

## Which DNA Test Should I Purchase?

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### Why Get Tested?

1. Ethnicity Estimate
2. Health Information
3. For Fun!/Curiosity
4. Break down a Genealogical Brick Wall
5. Prove or Disprove a Genealogical Theory
6. Paternity Questions
7. Adoption
8. Deep Ancestry
9. Find Cousins on any Family Line about 5-8 or so generations back (Autosomal test)

### Which test should you order?

- What is your ethnicity estimate?
  - Autosomal test with 23andme, AncestryDNA, Family Tree DNA (FTDNA) or MyHeritageDNA
  - 23andme is thought by experts to be most reliable; all are “estimates”
- What is the health information found in your DNA?
  - 23andme offers genetic predispositions, carrier status, drug metabolism information for \*some\* conditions at various price points
  - Ancestry, and FTDNA offer various wellness and traits information at various price points.
  - Read websites carefully to see what you are getting
  - Upload any company’s autosomal raw data file results to 3<sup>rd</sup> party websites: Promethease.com (\$12) or Codegen.eu (free) to get a genetic health report for over 2000 conditions or genes
  - Consult your Doctor for serious health concerns
- What is your background or family history?
  - Autosomal test with Ancestry, Family Tree DNA or MyHeritage
  - 23andme is a health testing company and doesn’t provide you with much genealogical support/information, so not generally as highly recommended if you seek genealogical information.
  - Use test information to contact genetic cousin matches, share information and pictures; work together on family history

- Serious genealogists and those solving a family mystery should test at all 4 companies.
- Who was the father of an ancestor?
  - Autosomal test of closest living relative to mystery man, provided mystery man isn't more than 5-6 generations removed from testee
  - Test at all 4 autosomal testing companies
  - 37 marker or higher Y-DNA test of a male, direct-line paternal descendant of mystery man
- Who was the mother of an ancestor?
  - Autosomal test of closest living relative to mystery woman, provided mystery woman isn't more than 5-6 generations removed from testee
  - Test at all 4 autosomal testing companies
  - In some cases, order a full-spectrum mtDNA test of a male or female to find their mother's direct female line. Understand that matches may be from 1000s of years ago and not relevant to current search.
- Who was the immigrant ancestor or who are relatives in old country?
  - Autosomal test of closest living relative to mystery man/woman, provided that person isn't more than 5-6 generations removed from testee
  - Test at all 4 autosomal testing companies
  - 37 marker or higher Y-DNA test of a male, direct-line paternal descendant of mystery man
  - \*Note that not as many Europeans/non-Americans have tested with the US testing companies yet, so you may not gain many matches....
- Who were the biological parents of an adoptee?
  - Conduct a records search for adoption records, request available information from the state and the adoption agency, search and register for reunion registries
  - Autosomal test at all 4 major companies, if possible
    - Ancestry.com has largest database; usually recommend start with them
    - Can upload Ancestry.com results to Family Tree DNA and MyHeritage (free)
    - Take 23andme last, if no significant matches in other databases
    - Upload results to GEDmatch.com (free) also. Note that GEDmatch allows law enforcement to use their site to upload crime scene DNA. You can opt your kits out of law enforcement matching.
    - When a close match is found, before making contact, make screen prints of all their information, user name, family tree, surnames, matches in common, and so on. Ask the DNA Detectives group below for ideas on how to approach the match in the best non-threatening way.
  - Join free Search Squad and DNA Detectives Facebook groups for adoptees with help on the search and help with understanding DNA

- Males can take a 37 marker or higher Y-DNA test to search for their father's line
- Court-ordered paternity tests should be done through reputable lab
- Experts recommend Parabon's Affinity test as a reliable, legal test that can detect siblings and half-siblings

### Types of DNA Testing for Genealogy:

#### 2) Y-DNA = Y-Chromosome (Males only)

- Tests direct paternal line only - of a male testee; women should find a male relative to test for them
- Only males pass the Y on to their sons
- Order 37 marker or higher test
- Best test for solving a mystery on direct paternal line of a male that cannot be solved by autosomal DNA
- Communicate with your matches to solve your mystery
- Serious genealogists should consider taking this test for general family background
- Offered by FTDNA testing company

#### 3) mtDNA = mitochondrial DNA

- Tests direct maternal line only - of the person tested
- Only females pass mtDNA on to their children
- Order full sequence test (not partial)
- Not recommended to solve most maternal mysteries, take autosomal test first
- Serious genealogists should consider taking this test for general family background
- Offered by FTDNA testing company

#### 4) atDNA =Autosomal chromosomes

- Test of autosomal chromosomes; tests returns matches to all branches of family to about 5-8 generations back; cousin test
- Upload your results to gedmatch.com to find matches who tested at other companies

#### 5) Admixture/Ethnicity = included in the price of autosomal test

- Tells percentage of each ethnic group found in your DNA; results somewhat speculative, usually correct at the continent level, but individual countries not always correct; percentages are estimates; not exact

### Concerns About Testing:

- Non-invasive, cheek swab/saliva test

- Privacy concerns; no-one else accesses your results at the company website except you (some companies share your anonymous results with research companies)
- Read each company's law enforcement privacy policies
- Prices coming down
- Tests becoming more reliable
- Family secrets can be revealed

### Testing Companies:

- 1) Ancestry.com DNA, <http://dna.ancestry.com>
  - Autosomal test & additional wellness test
  - Largest database of autosomal test results (20 million+)
  - Many resources for the genealogist
  - Can transfer raw data file to FTDNA and MyHeritageDNA
- 2) Family Tree DNA (FTDNA), <http://www.familytreedna.com>
  - Oldest company
  - Y-DNA test – 37 markers + a range of other marker levels available
  - mtDNA test - for full sequence mtDNA
  - Autosomal test – called Family Finder test
    - i. More European and Jewish members; about 1.4 million tested total
    - ii. Offers additional wellness option
    - iii. Can upload your 23andme, Ancestry or MyHeritage raw data file for free
    - iv. Law enforcement has access to this database; you must opt-out if you don't want to be included in law enforcement searches
- 3) 23 and Me, <https://www.23andme.com/> – autosomal test matching only
  - Autosomal test - \$99 basic/ \$199 with some health information
  - 2<sup>nd</sup> largest database of autosomal test results (14 million+)
  - Health company, not really as focused on genealogy
- 4) MyHeritage, [www.myheritage.com](http://www.myheritage.com) – newest company
  - Autosomal test
  - Can upload your Ancestry, FTDNA or 23andme raw data file for free
  - 5 million persons tested
  - Large number of European members
- 5) National Geographic, Genographic Project, <https://genographic.nationalgeographic.com/>
  - No longer selling kits; was an ethnicity test, plus male/female haplogroups
    - Can transfer Y-DNA results to Family Tree DNA's database for free

- 6) British company: LivingDNA - breaks ethnicities down to regions and towns in UK; limited cousin matching
- 7) Wegene – breaks ethnicities down for more accurate Asian results; no cousin matching

#### Free Database to compare autosomal results:

- GEDmatch, <http://gedmatch.com/> - Upload and compare autosomal DNA test results from different testing companies.
- \*\*Be aware that GEDmatch is open source software websites, meaning your data is not as secure as it might be at a company's database. Police have used GEDmatch data to catch criminals. You have to opt your kits out of law enforcement matching. Google "Golden State Killer" to find out more about this.

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#### Websites:

DNAeXplained-Genetic Genealogy Blog by Roberta Estes: <http://dna-explained.com/>  
International Society of Genetic Genealogy: <http://www.isogg.org/> Check out their wiki.

#### Definitions:

**Deep ancestry:** Ancestry in an anthropological time frame of over 1000 to tens of thousands of years ago that predates recorded history and surnames for most people. (per ISOGG)

**Haplogroup:** Group of people that descend from the same branch of the human family tree, perhaps thousands of years ago.

**Marker:** An identifiable physical location on a chromosome that is variable between individuals and whose inheritance can be monitored. A term commonly used along with allele values in describing an individual's haplotype. Marker labels, such as M173 or DYS388, have no intrinsic meaning. (per ISOGG)

**Non-paternity event:** When the individual's Y-DNA results do not link up to other persons of his same surname, but instead matches those of another surname closely or exactly. Could be caused by adoption, name change, illegitimacy, or marital infidelity in the paternal line, perhaps as long as 100s of years ago, or more recently. (per Kennett)

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Email me with questions!

You can also schedule a free consultation with me to go over results or help with a DNA problem