

Warburton - Dutton TMRCA Calculations

| TMRCA Criteria | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------|------------------|------------------|--------------|------|----------------|------|--------------|-------------------|------------------|------------------|------------------------|------|--------------|-------------------|--------------|------|--|--|------|--|--|
| 1 Mutation Rates based on Heinila - the only complete set. | | | | | | | | | | | | | | | | | | | | | | |
| 2 Date range is 1 standard deviation (16% - 84% probability). | | | | | | | | | | | | | | | | | | | | | | |
| 3 Rates averaged for each combination of matched markers: | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | FTDNA - 37 Markers | | 0.36% | | | | | | | | |
| | | | | | | | | | | | | DNAH - 43 Markers | | 0.25% | | | | | | | | |
| | | | | | | | | | | | | Common - 32/34 Markers | | 0.24% | | | | | | | | |
| | | | | | | | | | | | | FTDNA 25 | | 0.25% | | | | | | | | |
| | | | | | | | | | | | | FTDNA 67 | | 0.26% | | | | | | | | |
| | | | | | | | | | | | | FTDNA 111 | | 0.26% | | | | | | | | |
| 4 McGee used for calculations, but not for calculating average mutation rates as multiple markers have to be pre-averaged. | | | | | | | | | | | | | | | | | | | | | | |
| 5 Hybrid mutation model used as it gives the most correct value for genetic distance. (all mutations bar one are one different from mode, so only one 2-step mutation has possibly occurred) | | | | | | | | | | | | | | | | | | | | | | |
| 6 No allowance for counteracting mutations; by definition these are unknown and so are probably excluded from both mutation rates and genetic distance, so cancelling each other out. | | | | | | | | | | | | | | | | | | | | | | |
| 7 35 years per generation. | | | | | | | | | | | | | | | | | | | | | | |
| 8 Dates calculated as 1945 - (35 * No of generations). | | | | | | | | | | | | | | | | | | | | | | |
| 9 Profiles are identified by their Family Tree DNA Kit Numbers | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | Years per generation: | | | 35 | | | | | | | |
| Warburtons | | | | | | Duttons | | | | | | | | | | | | | | | | |
| | | | | | | Kit 102173-PA | | | Markers tested 25 | | | Kit 12715-PA | | | Markers tested 37 | | | | | | | |
| | | | | | | 16% | | 50% | | 84% | | 16% | | 50% | | 84% | | | | | | |
| Kit Number | Markers tested | Markers compared | Genetic Distance | TMRCA (gens) | Date | TMRCA (gens) | Date | TMRCA (gens) | Date | Markers compared | Genetic Distance | TMRCA (gens) | Date | TMRCA (gens) | Date | TMRCA (gens) | Date | | | | | |
| H1564 | 43 | 25 | 0 | 1 | 1910 | 6 | 1735 | 15 | 1420 | 32 | 1 | 5 | 1770 | 11 | 1560 | 21 | 1210 | | | | | |
| H1112 | 111 | 25 | 1 | 6 | 1735 | 14 | 1455 | 15 | 1420 | 37 | 4 | 11 | 1560 | 19 | 1280 | 28 | 965 | | | | | |
| 224096 | 37 | 25 | 1 | 6 | 1735 | 14 | 1455 | 27 | 1000 | 37 | 4 | 8 | 1665 | 14 | 1455 | 23 | 1140 | | | | | |
| H1572 | 43 | 25 | 0 | 1 | 1910 | 6 | 1735 | 27 | 1000 | 32 | 1 | 5 | 1770 | 11 | 1560 | 21 | 1210 | | | | | |
| H1579 | 43 | 25 | 0 | 1 | 1910 | 6 | 1735 | 15 | 1420 | 32 | 1 | 5 | 1770 | 11 | 1560 | 21 | 1210 | | | | | |
| H1580 | 43 | 25 | 0 | 1 | 1910 | 6 | 1735 | 15 | 1420 | 32 | 2 | 9 | 1630 | 18 | 1315 | 30 | 895 | | | | | |
| H1574 | 43 | 25 | 1 | 6 | 1735 | 14 | 1455 | 15 | 1420 | 32 | 3 | 14 | 1455 | 25 | 1070 | 39 | 580 | | | | | |
| H1578 | 43 | 25 | 2 | 11 | 1560 | 22 | 1175 | 27 | 1000 | 32 | 4 | 20 | 1245 | 32 | 825 | 48 | 265 | | | | | |
| 224421 | 37 | 25 | 2 | 11 | 1560 | 22 | 1175 | 39 | 580 | 37 | 6 | 18 | 1315 | 27 | 1000 | 39 | 580 | | | | | |
| 306676 | 37 | 25 | 2 | 11 | 1560 | 22 | 1175 | 39 | 580 | 37 | 4 | 11 | 1560 | 19 | 1280 | 28 | 965 | | | | | |
| Straight average Ave: | | | | | 1753 | | | 1483 | | | 1126 | | | 1574 | | | 1291 | | | 902 | | |
| Weighted average: | | | | | 1789 | | | 1506 | | | 1083 | | | 1728 | | | 1331 | | | 1039 | | |

Warburton - Dutton TMRCA Calculations

| | | Kit N49493-Birkenhead | | | | | | | | Kit 75484-MA | | | | | | | | | | | | | | | | | | | |
|---|----------------|-----------------------|------------------|--------------|-------------|--------------|------|--------------|-------------|------------------|------------------|--------------|------------|--------------|------|--------------|------|------|--|--|--|-----|--|--|--|-----|--|--|--|
| | | 16% | | | | 50% | | | | 84% | | | | 111 | | | | | | | | | | | | | | | |
| Kit number | Markers tested | Markers compared | Genetic Distance | TMRCA (gens) | Date | TMRCA (gens) | Date | TMRCA (gens) | Date | Markers compared | Genetic Distance | TMRCA (gens) | Date | TMRCA (gens) | Date | TMRCA (gens) | Date | | | | | | | | | | | | |
| H1564 | 43 | 34 | 1 | 4 | 1805 | 10 | 1595 | 21 | 1210 | 43 | 4 | 14 | 1455 | 23 | 1140 | 35 | 720 | | | | | | | | | | | | |
| H1112 | 111 | 67 | 4 | 8 | 1665 | 14 | 1455 | 21 | 1210 | 111 | 10 | 12 | 1525 | 17 | 1350 | 24 | 1105 | | | | | | | | | | | | |
| 224096 | 37 | 37 | 4 | 8 | 1665 | 14 | 1455 | 23 | 1140 | 37 | 8 | 18 | 1315 | 27 | 1000 | 39 | 580 | | | | | | | | | | | | |
| H1572 | 43 | 34 | 2 | 9 | 1630 | 17 | 1350 | 29 | 930 | 43 | 5 | 18 | 1315 | 28 | 965 | 41 | 510 | | | | | | | | | | | | |
| H1579 | 43 | 34 | 2 | 9 | 1630 | 17 | 1350 | 29 | 930 | 43 | 5 | 18 | 1315 | 28 | 965 | 41 | 510 | | | | | | | | | | | | |
| H1580 | 43 | 34 | 3 | 13 | 1490 | 24 | 1105 | 38 | 615 | 43 | 6 | 22 | 1175 | 33 | 790 | 48 | 265 | | | | | | | | | | | | |
| H1574 | 43 | 34 | 4 | 19 | 1280 | 30 | 895 | 47 | 300 | 43 | 7 | 22 | 1175 | 33 | 790 | 48 | 265 | | | | | | | | | | | | |
| H1578 | 43 | 34 | 4 | 19 | 1280 | 30 | 895 | 47 | 300 | 43 | 8 | 31 | 860 | 45 | 370 | 61 | -190 | | | | | | | | | | | | |
| 224421 | 37 | 37 | 5 | 15 | 1420 | 23 | 1140 | 34 | 755 | 37 | 8 | 26 | 1035 | 37 | 650 | 51 | 160 | | | | | | | | | | | | |
| 306676 | 37 | 37 | 3 | 8 | 1665 | 14 | 1455 | 23 | 1140 | 37 | 6 | 18 | 1315 | 27 | 1000 | 39 | 580 | | | | | | | | | | | | |
| | | Straight average: | | | | 1553 | | | | 1270 | | | | 853 | | | | 1249 | | | | 902 | | | | 451 | | | |
| | | Weighted average: | | | | 1749 | | | | 1318 | | | | 1026 | | | | 1420 | | | | 960 | | | | 606 | | | |
| | | Kit 159028-MA | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 16% | | | | 50% | | | | 84% | | | | | | | | | | | | | | | | | | | |
| Kit number | Markers tested | Markers compared | Genetic Distance | TMRCA (gens) | Date | TMRCA (gens) | Date | TMRCA (gens) | Date | Markers compared | Genetic Distance | TMRCA (gens) | Date | TMRCA (gens) | Date | TMRCA (gens) | Date | | | | | | | | | | | | |
| H1564 | 43 | 43 | 3 | 10 | 1595 | 18 | 1315 | 28 | 965 | | | | | | | | | | | | | | | | | | | | |
| H1112 | 111 | 111 | 9 | 11 | 1560 | 16 | 1385 | 21 | 1210 | | | | | | | | | | | | | | | | | | | | |
| 224096 | 37 | 37 | 8 | 18 | 1315 | 27 | 1000 | 39 | 580 | | | | | | | | | | | | | | | | | | | | |
| H1572 | 43 | 43 | 4 | 14 | 1455 | 23 | 1140 | 35 | 720 | | | | | | | | | | | | | | | | | | | | |
| H1579 | 43 | 43 | 4 | 14 | 1455 | 23 | 1140 | 35 | 720 | | | | | | | | | | | | | | | | | | | | |
| H1580 | 43 | 43 | 5 | 18 | 1315 | 28 | 965 | 41 | 510 | | | | | | | | | | | | | | | | | | | | |
| H1574 | 43 | 43 | 6 | 18 | 1315 | 28 | 965 | 41 | 510 | | | | | | | | | | | | | | | | | | | | |
| H1578 | 43 | 43 | 7 | 27 | 1000 | 39 | 580 | 55 | 20 | | | | | | | | | | | | | | | | | | | | |
| 224421 | 37 | 37 | 8 | 26 | 1035 | 37 | 650 | 51 | 160 | | | | | | | | | | | | | | | | | | | | |
| 306676 | 37 | 37 | 6 | 18 | 1315 | 27 | 1000 | 39 | 580 | | | | | | | | | | | | | | | | | | | | |
| | | Straight average: | | | | 1336 | | | | 1014 | | | | 598 | | | | | | | | | | | | | | | |
| | | Weighted average: | | | | 1501 | | | | 1073 | | | | 745 | | | | | | | | | | | | | | | |
| Weighted average of 26 pairs with 37 or more shared markers: | | | | | 1529 | | | | 1109 | | | | 786 | | | | | | | | | | | | | | | | |