

DNA Basics

In millions of cells, we have all of our DNA. In the nucleus of each cell we have Y-DNA, X-DNA, and autosomal DNA. Outside the nucleus of a cell we have mitochondrial DNA.

Each person has 23 chromosome pairs. The first 22 are autosomal chromosomes. The 23 is the sex chromosome. Each male gets a Y from his father and an X from his mother. Each female gets an X from her father and an X from her mother.

3 Types of DNA

Y-DNA – passed from father to son. Used to trace paternal lineages back through time. Doesn't mutate much over time. Does not recombine. Testing currently provided by Family Tree DNA.

Mitochondrial DNA – passed from a mother to all of her children. Only daughters will pass this on. Used to trace maternal lineages back through time. Doesn't mutate much over time. Does not recombine. Testing currently provided by Family Tree DNA.

Autosomal DNA – does recombine. 50% is received from each parent. Can be used to help verify paper lineages back 6-7 generations. Testing currently provided by Ancestry, Family Tree DNA, My Heritage, and 23&Me.

Testing Companies Comparison

	23&Me	Ancestry	Family Tree DNA	My Heritage	Living DNA
Y-DNA	Haplogroup		Yes		Haplogroup
mtDNA	Haplogroup		Yes		Haplogroup
atDNA	Yes	Yes	Yes	Yes	Yes
Test Type	Spit	Spit	Cheek swab	Cheek swab	Cheek swab
Cost for atDNA	\$99	\$99	\$79	\$79	\$99
Ethnicity Estimate	Yes	Yes	Yes	Yes	Yes
Haplogroups	Yes	No	Yes	No	Yes
Matches	Yes	Yes	Yes	Yes	Beta
Tools	Some	Some (browser plug-ins)	Yes	Yes	No
Allows transfer	No	No	Yes	Yes	Yes

Solving Genealogy problems with DNA

Confirm what question you are trying to solve. Once you do that – determine who you might need to test to solve your problem. Document your family tree – you need one to solve a genealogy problem with DNA. As you get matches, try eliminating portions of your tree based on matches with known relatives. The more known relatives you test, the easier it is to narrow down unknown matches.