

Can you help me find my cousins? Understanding Autosomal DNA

by Mary Kathryn Kozy

It can tell you:

- If you and another person are related /descended from the same individual
- If you and someone else with the same surname are related
- If your genealogical research is on the right track
- What area of the world your paternal and maternal lines come from, as well as giving you an idea of your ethnic origins

DNA basics:

- DNA (deoxyribonucleic acid) – double helix consisting of 23 pairs of chromosomes that can be found in the nucleus of every cell in the human body.
- 22 pairs of autosomes – a child receives half from their father and half from their mother.
- One pair of sex chromosomes – male has sex chromosomes XY and a female has sex chromosomes XX.
- Autosomes recombine with each child.
- Autosomes are responsible for our physical characteristics: height, built, hair and eye color, etc.

Autosomal testing:

- FamilyTree DNA (FTDNA), 23andMe, Ancestry.com & The Genographic Project are offering this type of test
- Tells you about the other 22 pairs of chromosomes
- Can tell you about siblings, cousins, aunts/uncles
- Generally can help you identify cousins back about 5 generations; some more distant
- Must try to discern which branch of the family you're related on, usually by comparing surnames/locations and the locations of the shared DNA on which particular chromosome

Some things to remember:

- If you don't want to know the answer, DON'T ask the question!
- Autosomal DNA inherited through multiple lines can cause you to appear more closely related than you actually are (e.g., island populations, heavily intermarried populations, early Colonial/religious congregations, etc.)
- Best to test a "triad," if possible – This involves a father, mother and child. Comparisons can then be made between a match and the child/father or child/mother to determine which part of the tree to examine for a common line.

Match interpretation tools:

- FTDNA has the most useful tool with the Chromosome Browser though others are adding tools all the time
- Spreadsheet to organize your results (see Internet links below)
- Matches are given with *suspected* relationships; it's up to you to figure out what it *really* is!
- Important to share your data with others and share trees/surnames
- Most often requires traditional genealogical methodology to confirm relationships

Geographical origins results:

- My Origins (FTDNA – used to be Population Finder)
- Ancestry Ethnicity Estimate
- 23andMe Ancestry Composition
- Genographic autosomal test

Want to learn more? Check out these Internet resources:

- Kelly Wheaton's Beginner's Guide to Genetic Genealogy (<https://sites.google.com/site/wheatonsurname/beginners-guide-to-genetic-genealogy>)
- International Society of Genetic Genealogy (www.isogg.org)
- DNA Testing Adviser (www.dna-testing-adviser.com)
- FamilyTree DNA (www.familytreedna.com)
- Genographic Project (genographic.nationalgeographic.com)
- Ancestry.com's DNA Testing (dna.ancestry.com)
- 23andMe (www.23andme.com)
- GeneBase blog (www.genebase.com/blog/)
- Finding Your Roots (www.pbs.org/wnet/finding-your-roots/) and Faces of America (www.pbs.org/wnet/facesofamerica/)
- Organizing Your Autosomal DNA Information with a spreadsheet (blog.kittycooper.com/2014/01/organizing-your-autosomal-dna-information-with-a-spreadsheet)

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