DNA tests WHY YOU NEED ONE

DNA testing can help you with your brick walls and has the power to reunite long-lost family members. **Debbie Kennett** explains why you should have your DNA tested to help with your family history research

DNA is now an essential tool for the family historian. It can be used to test hypotheses about relationships and can sometimes provide answers that can't be found in the paper trail alone. The databases are growing at a phenomenal rate, the cost of testing has plummeted in the last few years, and DNA testing is now so much more affordable.

Connect with cousins

An autosomal DNA test from AncestryDNA, Family Tree DNA or 23andMe can be taken by both males and females and will put you into a matching database to connect you with genetic cousins on all the different branches of your family tree.

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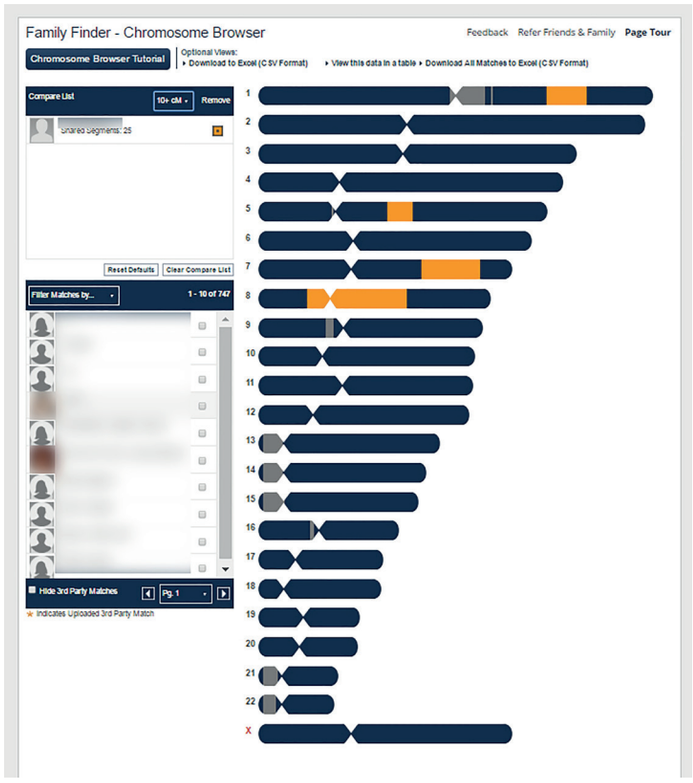
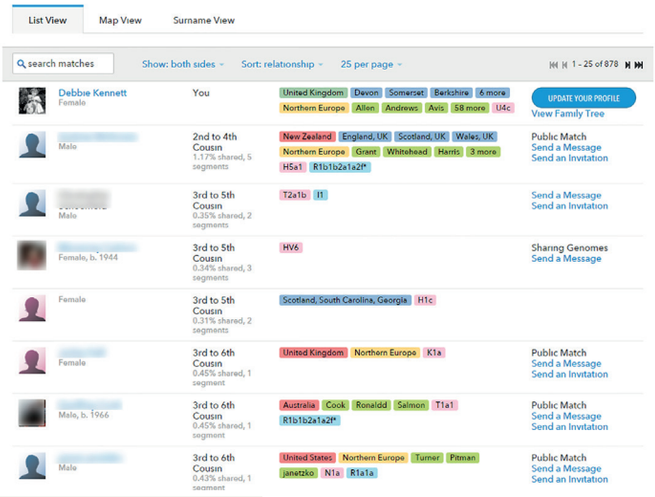
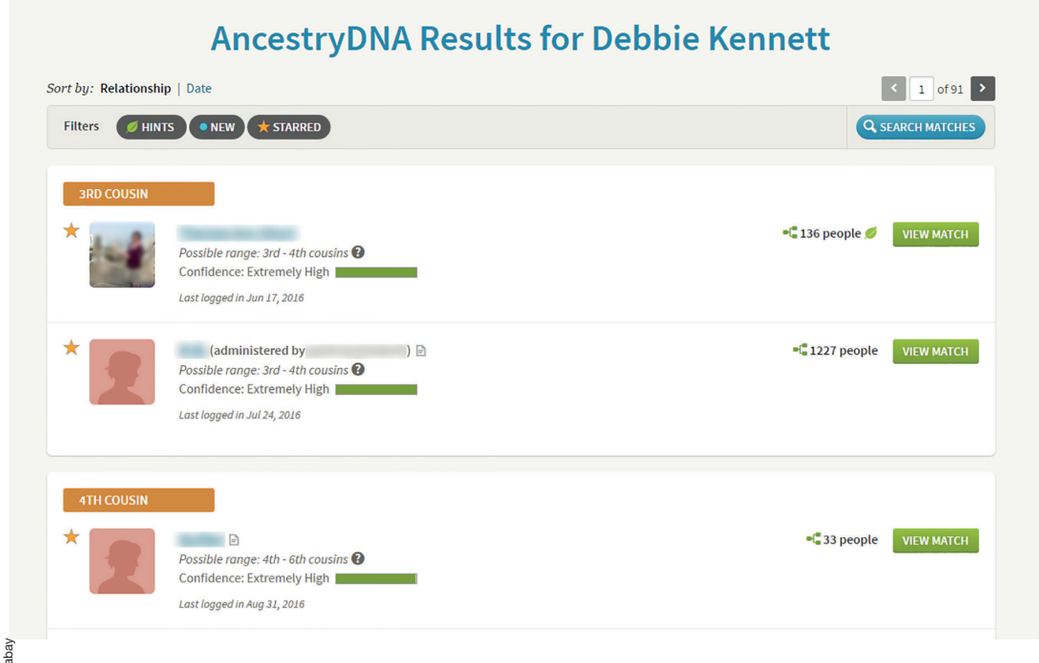
Although these tests can provide matches with more distant cousins, they are best used for making connections within the last five or six generations. It can be very exciting to have genetic confirmation of a genealogical relationship. Some companies will even give you a chromosome browser so that you can see a visual representation of the segments of DNA that you share. If you're lucky your newly found cousins will also have additional paper records or family photographs and letters to



This image shows a comparison between two second cousins once removed. The orange segments are the pieces of DNA that they share in common



The DNA Relatives feature at 23andMe gives you a list of your genetic cousins and the predicted relationship based on the amount of shared DNA. You can contact your matches through the messaging system so that you can try to work out how you are related



DNA wiki
Find DNA test comparison charts, details of projects, educational videos and much more at isogg.org/wiki/Wiki_Welcome_Page

AncestryDNA matches you with your genetic cousins in the database and predicts the relationship. You can click through and see your match's tree. Shaky leaf hints will identify the possible shared ancestral couple and show how you are related. Note that you need an Ancestry subscription to access all the features

Images: screengrab courtesy Debbie Kennett; Y-DNA map published under Creative Commons licence; other images pixabay

supplement your own research and fill in some of the holes in your tree.

Solve the insoluble

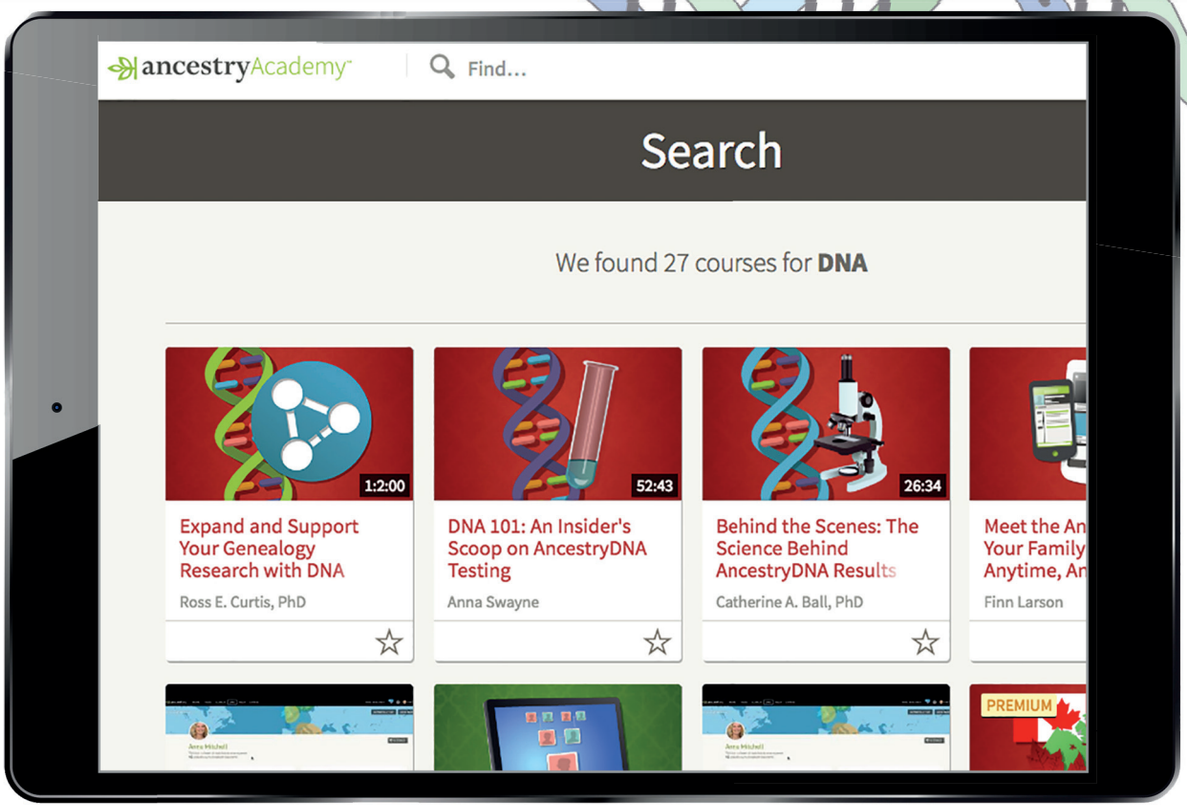
Previously insoluble family history mysteries now have the potential to be solved through DNA testing.

Michelle Rooney was known as the Dustbin Baby because she was found in a carrier bag in the dustbin area outside a block of flats. She was put up for adoption and for 45 years knew nothing about her origins. After taking a Family Finder test with Family Tree DNA she had a match with a first cousin in the database and this eventually led to her being reunited with her biological parents.

Mandy Shore was the product of a wartime liaison and was brought up by her adoptive parents. After testing with AncestryDNA she discovered that she had two half-sisters living in Texas in the USA. Their father was an American GI. He moved to Texas at the end of the war, married and had a family without ever knowing of Mandy's existence. Many other GI baby cases have now been solved as a result of DNA testing.

Match genes & surnames

The traditional Y-chromosome DNA



Watch videos on DNA (and many other topics) in the Ancestry Academy at **www.ancestry.co.uk/Academy/courses/recommended** Those videos not marked premium can be viewed without signing in or being a member of Ancestry

and mitochondrial DNA tests can also help with your genealogy research.

The Y-chromosome is passed on by a man to his sons and the transmission usually corresponds with the inheritance of surnames. If you have two males with the same surname a Y-DNA test will tell you whether or not they share a common ancestor. Y-DNA tests can also help with brick walls as a result of illegitimacy or adoption. There are now more than 9,000 surname projects run by volunteer project administrators as well as a range of geographical projects.

Find distant evidence

Both men and women have mitochondrial DNA, but only women can pass on mtDNA to the next generation, so this test follows an all-female path of inheritance. mtDNA tests are less useful because the surname changes with each generation. It also has a slow mutation rate, which means that the matches can be very distant, but it can be useful in some situations. mtDNA was successfully used in the identification of King Richard III's remains in Leicester in combination with other strands of evidence.

Who to test with?

For Y-DNA and mtDNA, Family Tree DNA is the company of choice. It has the world's largest Y-DNA and mtDNA databases and the widest range of tests.

For autosomal DNA you can choose between FTDNA's Family Finder test and AncestryDNA, though many genealogists test at both companies. You never know where you're going to get the all-important breakthrough match.

QUICK TIP

Find autosomal tests at **www.familytreedna.co.uk** and **dna.ancestry.co.uk**

For health reports as well as cousin matches, you can test at 23andMe.

QUICK TIP

For cousin matches see **www.23andme.com/en-gb**

ISOGG – the International Society of Genetic Genealogy – has a Wiki with lots of useful information as well as charts comparing the services offered by the various companies (see the information circle on page 57).

The run-up to Christmas is a good time to invest in a DNA test because the companies often have festive sales.

DNA testing is very much a team sport. The more people who test and the larger the databases become the easier it will be for us to break through those brick walls. Even if you do not get an immediate answer, your DNA test might just provide the missing piece of the jigsaw puzzle to solve someone else's family mystery.

If you've made a DNA discovery in your family history, we'd love to hear about it – please email helen.t@family-tree.co.uk

About the author

Debbie Kennett is an Honorary Research Associate in the Department of Genetics, Evolution and Environment at University College London. She wrote *DNA and Social Networking* (2011) and *The Surnames Handbook* (2012), both published by The History Press. She writes about genetic genealogy and her Cruwys one-name study on her blog, **cruwys.blogspot.co.uk**