

# DNA Basics – Getting a Solid Foundation

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## Before You Test

- **How DNA Works**
  - DNA is stored in every cell
  - You have 23 chromosomes – 22 autosomes and 1 sex chromosome – all in pairs
  - 50% of a person's DNA is inherited from each parent
  - Siblings do not inherit the same 50%
- **Types of Tests**
  - Y-DNA – passed from father to son to son to son. Only taken by males
  - Mitochondrial DNA (MtDNA) – passed from mothers to their children – both sons and daughters (Note: NOT X-DNA)
  - Autosomal DNA – Most common test. Available from Ancestry, 23andMe, MyHeritage, Family Tree DNA, Living DNA
- **Who To Test**
  - Oldest generation, oldest relatives
  - If you have both parents tested, no need to test their children for the parent's ancestral lines
  - Test All siblings of deceased parents
  - Target testing of second and third cousins
- **Privacy**
  - Terms and Conditions are Important
  - You say how your DNA can be used - for matches, for law enforcement, for genetic research, chromosomal detail, etc..
  - Sharing info with Matches means your relatives can see you – not the general population
- **Unexpected Results**
  - Be aware unexpected results DO happen

## After You Test

- **Ethnicity**
  - Based on a reference population
  - Might be 500 to 800 years ago
  - The Communities or Groups are more recent and typically more accurate
- **Matches** – The power of DNA is that it can help break through those brick walls. The gold in DNA testing is the list of MATCHES!
  - Start from the top of your list (most cMs) and work down
  - Identify cousins and use them to sort your matches
  - Separate your Matches into Groups
  - Use tags, colored dots and notes
- **Target Your Research** – what question are you trying to answer?
- **Support It** – With a Tree!
  - Mark people deceased, go out 4 generations, fill out whatever you know. Names are key.
  - Fill out your profile – surnames and locations
  - Make it public!
  - Use a subset of your tree if appropriate
- **Secure** - Download your Raw DNA file
  - DO NOT open the file – save it as a zip file somewhere you can find it again
- **Transfer** – spread your DNA around
  - No Uploads Possible – Ancestry and 23andMe
  - Upload to – MyHeritage, Family Tree DNA (FTDNA) and LivingDNA

## Testing Tips

- **Register the Test First**
- **Take a photo of the test kit number/the tube**
- **Saliva Tests**
  - Fill the tube completely – not including the bubbles
  - Drink a lot of water, and then stop 30 mins before testing
  - Use your tongue to loosen cells from the inside of your cheek as you get ready to spit
  - Take your time – do it over 15 to 30 mins if needed
  - Make sure the solution in the cap is released and mixed in

## Resources

- **Learn about DNA**
  - Blaine Bettinger's Book – "*Guide to DNA Testing and Genetic Genealogy*"
  - YouTube Videos – Crista Cowen, Family History Fanatics, Genealogy TV
  - Facebook – Genetic Genealogy Tips & Techniques, DNA Newbie
  - ISOGG Wiki - International Society of Genetic Genealogy  
[https://isogg.org/wiki/Wiki\\_Welcome\\_Page](https://isogg.org/wiki/Wiki_Welcome_Page)
  - Leeds Method – sorting your matches -  
<https://www.danaleeds.com/the-leeds-method/>
  - Your DNA Guide -  
<https://www.yourdnaguide.com/ydgblog>
  - Cyndi's List – DNA > Analysis Tools and Utilities -  
<https://www.cyndislist.com/dna/analysis/>