

BEGINNING DNA TEST INFORMATION

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- There are four significant DNA tests that are being used for genealogy purposes
 - Y-Chromosome Testing (Y-DNA)
 - For males only
 - Traces direct male lines
 - Finds both recent and deep common ancestors
 - Mitochondrial DNA Testing (mtDNA)
 - For both males and females
 - Traces direct female lines
 - Finds mostly deep common ancestors
 - Autosomal Cousin Testing (atDNA)
 - For both males and females
 - Traces all lines
 - Finds descendants of recent common ancestors
 - Autosomal Ethnicity Testing (atDNA)
 - For both males and females
 - Traces all lines
 - High error rate
- There are five major testing companies and one third-party company providing genealogical analysis tools.
 - **Ancestry** – www.ancestry.com
 - **FamilyTreeDNA (FTDNA)** – www.familytreedna.com
 - **23andMe** – www.23andme.com
 - **MyHeritage** – www.myheritage.com
 - **LivingDNA** – www.livingdna.com
 - **GEDmatch** – www.gedmatch.com

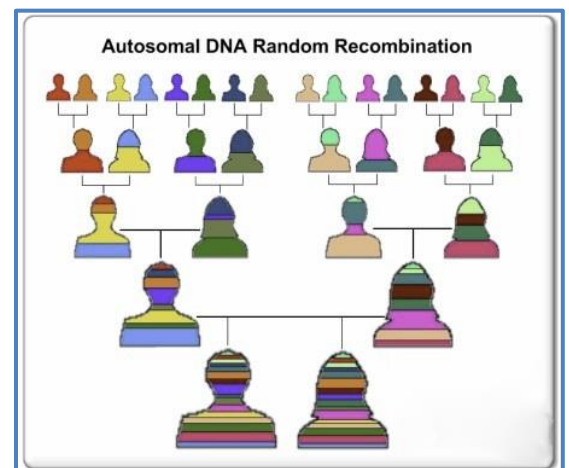
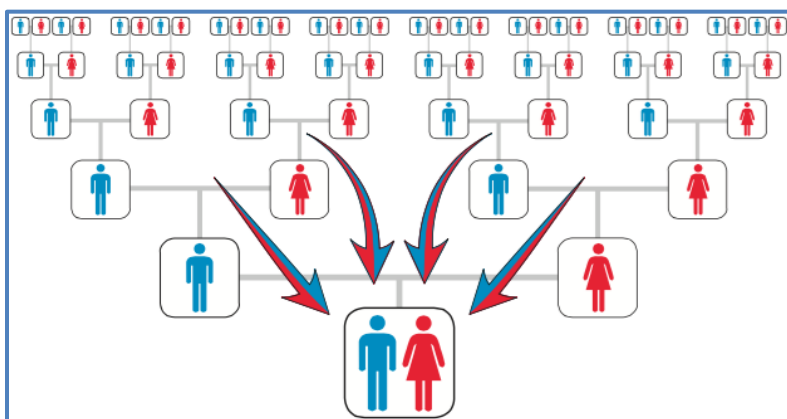
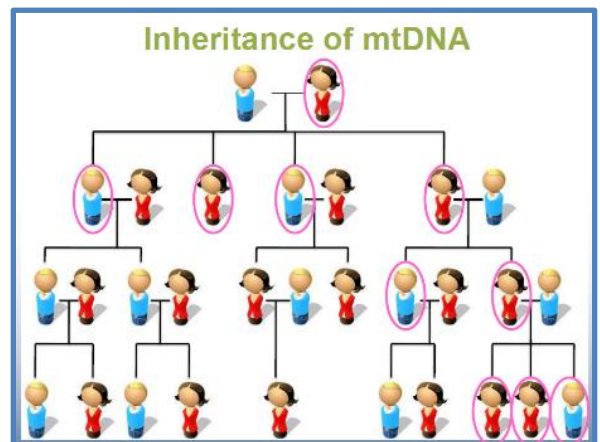
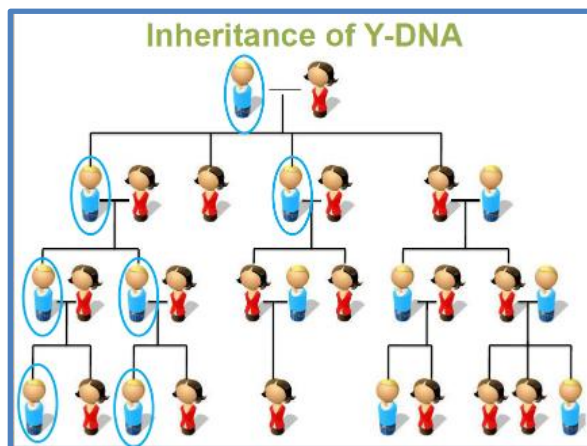
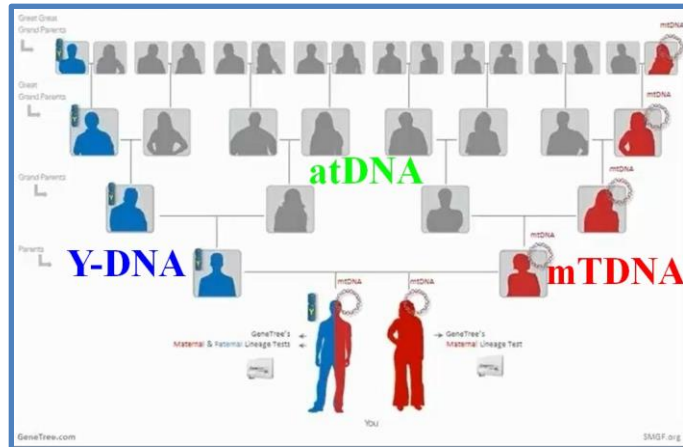
Company	Allows		Living					
	Import?	Fee?	23andMe	Ancestry	FTDNA	DNA	MyHeritage	Other
23andMe	No	n/a	n/a	n/a	n/a	n/a	n/a	
Ancestry	No	n/a	n/a	n/a	n/a	n/a	n/a	
Family Tree DNA	Yes	Yes*	Yes	Yes	n/a	No	Yes	Geno 2.0**
Living DNA	Yes	No	Yes	Yes	Yes	n/a	Yes	
MyHeritage	Yes	No	Yes	Yes	Yes	No	n/a	

* Only partial access for free; \$19 USD fee allows access to Chromosome Browser, myOrigins, and ancientOrigins; however, uploading MyHeritage DNA results allows full access at no charge

** Also known as Next Generation Genographic or National Geographic DNA

Y-DNA, mtDNA and atDNA INHERITANCE PATTERNS

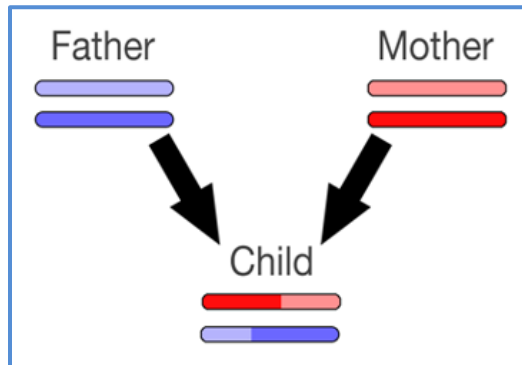
AUTOSOMAL DNA INHERITANCE PATTERN



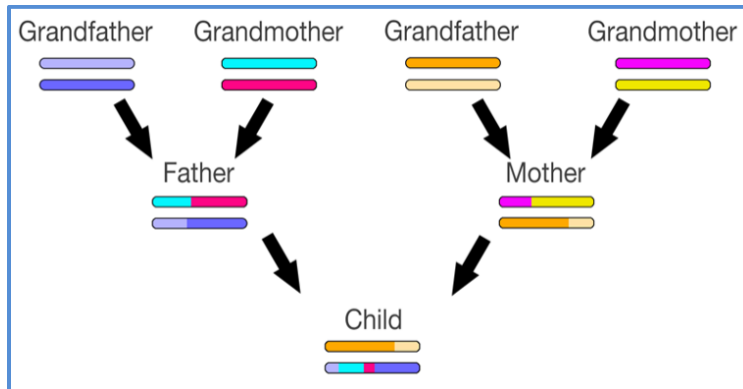
Inheritance of the Autosomal Chromosome (atDNA)

“RECOMBINATION”

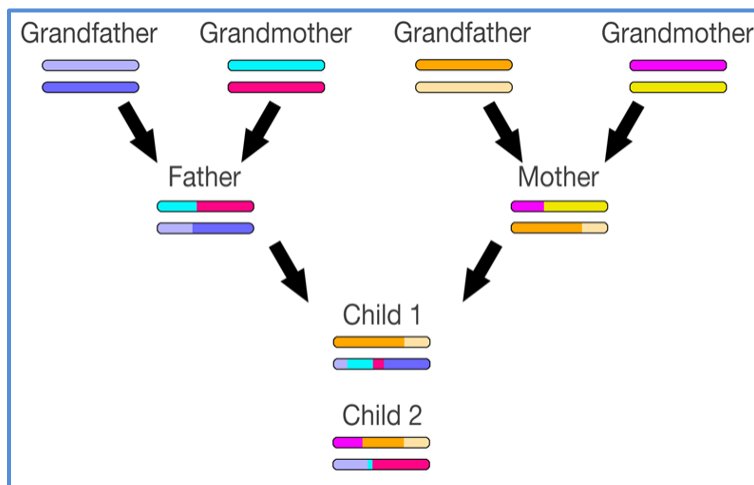
ONE GENERATION

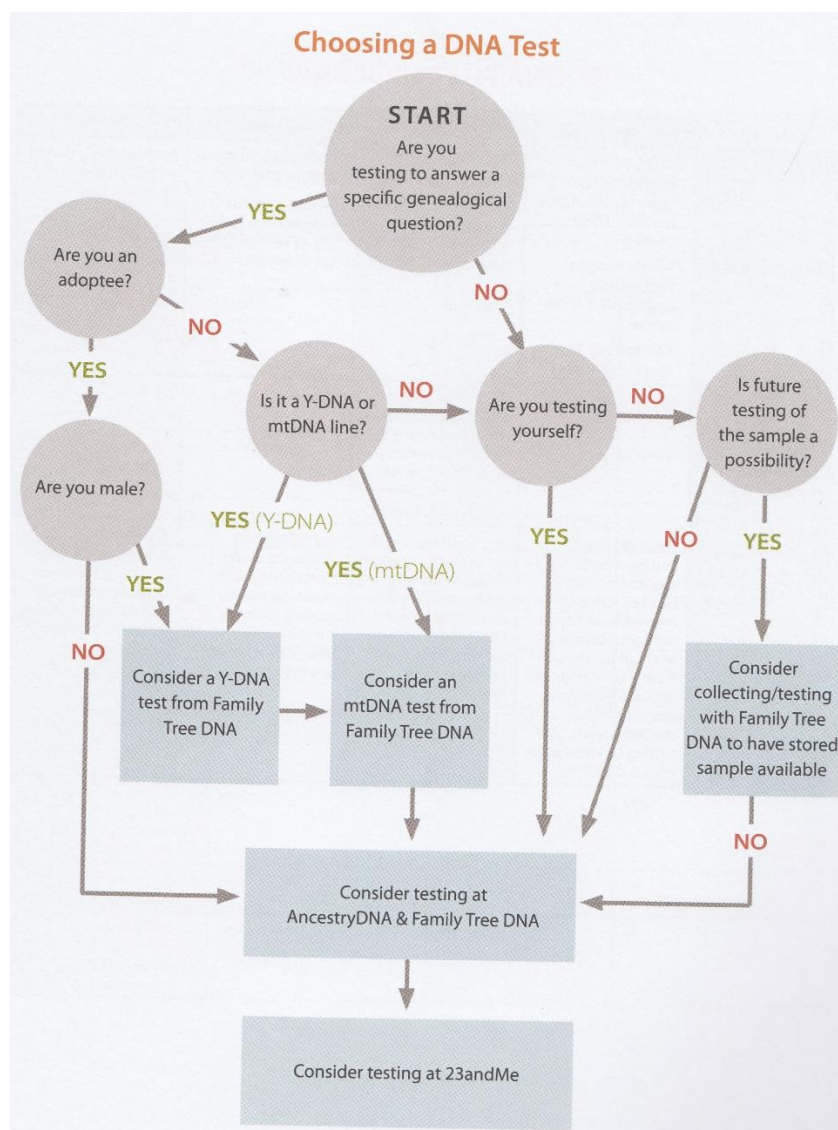


TWO GENERATIONS



SIBLINGS





Source: “The Family Tree Guide to DNA Testing and Genetic Genealogy” by Blaine T. Bettinger
 The Genetic Genealogist – thegeneticgenealogist.com

DEFINE YOUR TESTING GOALS

GOAL	DNA TEST(S)
Learn Ethnic Origins	Autosomal Test
Connect with Genetic Cousins	Autosomal Test
Connect with Biological Family	Autosomal Test
Identify Father of a Recent Male Ancestor Within Five Generations	Y-DNA and Autosomal Tests
Identify Father of an Historical Male Ancestor Five to Fifteen Generations Back	Y-DNA Test
Identify Mother of a Recent Female Ancestor Within Five Generations	mtDNA and Autosomal Tests
Identify Mother of a Historical Female Ancestor Five to Fifteen Generations Back	mtDNA and Autosomal Tests
Learn Health Predispositions	Autosomal Test (23andMe)

DNA LINKS

CONTACT INFORMATION

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PERSONAL SITES

GENEALOGY RESEARCH & DNA TESTING

<https://www.facebook.com/groups/1037858392921365/>

DNA REFERENCE AND INFORMATION

All of the DNA testing companies and third-party DNA tool sites have help articles, information videos and webinars, learning centers, wikis, forums, frequently asked question pages, and guides to help with any questions you have

DNA CENTRAL – New resource for everything DNA! (subscription-based site – Blaine Bettinger)

<https://dna-central.com/>

ISOGG WIKI – A Free Genetic Genealogy Encyclopedia

http://www.isogg.org/wiki/Wiki_Welcome_Page

YOUTUBE – 12,800 videos on Genetic Genealogy – many well know genetic genealogists

https://www.youtube.com/results?search_query=genetic+genealogy

DNA BLOGGERS

THE GENETIC GENEALOGIST – Adding DNA to the Genealogist’s Toolbox

Blaine Bettinger - <http://www.thegeneticgenealogist.com/>

WHO ARE YOU MADE OF – Tips and techniques on using your unique DNA to find your roots

<http://whoareyoumadeof.com/>

DNAeXplained – Genetic Genealogy – Discovering Your Ancestors – One Gene at a Time

Roberta Estes - <http://dna-explained.com/>

SEGMENT-OLOGY

Jim Bartlett - <http://segmentology.org/jim/>

KITTY COOPER’S BLOG – Musings on Genealogy, Genetics and Gardening

<http://blog.kittycooper.com/>

THE DNA GEEK – Mixing Science and Genealogy

Leah Larkin, Ph.D. – <http://thednageek>

DNA AND FAMILY TREE RESEARCH – Practical guidance on using DNA in genealogy research

Maurice Gleeson – <http://dnaandfamilytreeresearch.blogspot.com>

WHEATON SURNAME RESOURCES – Beginners Guide to Genetic Genealogy – Kelly Wheaton

<https://sites.google.com/site/wheatonsurname/beginners-guide-to-genetic-genealogy>

KERCHNER’S DNA TESTING AND GENETIC GENEALOGY INFO AND REFERENCE PAGE

<http://www.kerchner.com/dna-info.htm>

CRUWYS NEWS – Day-to-day activities of the CruwysCruse one-name study.

<https://cruwys.blogspot.com/>

ADOPTees & GENETIC GENEALOGY

DNA ADOPTION – Find Your Roots Through DNA – Information and DNA courses

<http://dnaadoption.com/>

DNA SEARCH ANGELS – Using DNA Testing and Traditional Adoption Search Methods

<http://dnaadoption.com/index.php?page=search-angels>

TESTING ADVISOR – The Independent Guide to DNA Testing

<http://www.dna-testing-adviser.com/>

DNA BOOKS

The Family Tree Guide to DNA Testing and Genetic Genealogy by Blaine T. Bettinger

Genetic Genealogy in Practice by Blaine T. Bettinger and Debbie Wayne Parker

NextGen Genealogy – The DNA Connection by David R. Dowell

Genetic Genealogy – The Basics and Beyond by Emily D. Aulicino

DNA and Genetic Genealogy: An Introduction by Diahan Southard

Stranger in My Genes by Bill Griffeth

GENETIC GENEALOGY VOCABULARY

Autosomal DNA (atDNA): One of the four kinds of DNA useful to genealogists, found in the cell nucleus and comprising the twenty-two non-sex chromosomes. Inherited from direct line ancestors

cMs (centiMorgans): A unit of measurement for DNA segments

Chromosome: A structure for carrying DNA in the cell nucleus; humans have a total of forty-six chromosomes, organized into twenty-three pairs

Chromosome Browser: A tool offered by some DNA sites (FTDNA, 23andMe, and GedMatch) that let test-takers see exactly what segments of their chromosomes are shared with another test-taker

DNA (deoxyribonucleic acid): Molecule that contains genetic information passed down to an individual by his ancestors that defines the individual's unique biological characteristics. Used to determine relationships between test-takers.

Genealogical Family Tree: Collection of all an individual's ancestors, regardless of whether or not they contributed DNA to the individual

Genetic Distance: Numerical representation of the differences or mutations between two individuals' Y-DNA or mtDNA results

Genetic Family Tree: Collection of genealogical ancestors that contributed DNA to an individual's complete set of DNA; a subset of the genealogical family tree

Genetic Genealogy: The practice and study of using DNA in genealogical/family history research

Haplogroup: Group of individuals who share several genetic mutations as well as a common (usually ancient) ancestor

Haplotype: The collection of specific marker results that characterize a test-taker as maternally or paternally related

Match: Individuals identified by a DNA company as having shared segments of DNA

Mitochondrial DNA (mtDNA): One of the four kinds of DNA useful to genealogists, found in the mitochondria of a cell and always inherited from the mother

Mutation: A change in the DNA that occurs spontaneously

NPE (Non-Paternal Event): Events or circumstances such as adoption, name change, or infidelity that lead to an unexpected break in a genetic line

Recombination: Process by which chromosome pairs exchange genetic material, leading to variations between generations

Tree Triangulation: Method for finding ancestors by using other matching DNA test-takers' family trees in conjunction with genetic in-common-with tools (AncstryDNA method)

X Chromosome: One of the two sex chromosomes that determine gender

X Chromosome DNA (X-DNA): One of the four kinds of DNA useful to genealogists, found in the cell nucleus and always inherited from mother for both sons and daughters and inherited from mother only for sons

Y Chromosome: One of the two sex chromosomes that determine gender

Y Chromosome DNA (Y-DNA): One of the four kinds of DNA useful to genealogists, found in the cell nucleus and always inherited by sons from their fathers

GETTING STARTED IN DNA FOR GENEALOGY

1. Order Ancestry.com DNA test (ancestry.com/dna) – the autosomal test, the only one they offer. If you do not have an ancestry subscription you will need to consider purchasing one of the following to take full advantage of the tools provided by Ancestry:

Feature	+ Subscription	- Subscription
Ethnicity estimate	X	X
Migrations	X	X
DNA matches	X	X
Contacting matches	X	X
Automatic updates to results	X	X
Shared matches	X	X
New Ancestor Discoveries	X	
DNA Circles	X	
Shared ancestor hints	X	
Full access to matches' public trees	X	
List of surnames in matches' trees	X	
List of birth locations in matches' trees	X	

- a. U.S. Discovery Subscription - \$189/year which provides full DNA results plus access to Ancestry records. Can subscribe to this level online or by phone.
 - b. DNA Insights Subscription - \$49/year which provides full DNA results with no Ancestry records access. Will be necessary to call Ancestry support (1-800-262-2834) to purchase this level of subscription.
2. While waiting for the DNA test results to come back begin to build the most complete family tree you can. This tree needs to be as complete as you can make it back four to six generations (second to fourth great-parents). This will enable you to successfully work with your matches to determine which family liner you are related on. This tree can be:
 - a. Created online at Ancestry.com
 - b. Uploaded to Ancestry.com by creating a gedcom file from your personal family tree program on your computer and uploading it to Ancestry.com
 3. When your test results come back from Ancestry:

- a. Link your DNA test results to yourself on your family tree on Ancestry to take advantage of DNA cousin matching, tree matching and DNA circles
- b. Give Ancestry some time to work its magic and begin to contact your closest new DNA cousins and work with them to find even more cousins.

To transfer and compare your DNA to test-takers on other sites and utilize the tools on these sites follow these steps:

1. Download your DNA raw data to your computer for the next three steps.
2. Transfer your DNA raw data to GedMatch.com and MyHeritage.com (Free Transfer).
3. Transfer your DNA raw data to Family Tree DNA (ftdna.com) and upgrade for \$19 (one-time fee) to take full advantage of FTDNA's great tools.
4. Begin to contact your closest new DNA cousins at the new DNA sites.

Detailed instructions for downloading your DNA raw data and transferring to these sites can be found on Thomas MacEntee's "DNA Bargains" at this link

<https://dnabargains.com/dna-downloading-uploading-dna-test-data/>

NOTE: Be sure and write down the usernames, passwords and kit numbers for each DNA test site and store in a secure location that you will remember.

Here is a table listing each of the five major DNA testing companies and how they handle import of DNA test data:

Company	Allows		Living					
	Import?	Fee?	23andMe	Ancestry	FTDNA	DNA	MyHeritage	Other
23andMe	No	n/a	n/a	n/a	n/a	n/a	n/a	
Ancestry	No	n/a	n/a	n/a	n/a	n/a	n/a	
Family Tree DNA	Yes	Yes*	Yes	Yes	n/a	No	Yes	Geno 2.0**
Living DNA	Yes	No	Yes	Yes	Yes	n/a	Yes	
MyHeritage	Yes	No	Yes	Yes	Yes	No	n/a	

* Only partial access for free; \$19 USD fee allows access to Chromosome Browser, myOrigins, and ancientOrigins; however, uploading MyHeritage DNA results allows full access at no charge

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