

The Lancashire Group

Lancashire Group Results

Eight of the thirteen members of the Lancashire Group have taken a Big Y-700 test, and a further member has a BigY-500 result. This result is from the Edenfield clan, which is the clan with the deepest history, going back to circa 1500. The BigY-700 results are from the Bury and Massachusetts, Bury and Finland, Haslingden and Utah, Haslingden, Radcliffe and New South Wales (NSW) clans, and the Prestwich family. The eighth BigY-700 result is from a descendent via a non-paternal event from an as yet undocumented family from Clayton, Yorkshire.

There are also 5 STR results, including a 43 marker result from the Turton clan, 37 marker results from the Bury and Western Australia, Haslingden, and Haslingden and Utah clans and a 12 marker result from the Edenfield clan

There is also a BigY-500 from the Tottington clan which shares a common ancestor with the rest of the Lancashire Group who lived about 800AD.

Individual results are identified in the results on the Warburton DNA Project webpage at **Family Tree DNA** (www.familytreedna.com/groups/warburton/about/background) by their kit number. The 2 kit numbers beginning with H were originally **DNA Heritage** 43 marker tests, which were transferred to **Family Tree DNA**. The test has 32 markers in common with FTDNA 37 marker tests, and all 43 markers are also covered by the Y111 and BigY tests.

All other results are from **Family Tree DNA**.

Lancashire Group Haplotree

The **Lancashire Group Haplotree** is presented as a separate document on the Warburton Website (www.warburton.one-name.net). The following commentary explains how it was constructed.

SNP Structure

The basic structure of the haplotree is based on two products produced by **Family Tree DNA**, the **Block Tree**, and the **Discover Tool**. Each Big Y tester receives their results on their personal **Family Tree DNA** results page. These include a picture of the **Block Tree** showing their position on the tree, the sequence of SNPs leading to that position, and their closest matches. Further information on matches is given in a list of matches. There is also a list of Private Variants. These are locations of new SNPs which are unique to the tester, and therefore have not been named.

The **Discover Tool** (discover.familytreedna.com/) gives additional information on SNPs, including dates, parent SNP, SNPs and lineages that descend from the SNP, information on the numbers testing positive for the SNP, and the locations of their earliest known ancestors, if known.

I have summarised all the information from the Tool that is relevant to Warburton testers in **SNP Ages from the Discover Tool** on the Warburton Website.

The basic structure of the Lancashire Group is presented by red arrows and blue SNP names. The structure begins with SNP R-S6881 (abbreviated to S6881), which is dated to 345AD with a 90% chance it falls between 25AD and 600AD. Over 90% of testers who have declared their earliest known ancestors' countries of origin state England, the UK, or the United States. This suggests that S6881 probably occurred in England. Earlier SNPs in the sequence begin to have a proportion of participants with a continental origin, and the largest number of these are from Germany.

The village of Warburton was established in the 10th century as a Mercian fortified settlement. Mercia was an Anglo-Saxon kingdom and I have assumed that Warburton was populated by Anglo-Saxons. The Anglo-Saxons migrated to England between the mid-5th and early 7th centuries. It would seem likely that S6881 occurred within an Anglo-Saxon family shortly before, or soon after they migrated to England.

Two major lineages below S6881 are defined by SNPs A11376 974AD (750-1175AD), and A11377 859AD (600-1075AD). The former lineage has roughly double the number of testers, and includes the Lancashire Group. The latter lineage includes the Tottington clan which also has SNP A11379 874AD (600-1100AD). Although there are a number of lineages below A11379 with various later SNPs. The Tottington clan has no subsequent named SNPs and just 5 private variants, which is a low number over a period which probably exceeds 1000 years,

The Tottington clan (kit 211606) shares a common ancestor with the main Lancashire Group who lived well before the adoption of surnames. The village of Warburton was probably established with a handful of families, some of which may already have been related. Some 3-400 years later when surnames were being adopted, many villagers would be descended from these initial founders. In particular the males would stay in the village, although wives might come from neighbouring villages. So it is possible that two distantly related villagers moved away and took the village name as their own. At some point they both migrated to the same area of Lancashire. Although they both became Warburtons their common ancestor had lived centuries earlier, maybe even before the founding of the village.

However a number of modern day S6881 carriers trace their ancestry to Lancashire. Therefore an alternative explanation is that a non-paternal event occurred involving one of these and a member of the Lancashire Group, resulting in a boy who took his Y-chromosome from a more distant S6881 lineage, but his name from a member of the Lancashire Group. The close geographical proximity between the Tottington clan and the rest of the Lancashire Group suggests this is the most likely

explanation, but there is currently no evidence to determine this either way. There is only one DNA result from the clan to date, and there are a number of lineages within the clan, descending from Richard Warburton (1717-97). It is possible the non paternal event only affects one of the lineages below Richard, and a result from another lineage within the tree may bypass it and reveal Richard's true DNA.

The Edenfield Clan (kits 363975 and 408583) is the oldest of the Lancashire Group clans. It starts with Thomas (c1490-c1559) who is mentioned in the Tottington Manor Halmote records from 1513 (when he was already an adult) to 1559. However a list of tenants of the Honour of Clitheroe dated 1443 lists an earlier Thomas as a tenant at Tottington. The same list mentions a John Warburton as a tenant in Haslingden.

The main Edenfield DNA result is a BigY-500 result, and it is not now possible to upgrade this to BigY-700. As well as SNP A11736, it is also positive for A11738 1048AD (751-1284AD), and A15056 1328AD (1059-1533AD). There are non-Warburton lineages below A11738, but all A15056 results are from members of the Lancashire Group of Warburtons. These SNPs are propagated through the rest of the Lancashire Group results. I was able to request a specific test for A15056 at YSEQ. The testers from the Turton and the Bury and Western Australia clans were tested to show they also share this SNP.

BigY-500 does not include a test for FT72032 1377AD (1108-1579AD) which is shared by all but one of the other Lancashire Group results. As it is likely that all the other clans of the group are offshoots of the Edenfield clan, it is also likely that at least a part of the Edenfield clan is positive for FT72032. However, as there is one result from the Clayton family that is not positive for FT72032, the SNP must have occurred after the adoption of the Warburton name.

Kit 363975 has 2 private variants. Kit 408583 was a 12 marker STR test with 4 differences from kit 363975. This is a curiously large difference. However he did test positive for SNP A15056. Peter of Edenfield (1733-1814) is the common ancestor of the two participants.

Clayton, Yorkshire Family (kit N248989). This is the only result which is negative for FT72032, suggesting it split from the Edenfield clan either before FT72032 occurred, or from an Edenfield lineage which did not experience the SNP. It has 6 private variants.

When I tried to request a test for FT72032 at YSEQ they refused because it is in a short sequence of about 1000 bases which is 97.5% similar to a sequence in chromosome 1, so they can't sure which sequence they are looking at. I presume the FTDNA test reads and compares long enough sequences to avoid this problem, but it does raise a slight concern that the test on this kit has produced a false negative. To date I have not produced a tree for this family but its earliest known ancestor is John of Clayton (1799-1879).

SNP FT190010

SNPs FT190010, dated 1552AD (1246-1751AD). FT190967 and FT190982 form a lineage below FT72032 that includes the the New South Wales Clan and the Prestwich Family indicating they have a more recent common ancestor. The sequence of these SNPs is unknown so FT190010 is short hand for the group of 3 SNPs.

New South Wales (NSW) Clan (kit 911220). This clan is descended from John of Leigh (born 1768), though its tree focuses on the descendants of his grandson Thomas who emigrated to NSW in 1840. It is a BigY-700 result with 5 private variants.

Prestwich Family (kit IN118699). This family comprises the descendants of George (1834-1889) the only son of John Warburton and Maria Varley who married at Manchester Cathedral in 1821 and lived in Prestwich and Reddish. It is a recent BigY-700 result with 5 private variants.

SNP A15053

SNPs A15053 dated 1584AD (1282-1788AD) forms a second lineage below FT72032 that includes the the Radcliffe Clan and the Bury and Massachusetts Clan indicating they have a more recent common ancestor.

The Radcliffe Clan (kit H1584) is a 43 marker STR test from DNA Heritage, that was first backed up by a positive test for SNP A15056, and recently upgraded to BigY-700. The clan descends from William of Radcliffe (c1734-1777) and is linked by marriage to the Haslingden clan. The BigY-700 result had 2 private variants. It is modal over the first 37 STR markers.

The Bury and Massachusetts Clan (kit 3166520). This was the first BigY result and was the basis for a SNP Panel at YSEQ that included 5 SNPs based on its private variants. One of these was A15056, shared by all other clan members, but the other 4 were never matched with anyone else so are still included in the result's 6 private variants. The clan descends from William of Bury who married in 1802.

Note: My previous version of the Lancashire Group Haplotype included links based on shared SNPs which were discovered as a result of their inclusion on lists of non-matching variants associated with various matches. These SNPs are not used in the **Block Tree** or the **Discover Tool** because they are in sections of DNA that are repeated, making it difficult to ensure that a result is from the correct sequence. Also many of the reads of the SNPs were of low quality. This probably explains some inconsistencies in the matches I 'discovered'. I have, therefore, opted to follow the **Block Tree** and **Discover Tool** in ignoring them.

Additions Based on STR Results

I have extended the basic SNP tree using STR results and known genealogical information. Because these extensions are somewhat speculative I have added them to the tree with green arrows. I used the McGee Time to Most Recent Common Ancestor (TMRCA) Calculator, set to the Infinite Allele Mutation Model, and the FTDNA mutation rate, to calculate a TMRCA for

each pair of clans. The dates are calculated based on 33 years per generation counting back from 1960. The results are shown in tables below.

I have included the STR calculations for the links defined by SNPs on the Lancashire Group Haplotree. Although the results from shared STR mutations are contradictory (see details below) there are shared mutations that support the SNP defined links.

The Edenfield Clan only has a genetic distance of 3 from the mode for all 9 results over 111 markers. For 2 of these it is in the minority in a 5/4 split. I have therefore assumed that the Edenfield value is the initial value for these two markers and recorded the genetic distance from this modified mode for each of the clans. This does not affect the TMRCA calculations, but it does contrast the stability of the Edenfield clan (genetic distance of 1 from the modified mode) with the variability of the other clans which have genetic distances from the modified mode of between 4 and 6.

The result of this is that the genetic distances between the Edenfield Clan and the other clans fall between 4 and 7, whilst those between the other clans range from 4 and 11. Some of the clans therefore share a more recent TMRCA with the Edenfield clan than they do with each other. This would seem to be an artefact of the clans diverging from the Edenfield clan in opposite directions.

The oldest clan after the Edenfield clan is the **Haslingden Clan (kits 225866 and 920314)**. The clan is descended from Robert of Musbury (died 1694). The presence of a tenant called John in Haslingden in 1433 raises the possibility that the clan is as old as the Edenfield branch, but it is more probably a later branch.

A 37 marker STR test was followed by a BigY-700 test. The testers were father (the BigY test) and son. Despite this there is one difference between the 2 over 37 markers. The date of the most recent common ancestor with the Edenfield clan is 1663AD (1432-1828AD), but the dates of the most recent common ancestor with all the other clans is earlier, though the ranges overlap considerably. Given that the Haslingden Clan was already established by the end of the 17th century, the date of 1663AD is the latest possible date for the split from the Edenfield clan. Despite this the BigY result only showed 2 private variants.

The Haslingden and Utah Clan (kits 416619 and 902763) also included a 37 marker STR test was followed by a BigY-700 test. The testers were descended from John of Haslingden (1825-96) who emigrated to Utah. John's parents were James and Elizabeth nee Halstead. John was aged 45 in the 1841 census which implies a birth date between 1791 and 1796. No baptism records have been identified for John or Elizabeth, probably because they were non-conformist baptisms. Elizabeth does give her place of birth as Haslingden in later censuses. Their son John emigrated to Utah and the 1869 Endowment House Records of Endowments states he was born on 16th June 1823 at Haslingden Grane, parents James Warburton and Elizabeth Alstead (sic). It would seem likely that James was born in Haslingden and therefore was probably related to the clan.

The BigY result has 3 private variants. Taken with the the 2 variants in the Haslingden clan, this is consistent with a common ancestor in the 18th century. This is 150 years or more after the split from the Edenfield clan, However no shared SNP occurred

in this time, and there is a low probability this would happen, This suggests the split from the Edenfield clan most likely did occur in the 17th century.

The following STR marker results are shared with the Haslingden Clan: DYS931=10, DYD449=29, DYS570=17 (though not uniquely) , DYS23=14, and DYS516 =14/15 compared with 13 for the rest of the clans. However the genetic distance between the two clans is 7 over 111 STR markers, giving a most recent ancestor date of 1630AD (1366-1795AD). Despite both being descendants of John (1823-96), the two testers have a genetic distance of 4 over 37 markers between them. This testifies to the volatility of the STR markers, suggesting the 1630AD date for the common ancestor is too early. The several shared STR mutations also strengthens the relationship between the two clans.

The Bury and Western Australia (WA) Clan (kit IN14246) is a 37 marker STR result which is equal to the group mode for all 37 markers. It has also tested positive for SNP A15056. The clan descends from Thomas of Bury (born 1787). As it shares all 37 markers with the Radcliffe clan I have positioned it as an offshoot of the Radcliffe clan.

The Turton Clan (kit H1582) is an original 43 marker STR test from **DNA Heritage**, backed up by a positive test for SNP A15056. The clan descends from Peter of Turton (born circa 1809). It shares DYS393=14 with the Haslingden clan, but it is modal on all other markers tested. The date of the most recent common ancestor with the Haslingden clan calculates to 1630AD (1267-1828AD). It is unlikely it inherited DYS393=14 from the Haslingden clan as the Haslingden Clan mutation must have occurred after the split with the Haslingden and Utah clan. It more likely had its own occurrence of the mutation, as it is otherwise very close to the Bury and Massachusetts, Radcliffe, New South Wales and Prestwich clans. A BigY-700 result is needed to see if it is possible to prove a link to any of these clans.

The Bury and Finland Clan (kit IN11230) is the result of a Y37 STR test that was upgraded to BigY-700. The clan descends from George of Bury (born 1766), and includes a branch that emigrated to Finland. The test was taken to prove descent from the Warburton immigrants. The result has 9 private variants, the highest number in all the tests, and a genetic distance of 5 from the Group mode. The date of the common ancestor with the Edenfield Clan, based on 111 STR markers, is 1696AD (1498-1861AD). Given the high number of private variants I have shown it as a separate branch from the Edenfield Can, despite the STR based date calculation being similar to other branches.

Time to Most Recent Common Ancestor (TMRCA) Calculations

Having 9 BigY results presented the possibility of performing TMRCA calculations based on 111 markers. The following table shows the calculations for each pair of clans, and for each clan against the modified mode. I used the McGee Time to Most Recent Common Ancestor (TMRCA) Calculator at: <http://www.mymcgee.com/tools/yutility111.html> Settings used were the Infinite Allele Mutation Model, and the FTDNA mutation rate. The dates are calculated using based on 33 years per generation counting back from 1960.

Comments on the STR Testing Results

The STR results across the group are quite volatile particularly when looking at the early tests of 37 or 43 markers. Many of the divergences from the mode are confined to a single test, even over the 700+ markers reported by BigY-700. Those that do suggest relationships, sometimes inconsistently, are listed below:

- DYS393 - 10 results = 13, 4 results = 14. The 4 results at 14 include one result is from a 12 marker test in the Edenfield clan that doesn't match the other result from the clan, one is from the Turton clan which I believe is an independent mutation (see discussion above), and 2 from the Haslingden clan.

111 Marker Results Part 1																						
Origin		Modified Mode				Haslingden/Utah				Clayton				Radcliffe				Prestwich				
	Kit					902763				N248989				H1584				IN118699				
GD from modified mode:		0				6				4				4				5				
		GD	Ave.	5%	95%	GD	Ave.	5%	95%	GD	Ave.	5%	95%	GD	Ave.	5%	95%	GD	Ave.	5%	95%	
Modified Mode						6	1663	1828	1432	4	1762	1894	1564	4	1762	1894	1564	5	1696	1861	1498	
Haslingden/Utah	902763	6	1663	1828	1432					10	1465	1696	1168	8	1564	1762	1300	8	1564	1762	1300	
Clayton, Yorks	N248989	4	1762	1894	1564	10	1465	1696	1168					6	1663	1828	1432	7	1630	1795	1366	
Radcliffe	H1584	4	1762	1894	1564	8	1564	1762	1300	6	1663	1828	1432					5	1695	1861	1498	
Prestwich	IN118699	5	1696	1861	1498	8	1564	1762	1300	7	1630	1795	1366	5	1696	1861	1498					
Edenfield	363975	1	1861	1960	1630	7	1630	1795	1366	5	1696	1861	1498	5	1706	1861	1498	4	1762	1894	1564	
Bury/Mass	316620	6	1663	1828	1432	9	1531	1729	1234	8	1564	1762	1300	4	1762	1894	1564	5	1696	1861	1498	
NSW	911220	4	1762	1894	1564	7	1630	1795	1366	6	1663	1828	1432	4	1762	1894	1564	5	1696	1861	1498	
Bury and Finland	IN10230	4	1762	1894	1564	10	1465	1696	1168	7	1630	1795	1366	8	1564	1762	1300	9	1531	1729	1234	
Haslingdon	920314	5	1696	1861	1498	7	1630	1795	1366	9	1531	1729	1234	9	1531	1729	1234	10	1465	1696	1168	

111 Marker Results Part 2

Origin		Edenfield				Bury and Mass				NSW				Bury and Finland				Haslingden			
	Kit	363975				316620				911220				IN10230				920314			
GD from modified mode		1				6				4				4				5			
		GD	Ave.	5%	95%	GD	Ave.	5%	95%	GD	Ave.	5%	95%	GD	Ave.	5%	95%	GD	Ave.	5%	95%
Modified Mode		1	1861	1960	1630	6	1663	1828	1432	4	1762	1894	1564	4	1762	1894	1564	5	1696	1861	1498
Haslingden/Utah	902763	7	1630	1795	1366	9	1531	1729	1234	7	1630	1795	1366	10	1465	1696	1168	7	1630	1795	1366
Clayton, Yorks	N248989	5	1696	1861	1498	8	1564	1762	1300	6	1663	1828	1432	7	1630	1795	1366	9	1531	1729	1234
Radcliffe	H1584	5	1706	1861	1498	4	1762	1894	1564	4	1762	1894	1564	8	1564	1762	1300	9	1531	1729	1234
Prestwich	IN118699	4	1762	1894	1564	5	1696	1861	1498	5	1696	1861	1498	9	1531	1729	1234	10	1465	1696	1168
Edenfield	363975					5	1696	1861	1498	5	1696	1861	1498	5	1696	1861	1498	6	1663	1828	1432
Bury/Mass	316620	5	1696	1861	1498					4	1762	1894	1564	10	1465	1696	1168	11	1432	1630	1135
NSW	911220	5	1696	1861	1498	4	1762	1894	1564					8	1564	1762	1300	7	1630	1795	1366
Bury and Finland	IN10230	5	1696	1861	1498	10	1465	1696	1168	8	1564	1762	1300					9	1540	1729	1234
Haslingdon	920314	6	1663	1828	1432	11	1432	1630	1135	7	1630	1795	1366	9	1531	1729	1234				

- DYS931 - 9 results = 11, 5 results = 10). The 5 results at 10 include one result from a 12 marker test in the Edenfield clan that doesn't match the other result from the clan,. The other 4 results are from the Haslingden, and Haslingden and Utah clans.
- DYS449 (8 results = 30, 4 results = 29). The 4 results at 29 are from the Haslingden, and Haslingden and Utah clans.
- DYS576 (1 results = 16, 9 results = 17, 3 results at 18). 2 of the results at 18 are from the Bury and Massachusetts, and New South Wales clans. The result at 16 and one of the results at 18 are from 1 of 2 results from the Haslingden and Utah, clan and Haslingden clans respectively.

- DYS570 (4 results = 17, 5 results = 18). The 4 results at 18 link the Haslingden, and Haslingden and Utah clans, and possibly the Edenfield, and Bury and Finland clans.
- CDY (8 results at 37-39, 3 results at 37-38, 1 result at 38-39). The result at 38-39 is a second result from Haslingden and Utah clan. The 3 results at 37-38 link the Bury and Massachusetts, Edenfield, and Prestwich clans.
- DYS710 (5 results at 36, 4 results at 37). The results at 36 link the Bury and Massachusetts, NSW, Prestwich, and Radcliffe clans, plus the Haslingden and Utah clan which is probably a separate mutation.
- DYS715 (7 results at 23, 2 results at 24). The results at 24 link the Radcliffe, and Bury and Massachusetts clans.
- DYS516 (7 results at 13, 1 results at 14, 1 result at 15). The results at 14 and 15 possibly link the Haslingden, and Haslingden and Utah clans, with the Haslingden and Utah clan suffering an additional mutation.
- DYS523 (6 results at 13, 2 results at 14, 1 result at 15). The results at 14 link the Haslingden, and Haslingden and Utah clans. The result at 15 is probably one or more isolated mutations in the Edenfield clan.
- DYS389B (7 result sat 10, 2 results at 11). The results at 11 link the Prestwich, and Bury and Finland clans.
- DYS518u3 (2 results at 16, 4 results at 17, and 3 no reads). The results at 16 link the Radcliffe, and Bury and Finland clans.
- FTY471 (2 result sat 5, 5 results at 6, and 2 no reads). The results at 5 link the Bury and Massachusetts, and Bury and Finland clans.
- DYS612u5 (1 result at 24, 3 results at 25, 4 results at 26, and 1 no read). The results at 25 are from the Radcliffe, New South Wales, and Haslingden clans, and the result at 24 is from the Bury and Massachusetts clan. The Haslingden result looks like an isolated mutation, but the others may be related.
- FTY389 (1 result at 14, 5 results at 15, 3 results at 16). The one result at 14 is probably an isolated mutation. The 3 results at 16 are in the Bury and Massachusetts, Clayton and Haslingden clans, 3 otherwise unrelated clans and so are possibly also isolated mutations.

Apart from several results that show a link between the Haslingden, and Haslingden and Utah clans, the pattern of matches is contradictory. All the clans share mutations with various other clans but there is no structure or consistency in the matches. Many of the apparent matches must be the result of multiple independent mutations, and it isn't possible to isolate genuine shared mutations that might add information to the structure of the haplotree. That said the presence of 2 matches each between the New South Wales, Radcliffe, and Bury and Massachusetts lend some support to the later dates for their most recent common ancestors.

Uncommon Alleles

The volatility in the early 37 and 43 marker STR tests resulted in unusually large genetic distances which affected TMRCA calculations. Some confidence that the clans were linked by a common ancestor who lived after the adoption of the Warburton surname was gained from observing the sharing of uncommon alleles.

Each marker in a DNA result has a value representing the number of times a short sequence of DNA is repeated at that location. Some values will be more common than others within the population as a whole. Each possible value is known as an allele. The allele distribution is the proportion of the total results found for each allele. For example marker DYD464d has a value of 17 in 49% of people in Haplogroup R-U106.

The chances of randomly sharing several uncommon alleles can be very low. The Lancashire group all share 3 allele values which are less common. These are DYS447 value 24 which has a 31% probability, DYS464d value 19 which has a 4% probability, and DYS442 value 13 which has a 15% probability. When I first explored this there was a fourth uncommon allele, the value 23 at DYS390. However within U106 the frequency of this allele has been found to be 59%. Multiplying just these 4 values gives a probability of any two people at random having all four values of about 0.01%. This gave added confidence that the Lancashire group share a common ancestor.

When SNPs were tested all the clans were shown to have a common ancestor since surnames were adopted, except for the Tottington clan which is more remote. Many of the non-Warburton results from within the R-S6881 haplogroup (345AD) also share these uncommon alleles, despite having a more remote common ancestor.

The **Mutation Table** document on the website includes allele frequencies within the R1b-U106 haplogroup for a number of markers.