

## Mixing DNA results with your paper trail

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Available on Amazon in paperback or on Kindle



### DNA testing

I was giving a lecture about researching a tree when you were adopted at a UK 'Who Do You Think You Are?' conference. There were DNA kits available and I bought the first test I saw - I didn't make an informed choice. I knew about 'paternity testing' but didn't know much more about DNA testing. ***When my DNA test results came back I wasn't sure what to do next.***



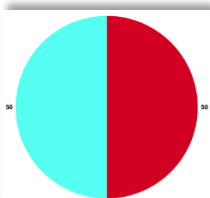
I have subsequently discovered that different tests test different things and each company has its own advantages and disadvantages. I didn't understand the jargon, and the implications of the results were lost on me.

### 3 different types of DNA tests

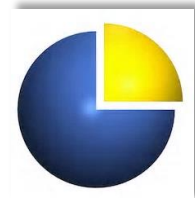
- mtDNA traces the maternal line
- Y-DNA follows the male line; Y-DNA is passed down from father to son - inheritance pattern typically follows the surname
- autosomal DNA analyses the 22 pairs of non-sex chromosomes, which include one from the mother & one from the father; can tell you about both sides of the family

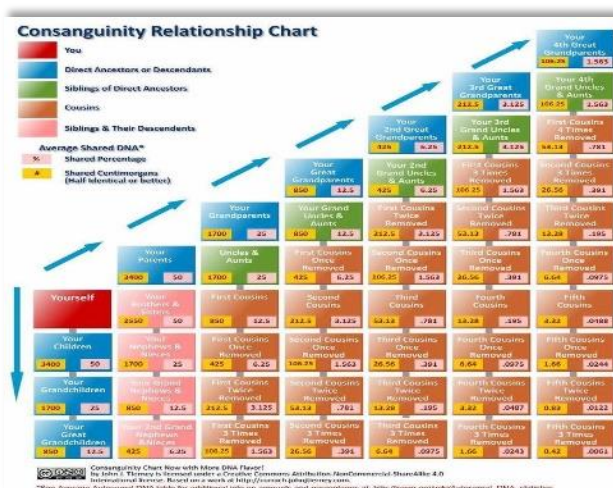
DNA test results reveal an ethnicity estimate, a map, a list of people that your DNA 'matches' (overlaps) with, and the opportunity to contact them and collaborate if you both want to.

### Pie charts



After my children and my grandchildren DNA tested, I could see a picture emerging. I knew our relationships, and could work out our percentage overlaps; for example, my children would inherit c50% from me, and my grandchildren would inherit c25%, and so on. I needed to understand this, to work out potential 2<sup>nd</sup> or 3<sup>rd</sup> cousins.





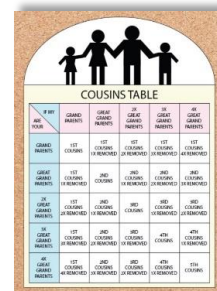
If you do a DNA test, you will biologically match with other people, and can then interpret the information as relationship predictors. (See Tierney's Consanguinity Chart). It can be useful to enter the shared cM you have with a match into Bettinger's 'Shared cM Project 4.0 tool v4,' which will reveal a variety of proposed relationships. Ethnicity estimates can be 'gold dust', providing huge clues about ancestry. You can also utilise GEDmatch, which allows DNA uploads from various sites: Ancestry, 23AndMe, FTDNA, with more companies potentially being added. This increases the chance for collaboration with matches.

<https://currach.johnjtierney.com/2013/12/consanguinity-chart-now-with-more-dna-flavor/>

### Utilise known relationship DNA results:

Approximate amount of shared DNA (in centimorgans)	Possible relationship
3,475	Parent, child, or identical twin
2,400–2,800	Full sibling (including fraternal twins)
1,450–2,050	Grandparent, aunt, uncle, half—sibling
680–1,150	1st cousin, great—grandparent
200–620	2nd cousin
90–180	3rd cousin
20–85	4th cousin
6–20	Distant cousin: 5th cousin — 8th cousins

**my children:** 'parent/child' - range from 3,421-3,488cM across 73-85 segments  
**my grandchildren:** 'close family-1<sup>st</sup> cousins' (inherited less DNA from me than would be expected) range from 1567-1627cM across 42-46 segments

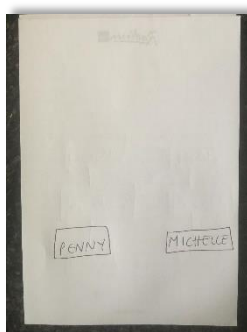


### Generalise these tactics to unknown relationship DNA matches

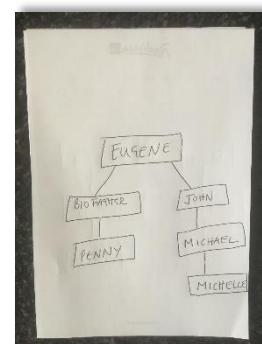
- my highest DNA match shares 332 cMs shared across 17 DNA segments, predicted 2<sup>nd</sup> cousin - hasn't replied to messages; added some information from her public tree
- next highest DNA match shares 32 cMs shared across 3 DNA segments, predicted 4<sup>th</sup> – 6<sup>th</sup> cousin - collaborated fully & broadened my information along a whole branch of descendants from our g- grandparents

Look at potential relationships from amount of DNA overlap, then insert into possible positions on a practice tree, utilising names & places.

### Example



**Shared DNA:** 6.2% (437.4 cM); shared segments 15; largest segment 82.8 cM  
**DNA predicted relationship:** 1<sup>st</sup> cousin once removed/  
 1<sup>st</sup> cousin twice removed/ 2<sup>nd</sup> cousin  
**tree relationship:** 1<sup>st</sup> cousin once removed



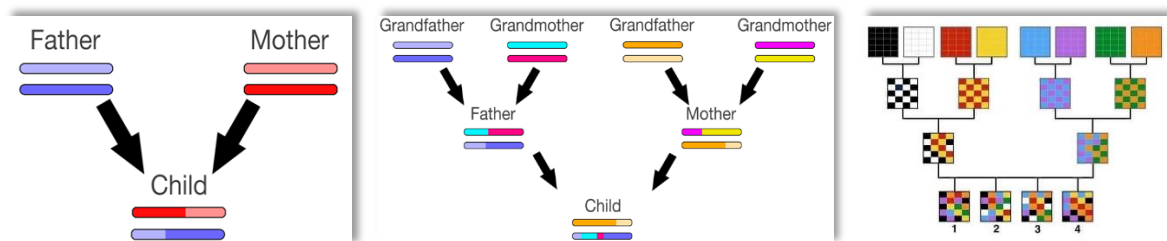
### Be open to a range of possible relationships based on DNA, for example:

- match - shared 32cM across 3 segments, predicted 4<sup>th</sup> - 6<sup>th</sup> cousin
- actual relationship - 3<sup>rd</sup> cousin - different to the predicted 1
- the tree position would have been incorrect
- match's mother: shared 121 cM across 7 DNA segments, predicted 3<sup>rd</sup> - 4<sup>th</sup> cousin
- actual relationship - 2<sup>nd</sup> cousin once removed

### Choose who to 'usefully' DNA test

- ideally test elders: available parent/ grandparent/ aunt/ uncle
- no (real) point testing people with the same relationship to you, for example, your 3 siblings
- test someone with a distant but known relationship to you

### Ethnicity and inheritance



Inheritance seems random, and can raise (unfounded) doubts about paternity.

### GedMatch

You can also download your DNA data, and then upload it to a free-to-use website, [www.gedmatch.com](http://www.gedmatch.com) which compares the main DNA testing websites, and gives more insights. I had 150 matches on Ancestry, and over 1,000 on GedMatch. Many of those people had tested on other sites, and we would never have overlapped on the separate sites we had chosen. A really useful column on that site is MRCA, most recent common ancestor, which reveals how many generations ago you and your match overlap. There is also the potential for triangulation, where you can see if 2 known relatives overlap with each other, and eliminating people who don't match both.

### Useful tools:

- The Shared cM Project 4.0 tool v4: <https://dnainter.com/tools/sharedcmv4>
- Excel spreadsheets
- grouping methods
- Leeds method, visually identifies groups of DNA matches who likely share common ancestors [The Leeds Method of Clustering DNA Matches - Dana Leeds](#)
- AutoClusters - groups together DNA Matches that likely descend from common ancestors, in a visual chart [Features \(geneticaffairs.com\)](#)

You should decide which relatives you're searching for and the 'why' will then inform the 'how'

- searching for bio family
- specifically interested in DNA angle
- broaden your tree and your narrative

## Collaboration

Collaboration with people who share small DNA matches can add a whole branch to trees, and can teach you many lessons about mixing DNA results with a paper trail. Consulting your trees, looking for common ancestral names and filling in potential positions, revealed 'truer' tree positions. Having a 'fixed' position on your tree can also mean that you could add other matches to branches with more confidence. Triangulation can help. Being diplomatic is vital. Your good news may be good news for you, but could be bad or unexpected news for someone else.

## Adoption

DNA testing can be very useful for adopted people (please look for other presentations by me about adoption)

## Contacting bio parents

- take things slowly, but not too slowly
- maybe use an intermediary
- think through possibilities, but don't over-think
- consider people's feelings
- ask advice from people close to you
- look after yourself
- be patient, it is a new relationship

## Points to remember

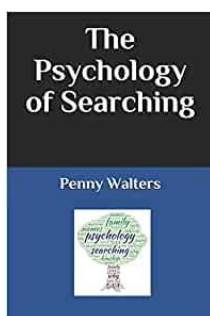
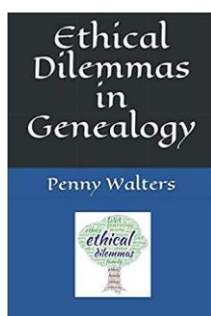
The predicted relationship based on your DNA match may not be the exact one that it is in your tree. My grandchildren are suggested to be my 1<sup>st</sup> cousins; a third cousin is predicted to be my 4<sup>th</sup> to 6<sup>th</sup> cousin, based on amount of DNA shared. You could consult a consanguinity chart to see the variety of relationships a DNA match could be. Don't assume the other person is an expert, they may well be a hobbyist. It's not compulsory to reply to messages or collaborate; it's not compulsory to share your tree. You can't delete what you say to people.

## Ethical dilemmas

*'I'm only doing my tree, what problems can there be?'*

- privacy & confidentiality issues
- DNA - very new (do we understand it all)
- opening up 'a can of worms' (secrets & lies)

## Author of:



***'Ethical Dilemmas in Genealogy'*** 2019. ISBN: 9781724038241

***'The Psychology of Searching'*** 2020. ISBN: 9781687167262

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