

Hi DiNAs and welcome to the latest in a series of weekly blogs about things DNA while we are in lockdown.

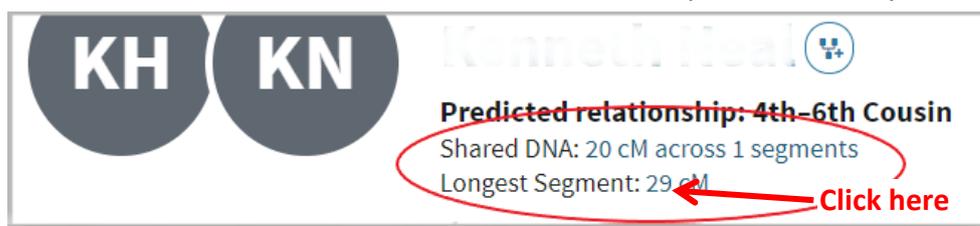
Longest Segments at Ancestry

“Now that Ancestry provides info on the ‘longest segment’; what can I do with this information?”

This was a recent Facebook question asking about Ancestry’s longest segment – information which started showing up against our matches this month (August).

“But is it important?” I hear you and the above correspondent cry. The answer – as usual – is “it depends”. If we need to work out our relationship to our matches, the longer the **Shared DNA** segment, the closer or more recent is the relationship. If we see a small shared segment size this could indicate that the relationship is further back on our tree – maybe because of [endogamy](#) which is the intermarriage of cousins over time within the one locality.

Another perceived problem with this new tool is that the longest segment can sometimes be shown as longer than the Shared DNA length. And, on the face of it, it seems to be a reasonable cause of confusion. But all is explained should you click on



the “Longest Segment” link where you will receive, inter alia, this message:

In some cases, the length of the longest shared segment is greater than the total length of shared DNA. This is because we adjust the length of shared DNA to reflect DNA that is most likely shared from a recent ancestor. Sometimes, DNA can be shared for reasons other than recent ancestry, such as when two people share the same ethnicity or are from the same regions.

This reasoning is, of course, the difference between Identical by State (IBS) and Identical by Descent (IBD) that I wrote about briefly in a recent newsletter.¹ With reference to the example in the graphic above, Ancestry is saying that “we looked at all of the DNA that you share with KN and it shows as just 1 segment which is 29cM long – BUT – some of that segment is not a real match, it is IBS”.

So Ancestry, using its algorithm called Timber, has taken away the length it has determined to be IBS, leaving a smaller length of 20cM that is probably IBD – or real DNA passed down by an ancestor.

Note: Timber is not used for matches over 90cM because a match of this size or greater is more likely to be a reasonably close – and therefore more readily identifiable – cousin.

¹ Lockdown DNA #13; A Weekend Spent Looking at Small cM Matches; p.1

- Blogs: Who Are You Made Of: Mercedes – [What is Longest Segment on Ancestry DNA?](#)
 The DNA Geek: Leah Larkin – [AncestryDNA's 2020 Matching White Paper](#)
 Kitty Cooper's Blog: Kitty Cooper – [Ancestry and the Longest Segment](#)
 Cruwys news: Debbie Kennett – [Some updates to AncestryDNA's matching system and a database update](#)

Using YDNA for Ancient Lineage

Y DNA testing has fallen out of favour over recent years. Once, it was flavour of the month and even Ancestry provided this test, but over the years most DNA companies have concentrated on “sexier” atDNA testing with its more instant and understandable results. But there is a reason why the men in our family should take a Y test and that is to research long-term surnames and Ancient DNA.

Using DNA to identify the remains of WWI soldiers has been around a long time (in DNA years)² and similarly the Australian Federal Police are looking at using DNA from living relatives to identify the remains of unknown persons in an attempt to resolve long-term missing person cases throughout Australia.³ Depending on the condition of the remains, either one test will be used – or a mixture of Y, mitochondrial and autosomal DNA.

Until recently archaeology was the leading discipline for reconstructing our past, then Svante Pääbo, a co-founder of the science of Paleogenetics,⁴ managed to extract and sequence DNA from Neanderthal and Denisovan remains. Recently his team has reconstructed the entire genome of Homo neanderthalensis. Now genetics is able to provide the hard science to prove and in many cases overturn, current beliefs.

Finding the remains of Richard III under a carpark in 2012 made headlines as did

Skeleton found in car park is that of Richard III - as it happened

- Live updates as researchers reveal that remains are those of English king killed at Battle of Bosworth Field in 1485
- Read a summary of what the academics discovered
- Read more: DNA confirms twisted bones belong to king



▲ The skeleton of Richard III. Photograph: University of Leicester

using DNA from his descendants to confirm that it was him.

Irish blogger and genetic genealogist [Maurice Gleeson](#) recently wrote an article on the use of DNA to identify ancient Irish remains which in turn tested established theories of their Celtic origins. As with the military and police forensic investigations, the ancient Irish research used DNA to connect the living to the various tribes as well as provide links to surnames.

Gleeson writes:

The Ancient DNA Lab at Trinity College Dublin has DNA tested over 100 ancient Irish samples collected over the last 200 years by intrepid archaeologists and antiquarians, and lying in wait in museum storerooms all over Ireland. These samples date from 6000

² [Recovery and identification of missing servicemen](#)

³ [Australian-first forensic program seeks to name our country's unidentified human remains](#)

⁴ Wikipedia; [Svante Pääbo](#)

years ago up to medieval times. The first publication from this group was in 2015 and made news headlines across the world. It completely upended long-established theories of “Celtic” origins for the Irish and showed that the modern Irish genome is substantially pre-Celtic. Since then testing ancient Irish DNA has progressed at a furious pace and further publications from this ground-breaking work are continuing to emerge.

And the testing of ancient DNA is in turn driving technology to improve the system of Whole Genome Sequencing (WGS) – [which is helping to bring down the price](#) – as well as developing better micro-chips that are able to increase the number of SNP markers ([Single Nucleotide Polymorphisms](#)) for autosomal DNA testing. As genetic genealogists these advances will benefit us in the near future.

Using DNA to prove his surname lineage is the subject that Chris Lindesay will be discussing at his virtual talk in September. Chris is a member of the Heraldry & Genealogy Society of Canberra. His presentation applies genealogy with heraldry and the modern science of DNA analysis to build a comprehensive picture of his extended Lindesay family, its connections with the Lindsay clan worldwide and that surname’s ancestry.

If you’re interested in attending, join Chris in a one hour webinar sponsored by the Australasian DNA SIG Convenors Group on Tuesday 8th September 2020 – 7pm to 8pm AEST. No registration is required and the session is open to the first 150 people who log in that evening.

Participants should use this link to join the meeting from your computer, tablet or smartphone: <https://global.gotomeeting.com/join/661818757>

Further reading and information

Presentation: Australasian DNA SIG Convenors Group: Chris Lindesay – *The Lindsay International Surname DNA Project*; Tuesday 8th September between 7-8pm AEST

- Blogs:
- DNA and Family Tree Research: Maurice Gleeson – [Digging up your Ancestors - Citizen Science meets Ancient DNA](#)
 - Phys Org: Chinese Academy of Sciences – [Ancient DNA unveils important missing piece of human history](#)
 - Frontiers for Young Minds: Yoav Mathov & Liran Carmel – [The Revolution of Ancient DNA—What Does Genetics Tell Us About the Past?](#)
 - The Conversation: Elizabeth Sawchuk & Mary Prendergast – [Ancient DNA is a powerful tool for studying the past – when archaeologists and geneticists work together](#)
 - The Irish Times: Conor Purcell – [How ancient DNA is transforming history](#)

Identifying relationships and knocking down brick walls

We’ve all got them even if we believe that we don’t – brick walls that is.

Everybody comes to a Dead End at some point along each of their ancestral lines, particularly if one of your ancestors was adopted, a foundling, or illegitimate. DNA testing can help break through even the most resilient Brick Wall and help you push back one or more generations.

So said Maurice Gleeson in a 2018 presentation he gave in New Zealand. The talk was videoed and is available for viewing (with adverts) and is well worth watching. Some of the statistics may be a few years old, but the general idea is sound. The video is about using Y DNA to identify a father, a grandfather or surname and Gleeson suggests that we look for common surnames in our Y matches. But it doesn't stop there; he also recommends that we do the same with our autosomal DNA matches by identifying common surnames in our matches' trees.

Further reading and information

- Video: New Zealand Society of Genealogists: Maurice Gleeson – [Using DNA to solve unknown parentage cases](#)
Genealogy TV: Constance Knox – [#1 Way to Break Down Brick Walls - Trick to Making Cluster Research Faster](#)
- Blogs: Genealogical Musings: History Chick – [Breaking Down Brick Walls with DNA](#)

Members' Tips & Tricks



This is an area for you to tell us something that you have discovered – a tip, a hint, a suggestion, some advice or recommendation that has helped you and that you would like to pass on to our members. Email your MT²s to [me](#).