

# Haplogroups

Haplogroups can tell you where a small portion of your ancestors originated thousands of years ago. Your haplogroups can shed light on the ancient origins of your maternal (your mother's mother's...mother) and paternal (father's father's...father) ancestors, and are assigned based on detecting certain genetic variants unique to each haplogroup.

[Genetic Result](#)[About Report](#)[About Your Haplogroups](#)[What You Can Do](#)

## Thomas, your maternal haplogroup is H3.

You can learn about your paternal haplogroup by connecting with your father or brother, or male relative on your father's side.

Maternal Haplogroup

H3

Paternal Haplogroup

### Maternal Haplogroup

Maternal haplogroups are families of mitochondrial DNA types that all trace back to a single mutation at a specific place and time. By looking at the geographic distribution of mtDNA types, we learn how our ancient **female** ancestors migrated throughout the world.

H3 branches from H.

**Haplogroup:** H3

**Age:** greater than 15,000 years

**Region:** Europe

[See Haplogroup Tree](#)

### Paternal Haplogroup

Paternal haplogroups are families of Y chromosomes that all trace back to a single mutation at a specific place and time. By looking at the geographic distribution of these related lineages, we learn how our ancient **male** ancestors migrated throughout the world.

**Share** with your brother or father. When this feature is available, you'll receive your paternal haplogroup assignment.

[Link male relative](#)

[See Haplogroup Tree](#)

# Interpreting Haplogroups

[Review the Ancestry tutorial](#)

[See Scientific Details](#)

## + This report can tell you

- Where a small portion of your ancestors originated thousands of years ago.
- About additional clues supporting your relationship to a [DNA](#) relative. They can also indicate whether you share a maternal or paternal ancestor with that individual.

## - This report cannot tell you

- If you definitely share your maternal or paternal haplogroups with your relatives.
- If you are closely related.
- A woman's paternal haplogroup assignment. Women can link their accounts to a male relative on their father's side to receive a paternal haplogroup result.

## Understand your haplogroup's widespread migration patterns.

### Maternal haplogroup

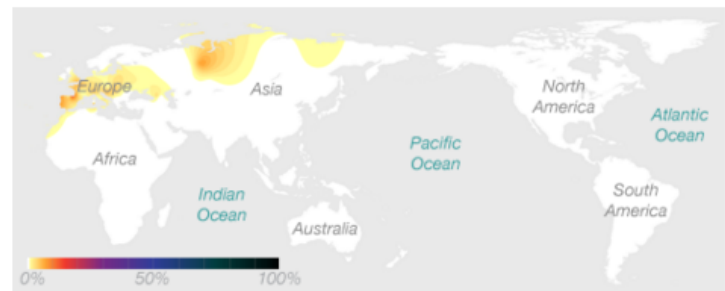
### Paternal haplogroup

#### Haplogroup H3 Migration

**Origin:** Haplogroup H, the parent of H3, originated in the Near East and then expanded throughout Europe toward the end of the Ice Age. H3 likely branched off the rest of H in Iberia and expanded across most of western Europe after the glaciers receded. Today, H3 is distributed across much of Europe and is rare elsewhere.

**Highlight:** H3 was involved in the resettlement of northern Europe after the Ice Age.

**Example Populations:** Spanish (Galician), Basques



## Do more with your Haplogroup results.



Join the research and help us understand more about how your ancestry relates to genetics.

[Ancestry survey](#)



Compare your results to your family and friends.

[Share and compare](#)



Join the discussion with other 23andMe customers interested in haplogroups.

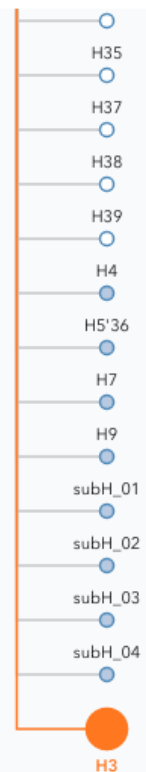
[Join the forum](#)

# Scientific Details

[Haplogroup Trees](#)[References](#)

## Your Haplogroups are determined based on the evolution of specific genetic variants.

Your haplogroups are a clue to your past. The framework that is used to identify different haplogroups, and how they relate, is called a phylogenetic tree. Your maternal haplogroup can be traced through your mitochondrial DNA, and your paternal haplogroup through your Y-chromosome (or if you are a woman, by matching your father or brother's DNA). Each major branch of each tree is named with a letter, and deeper branches within the tree are labeled with numbers and letters to note their relationship to one another. Each branch is thousands or tens of thousands of years old. Because members of a branch tend to be found in the same region of the world, your haplogroup assignment identifies your deep ancestry.

[Maternal haplogroup tree](#)[Paternal haplogroup tree](#)

# References

1. Abu-Amero et al. (2007). "Eurasian and African mitochondrial DNA influences in the Saudi Arabian population." *BMC Evol Biol* 7:32-46. [↗](#)
2. Achilli et al. (2007). "Mitochondrial DNA variation of modern Tuscans supports the near eastern origin of Etruscans." *Am J Hum Genet* 80:759-68. [↗](#)
3. Al-Zahery N et al. (2003). "Y-chromosome and mtDNA polymorphisms in Iraq, a crossroad of the early human dispersal and of post-Neolithic migrations." *Mol Phylogenet Evol* 28(3):458-72. [↗](#)
4. Alonso S et al. (2005). "The place of the Basques in the European Y-chromosome diversity landscape." *Eur J Hum Genet* 13(12):1293-302. [↗](#)
5. Arredi B et al. (2004). "A predominantly neolithic origin for Y-chromosomal DNA variation in North Africa." *Am J Hum Genet* 75(2):338-45. [↗](#)
6. Balanovsky O et al. (2008). "Two sources of the Russian patrilineal heritage in their Eurasian context." *Am J Hum Genet* 82(1):236-50. [↗](#)
7. Barac L et al. (2003). "Y chromosomal heritage of Croatian population and its island isolates." *Eur J Hum Genet* 11(7):535-42. [↗](#)
8. Batista et al. (1995). "Mitochondrial DNA diversity in the Kuna Amerinds of Panamá." *Hum Mol Genet* 4:921-9. [↗](#)
9. Belezá S et al. (2005). "The genetic legacy of western Bantu migrations." *Hum Genet* 117(4):366-75. [↗](#)
10. Bereir RE et al. (2007). "Co-introgression of Y-chromosome haplogroups and the sickle cell gene across Africa's Sahel." *Eur J Hum Genet* 15(11):1183-5. [↗](#)
11. Bolnick DA et al. (2006). "Asymmetric male and female genetic histories among Native Americans from Eastern North America." *Mol Biol Evol* 23(11):2161-74. [↗](#)
12. Bosch E et al. (2001). "High-resolution analysis of human Y-chromosome variation shows a sharp discontinuity and limited gene flow between northwestern Africa and the Iberian Peninsula." *Am J Hum Genet* 68(4):1019-29. [↗](#)
13. Bowden GR et al. (2007). "Excavating Past Population Structures by Surname-based Sampling: the Genetic Legacy of the Vikings in Northwest England." *Mol Biol Evol*. [↗](#)
14. Brown et al. (1998). "mtDNA haplogroup X: An ancient link between Europe/Western Asia and North America?." *Am J Hum Genet* 63:1852-61. [↗](#)
15. Capelli C et al. (2006). "Population structure in the Mediterranean basin: a Y chromosome perspective." *Ann Hum Genet* 70(Pt 2):207-25. [↗](#)
16. Cinnioglu C et al. (2004). "Excavating Y-chromosome haplotype strata in Anatolia." *Hum Genet* 114(2):127-48. [↗](#)
17. Cordaux R et al. (2004). "Independent origins of Indian caste and tribal paternal lineages." *Curr Biol* 14(3):231-5. [↗](#)
18. Cruciani F et al. (2002). "A back migration from Asia to sub-Saharan Africa is supported by high-resolution analysis of human Y-chromosome haplotypes." *Am J Hum Genet* 70(5):1197-214. [↗](#)
19. Derbeneva et al. (2002). "Traces of early Eurasians in the Mansi of northwest Siberia revealed by mitochondrial DNA analysis." *Am J Hum Genet* 70:1009-14. [↗](#)
20. Derenko MV et al. (2002). "[Polymorphism of the Y-chromosome diallelic loci in the ethnic populations of the Altai-Sayan region]" *Genetika* 38(3):393-9. [↗](#)
21. Di Giacomo F et al. (2003). "Clinal patterns of human Y chromosomal diversity in continental Italy and Greece are dominated by drift and founder effects." *Mol Phylogenet Evol* 28(3):387-95. [↗](#)

22. Eshleman et al. (2004). "Mitochondrial DNA and prehistoric settlements: native migrations on the western edge of North America." *Hum Biol* 76(1):55-75. [↗](#)
23. Fadhloui-Zid et al. (2004). "Mitochondrial DNA heterogeneity in Tunisian Berbers." *Ann Hum Genet* 68:222-33. [↗](#)
24. Firasat S et al. (2007). "Y-chromosomal evidence for a limited Greek contribution to the Pathan population of Pakistan." *Eur J Hum Genet* 15(1):121-6. [↗](#)
25. Francalacci P et al. (2003). "Peopling of three Mediterranean islands (Corsica, Sardinia, and Sicily) inferred by Y-chromosome biallelic variability." *Am J Phys Anthropol* 121(3):270-9. [↗](#)
26. Gayden T et al. (2007). "The Himalayas as a directional barrier to gene flow." *Am J Hum Genet* 80(5):884-94. [↗](#)
27. González et al. (2003). "Mitochondrial DNA Affinities at the Atlantic Fringe of Europe." *Am J Phys Anthropol* 120:391-404. [↗](#)
28. Helgason A et al. (2000). "Estimating Scandinavian and Gaelic ancestry in the male settlers of Iceland." *Am J Hum Genet* 67(3):697-717. [↗](#)
29. Hurler ME et al. (2005). "The dual origin of the Malagasy in Island Southeast Asia and East Africa: evidence from maternal and paternal lineages." *Am J Hum Genet* 76(5):894-901. [↗](#)
30. Kaestle and Smith (2001). "Ancient mitochondrial DNA evidence for prehistoric population movement: the Numic expansion." *Am J Phys Anthropol* 115:1-12. [↗](#)
31. Karafet TM et al. (2002). "High levels of Y-chromosome differentiation among native Siberian populations and the genetic signature of a boreal hunter-gatherer way of life." *Hum Biol* 74(6):761-89. [↗](#)
32. Karlsson AO et al. (2006). "Y-chromosome diversity in Sweden - a long-time perspective." *Eur J Hum Genet* 14(8):963-70. [↗](#)
33. Kasperaviciute D et al. (2004). "Y chromosome and mitochondrial DNA variation in Lithuanians." *Ann Hum Genet* 68(Pt 5):438-52. [↗](#)
34. Kayser M et al. (2005). "Significant genetic differentiation between Poland and Germany follows present-day political borders, as revealed by Y-chromosome analysis." *Hum Genet* 117(5):428-43. [↗](#)
35. Kivisild T et al. (2003). "The genetic heritage of the earliest settlers persists both in Indian tribal and caste populations." *Am J Hum Genet* 72(2):313-32. [↗](#)
36. Kivisild et al. (1999). "Deep common ancestry of Indian and western-Eurasian mitochondrial DNA lineages." *Curr Biol* 9:1331-4. [↗](#)
37. Kivisild et al. (2004). "Ethiopian Mitochondrial DNA Heritage: Tracking Gene Flow Across and Around the Gate of Tears." *Am J Hum Genet* 75:752-70. [↗](#)
38. Kolman and Bermingham (1997). "Mitochondrial and Nuclear DNA Diversity in the Chocó and Chibcha Amerinds of Panama." *Genetics* 147:1289-302. [↗](#)
39. Lappalainen T et al. (2006). "Regional differences among the Finns: a Y-chromosomal perspective." *Gene* 376(2):207-15. [↗](#)
40. Luis JR et al. (2004). "The Levant versus the Horn of Africa: evidence for bidirectional corridors of human migrations." *Am J Hum Genet* 74(3):532-44. [↗](#)
41. Malhi et al. (2002). "The Structure of Diversity within New World Mitochondrial DNA Haplogroups: Implications for the Prehistory of North America." *Am J Hum Genet* 70:905-19. [↗](#)
42. Malhi et al. (2003). "Native American mtDNA Prehistory in the American Southwest." *Am J Phys Anthropol* 120:108-24. [↗](#)
43. Malhi et al. (2004). "Patterns of mtDNA Diversity in Northwestern North America." *Hum Biol* 76(1):33-54. [↗](#)

44. Malhi et al. (2006). "Distribution of Mitochondrial DNA Lineages Among Native American Tribes of Northeastern North America." *Hum Biol* 73(1):17-55. [↗](#)
45. Malyarchuk et al. (2003). "Mitochondrial DNA variability in Bosnians and Slovenians." *Ann Hum Genet* 67:412-25. [↗](#)
46. Malyarchuk et al. (2006). "Mitochondrial DNA diversity in the Polish Roma." *Ann Hum Genet* 70:195-206. [↗](#)
47. Malyarchuk et al. (2006). "Mitochondrial DNA variability in the Czech population, with application to the ethnic history of Slavs." *Hum Biol* 78(6):681-96. [↗](#)
48. Marjanovic D et al. (2005). "The peopling of modern Bosnia-Herzegovina: Y-chromosome haplogroups in the three main ethnic groups." *Ann Hum Genet* 69(Pt 6):757-63. [↗](#)
49. Martinez L et al. (2007). "Paleolithic Y-haplogroup heritage predominates in a Cretan highland plateau." *Eur J Hum Genet* 15(4):485-93. [↗](#)
50. Metspalu et al. (2004). "Most of the extant mtDNA boundaries in south and southwest Asia were likely shaped during the initial settlement of Eurasia by anatomically modern humans." *BMC Genet* 5:26. [↗](#)
51. Myres NM et al. (2007). "Y-chromosome short tandem repeat DYS458.2 non-consensus alleles occur independently in both binary haplogroups J1-M267 and R1b3-M405." *Croat Med J* 48(4):450-9. [↗](#)
52. Nasidze I et al. (2005). "MtDNA and Y-chromosome variation in Kurdish groups." *Ann Hum Genet* 69(Pt 4):401-12. [↗](#)
53. Onofri V et al. (2007). "Y-chromosome genetic structure in sub-Apennine populations of Central Italy by SNP and STR analysis." *Int J Legal Med* 121(3):234-7. [↗](#)
54. Pereira et al. (2000). "Diversity of mtDNA lineages in Portugal: not a genetic edge of European variation." *Ann Hum Genet* 64:491-506. [↗](#)
55. Pericic M et al. (2005). "High-resolution phylogenetic analysis of southeastern Europe traces major episodes of paternal gene flow among Slavic populations." *Mol Biol Evol* 22(10):1964-75. [↗](#)
56. Plaza et al. (2003). "Joining the pillars of Hercules: mtDNA sequences show multidirectional gene flow in the western Mediterranean." *Ann Hum Genet* 67:312-28. [↗](#)
57. Qamar R et al. (2002). "Y-chromosomal DNA variation in Pakistan." *Am J Hum Genet* 70(5):1107-24. [↗](#)
58. Quintana-Murci et al. (2004). "Where West Meets East: The Complex mtDNA Landscape of the Southwest and Central Asian Corridor." *Am J Hum Genet* 74:827-45. [↗](#)
59. Raitio M et al. (2001). "Y-chromosomal SNPs in Finno-Ugric-speaking populations analyzed by minisequencing on microarrays." *Genome Res* 11(3):471-82. [↗](#)
60. Rugeiro M et al. (2006). "Iran: tricontinental nexus for Y-chromosome driven migration." *Hum Hered* 61(3):132-43. [↗](#)
61. Reidla et al. (2003). "Origin and Diffusion of mtDNA Haplogroup X." *Am J Hum Genet* 73:1178-90. [↗](#)
62. Richard et al. (2007). "An mtDNA perspective of French genetic variation." *Ann Hum Biol* 34(1):68-79. [↗](#)
63. Richards et al. (1998). "Phylogeography of mitochondrial DNA in western Europe." *Ann Hum Genet* 62:241-60. [↗](#)
64. Richards et al. (2000). "Tracing European Founder Lineages in the Near Eastern mtDNA Pool." *Am J Hum Genet* 67:1251-76. [↗](#)
65. Rosa A et al. (2007). "Y-chromosomal diversity in the population of Guinea-Bissau: a multiethnic perspective." *BMC Evol Biol* 7:124. [↗](#)
66. Rosser ZH et al. (2000). "Y-chromosomal diversity in Europe is clinal and influenced primarily by geography, rather than by language." *Am J Hum Genet* 67(6):1526-43. [↗](#)

67. Sahoo S et al. (2006). "A prehistory of Indian Y chromosomes: evaluating demic diffusion scenarios." *Proc Natl Acad Sci U S A* 103(4):843-8. [↗](#)
68. Sahoo and Kashyap (2006). "Phylogeography of Mitochondrial DNA and Y-Chromosome Haplogroups Reveal Asymmetric Gene Flow in Populations of Eastern India." *Am J Phys Anthropol* 131:84-97. [↗](#)
69. Semino O et al. (2000). "The genetic legacy of Paleolithic Homo sapiens sapiens in extant Europeans: a Y chromosome perspective." *Science* 290(5494):1155-9. [↗](#)
70. Sengupta S et al. (2006). "Polarity and temporality of high-resolution y-chromosome distributions in India identify both indigenous and exogenous expansions and reveal minor genetic influence of Central Asian pastoralists." *Am J Hum Genet* 78(2):202-21. [↗](#)
71. Shen P et al. (2004). "Reconstruction of patrilineages and matrilineages of Samaritans and other Israeli populations from Y-chromosome and mitochondrial DNA sequence variation." *Hum Mutat* 24(3):248-60. [↗](#)
72. Simoni et al. (2000). "Geographic Patterns of mtDNA Diversity in Europe." *Am J Hum Genet* 66:262-78. [↗](#)
73. Starikovskaya et al. (1998). "mtDNA Diversity in Chukchi and Siberian Eskimos: Implications for the Genetic History of Ancient Beringia and the Peopling of the New World." *Am J Hum Genet* 63:1473-91. [↗](#)
74. Starikovskaya et al. (2005). "Mitochondrial DNA diversity in indigenous populations of the southern extent of Siberia, and the origins of Native American haplogroups." *Ann Hum Genet* 69:67-89. [↗](#)
75. Tajima A et al. (2004). "Genetic origins of the Ainu inferred from combined DNA analyses of maternal and paternal lineages." *J Hum Genet* 49(4):187-93. [↗](#)
76. Tambets K et al. (2004). "The western and eastern roots of the Saami--the story of genetic 'outliers' told by mitochondrial DNA and Y chromosomes." *Am J Hum Genet* 74(4):661-82. [↗](#)
77. Thanseem I et al. (2006). "Genetic affinities among the lower castes and tribal groups of India: inference from Y chromosome and mitochondrial DNA." *BMC Genet* 7:42. [↗](#)
78. Töpf et al. (2006). "Tracing the Phylogeography of Human Populations in Britain Based on 4th-11th Century mtDNA Genotypes." *Mol Biol Evol* 23(1):152-161. [↗](#)
79. Wells RS et al. (2001). "The Eurasian heartland: a continental perspective on Y-chromosome diversity." *Proc Natl Acad Sci U S A* 98(18):10244-9. [↗](#)
80. Wood ET et al. (2005). "Contrasting patterns of Y chromosome and mtDNA variation in Africa: evidence for sex-biased demographic processes." *Eur J Hum Genet* 13(7):867-76. [↗](#)
81. Yao et al. (2002). "Phylogeographic Differentiation of Mitochondrial DNA in Han Chinese ." *Am J Hum Genet* 70:635-51. [↗](#)
82. Zegura SL et al. (2004). "High-resolution SNPs and microsatellite haplotypes point to a single, recent entry of Native American Y chromosomes into the Americas." *Mol Biol Evol* 21(1):164-75. [↗](#)