

Basics of DNA and Genealogy
 Genealogy Plus!
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 Ames Public Library and Story County Genealogical Society
 Theresa Liewer, Iowa Genealogical Society

Testing Companies	Family Tree				
	Ancestry	23andMe	MyHeritage	DNA (FTDNA)	Living DNA
Database size	20,000,000	12,000,000	5,200,000	1,400,000	500,000
Sample collection	Saliva tube	Saliva tube	Cheek swab	Cheek swab	Cheek swab
Linkage to family trees	Yes	No	Yes	Yes	No
Accepts transfers	No	No	Yes (1)	Yes (1)	Yes
Autosomal DNA test	Yes	Yes	Yes	Yes	Yes
Y Chromosome test	No	No	No	Yes	No
Mitochondrial test	No	No	No	Yes	No
Autosomal test cost	\$99	\$99	\$79	\$79 (2)	\$99
Y DNA test cost (37 markers)	-	-	-	\$119 (2)	-
Mitochondrial test cost	-	-	-	\$159 (2)	-
Special considerations	-	Health	Strong European	-	British Isles

Note (1) Small fee charged for access to all DNA reports

Note (2) You can buy one test type and later have that sample used for another type for a fee.

There are sales throughout the year - Valentines Day, Mother and Father's Day, Thanksgiving, Christmas, April 25-National DNA Day and August for some reason.

Resources:

All of the testing company websites have learning sections with good explanations of how their tests work and how to interpret their results.

International Society of Genetic Genealogy (**ISOGG**) Wiki Essential resource for genealogists.
 Good explanations. Website www.ISOGG.org.

There are also **videos on YouTube.com** – search under your testing company’s name.

Webinars through Legacy Family Tree Webinars by recognized experts.

Books including *The Family Tree Guide to DNA Testing and Genetic Genealogy* . Blaine T Bettinger

Facebook:

Genetic Genealogy Tips and Techniques (moderated by Bettinger)

Groups for each testing company.

See Katherine Willson’s website <https://socialmediagenealogy.com/genealogy-on-facebook-list/> for her list of Facebook group and check out the ones for DNA.

Monthly meeting of the DNA Special Interest Group at the Iowa Genealogical Society via Zoom.

Websites:

DNAPainter.com Includes tools for Chromosome mapping, building trees, identifying unknown ancestors (WATO), and figuring out relationships with the Shared cM tool

www.Gedmatch.com

Free website where you can upload your raw DNA data from any test, allowing you to find matches with people who have tested with other testing companies.

Terminology and Abbreviations

Centimorgan (cM) A unit of measurement referring to the DNA segments you have in common with others. The larger the number of cM's shared, the closer you are related.

Chromosome A structure found inside the nucleus of a cell made up of proteins and DNA organized into genes. Each cell normally contains 23 pairs of chromosomes

Autosomal DNA (atDNA) DNA from chromosomes 1 through 22 (autosomes)

Sex chromosome. A type of chromosome that participates in sex determination. Humans have two sex chromosomes X and Y. Females have two X chromosomes; males have an X and a Y chromosome. Considered the 23rd pair of chromosomes.

Mitochondrial DNA (mtDNA) The DNA found in cell structures called mitochondria which are separate from the nucleus where chromosomes reside. Mitochondria convert chemical energy from food into a form that cells can use. mtDNA is passed from a mother to her children,

Gene The basic unit of heredity that occupies a specific location on a chromosome. Each gene contains nucleotides arranged in a linear manner. Most genes code for a particular function or characteristic.

Nucleotide The units and chemicals strung together to make DNA in long chains of repeating nucleotides. The nucleotides in DNA are abbreviated as A,C,G,T.

Haplotype A group of genes on a single chromosome that are closely enough linked to be inherited usually as a unit.

Haplogroup A genetic population group of people who share a common ancestor on the paternal or maternal line. Haplogroups are predicted by means of Y DNA testing for the paternal side and mitochondrial testing for the maternal side.

The original haplogroup originated in Africa and each time DNA mutated over the millennia, a group split off and became a new haplogroup. A haplogroup is assigned a letter.