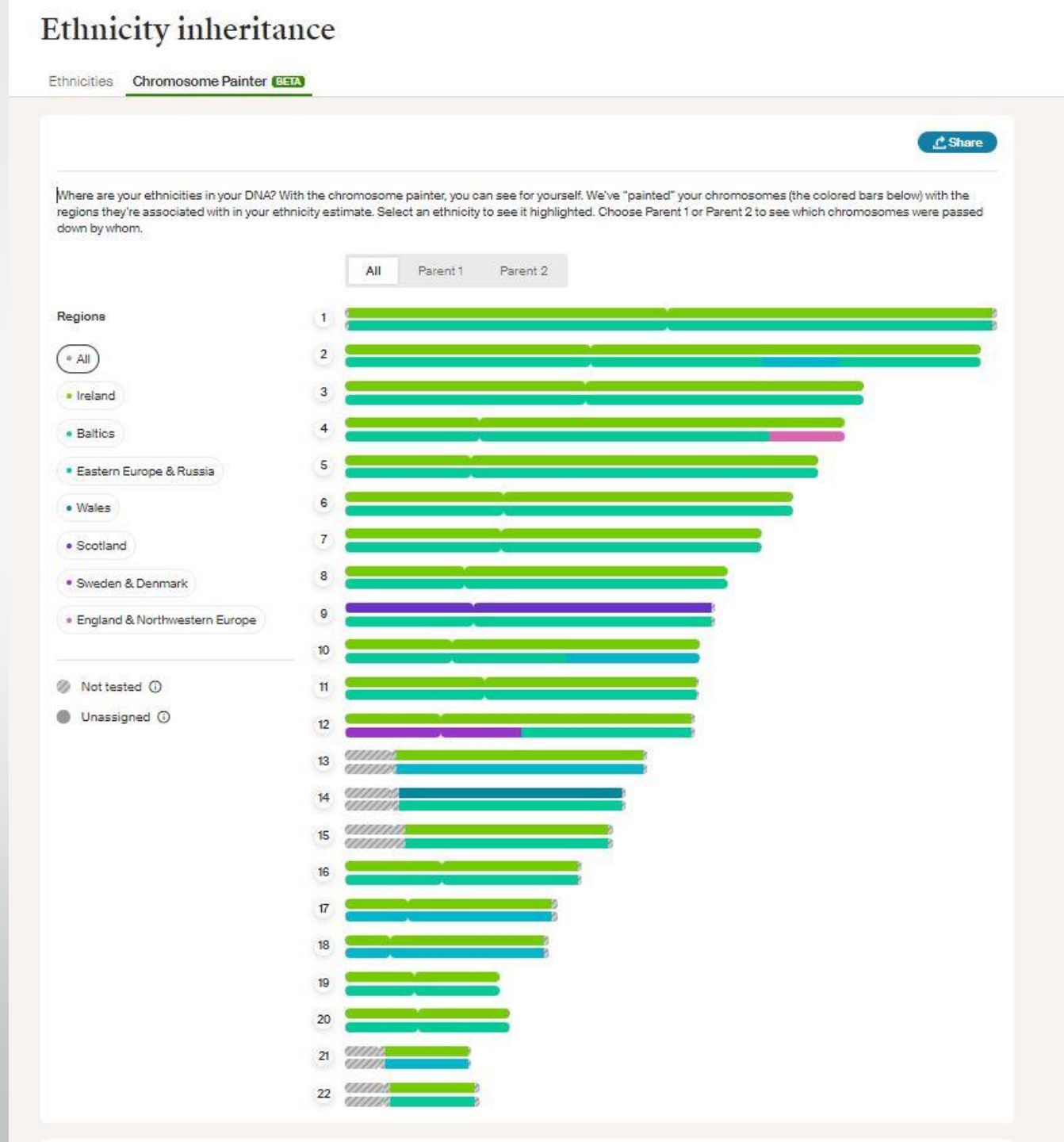
This information comes from your results—not from testing your parents.



Ancestry Chromosome Painter

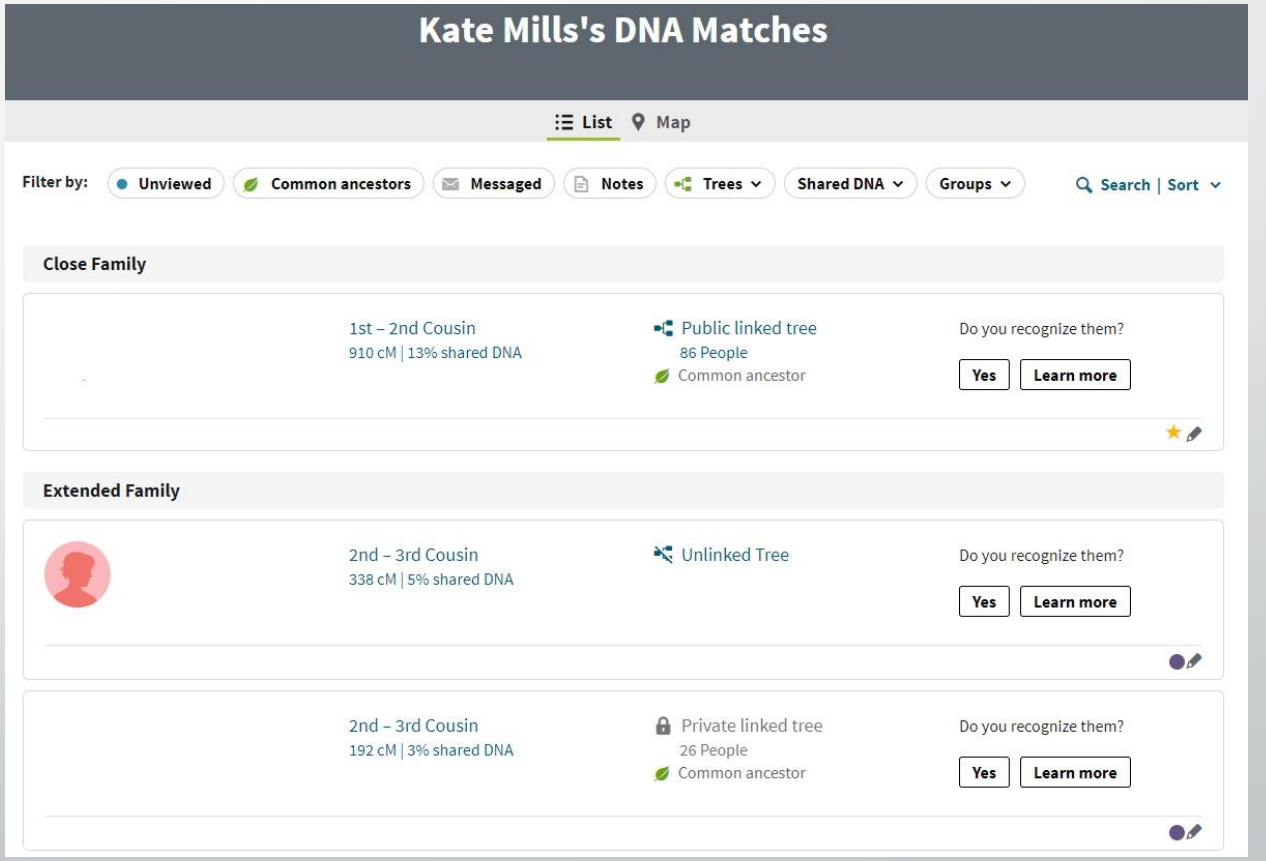
Use the chromosome painter to see where your ethnicities lie on your chromosomes and from which parent they were received.

With this data, you can get a general feel for how recent your connections are to your ethnicity regions. The longer a segment (a single colored block) is for a region, the more recent your connection to that region may be.

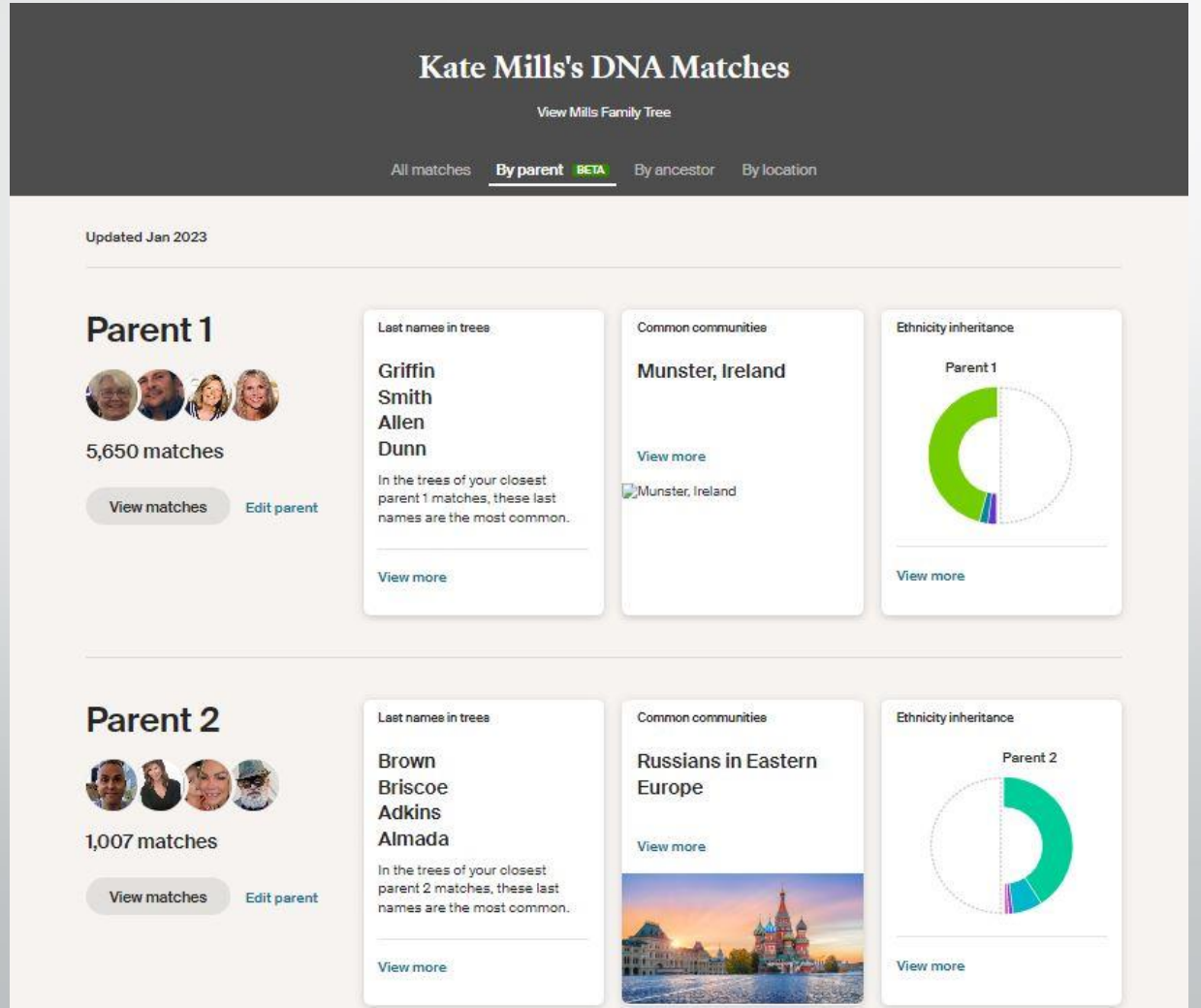


Ancestry DNA Matching

A major part of your DNA results is the DNA matches. These are possible relatives whose DNA matches yours, listed in order of most to least. These results can be filtered and sorted in various ways and you can "star" matches and color code them.



Ancestry DNA Matches By Parent (Sideview)

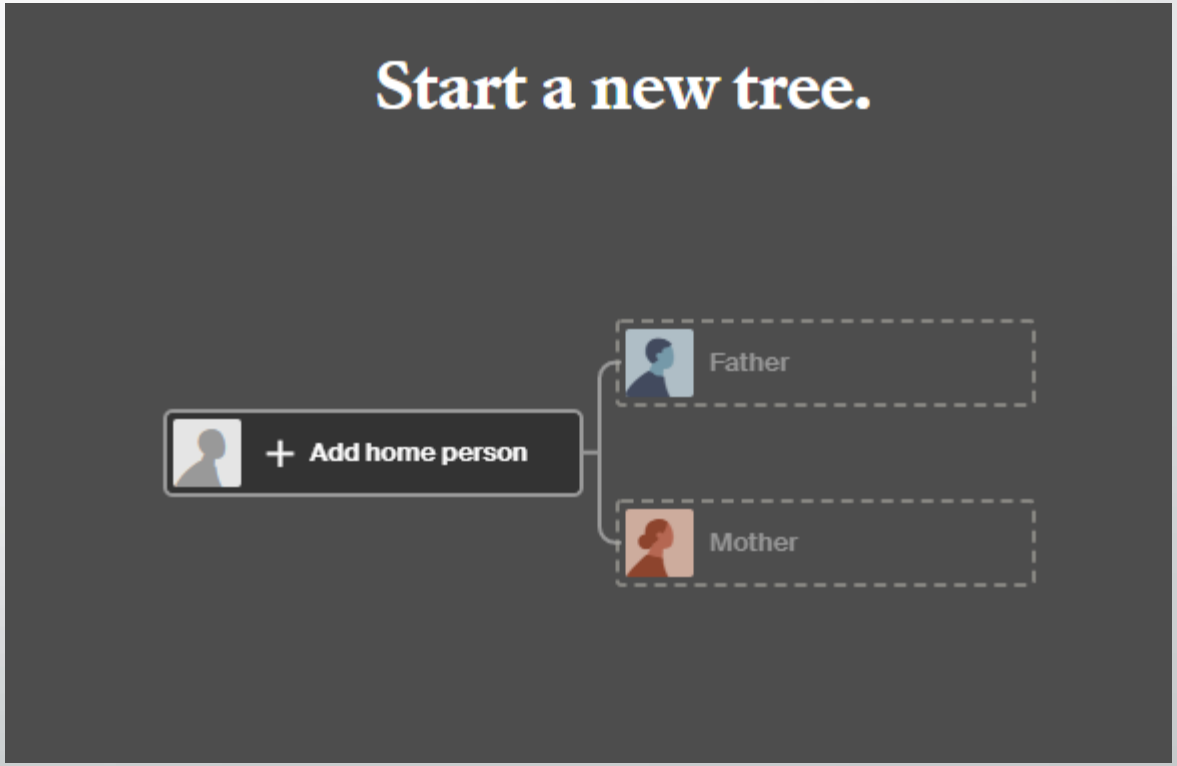


Build an Ancestry Family Tree

From any page on Ancestry, click the Trees tab and select Start a New Tree (if this is your first tree) or Create & Manage Trees > Create a new tree.

Add yourself, your parents, grandparents and all known relatives.

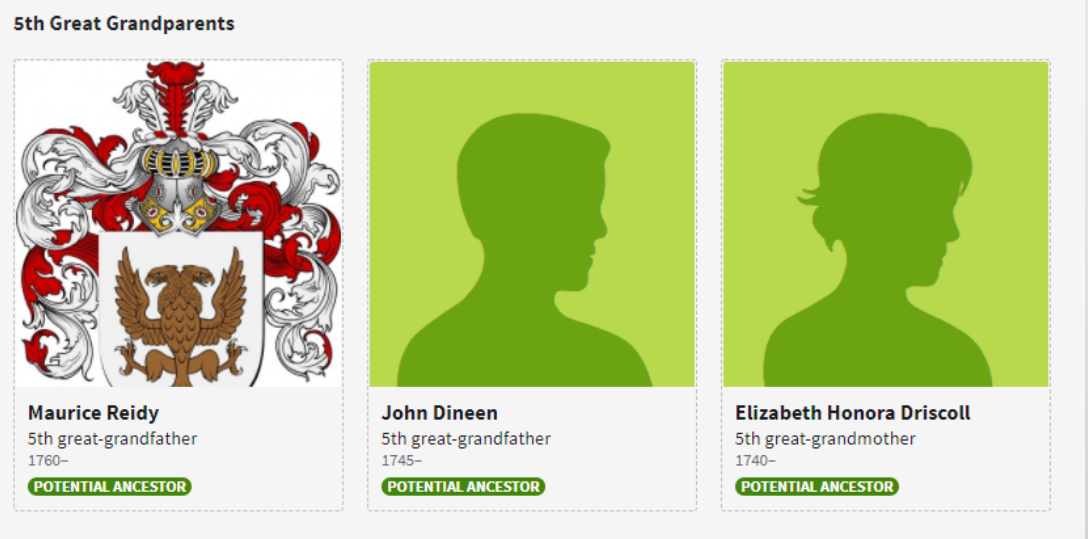
When you get your DNA results, link them to your tree!

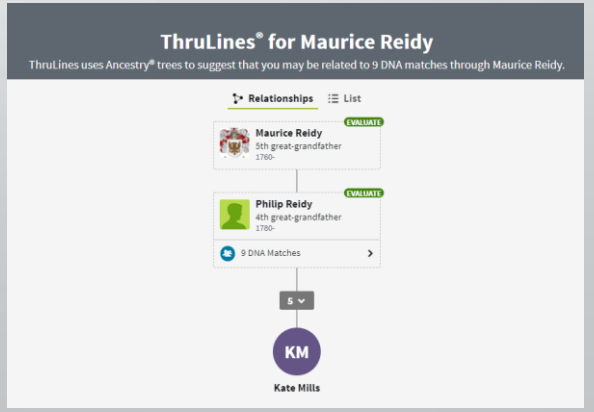


Ancestry ThruLines

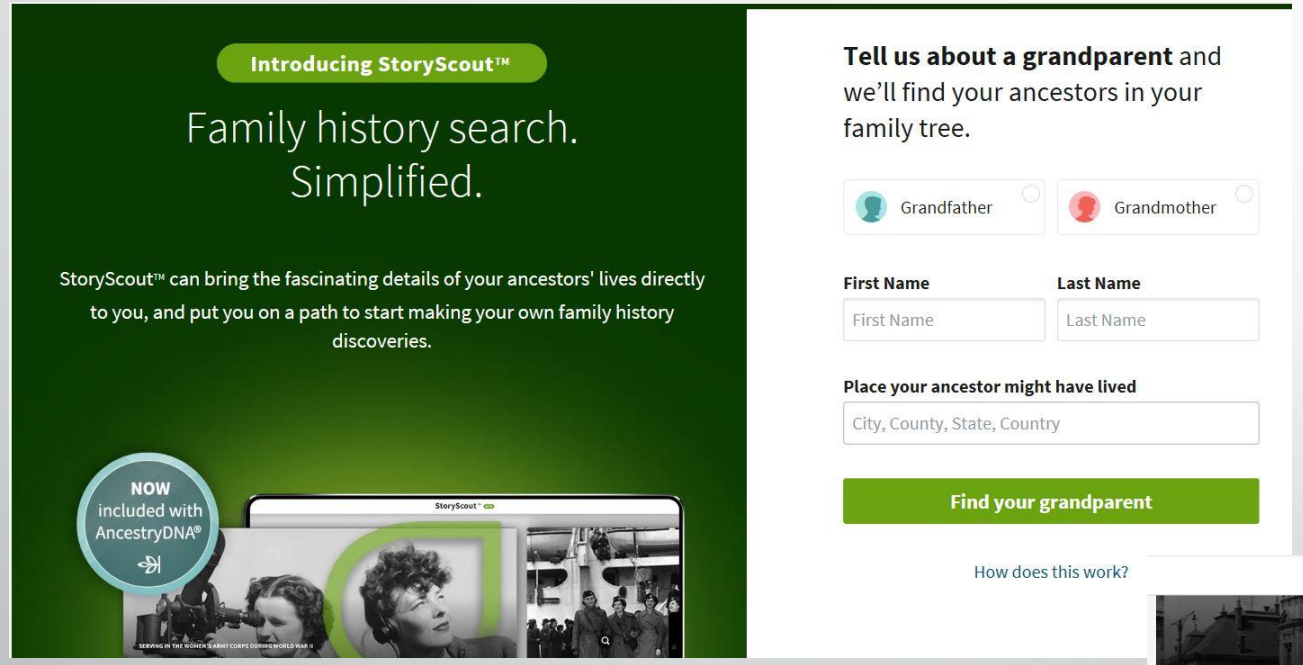
ThruLines finds connections to your DNA matches by looking through other people's trees for you.

Possible ancestors are returned in the results, giving you new leads to research.

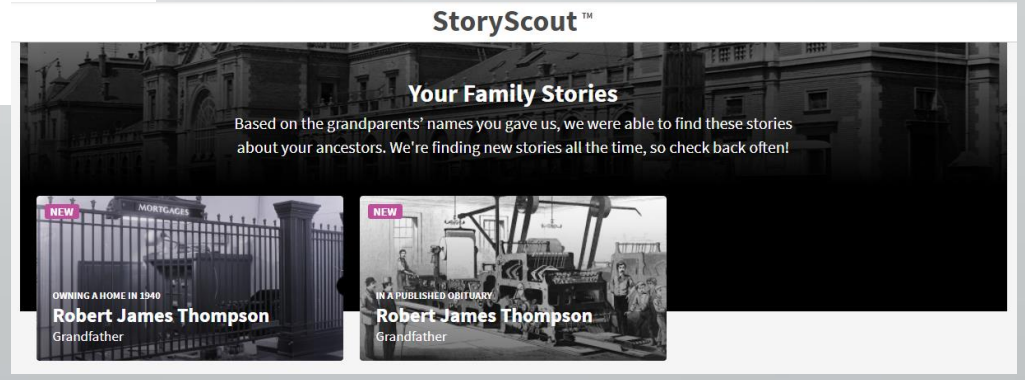




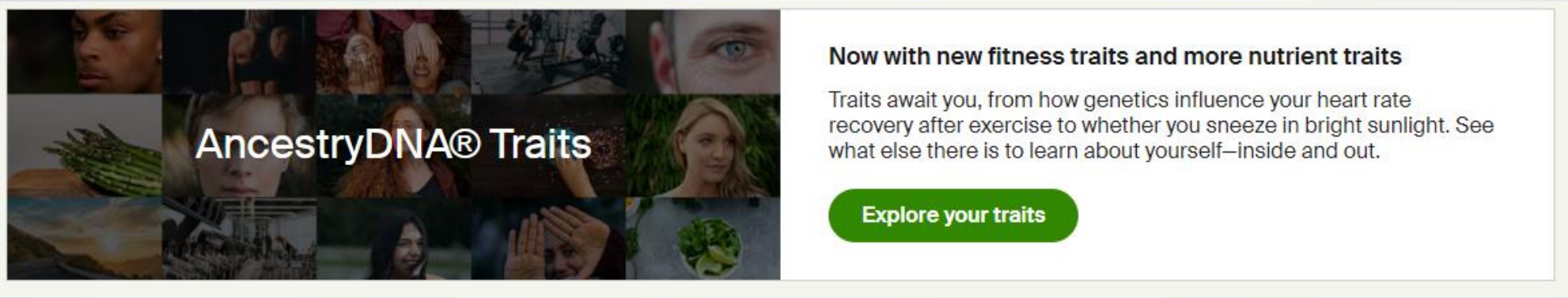
Ancestry StoryScout



Add your grandparents' name and location and Ancestry will search the public and searchable trees. Returns are more social history than actual leads.



AncestryDNA Traits Have Been Expanded



Suggests traits (42 of them) like hair and eye color, whether you like sweets and dislike bitter or why you might not like cilantro. Free to existing customers, $20 extra for new customers.

23&Me

23&me

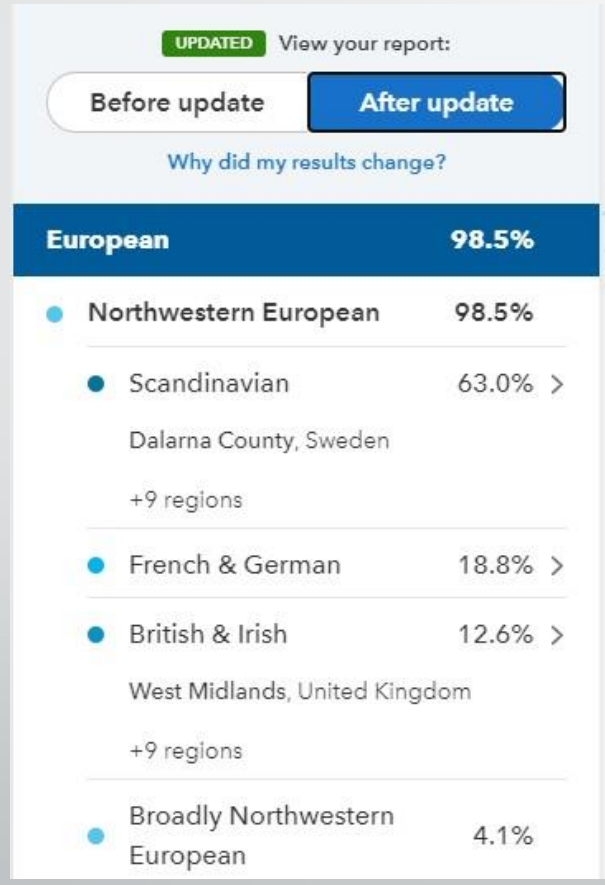
- Saliva Sample
- Results in 4-6 Weeks
- FDA-cleared for use with Genetic Health Risk and Carrier Status reports.
- DNA Matching, Family Tree Feature
- App: Yes
- Second largest database, approx. 14 million
- Tests: Ancestry + Traits: $119; Health Upgrade: $110-$125; Health + Ancestry: $229; 23&Me + Membership: $298 and $69/Year.
- A percentage of the cost can be paid with money from your healthcare flexible spending account. Check with your tax professional.

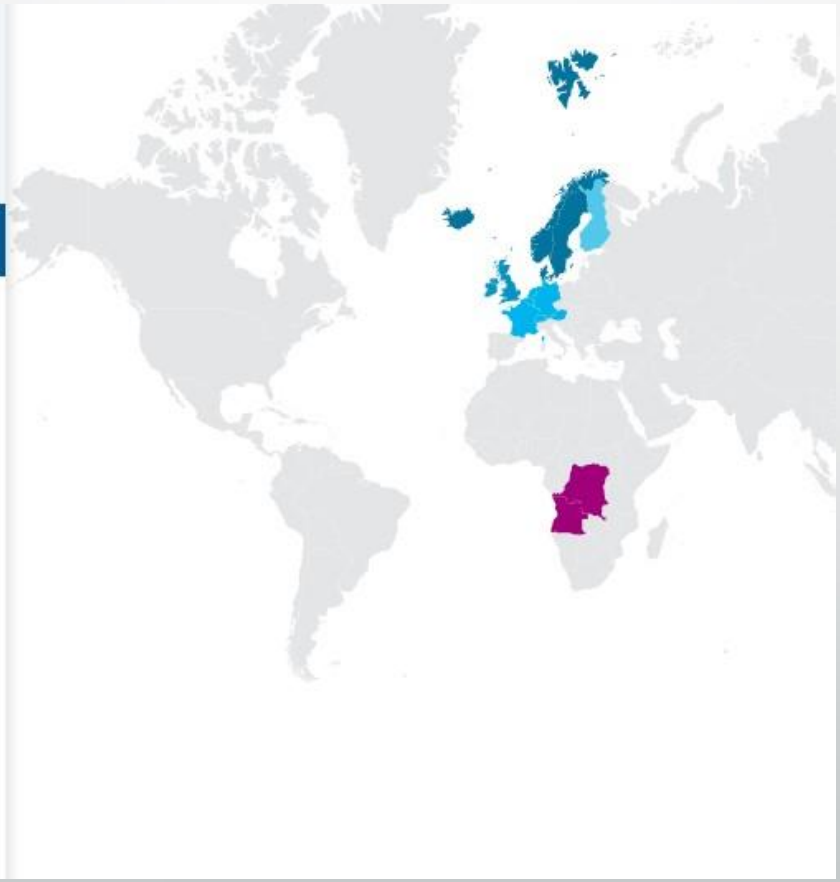
23&Me Health Reports

- Genetic Health Risks: Type 2 Diabetes, Celiac, Parkinson's, BRCA ½, etc.
- Wellness Reports: Caffeine, Sleep, Muscle Composition, Weight, etc.
- Traits: Cheek Dimples, Eye Color, Freckles, Taste and Smell, etc.
- Carrier Status: Cystic Fibrosis, Sickle Cell Anemia, etc.

23&Me strongly suggests discussing the results with a health care professional.

Terry's 4th 23&Me Ethnicity Results

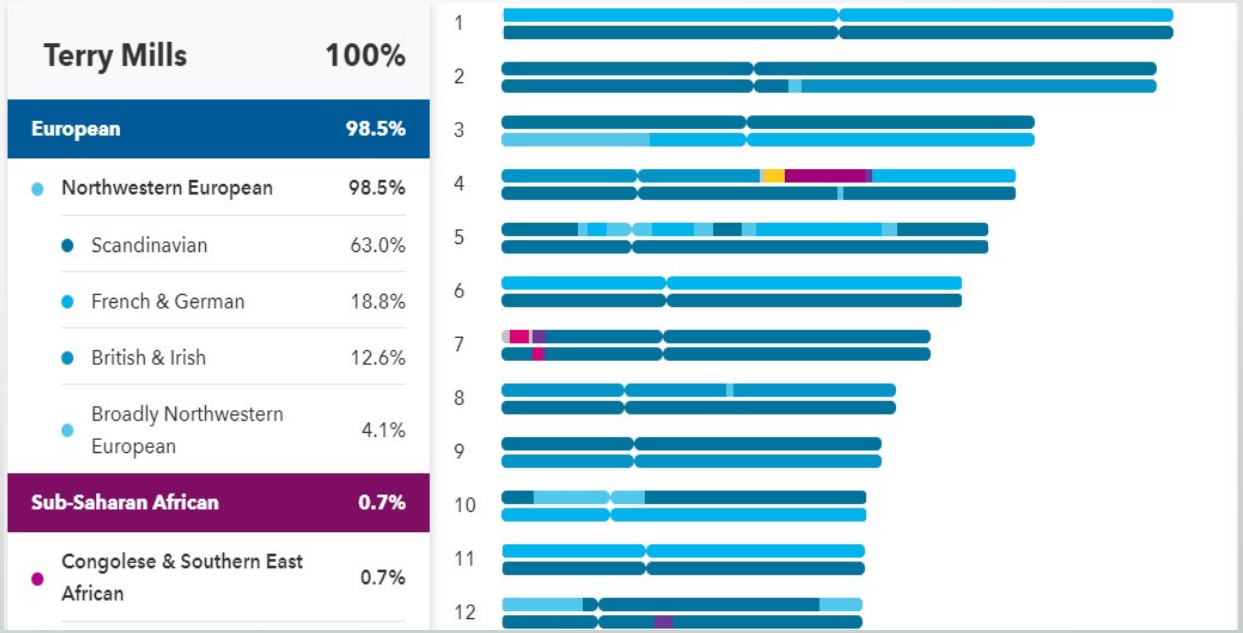




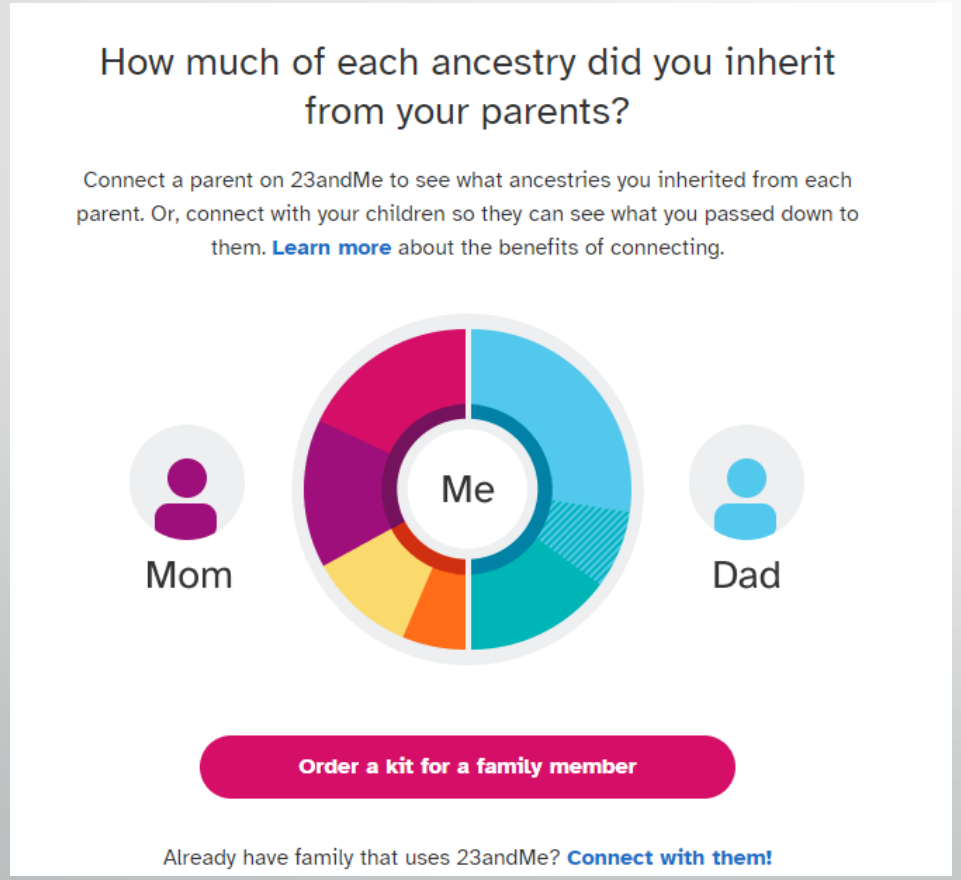
Terry's 23&Me Chromosome Painting

Your Chromosome Painting shows where your ethnicities lie on your chromosomes.

If you opt-in to DNA Relatives, there is also a chromosome browser where you can compare with your matches.



23&Me Parental Inheritance



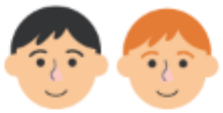
Like Ancestry, 23&Me has a parental inheritance feature.

Unlike Ancestry, which generates the information from your DNA, you do need to opt-in and connect with other family members who have tested with 23&Me as they use DNA results to determine parental inheritance.

23&Me Family and Friends

- **DNA Family Tree:** Opt-In. A tree is generated based on your DNA matches; you will still need to fill in names once you've confirmed a match.
- **DNA Relatives:** Opt-In. Find your DNA matches with this feature.
- **Share and Compare:** Connect with other 23&Me users to compare reports.
- **DNA Comparison:** Compare segments of shared DNA with your relatives.
- **GrandTree:** Trace the flow of DNA from grandparents to grandchildren.

23&Me Terry's Traits



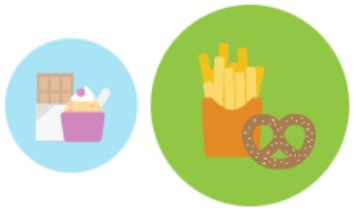
Red Hair

Terry, your genetics predict

73%
chance you **have red hair**

27%
chance you **do not have red hair**

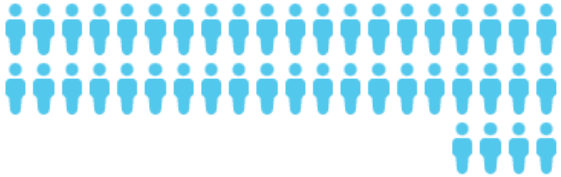
View full report



Terry, the combination of your genetics and other factors makes you **likely to prefer salty or savory snacks.**

Of 23andMe research participants with results like yours:

56% prefer salty or savory snacks.

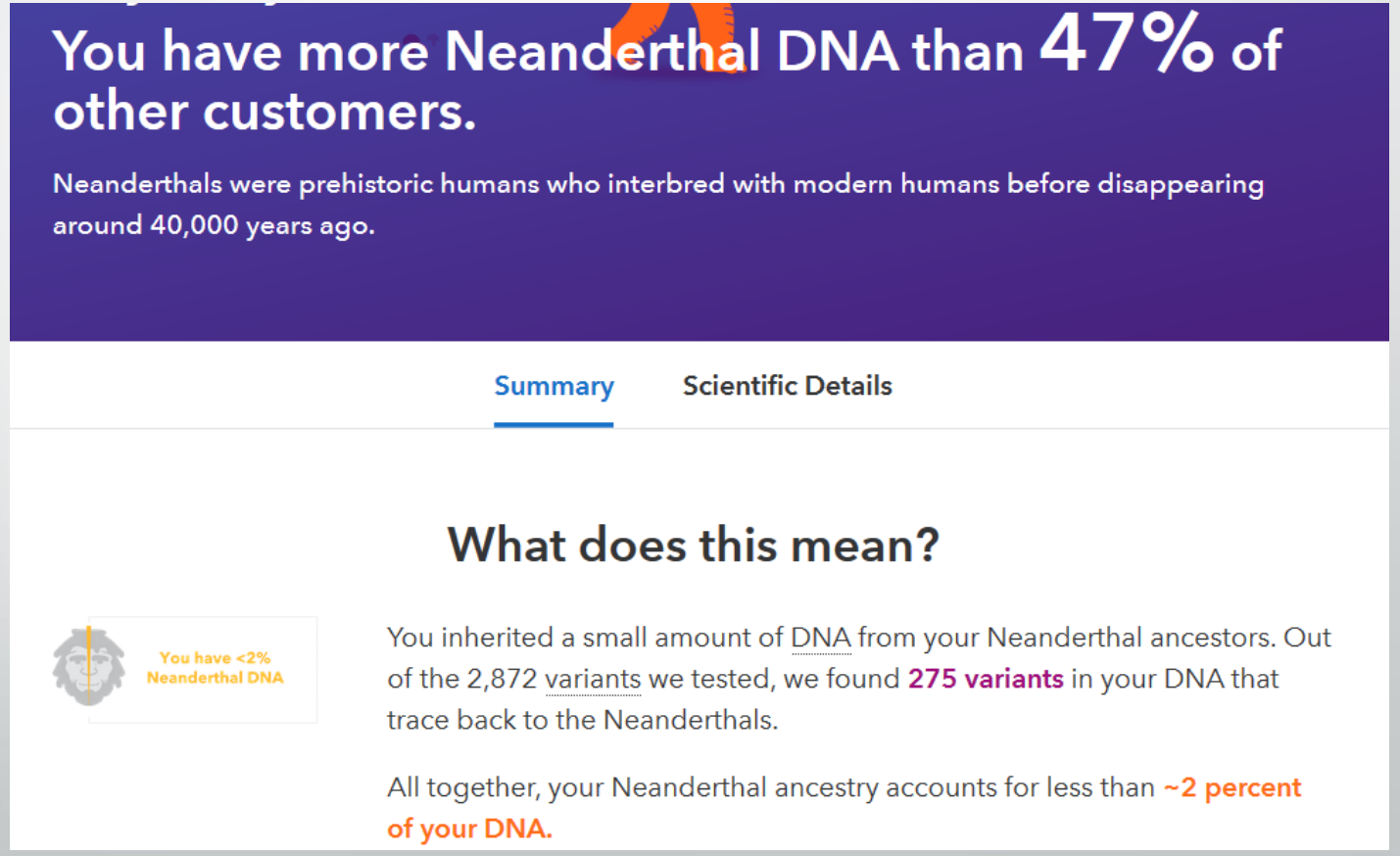


44% prefer sweet snacks.

Terry's 23&Me Neanderthal Ancestry

23&Me tests for Neanderthal DNA and compares the amount to the other people in the database.

Terry has more Neanderthal DNA than 47% of 23&Me customers and that accounts for less than 2% of his overall DNA.

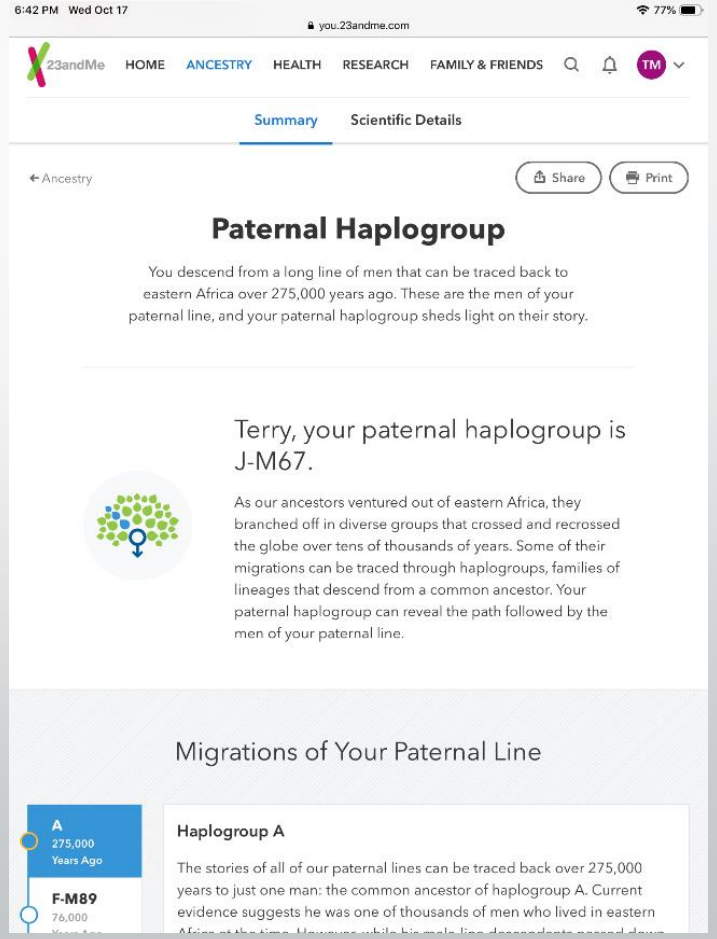


Terry's 23&Me Paternal Haplogroup

Haplogroup is a group of people who share a common ancestor going back thousands of years.

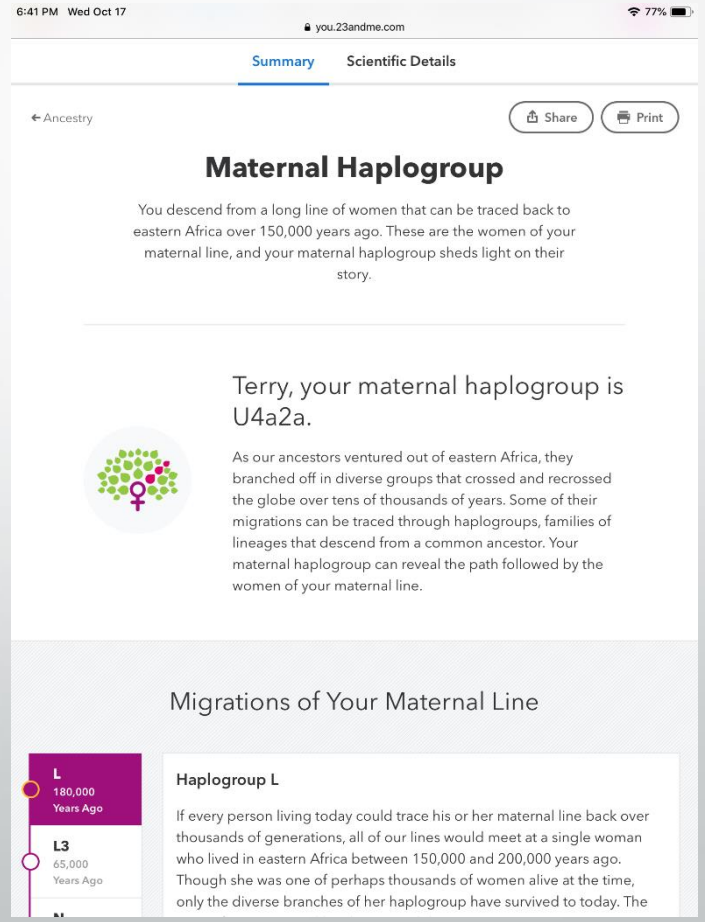
Terry's paternal haplogroup is J-M67.

23&Me includes the migration patterns of the group.

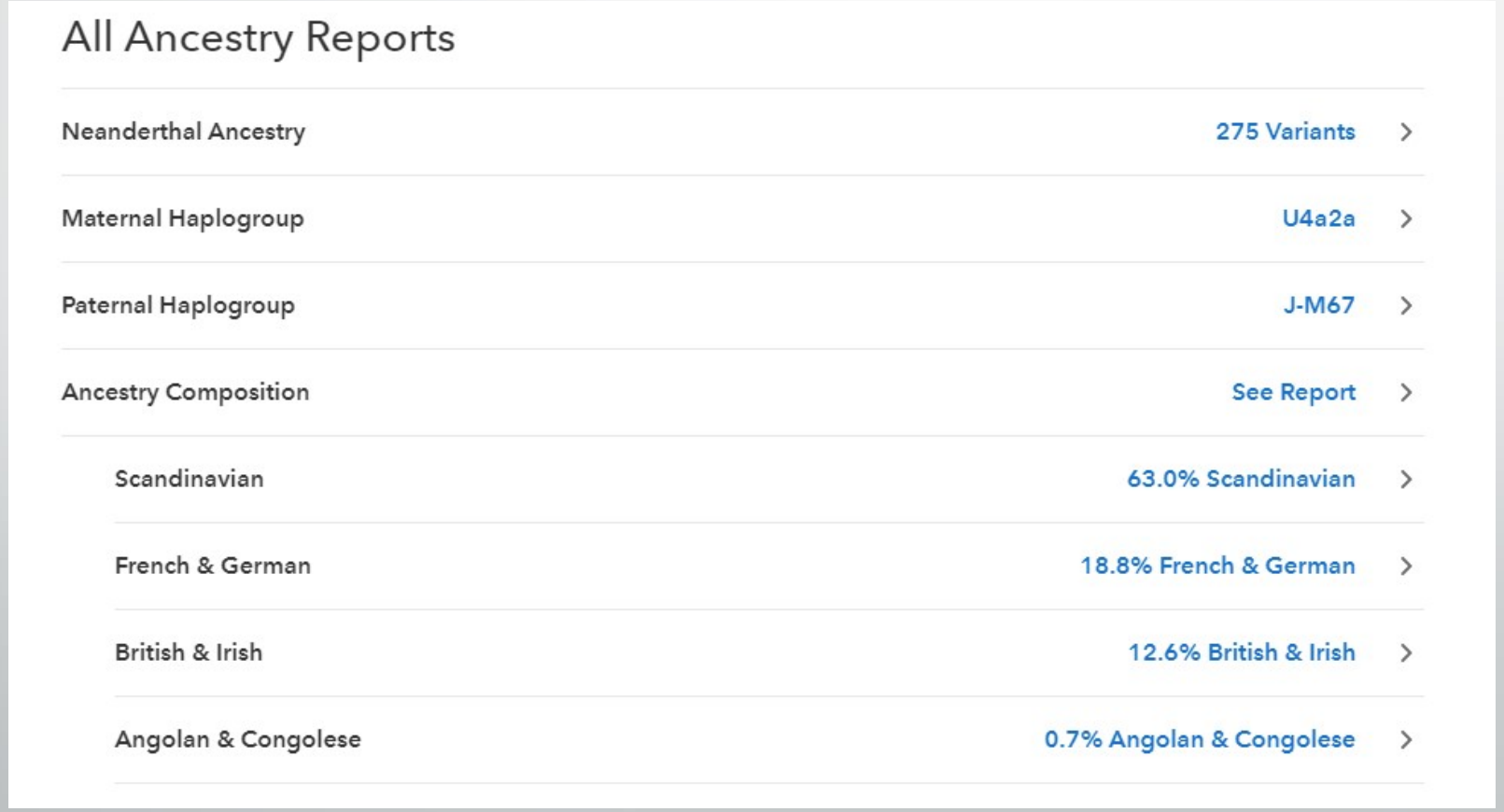


Terry's 23&Me Maternal Haplogroup

His maternal haplogroup
Is U4a2a.



Terry's 23&Me All Reports



FamilyTreeDNA

- FamilyTreeDNA
- Cheek Swab
- Results in 4-8 weeks, depending on the chosen test
- Offers Separate Y and mtDNA tests (paternal and maternal lines)
- DNA Matching
- App: No
- Database, 1.5 million
- Tests: Family Finder: $79; Family Finder + myDNA Wellness: $119; Y-DNA: $119-$449; mtDNA: $159

Kate's 3rd FTDNA Ethnicity Results

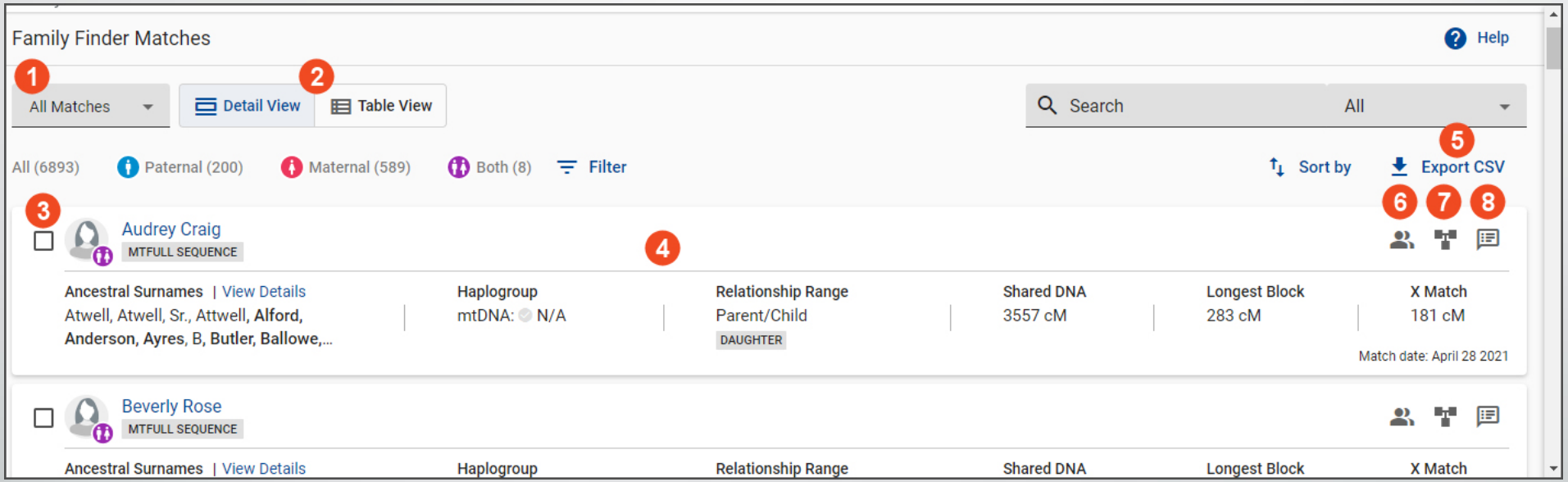
myOrigins® Version 3

Uncover the unique genetic assemblage that has been passed down to you from your ancestors, and see to which of our 90 reference populations from around the world your autosomal DNA is connected. Our clusters highlight major historical and genetic events, thus shedding light on the complexity of your genetic tapestry. Though we are all unique and distinct, we are also woven from the same fundamental elements. The meaning of each thread is yours to decipher. Read less

myOrigins® | Compare Origins

Kate Mills	
Europe	100%
Western Europe	
Ireland	52%
Baltic	
Baltic	30%
Eastern Europe	
East Slavic	10%
West Slavic	3%

FTDNA Family Finder Matches

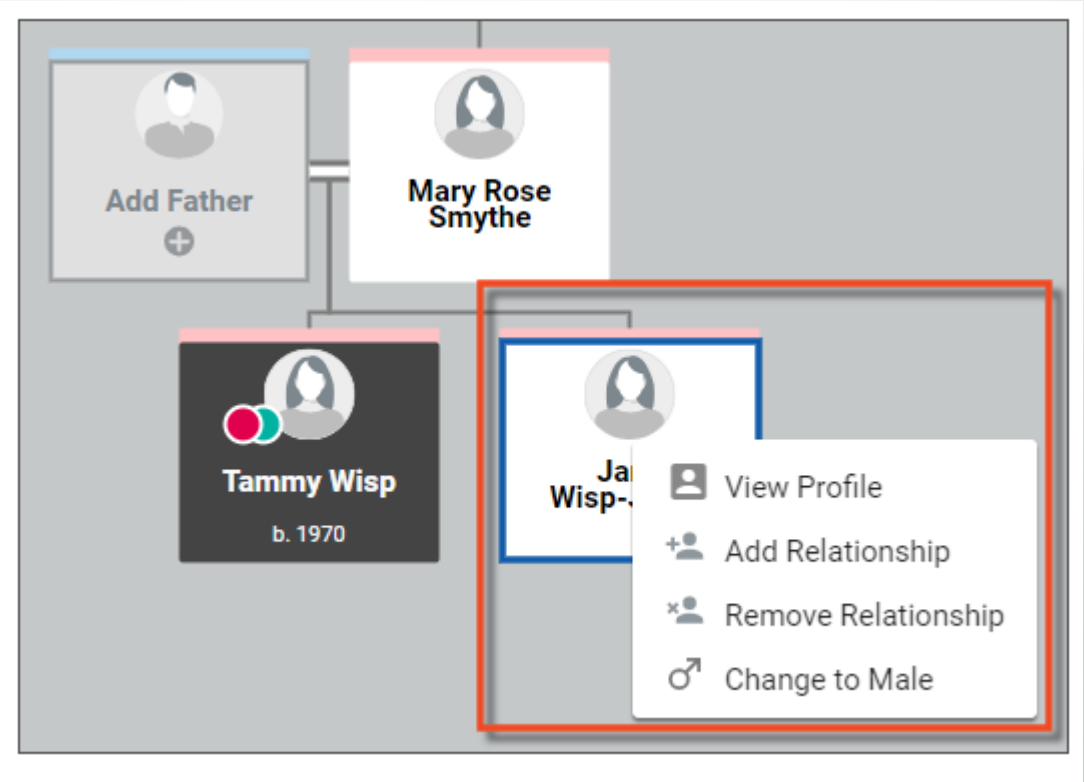


Filter Matches, Select Matches for Comparison, See Matches in Common, Check Family Trees, Add Notes.

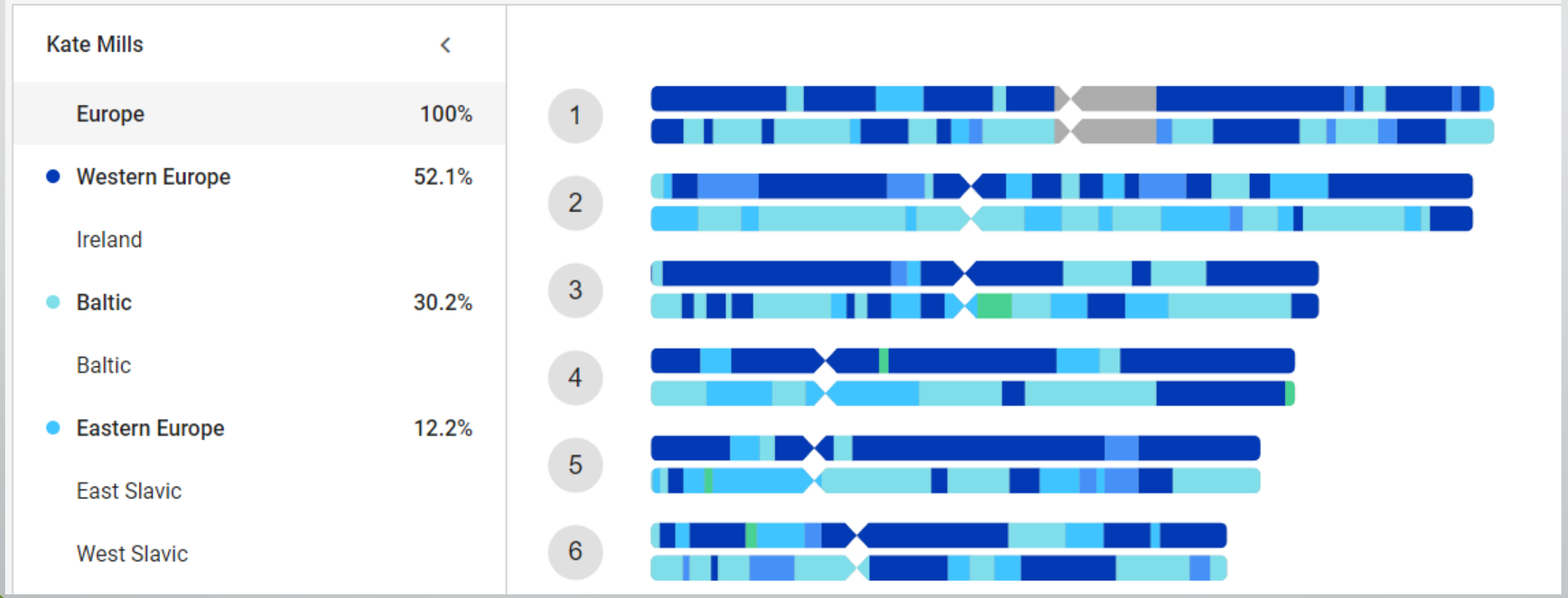
FTDNA FamilyTree

This tool allows you to build a family tree and link to your matches.

You can build one from scratch or upload a GEDCOM version of your existing family tree.

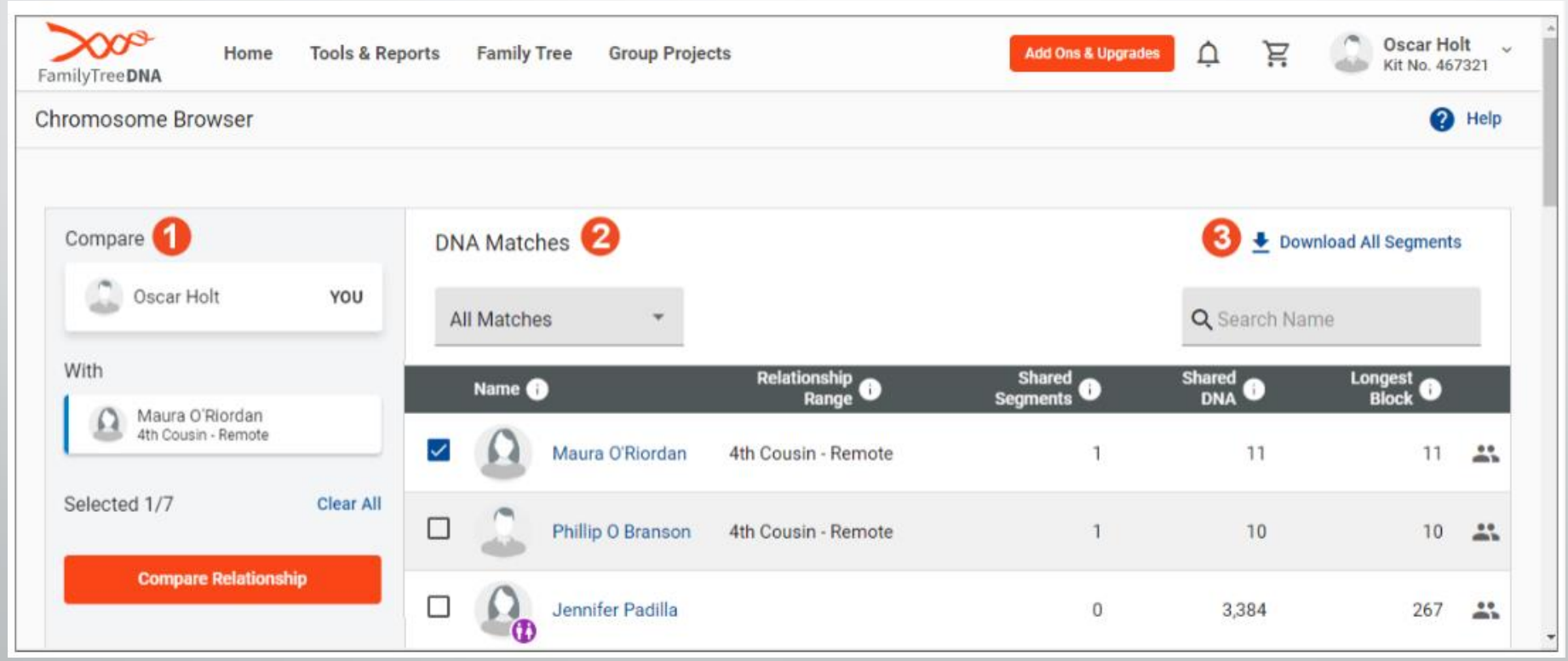


FTDNA Chromosome Painter

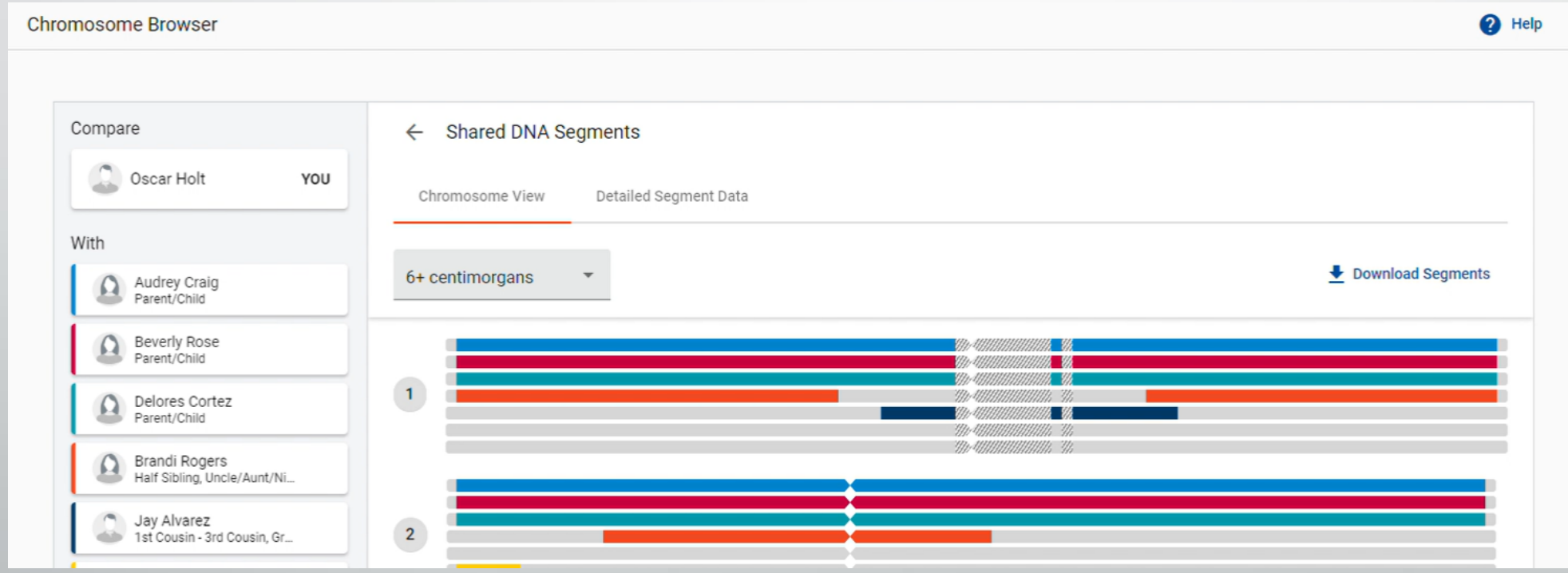


FTDNA Chromosome Browser (Opt In)

The Chromosome Browser allows you to view and compare the DNA segments that you share with your Family Finder matches (autosomal DNA relatives). Note: Only Family Finder matches who have opted in to matching are listed.



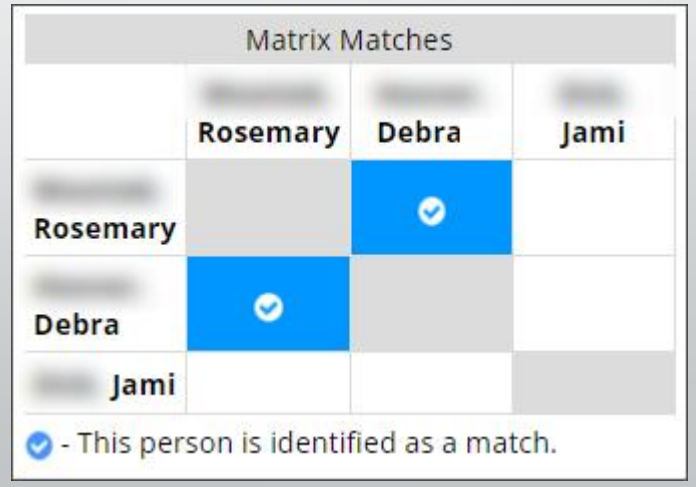
FTDNA Chromosome Browser



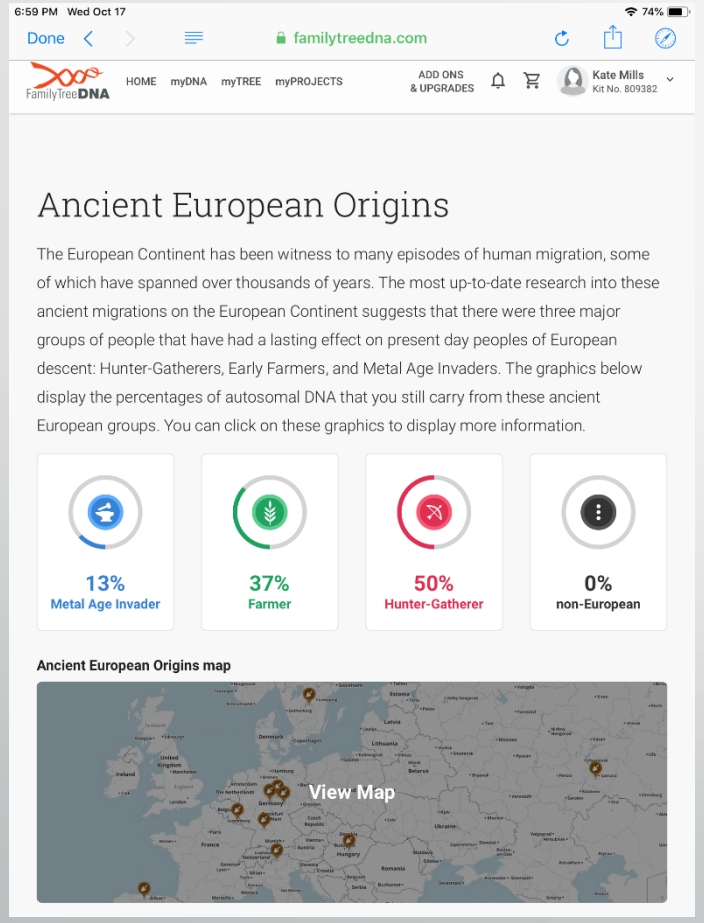
FTDNA Family Finder Matrix (Opt In)

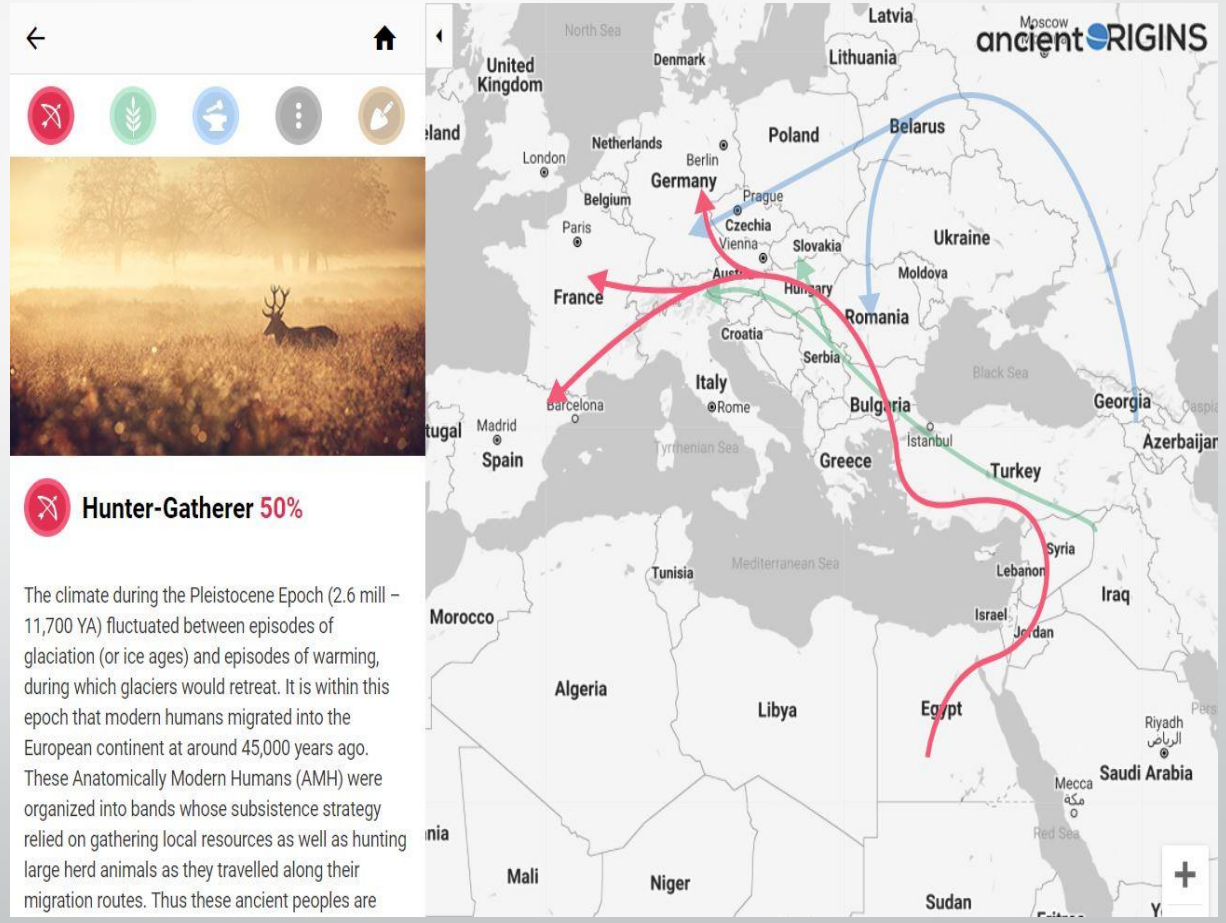
The Family Finder Matrix allows you to select up to 10 of your matches and compare them to each other to see if they have an autosomal genetic relationship between each other. Once you have added at least two matches, the Matrix Matches grid is displayed below the list box. This grid displays the selected matches.

When two of the matches you selected have a genetic relationship, a blue checkmark is displayed in the matrix grid.



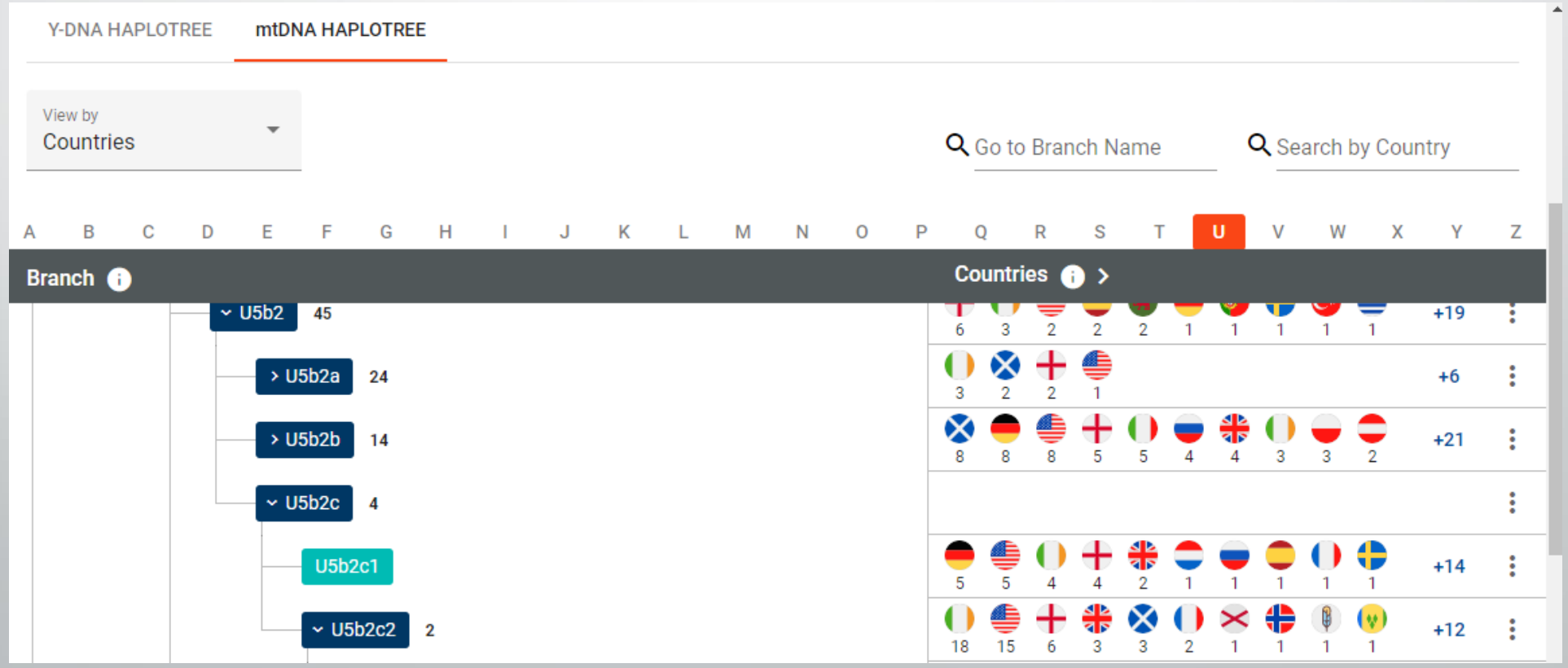
Kate's FTDNA Ancient Origins





Kate's FTDNA Public Haplotrees

Look up your Haplogroup number to see your country of origin



FamilyTree DNA and the DAR

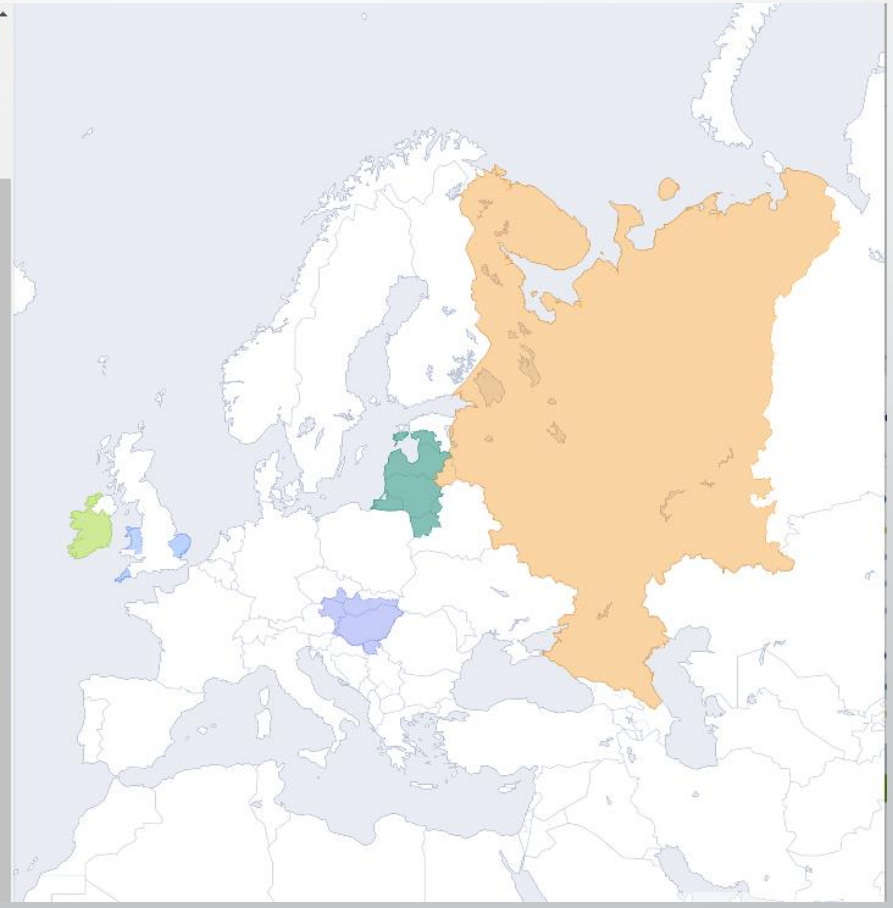
The Daughters of the American Revolution have partnered with FamilyTree DNA and will accept Y-DNA, atDNA and mtDNA as contributing, but not sole evidence of lineage.

https://blog.dar.org/dar-begins-accepting-autosomal-dna

Living DNA

- Living DNA
- Cheek Swab
- Results take 6-8 weeks since they've opened a lab in the US.
- DNA Matching: Yes, called Family Networks/Matching
- Particularly strong in African, Great Britain and European Ancestry (based in the UK).
- App: No
- Database: approx. 300,000
- Tests: Ancestry Kit: $105; Wellbeing Kit: $139; Ancestry + Wellbeing: $189

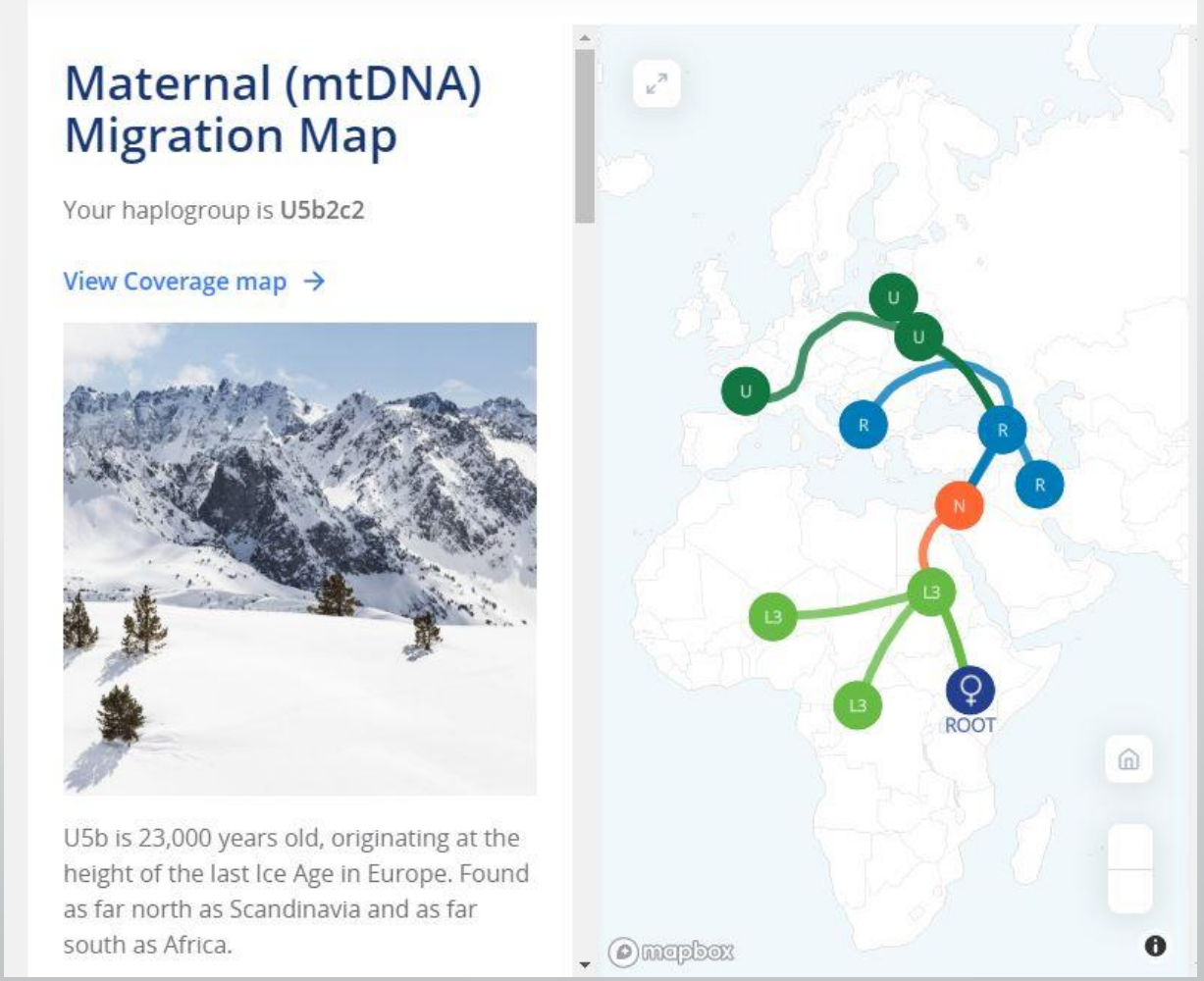
Kate's 4th Ethnicity Results Update



Kate's Motherline Updated

Haplogroup is U5b2c2 originating 23,000 years ago from Africa to Scandinavia

This is a migration map which shows the journey your ancestors may have taken for you to get where you are today.



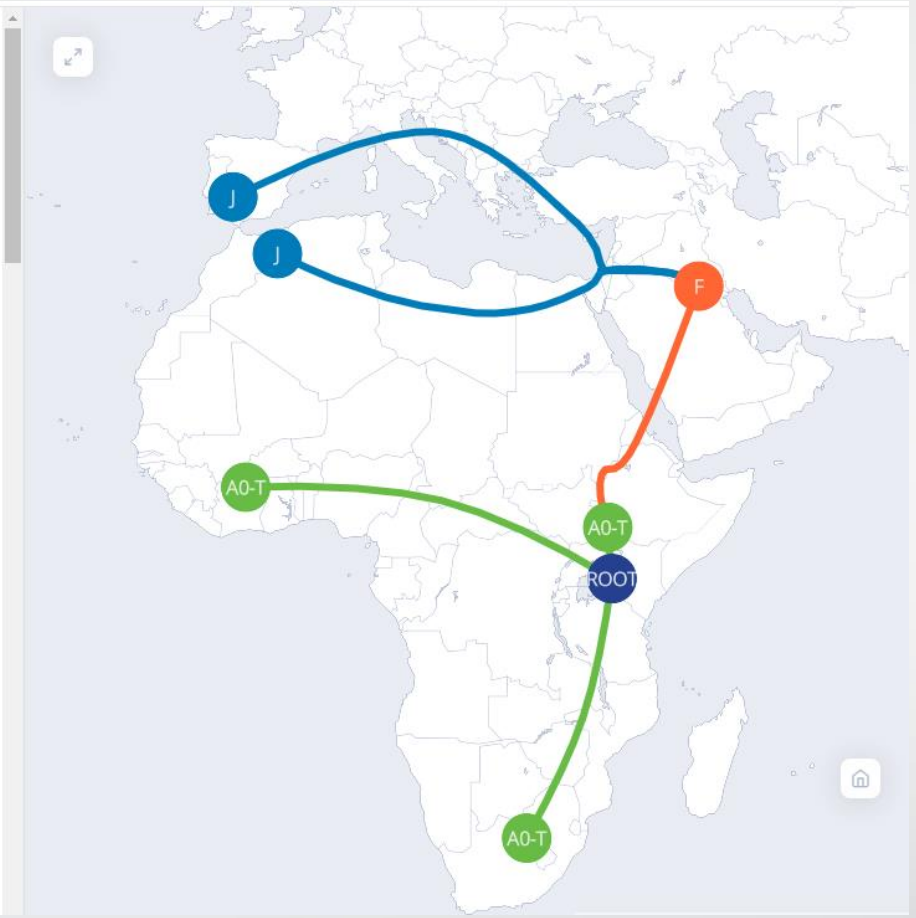
Paternal (Y DNA) Migration Map

Your haplogroup is **J-FGC7860**

Learn more about your results →

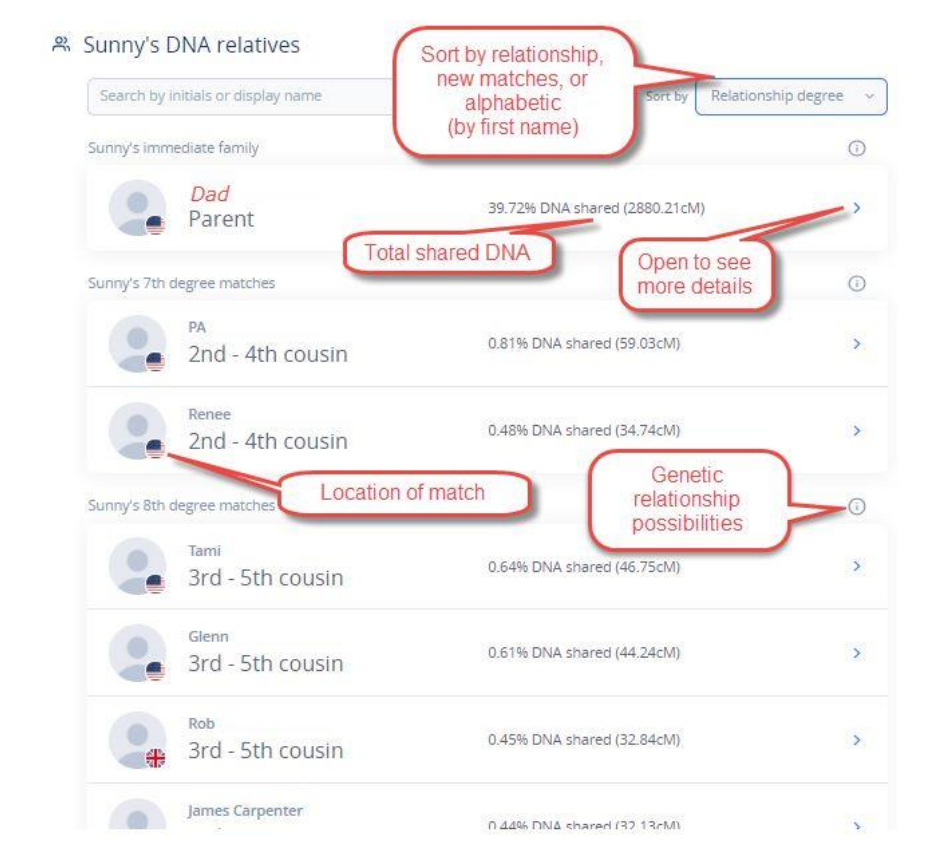
You're viewing your migration map which shows the journey your ancestors may have taken for you to get where you are today. Click on "Coverage Map" below to see the regions where people with your haplogroup are living today.

Migration map Coverage map



Terry's Fatherline Updated Haplogroup J-FGC7860 originating 21,000 years ago in Asia, the Middle East, Turkey and the Mediterranean.

Living DNA-Family Matching



The Family Matching tool helps you to discover genetic relatives that have also tested with Living DNA. Your DNA is compared against potential matches to determine your predicted relationship to each person.

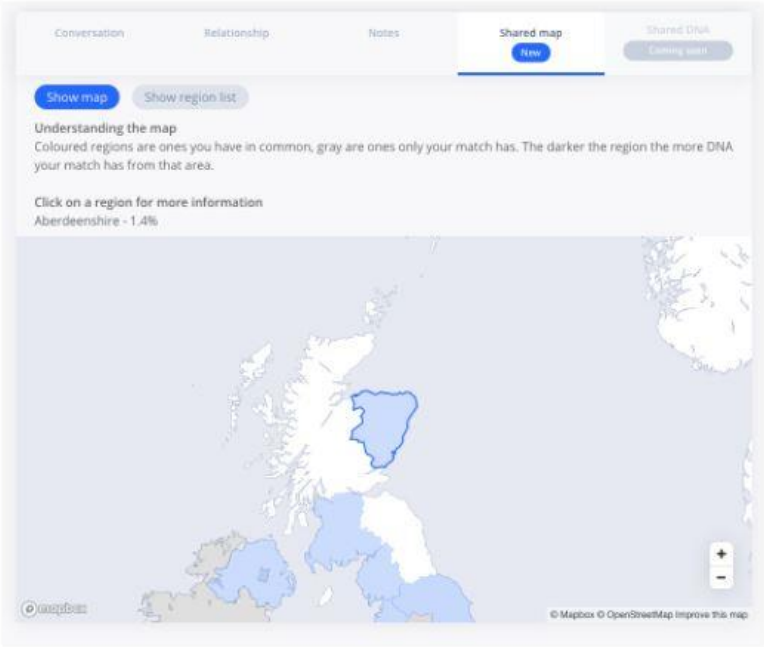
You must be opted into Family Matching. It can take up to 2 weeks for matches to appear once you have opted in.

Matches can be searched, as well as filtered and sorted in a number of different ways.

Living DNA Shared Map

Shared maps is a new feature within Family Networks which allows you to view your matches on an autosomal map, so you can compare your shared autosomal regions.

Once you opt in, you can select a match and see your results on a map. The regions in color are shared, the regions in gray are not.

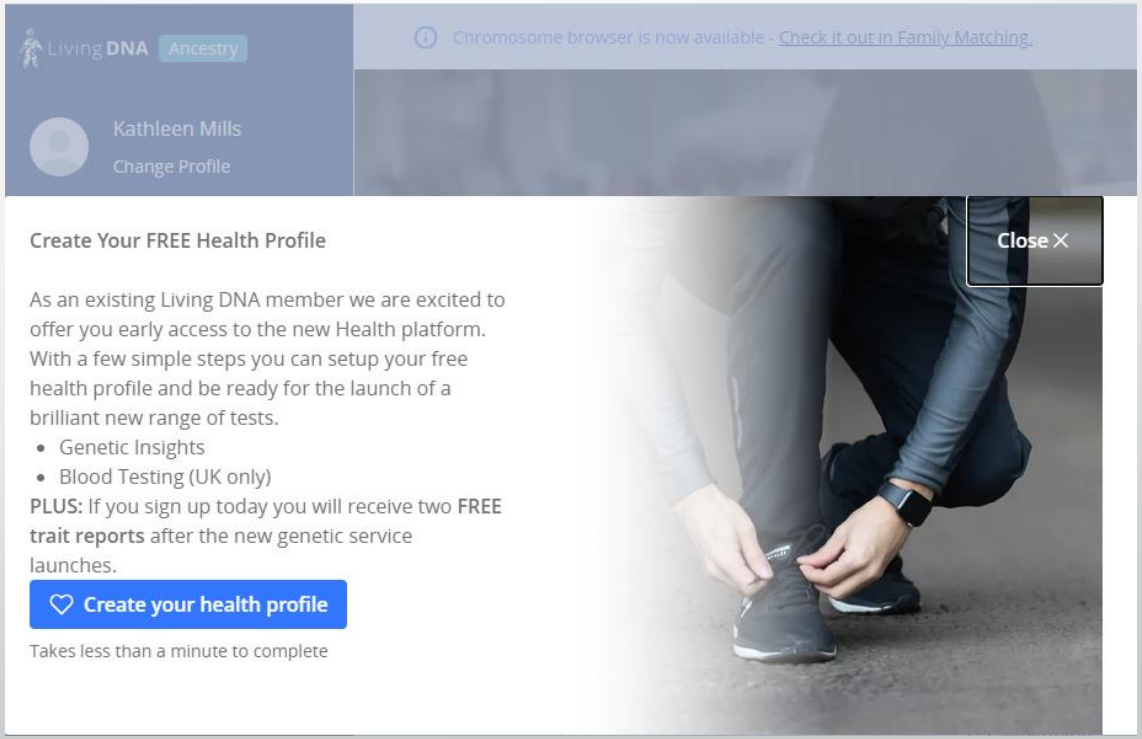


What is Shared Maps?

Shared maps is a new feature within Family networks which allows you to view your matches autosomal map. As well as this it enables you to compare your shared autosomal regions.

Living DNA Health

A new feature adding wellbeing, traits and even blood tests (any or all could be UK only), possibly fee-based in the future.



Living DNA Add-Ons (for a Fee)

- Wellbeing (Nutrition, Fitness, etc.)
- Neanderthal
- Vitamin Subscription
- Viking

Living DNA Viking Index $20 Add-On Fee

Using your raw DNA data (from a Living DNA test or an upload, LivingDNA can compare your DNA to each of four groups to tell you which Vikings you are most genetically similar to: Norway, Eastern Europe, Denmark and Sweden or Great Britain, Ireland and Iceland. The Viking index represents the amount of DNA that you share with ancient Vikings.

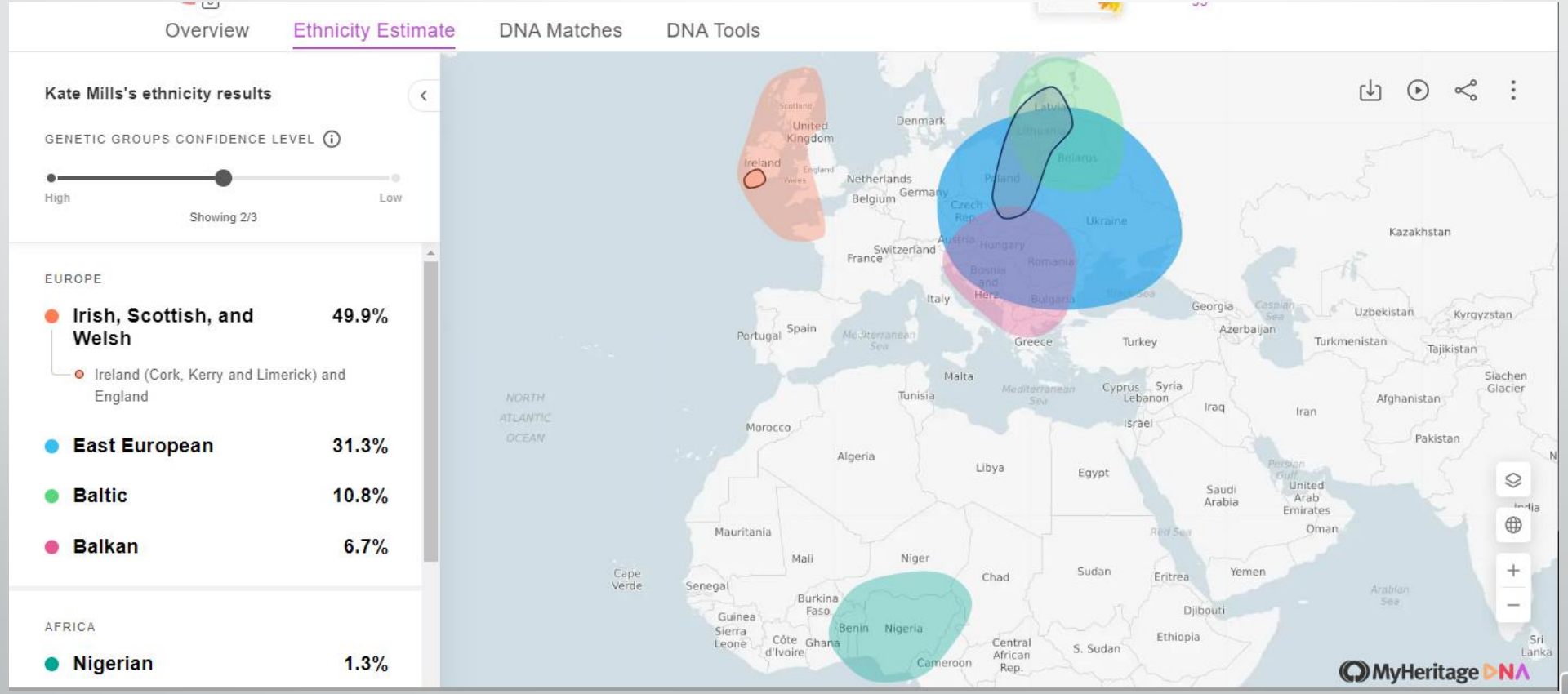
Kate's Viking Index

Terry's Viking Index

MyHeritage

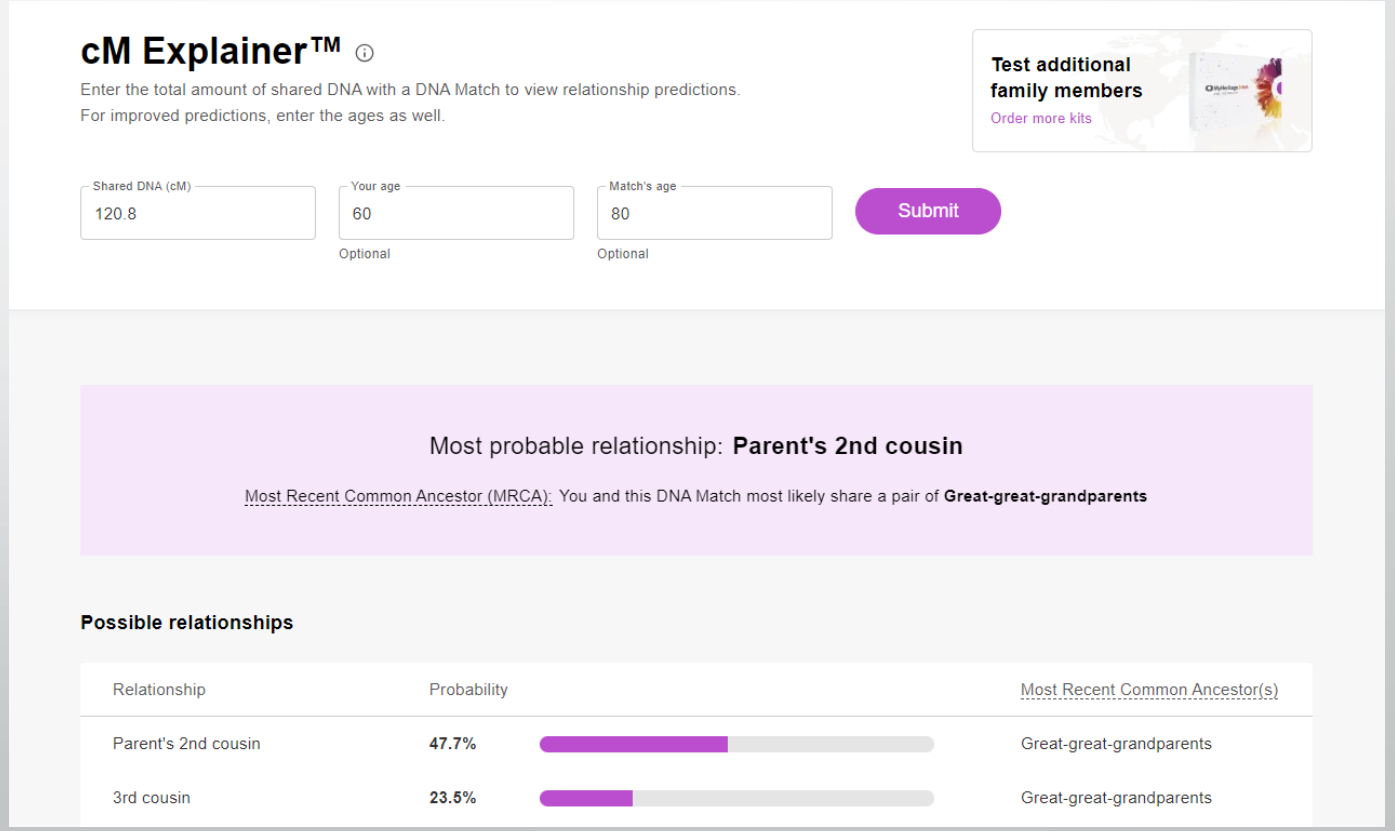
- MyHeritage
- Cheek Swab
- Results in 3-4 Weeks
- Ancestry
- DNA Matching
- App: Yes
- Database: about 6.8 million
- Tests DNA Kit: $89; DNA Kit and 30-day trial of MyHeritage: $89

Kate's MyHeritage Ethnicity Results



Kate's MyHeritage cM Explainer

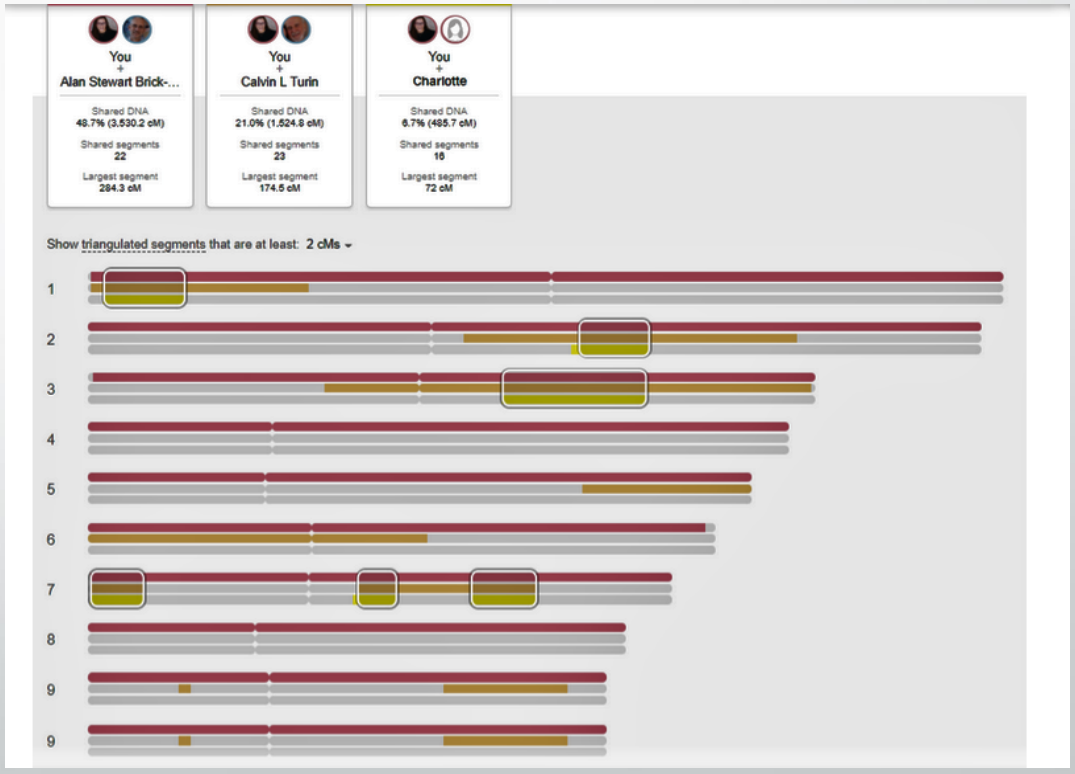
This tool predicts how you might be related to a DNA Match, based on the amount of DNA you share with the match, and self-reported ages (if available).



MyHeritage Chromosome Browser

Shared DNA segments are sections of DNA that two DNA Matches may have inherited from a common ancestor.

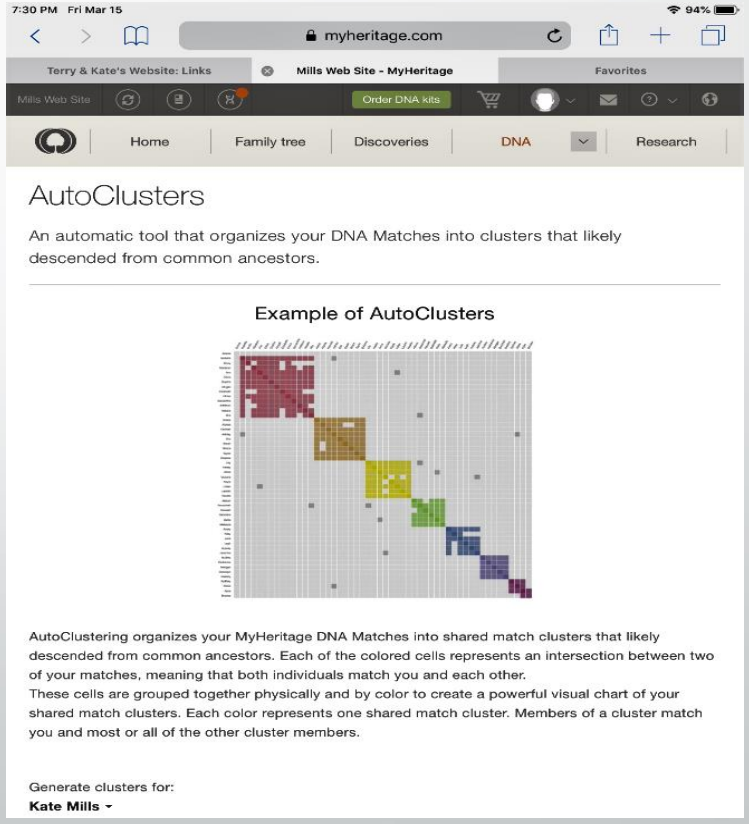
In this Chromosome Browser you can view shared DNA segments between yourself and up to 7 DNA Matches, simultaneously.



MyHeritage AutoClusters

AutoClusters organizes your MyHeritage DNA Matches into shared match groups that likely descended from common ancestors.

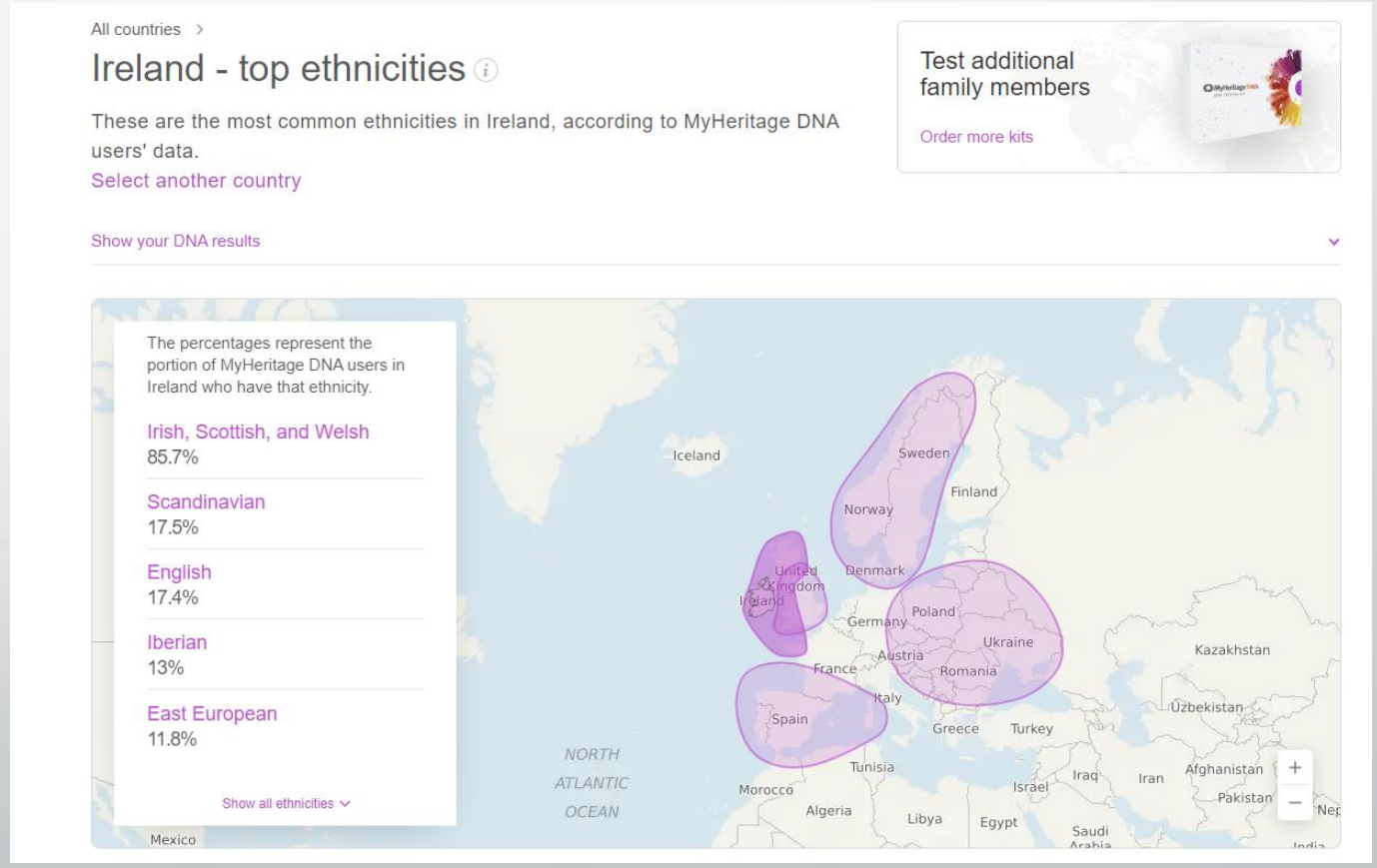
Each color represents one shared match cluster. Members of a cluster match you and most or all of the other cluster members.



MyHeritage Ethnicities Map

MyHeritage has collected DNA data from people around the world.

Using the ethnicities around the world feature, you can explore the most common ethnicities in different countries, and the top countries for each ethnicity, based on people who have tested with MyHeritage.



Specialty DNA Tests

- Home DNA: tests for ancestry, African and Asian Origins, paternity, dog/cat breeding, skin care, weight; most can be found at CVS, Walgreens and Wal-Mart ($69-$199). https://homedna.com/
- Wisdom Panel https://www.wisdompanel.com/en-us for dogs and cats, Embark https://embarkvet.com/ for dogs ($99-$199); Basepaws https://basepaws.com/ for cats; order from Amazon ($99-$499). Etalon Diagnostics Horse DNA Test ($119-308) https://www.etalondx.com/
- Vitagene https://try.vitagene.com/ for ancestry & health; order from Vitagene ($99). Other health tests are available.
- TellMeGen: Based in Spain/website in Spanish, has health and ancestry tests; order from TellMeGen or Amazon ($189-$149). https://www.tellmegen.com/en/
- Somos: DNA test for the Latinx community ($199); order from Amazon. https://www.somosancestria.com/
- CircleDNA: DNA for Health, Diet, Nutrition, etc. ($329-$699); order from CircleDNA. https://circledna.com/
- GenoPalate: DNA for Nutrition, Stress, Personalized Recipes and Supplements, $179; order from GenoPalate. https://www.genopalate.com/

I Got My Results, Now What?

- Upload them to other testing sites and get their analysis of your results.
- Upload them to GEDMatch and DNAGedcom to learn even more.
- Start/Continue your research with the new information you've received.
- Start building your family tree.
- Start contacting your matches.
- Check your results for updates.

Want to Know More?

- International Society of Genetic Genealogy
  https://isogg.org/wiki/Wiki_Welcome_Page
- ISOGG DNA Kit Comparison Chart
  https://isogg.org/wiki/Autosomal_DNA_testing_comparison_chart
- U.S. National Library of Medicine Genetics Home Reference
  https://ghr.nlm.nih.gov/primer/dtcgenetictesting/ancestrytesting
- YouTube Videos: Most of the major kit providers and National Geographic have them

	Ancestry	23&Me	FTDNA	Living DNA	MyHeritage
Cost	$99-$119	$119-$298	$79-$449	$105-$189	$89
Database	23 Million	14 Million est.	1.5 Million	300,000 est.	6.8 Million
Sample	Saliva	Saliva	Swab	Swab	Swab
Time	6-8 Weeks	4-6 Weeks	4-8 Weeks	6-8 Weeks	3-4 Weeks
Ethinicity Estimate	Yes	Yes	Yes	Yes	Yes
Matching	Yes	Yes	Yes	Yes	Yes
Neanderthal	No	Yes	Yes	Yes, for a fee	No
Haplogroup	No	Yes	Yes, with Y or mtDNA	Yes	No
Chromosome Painter/Browser	Yes/No	Yes/Yes, Opt-In	Yes/Yes	No/No	No/Yes
Health	No	Yes, FDA cleared, additional fee	No	Yes, UK only?, fee?	No
Wellbeing (Nutrition, Fitness)	No	Yes, in Health if purchased	Yes, in myDNA if purchased	Yes, new feature coming soon, UK Only?	No
Traits	Yes, fee for new customers	Yes	No	No	No
App	Yes	Yes	No/Yes, myDNA	No	Yes
Subscription	Yes	No	No	No	Yes
Uploads	No	No	Yes	Yes	Yes
Owned By	Blackstone (investment)	VG/Richard Branson	myDNA/Gene by Gene	David and Hannah Micholson	Francisco Partners (investment)

ISOGG: https://isogg.org/wiki/Autosomal_DNA_testing_comparison_chart

Questions?

Contact: Kate Mills, kmills@balibrary.org

PDF slides available at: https://balibrary.org/component/content/article/1497