

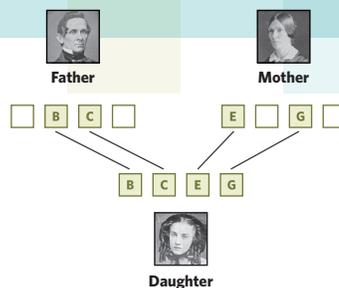
# AncestryDNA 101:

## The Insider's Guide to DNA

### Family history is in our DNA

We all have DNA. It's the genetic code that tells your body how to build you. You inherit half of your DNA from each parent: 50% from Mom and 50% from Dad, though exactly which DNA gets passed down is random. Because they inherited their DNA in the same way from their parents, your DNA is made up of pieces of DNA passed down from your ancestors going back generations.

*A simplified view of how an individual receives a random mix of DNA from each of their parents.*



### HOW DOES THE ANCESTRYDNA TEST WORK?

AncestryDNA is an autosomal DNA test that examines your unique genetic code for clues about your family history. Then we use genetic science to determine family relationships within our database of AncestryDNA members and your ethnicity origins.

AncestryDNA extracts your DNA from a small saliva sample. Then our lab looks at more than 700,000 different “markers” in your DNA to create a profile for you.

**To find people you are related to**, we compare your profile to profiles of other people who have taken the test, looking for segments of DNA that indicate you might be relatives and share a common ancestor. Based on how much shared DNA you have with another individual, we can predict a relationship. For example, a grandparent and grandchild typically will have a relationship status of immediate family because of the amount of DNA they have in common.

**To reveal your unique ethnic origins**, we compare your profile to distinct genetic profiles for 26 regions around the world. By finding similarities between your genetic profile and the regional profile, we can find where your ancestors most likely lived and estimate how much of your DNA likely came from each particular region.

## WHAT IS AN AUTOSOMAL DNA TEST AND WHY SHOULD I TAKE ONE?

AncestryDNA uses the latest DNA autosomal testing technology to provide a comprehensive look across all lines in your family tree, something older technology like Y-DNA and mitochondrial DNA (mtDNA) tests can't do. Also, because everyone has autosomal DNA, both men and women can take the test.

Without getting too technical, AncestryDNA analyzes your autosomal DNA, which includes almost the entire genome—all 22 pairs of nonsex chromosomes—instead of looking only at the Y-chromosome or mitochondrial DNA. A Y-DNA test follows one family line on the chart, from son to father. An mtDNA test also follows only one line, the maternal line. The autosomal test looks at your entire family tree.

Also, typical Y-DNA and mtDNA tests look at much smaller amounts of your DNA. Y-DNA and mitochondrial DNA make up less than 2% of your entire genome, and a Y-DNA test will look at from 12 to 111 locations on one chromosome. AncestryDNA, on the other hand, looks at the entire genome at over 700,000 locations. You don't need to be a scientist to see that 700,000 is much more detailed.

**Tip:** Get your parents, grandparents, and siblings tested too. You only get 50% of each parent's DNA. That leaves 50% you don't have. Since DNA is inherited at random, other relatives may have inherited segments of DNA that you didn't, so they could match people you don't. Testing older generations helps extend your research further back in time and target family lines more specifically.

## WHAT WILL MY TEST TELL ME?

AncestryDNA uses your test results to:

- 1 Find "cousin" matches
- 2 Tell you how you and your match might be related if you both have online trees
- 3 Estimate your historical ethnicity

To see your results, go to

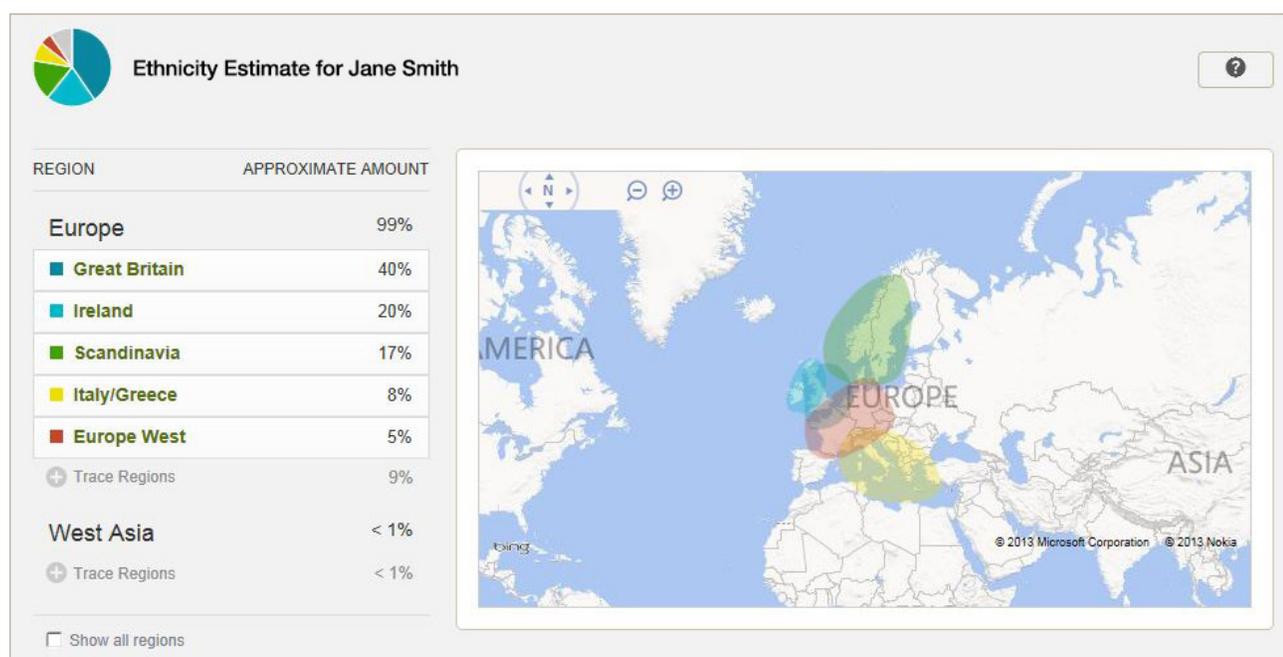
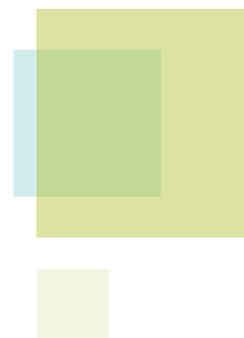
[www.ancestrydna.com](http://www.ancestrydna.com) and log in. This will take you to your personal DNA home page. To see the results of a test, click the **See full Ethnicity Estimate** or **See matches** button.

The screenshot shows a user profile for Jane Smith. At the top, there is a profile picture placeholder, the name "Jane Smith", and a settings gear icon. Below the name, it says "This test is shown to DNA matches as: J. S." and "Linked to Jane Smith". The main content is divided into two columns. The left column is titled "Ethnicity Estimate View" and features a pie chart with segments in blue, green, yellow, and red. To the right of the chart, it lists "Regions: Great Britain, Ireland, Scandinavia, Italy/Greece, Europe West, and 4 more". Below this is a green button labeled "See full Ethnicity Estimate". The right column is titled "Matches" and lists three categories: "Shared ancestor hints" with a leaf icon, "Starred matches" with a yellow star icon, and "High confidence matches" with a person icon. Below this list is a green button labeled "See matches".

## Ethnic Origins

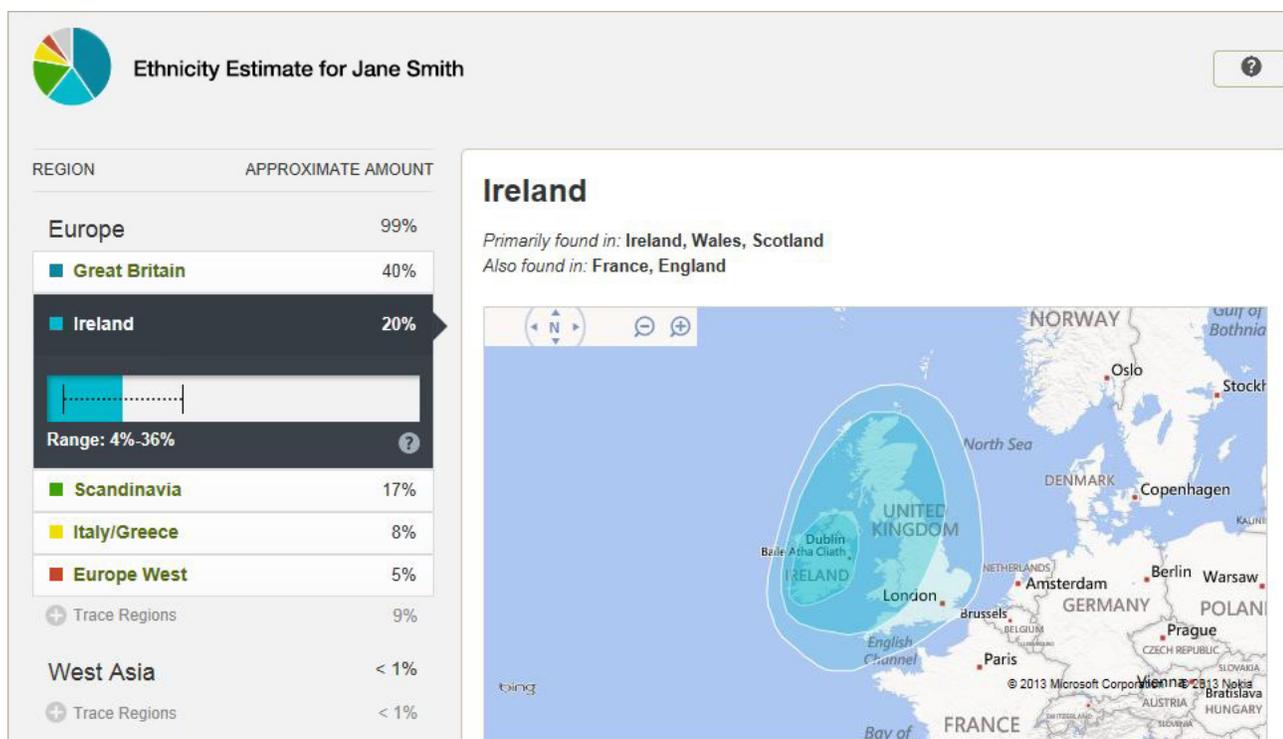
### HOW CAN ANCESTRYDNA ESTIMATE MY ETHNICITY?

AncestryDNA has built a database of genetic profiles for 26 regions around the world, which is called a “reference panel.” This panel is made up of people known to have deep-rooted ancestry in a particular area. We use this panel to create a genetic profile for a region and then compare your profile against each regional profile to see what percentage of your DNA came from a particular region. These results tell you where your ancestors likely came from, which can take your searches in exciting and surprising directions.



To find out more about a specific ethnicity, click on it. This brings up an ethnicity page with several items. You’ll see a map with three concentric shaded areas going from darkest to lightest. These are places where people with this ethnic profile are typically found. The darker the shading, the more likely your ancestors lived there.





Below the map you'll find a graph showing how your ethnicity results compare to a typical native's and a short description of the region that discusses migrations and other important events that may help explain how your ancestor came to or left the region. If you have unexpected ancestry showing in your results, this section may help explain your connection to that region.

## What are "DNA matches"?

AncestryDNA compares your test results to the results of every other sample in our database, looking for segments of DNA you have in common. When we find enough to indicate a relationship, we calculate how close that relationship is likely to be based on the amount of DNA you seem to share from a common ancestor.

You can see all of your matches by clicking the **See matches** button. Or you can filter matches by clicking on one of the links (we'll explain more about filters later).

### Matches

-  Shared ancestor hints
-  Starred matches
-  High confidence matches

[See matches](#)

### AncestryDNA Results for Jane Smith

Filters Hints New Starred

Sort by: Relationship | Date

#### 2ND COUSIN

- ★ **SmithPacker** 150 people Review Match  
 Possible range: 2nd - 3rd cousins  
 Confidence: 99%  
 Last logged in Oct 13, 2013
- ★ **J.M.S** No family tree Review Match  
 Possible range: 2nd - 3rd cousins  
 Confidence: 99%
- ★ **smithbrandyn** 512 people Review Match  
 Possible range: 2nd - 3rd cousins  
 Confidence: 99%  
 Last logged in Oct 26, 2013
- ★ **S. M. M.** 30976 people Review Match  
 Possible range: 2nd - 3rd cousins  
 Confidence: 99%  
 (administered by MommaSmith44)

#### 3RD COUSIN

- ★ **Smith Anderson 33** 2823 people Review Match  
 Possible range: 3rd - 4th cousins  
 Confidence: 98%  
 Last logged in Oct 23, 2013

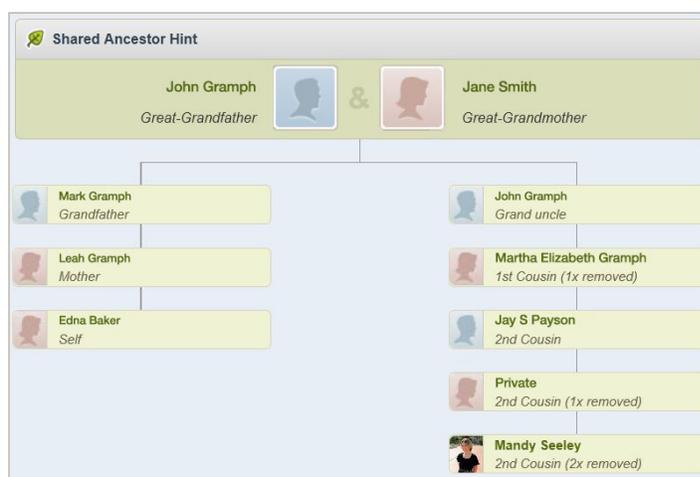
## HOW DO I KNOW HOW I'M RELATED TO MY MATCHES?

What DNA can't usually tell you is exactly how you are related—at least not without a little help.

That's where the online trees from Ancestry.com come in. In fact, building an online tree is the best way to maximize results from your AncestryDNA test. Here's why. After we find a DNA match, if both you and the match have a tree on Ancestry.com linked to your test results, we compare those trees to see if we can determine how you are related. If we think we know, you get an Ancestry Hint leaf.

If you have a leaf, when you click the **Review Match** button, you get a chart that looks like the one to the right:

That's a huge head start. As more people build trees and take DNA tests, more matches will turn up. And the more accurate and complete your tree is, the more useful your DNA matches will be.



## WHAT IF I DON'T HAVE A LEAF?

Even if we can't pin down a common ancestor, if both you and a match have an online tree linked to your AncestryDNA results, AncestryDNA generates a list of surnames that appear in both family trees. We call these shared surnames. You can use these to help uncover your common ancestor.

When you click on a shared surname, you'll get details on people with that surname from both your tree and your match's tree so you can compare them and look for a common ancestor.

### SHARED SURNAMES

Surnames that appear in both **John Gramph's** tree and **Jane Smith's** tree

**Chase**  
**Curtis**  
**Ogden**  
**Sherman**  
**Stoddard**  
**Thompson**  
**Warham**  
**Wright**

### People with the surname Smith ✕

**From Mary Maryson : TJ Smith Family Tree (2)**

**Cool Smith**  
 B: 08 Feb 1650 in Stratford, Fairfield, Connecticut, USA  
 D: 13 Dec 1730 in Woodbury, Litchfield, Connecticut, USA

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**Ann Smith**  
 B: 01 Mar 1691 in Woodbury, Litchfield, Connecticut, USA  
 D: 12 Jan 1720

**From Mary Maryson : Rawlins Family Tree (1)**

**Jane Smith**  
 B: 1 Mar 1668 in Woodbury, Litchfield, Connecticut, USA  
 D: 12 Jan 1720 in Woodbury, Litchfield, Connecticut, USA

A shared surname isn't always an indicator of the ancestor you share, so don't stop with the list of matches in the shared surnames box. AncestryDNA also provides a list of surnames going back 10 generations in your match's tree. Your connection may have a variant spelling in their tree, so browse through all the names on the list.

## I HAVE LOTS OF DNA MATCHES. WHAT DO I DO WITH THEM ALL?

Sometimes your AncestryDNA test can be so successful, the success gets a little overwhelming. Here are some strategies for putting your DNA matches to work for you.

### Use filters

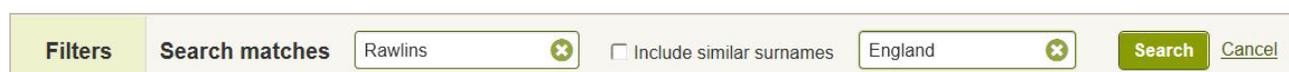
One way to get your matches narrowed down and working for you is to "ask" them specific questions. You can do this by using filters.

Surnames (10 generation pedigree)	
▶ Griffith	3
▶ Hyde	4
▶ Jensen	2
▶ Larsen	1
▶ Lister	1
▶ Meacham	2
▶ Smith	2
▶ Stoddard	3
▶ Svoboda	1
▶ Tachovsky	2
▶ Woolf	2

For example, say you don't know where in England your Rawlins ancestors come from. You can use filters to look for Rawlinses from England in trees created by your DNA matches. You start searching for surnames or locations (or both) by clicking on the **Search matches** box.



You filter by surname in the box on the left and add a location on the right.



Out of hundreds of DNA cousin matches, this search yielded eight trees that meet the criteria of Rawlins and England. Are these folks relatives? That will take some research to determine, but eight trees is both a good start and a manageable one. If you don't have any matching surnames, you can look for just matching places.

## CAN I CONTACT MY MATCHES?

You can and you should. Your DNA matches are potential research partners who may have information, sources, stories, photographs, and knowledge that you don't. As an Ancestry.com member, you can contact a match by clicking the **Send Message** button next to a name.



We find it helps to keep your message short, sweet and as specific as possible. Here's an example:

Hi George, this is Jane Smith, and we're DNA 4th cousin matches. I have looked through your surnames and locations, and I see that we both have family in Virginia in the early 1700s. The surnames are different, but it looks like your Campbells were in Virginia at the same time as my Davises. Do you know where your Campbells came from before they were in Virginia? Thanks in advance for your help.

### Filter features

Each of these filters can help you manage and systematically work through your DNA cousin matches.

-  This filter finds matches with a shared ancestor.
-  The blue dot indicates a new connection to investigate. Once you've reviewed this connection, the dot will go away.
-  This filter allows you to look at only unreviewed matches. Click on the star to the left of your favorite connections so you can use the filter to find them anytime.

## Frequently Asked Questions

### Who can see my results? Are they private?

We take your privacy very seriously. From the time your sample is at our lab to when our science team is analyzing the data, there is no name attached to it, only a bar code. And only you have access to the raw data from your test.

### Does the AncestryDNA test provide any medical information?

AncestryDNA focuses on details that could help you with your family history. We provide no medical information in your results.

### If the science keeps getting better, should I wait to take the test?

There's no need to wait because we'll give you updates along the way, for free. Because we are adding thousands of people to our DNA database every month and because the science behind DNA is constantly evolving, your AncestryDNA test is dynamic. You'll get updates when we find new matches or when new breakthroughs let us improve any of our results. In fact, we recently launched an update to our ethnicity results. In fact, We added new regions that provide even more detailed results; for example, both Europe and Africa have each now been broken out into nine regions.

### How do I get an AncestryDNA test?

To order a test, go to [www.ancestrydna.com](http://www.ancestrydna.com) and click the **Get Ancestry DNA button**. Then follow the simple steps to order your AncestryDNA test.

### How do I take the test?

All you need for an AncestryDNA test is a small saliva sample. Your test kit will arrive in the mail with everything you need, including a prepaid mailer to return your sample to our lab. The test has three easy steps:

- 1. Activate your test online**
- 2. Collect your DNA sample.**
- 3. Mail in your sample.**