

How Does An Autosomal AncestryDNA Test Work?

<https://blogs.ancestry.com/cm/how-does-an-ancestrydna-test-work/>

An AncestryDNA test is simple. You order a kit, send in your saliva sample, and voila. You get an email weeks later telling you when your results are ready.

Those results reveal your ethnicity estimate, people you may be related to, and new details about your unique family history.

But how does an AncestryDNA test actually work? Take a peek behind the scenes with AncestryDNA:



<https://youtu.be/5nuQ3INsqJk>

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After the robots in the lab are done is when things get really interesting.

Your DNA is measured at about 700,000 locations to generate raw DNA data, which looks like this:

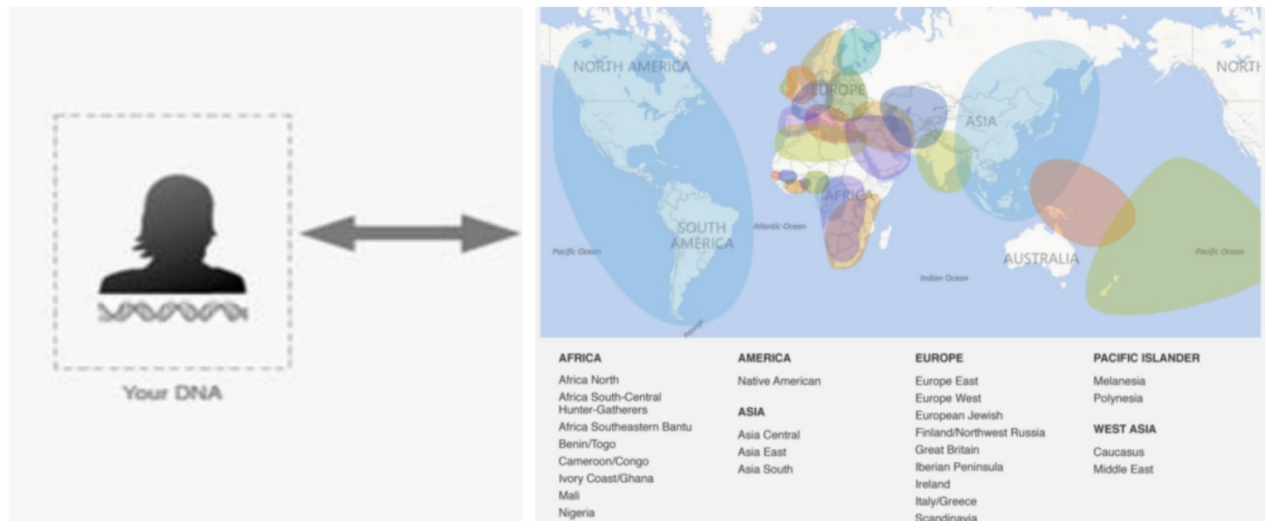
rs12562034	1	768448	G	G
rs11240777	1	798959	G	G
rs6681049	1	800007	C	C
rs4970383	1	838555	A	C
rs4475691	1	846808	T	C
rs7537756	1	854250	G	A
rs13302982	1	861808	G	G
rs1110052	1	873558	G	T
rs17160698	1	887162	T	T
rs3748597	1	888659	C	C
rs13303106	1	891945	A	G

Here's an example of what raw DNA data looks like

Our science team uses the raw DNA data to determine your ethnicity estimate as well as identify people you might be related to.

How Do We Determine Your Ethnicity Estimate?

After your DNA is measured at 700,000 locations throughout your genome, we take the data and compare it to the population data from [26 different regions](#) around the world.



Your data is compared to population data from 26 different regions.

We run this comparison **40 times** to get the best estimate of what regions you are genetically similar to, based on current research. After running the comparisons, we give you an ethnicity estimate.

Here's an example of what a set of ethnicity results could look like:

REGION	APPROXIMATE AMOUNT
Asia	< 1%
+ Trace Regions ?	< 1%
Europe	99%
■ Europe West	40%
■ Ireland	21%
■ Great Britain	17%
■ Scandinavia	11%
○ Trace Regions ?	10%
■ Finland/Northwest Russia	5%
■ Italy/Greece	4%
■ Iberian Peninsula	< 1%

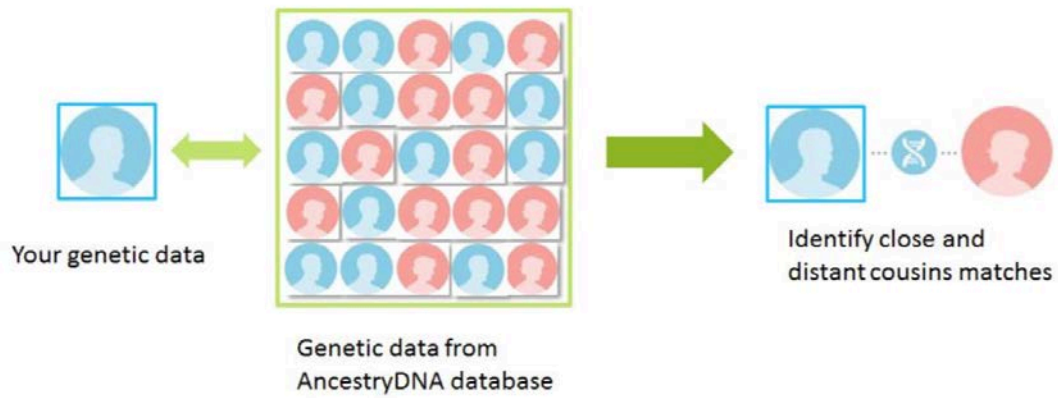
What's fascinating is your ethnicity results are unique to you. If you had additional family members tested, [their results might look different](#). Your sister, for example, could be twice as Irish as you.

This is because we all get 50% of our DNA from each parent. But except in the case of identical twins, they don't give the same 50% to each child.

How Do We Determine Matching?

In addition to an ethnicity estimate, we compare your DNA to everyone else's in our database. Currently that database consists of more than 2.5 million samples.

Depending on how much DNA you share with any given person in the database, we estimate a possible relationship. This is how DNA can help you find cousins you never knew you had.



We compare your DNA to over 2.5 million samples in our database.

And as our database grows, we will continue to compare your genetic data to anyone else who takes the AncestryDNA test. So you'll have continuous possibilities of finding new connections.