

## UPDATE – DNA FOR AGS

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**Autosomal DNA (atDNA) Test Results from Six Recognized Companies All Give You Your Estimated Ethnicity Values. Can You Believe Them?**



The advertisements on TV, Facebook, etc. from DNA companies all advertise how they will give you your heritage just by doing their atDNA test—all for less than \$100. Based on reading and my own results from all six companies, the answer is YES and NO!

The CONTINENTAL results that they each give for your percent European, African, Native American, Asian, etc. (each company has its own categories, which may differ slightly from my list) are usually very good, except where you are dealing with less than 5% of your DNA or trace amounts. For instance all six companies in the chart below agree that I am between 98 and 100 % European, which is no big surprise. Thus this is a YES!

When they try to provide DETAILED results, such as Europe for instance, and break it down into countries, they get into many problems which create inaccuracies. Look at my Scandinavian results in the chart below. Two companies show two numbers separated by a dash. This is because these two companies recently reevaluated their ethnicity results. My mtDNA results (female line) show that I am part Scandinavian, but in the atDNA chart range below, my range is from zero to 33%. Thus this is a NO!

Geography	FTDNA	Ancestry	23&Me	MyHeritage	LivingDNA	Nat'l Geo
European	99	99-100	99.7-99.9	100	100-100	98
W&CntrlEurpn	61	13-11	18.5-28.4	27	27	57
Scandinavian	11	16-0	6.3-1.7	0	0	33
British & Irish	27	59-89	69.7-67.9	73	73	8
Italy & Greece	0	0	1.4-1.0	0	0	0
Iberia	0	0	0.9-0.4	0	0	0
Misc.	0	0	3.0-0.5	0	0	2

There are at least two reasons for this:

1. If you know that one of your great-grandparents or (even more difficult) your great-great-grandparents was from Italy, you may find this DNA trace (typically less than 1.5% of your DNA) in your DNA results, whereas your siblings may not show this trace at all. How can this be since you all share the same parents? This is because the DNA gets SCRAMBLED, or

geneticists call it RECOMBINED, at every conception. This is important for the survival of all living things, but it means that you and your siblings get a different amount of DNA passed down to you from each of your grandparents, great-grandparents, etc. This is why all the children in a family have similar looks, but all have unique characteristics of both looks and personality. The exception is identical twins.

2. Each company compares you with a reference population established by experts in the field of population genetics. Each company has different experts and few of them agree. I suspect that it is relatively easy to describe a reference population for Japan, which has been highly isolated for a very long time, but many countries in Asia and Europe have been very fluid throughout history with changing borders and significant movements of groups of people, etc. For instance, how can you establish a reference population of Germany: by all those in Europe that speak German, or by the borders of the City-States that unified in 1871 to form the German Empire, or by some other method? It is not an easy job. Thus, expect different detailed ethnicity results from all six testing companies. These results are predicted to improve as more people test and as the companies each refine their reference populations. You can expect each company to modify its detailed ethnicity results in the future.