



FIRST LOOK: 23ANDME CONTENTS

| | |
|---|----|
| Class Objective | 2 |
| Taking This Course..... | 2 |
| Overview of 23andme..... | 2 |
| DNA Relatives (Matching)..... | 2 |
| Working with Matches..... | 4 |
| Comparing DNA Matches | 6 |
| Match’s Profiles..... | 6 |
| Chromosome Browser: Advanced DNA Comparison | 9 |
| Ethnicity Estimates / Admixture..... | 14 |
| Downloading Raw DNA File..... | 14 |
| More about 23andme Health Reports | 15 |
| Important Caveats | 16 |



CLASS OBJECTIVE

Objective:

Learn what to do with results of autosomal DNA testing from 23andMe.

Tools: 23andMe results; 23andMe.com, gedmatch.com; DNAAdoption handouts.

Exercises: Practice Exercises throughout the lesson help you apply what you're learning.

TAKING THIS COURSE

Use of this document signifies your agreement to [the Web Site Agreement](#), [Privacy Statement](#), [Terms of Use](#) of [DNAGedcom](#) and [DNAAdoption](#). This content is copyrighted by DNAAdoption.org.

Screenshots taken from 23andMe.com are for educational purposes and do not imply ownership of content.

OVERVIEW OF 23ANDME

23andMe is a direct-to-consumer genomic testing company that offers limited health information and ancestry results. More details about their health reports are at the end of this class.

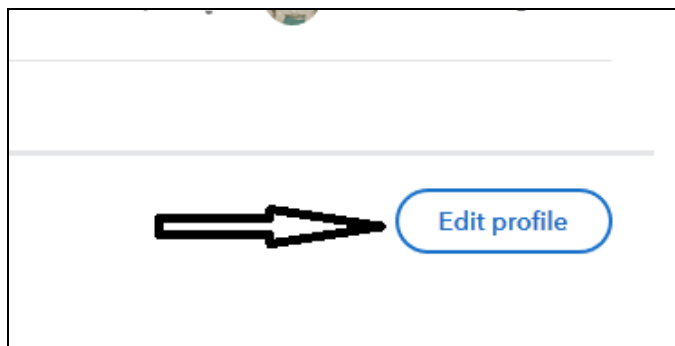
DNA Relatives (Matching)

23&Me's matching, or DNA relative matches, is the most important feature for anyone searching for birth family. Once you have signed into your account, select the appropriate profile from the pull-down profile menu if you manage more than one kit.



To get to your list of matches, click **Family and Friends** at the top of the page, then click **View All DNA Relatives** at the top of the pull-down menu or access it from the menu at the bottom right of the profile home page.

You may select how your information is shared with and displayed to your matches by selecting **Edit Profile** at the top right of the **DNA Relatives** page. It is a good idea to carefully consider all of these preferences based on your desire for privacy.



Since I want people to share openly with me and I want to know who they are, I have chosen to participate in open sharing and display my full name. Open sharing reveals your ethnicity estimates and shared DNA segment information to DNA matches and is indicated by a purple dot beside the match's name in the sharing column.

Matches will not need to contact you in order to see this information if you select open sharing. Those who elect open sharing may use the chromosome browser to compare with other matches that have also opted into open sharing, without ever having to request to share genomes.

These matches will automatically be in your chromosome browser area. If a match has not elected open sharing, then a request to make a connection still must be sent.

Would you like to display your ancestry results and matching DNA segments to DNA Relatives?

Showing the results of your ancestry reports and your matching DNA segments* makes it easy to compare ancestries with relatives. As new ancestry reports are added, your profile will update.

- Yes**, show my ancestry results and matching DNA segments.
- No**, do not show this information.

*Please note: When you display your segments, there is a risk that your relatives may be able to identify additional information about you, including genetic variants related to health.

Enhance your profile with more information

Share additional information about yourself and your family's ancestry to compare with your relatives and connections – you might find something in common to talk about!

1. Put a face to the name!

You also can select which additional information you would like to share with your matches in the **Enhance your profile** section by clicking the little down arrow to the right of each category.

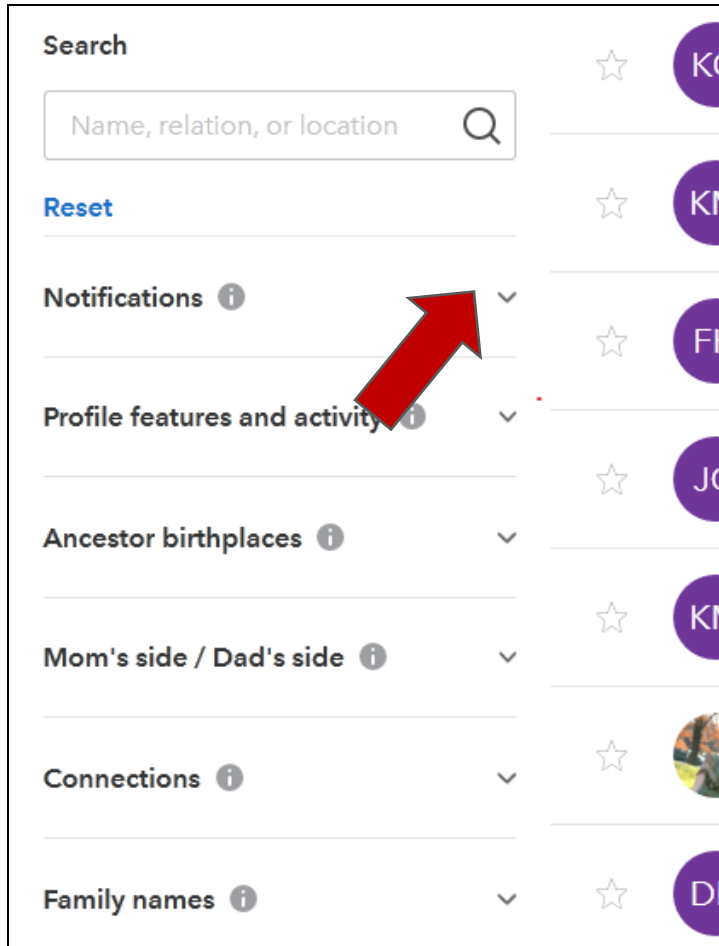
Be sure to save your updated preferences by clicking the **Update** button at the bottom of the page.

Working with Matches

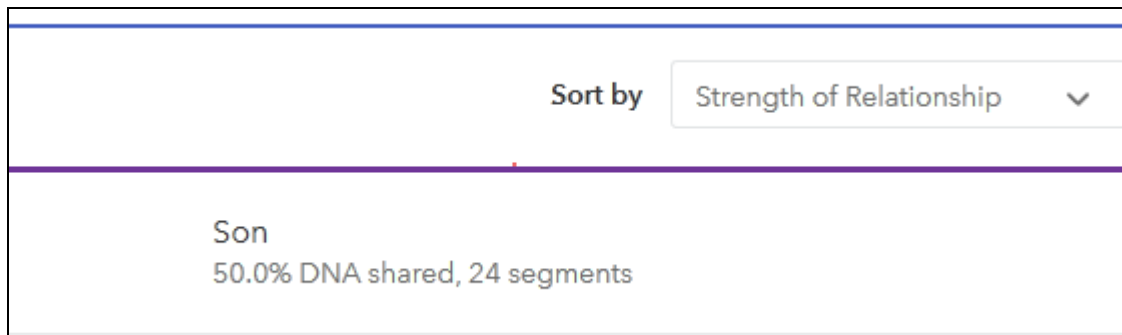
A menu of various filters is available to the left of your match list. Click the little down arrow to the right to reveal options. Available filters change from time to time.

You may also search for keywords among your matches including haplogroups. Using the filters will temporarily hide any match who does not meet the filter or search criteria.

To reveal the hidden matches, click the arrow again.



To sort matches, go to the far right on the DNA Relatives first page at the top of the match list.



Click the little down arrow to reveal options.

Also, notice that you can mark matches with a star to indicate a criterium of your choice. As of now, that is the only way to mark your matches on 23andMe. You can also add remarks at the bottom of each match's profile page.

Comparing DNA Matches

Under **Family and Friends**, click on **Advanced DNA comparisons**. Here you can pick any five (5) people from your list of matches to compare, either against the main profile or against other matches.

In this view, you can see haplogroups.



Match's Profiles

The notes and messages area are both located on the bottom after selecting a match. Under the name is a button to send a message. You might consider including your email address if you want to communicate outside of 23andMe.

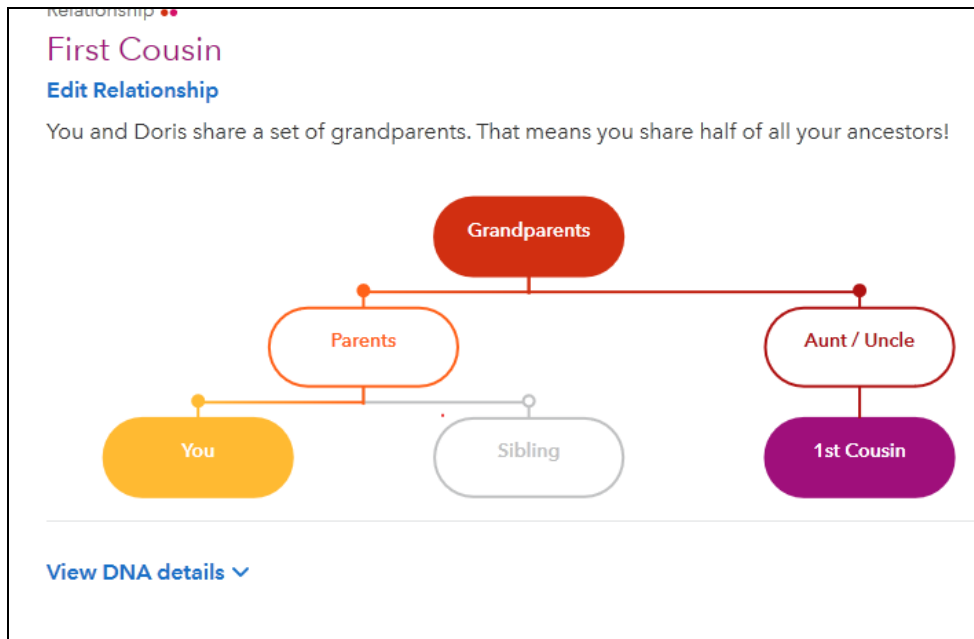
The notepad icon on the bottom is for your own personal notes. These notes are not shared with the match.

Click on each profile for more information. 23andMe gives your **predicted** relationship, which includes a diagram to illustrate this relationship. Note: Half relationships are not included in the predictions at this time. Since adoptees have many potential half relationships, that can skew the predicted relationships.

Beware: The actual relationship may turn out to be different from the predicted relationship so view it with healthy skepticism until more work is done.

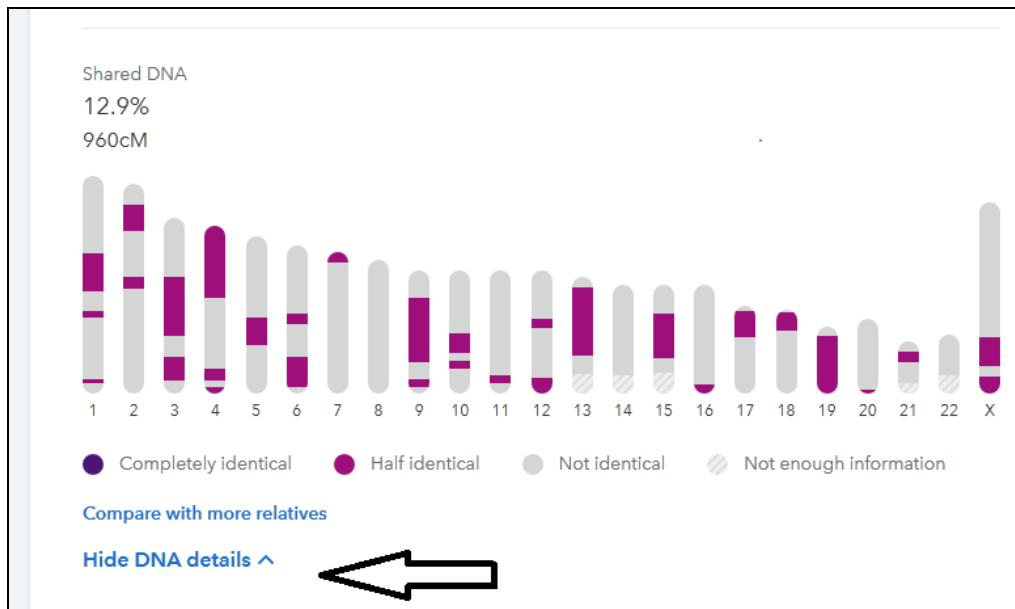
This comparison area has a lot of information, including side-by-side comparisons of ancestor locations, ethnicity estimates called “ancestries” in 23andMe and estimated haplogroups.

You may also see your match's listed ancestral surnames, family tree and In Common With (ICW) or shared DNA matches.



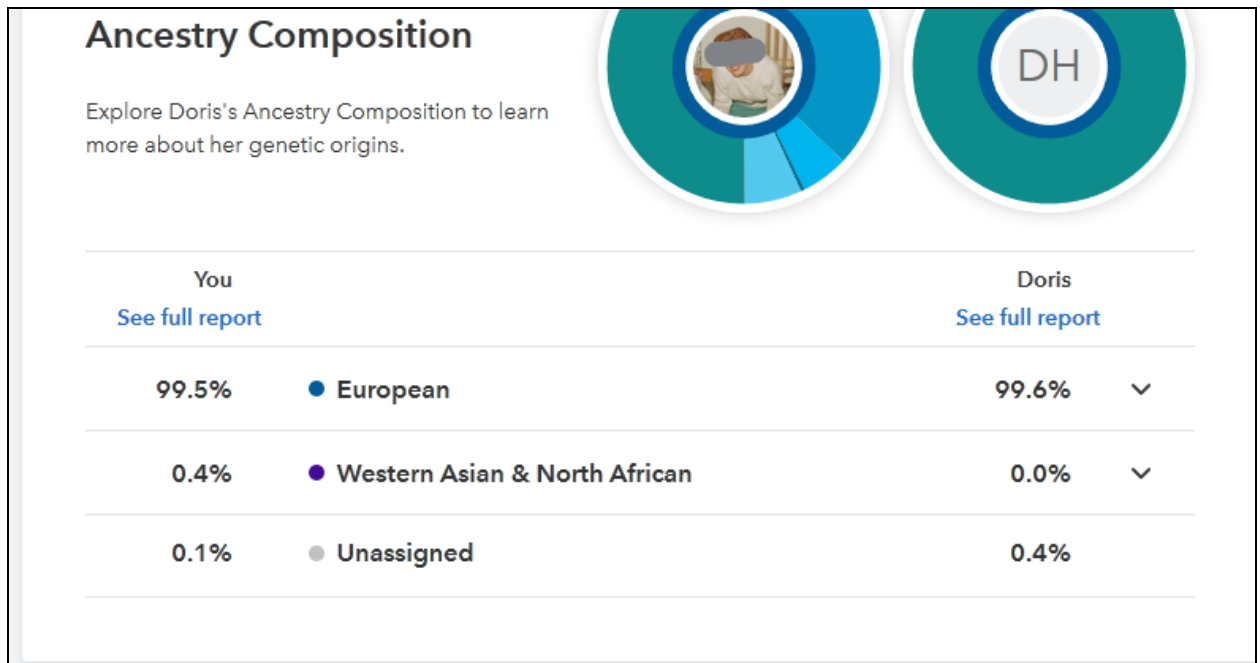
Note: One of the things you can view in the profile area with shared matches is a preview of the chromosome browser that shows which chromosomes the match shares.

Click on the **View Details** to view or **Hide** to hide. However, this is not interactive and is not the actual chromosome browser.



Another feature in the profile area is side-by-side ethnicity percentage comparisons with your match. Your percentages are on the left and your match's percentages are on the right.

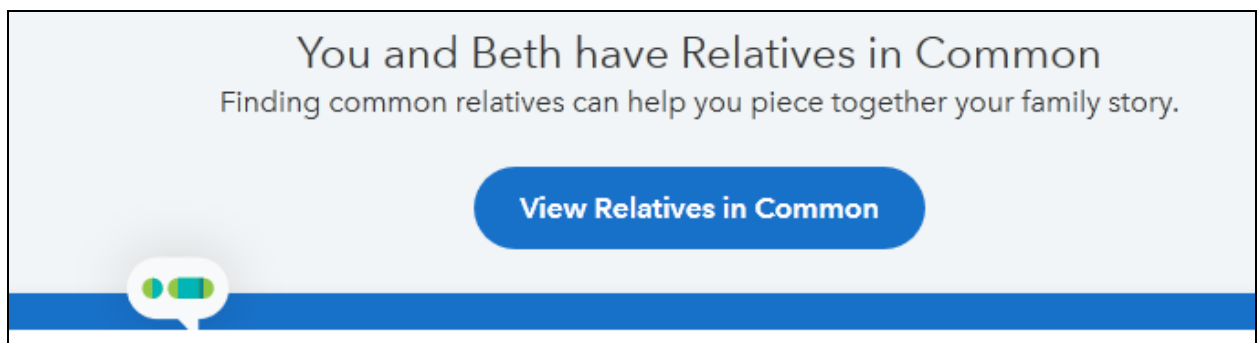
You can use the drop-down arrows to the right to see more detail.



Another option is to go back to the main page and click on **Ancestry** at the top and then **Ancestry Composition**. Scroll to the bottom and click on any match with whom you are sharing info or who also has an open sharing profile, and you can compare yourself with that person.

The last feature in the profile area is **Relatives In Common With (ICW)**. This is only for open sharing, regardless if one is already sharing genomes.

Click on a match's profile and scroll to the bottom. Then click on the blue button to **View Relatives in Common**:



You will see a list like the next figure. Note: the fact that you and a match are sharing DNA with a third match does not mean you share a common ancestor.

Make note of all the people who are In Common with (ICW) each other. Then go to the Advanced DNA matching (discussed next) and compare the main person against both people to see if they all match on the same chromosome and segment, and then compare the two matches against each other to see if they also match each other on that segment (i.e., the same copy of your chromosome).



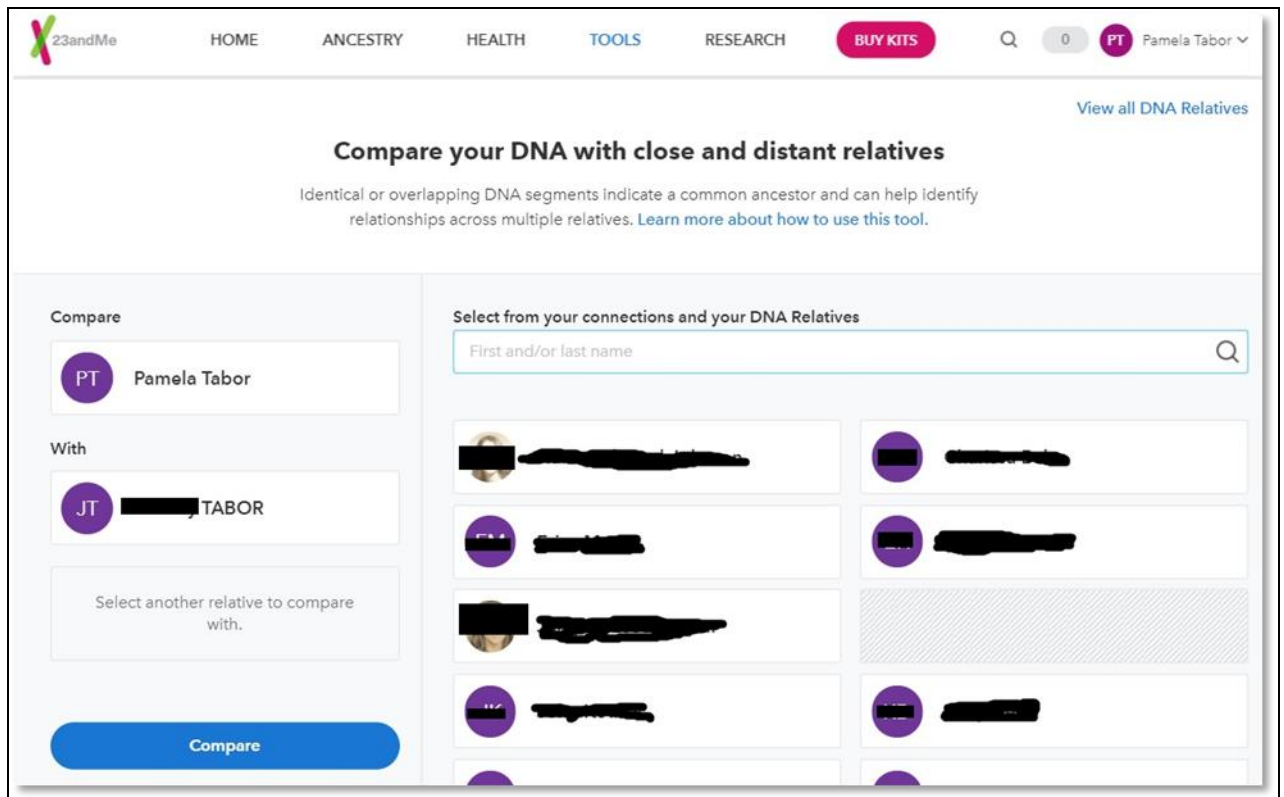
This is the heart of triangulation. For detailed information on this topic, please consult the **Applied Autosomal DNA 201** course available from DNAadoption.org.

| You | Deborah | Shared DNA ⓘ |
|---------------------|---------------------|--------------|
| 3rd Cousin 0.49% | 4th Cousin 0.21% | Yes |
| 3rd Cousin 0.42% | 5th Cousin 0.18% | Yes |
| 3rd Cousin 0.41% | 4th Cousin 0.32% | Yes |
| 3rd Cousin 0.40% | 5th Cousin 0.12% | Yes |
| 3rd Cousin 0.40% | 4th Cousin 0.39% | Yes |
| 3rd Cousin 0.37% | 4th Cousin 0.20% | Yes |
| 4th Cousin 0.58% | 4th Cousin 0.45% | Yes |
| 4th Cousin 0.36% | 5th Cousin 0.16% | Yes |

Chromosome Browser: Advanced DNA Comparison

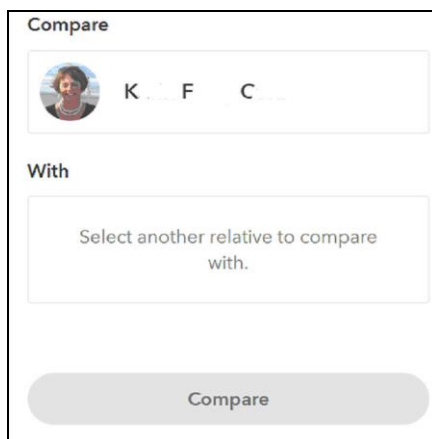
Under **Family and Friends** on the front page, select **Advanced DNA Comparison**. Here you can pick any five (5) people from your list of matches to compare, either against the main profile or against other matches.

You may browse your matches or search for a particular individual in the search box.



Select one match for everyone to compare to. Then select up to five (5) more for comparison. As soon as you select a match, they disappear from your list.

The old version of 23andMe allowed for one to compare oneself with oneself; this is no longer an option.



Searching for a name, either by given or surname, is another option.





Below, you will see an example of the chromosome browser. The **purple** on the chromosome browser is my maternal half sister. It gives the total number of centiMorgans (cMs) and the number of segments. Every **purple** bar counts as a single segment. As you can see, sometimes there is more than one segment on a chromosome.

Clicking on any segment will give the exact cM for that segment.

The detailed segment data are also available in a table below the graphic of the chromosome browser.

Detailed segment data

| Comparison | Chrom. | Start Position | End Position | Genetic Distance (cM) | Number of SNPs | Identity |
|------------|--------|----------------|--------------|-----------------------|----------------|----------|
|------------|--------|----------------|--------------|-----------------------|----------------|----------|

Half IBD
1819 cM

Segments
46

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
X

[Edit view](#)

View segment data in table ▼

Downloading aggregate data to a CSV file will be available soon.

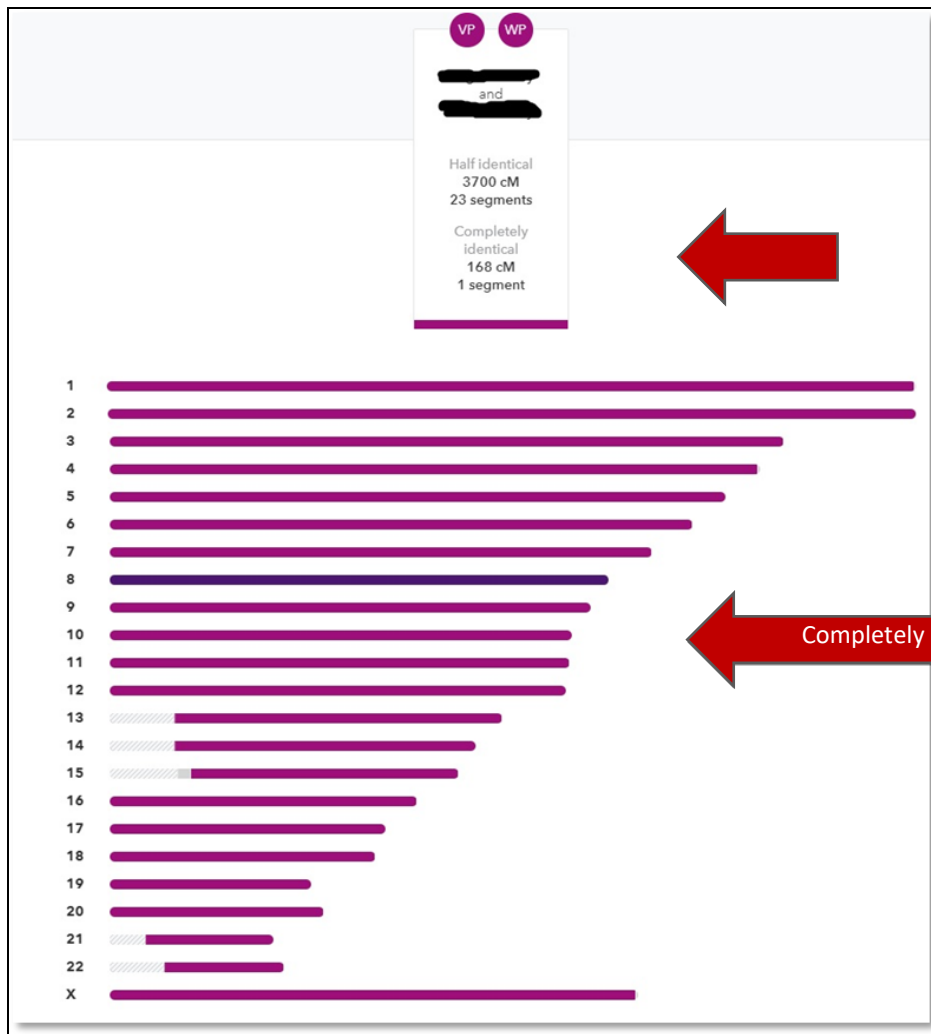
Most adoptees will see only half identical matching segments in the chromosome browser.



If you see a fully or completely identical segment, you know that you match on both copies of the segment and you likely share more than one common ancestor. The example below is from a parent and child in which the child’s father and mother have a common ancestor from whom they both inherited the same segment on Chromosome 8.

A typical parent-child chromosome browser will show 23 half identical segments in the neighborhood of 3700 cM.

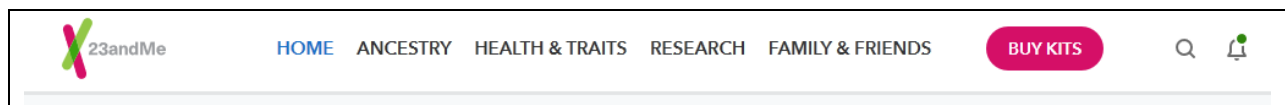
Half relationships would be unlikely to share completely identical segments unless they come from an endogamous population or share more than one relationship.



There are other reports available from the home page, such as one’s ethnicity breakdown, called an admixture.

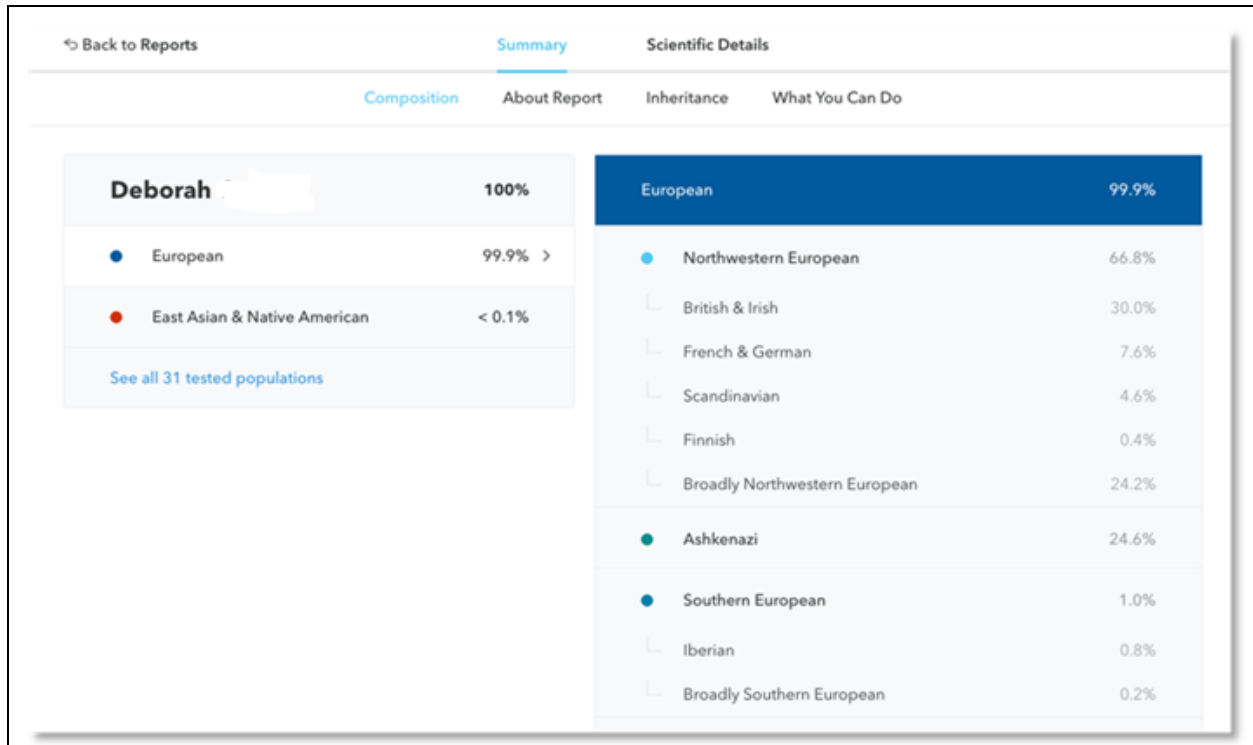
Click on either **Ancestry** or **Health** menu at the top of the page to reveal the available options.

New reports and enhancements are added all the time. The user interface also changes slightly periodically so the actual options may differ from the screen captures.



Ethnicity Estimates / Admixture

This is a partial breakdown of an admixture. I clicked on the European category to reveal sub-categories of a more in-depth breakdown.



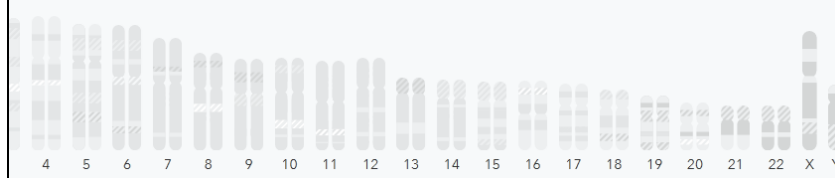
DOWNLOADING RAW DNA FILE

To download your raw DNA file, click on your name in the upper right and then click **Browse Raw Data**. You should see a screen like this where you can download your data or just explore.

Your Raw Data

Search for specific genes and markers (SNPs) of interest.* You can view or [download](#) your data at anytime in its raw, uninterpreted format (your A's, T's, G's, and C's).

Or browse by chromosome:



Then click **Download** to the right of Browse.

Scroll down to the bottom of the page. Follow the instructions to download.

Your downloaded Raw DNA file will have a default filename that includes the chip version number. See other DNAAdoption First Look classes for transfer details and instructions or check with each testing site about uploads.

See a log of updates and changes to the raw data download [▼](#)

This is an advanced view of all the uninterpreted raw genotype data, including data that is not used in 23andMe reports. This data has undergone a general quality review however only a subset of markers have been individually validated for accuracy. As such, the data from 23andMe's Browse Raw Data feature is suitable only for research, educational, and informational use and not for medical or other use.

Choose between downloading data for all DNA (chromosomes 1-22, X, Y, and mitochondrial), only the Y chromosome, or only mitochondrial DNA:

All DNA
▼

For security please re-enter your password:

password

Download Raw Data

Go explore the exciting world of your DNA test at 23andMe!!

MORE ABOUT 23ANDME HEALTH REPORTS

Customers may purchase health and ancestry, or ancestry only services. Health services include “genetic health risks” and “carrier status.” 23andMe’s website claims that their health and ancestry services offered 75 or more exclusive reports as of July 2018.



Those include 5 ancestry reports (ancestry composition from more than 150 regions, maternal and paternal haplogroup estimates, Neanderthal ancestry, and your DNA family [i.e., matches]), 5+ genetic health risks reports (Limited variants of BRCA1/BRCA2, Age-Related Macular Degeneration, Alpha-1 Antitrypsin Deficiency, Celiac Disease, G6PD Deficiency, Hereditary Hemochromatosis, Hereditary Thrombophilia, Late-onset Alzheimer's Disease, Parkinson's Disease), 5+ wellness reports (such issues as Alcohol flush reaction, caffeine consumption, deep sleep, genetic weight, lactose intolerance muscle composition, saturated fat and weight, and sleep movement), 40+ genetic trait carrier status reports (such as Beta Thalassemia, Gaucher Disease Type 1, several types of Limb-Girdle Muscular Dystrophy, Sickle Cell Anemia, and Tay-Sachs Disease) and 15+ traits (such as asparagus odor detection, cheek dimples, cilantro taste aversion, ear wax type and red hair).

IMPORTANT CAVEATS

Important Note: 23andMe does not test for every variant of these diseases and traits, and the company is very explicit about the fact that they do not diagnose any disease.

For example, one of the DNA Adoption teachers has a medical diagnosis of being a carrier of the Mediterranean variant of G6PD deficiency, a disease common among individuals of Greek ancestry. However, 23andMe's G6PD Deficiency carrier status currently only tests for the African variant so 23andMe inaccurately lists her as not being a carrier of G6PD deficiency. This is interesting since the 23andMe V4 raw data results that she has does include the marker information that can identify the Mediterranean variant carrier status and accurately shows that, in fact, she is a carrier.

This situation is ripe for misinterpretation and has a potential danger as G6PD deficiency is a sex-linked trait carried on the X-chromosome. If someone were a young Greek woman contemplating having children with a male sufferer of G6PD deficiency Mediterranean variant, she might erroneously conclude that they would not be able to pass on the disease to their sons based on the 23andMe results.

Customers should never make medical decisions based on the results they receive from any direct-to-consumer genomic testing company. These labs are not certified for that level of quality assurance and they are not complete in a medical sense of testing for all variants. If you receive a report saying that you are positive for a carrier status, please have a medical doctor confirm this through standard medical testing.

Similarly, if you suspect that you are a carrier for a genetic trait, do not rule out the possibility based on the limited variants tested on 23andMe.

Some doctors will welcome your sharing of your results and use them as an indicator for further medical testing. Your doctor will be able to advise you of the proper course of action.