23andMe

Larry Bradshaw
Maternal Haplogroup

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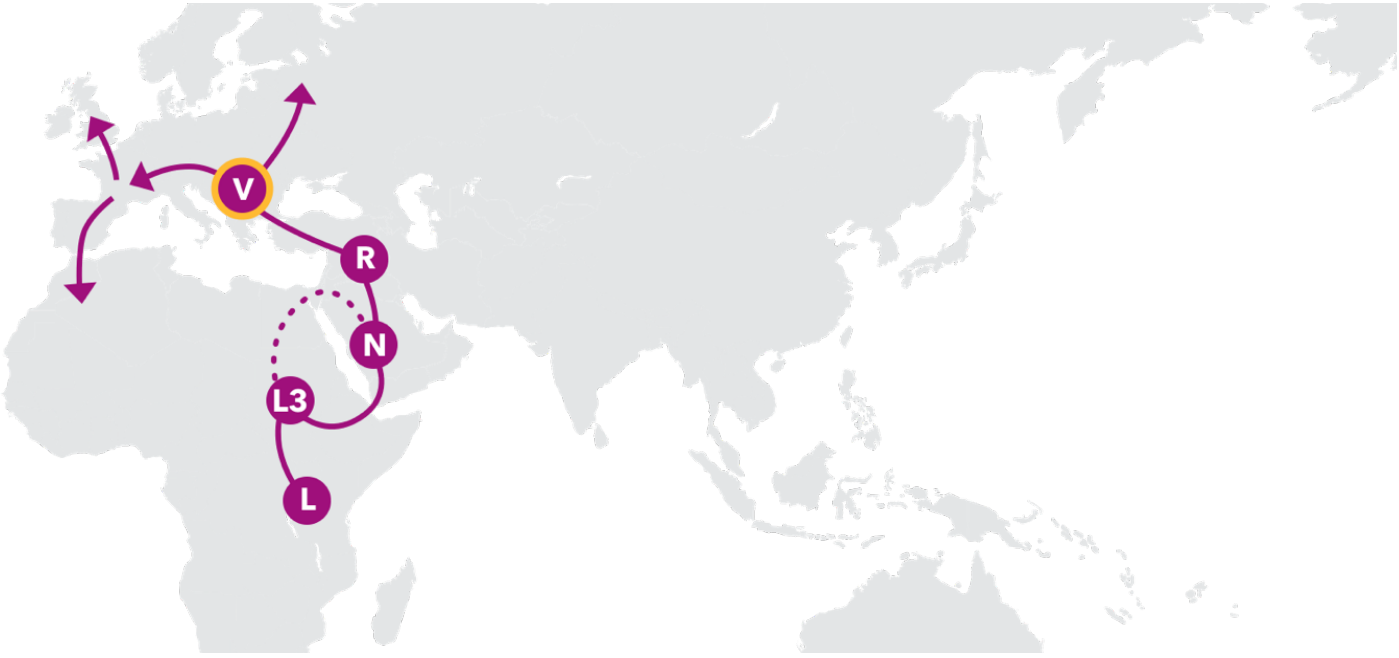
You descend from a long line of women that can be traced back to eastern Africa over 150,000 years ago. These are the women of your maternal line, and your maternal haplogroup sheds light on their story.

Larry, your maternal haplogroup is V2.

As our ancestors ventured out of eastern Africa, they branched off in diverse groups that crossed and recrossed the globe over tens of thousands of years. Some of their migrations can be traced through haplogroups, families of lineages that descend from a common ancestor. Your maternal haplogroup can reveal the path followed by the women of your maternal line.

Migrations of Your Maternal Line



180,000 Years Ago

Haplogroup L

If every person living today could trace his or her maternal line back over thousands of generations, all of our lines would meet at a single woman who lived in eastern Africa between 150,000 and 200,000 years ago. Though she was one of perhaps thousands of women alive at the time, only the diverse branches of her haplogroup have survived to today. The story of your maternal line begins with her.

65,000 Years Ago

Haplogroup L3

Your branch of L is haplogroup L3, which arose from a woman who likely lived in eastern Africa between 60,000 and 70,000 years ago. While many of her descendants remained in Africa, one small group ventured east across the Red Sea, likely across the narrow Bab-el-Mandeb into the tip of the Arabian Peninsula.

59,000 Years Ago

Haplogroup N

Your story continues with haplogroup N, one of two branches that arose from L3 in southwestern Asia. Researchers have long debated whether they arrived there via the Sinai Peninsula, or made the hop across the Red Sea at the Bab-el-Mandeb. Though their exact routes are disputed, there is no doubt that the women of haplogroup N migrated across all of Eurasia, giving rise to new branches from Portugal to Polynesia.

57,000 Years Ago

Haplogroup R

One of those branches is haplogroup R, which traces back to a woman who lived soon after the migration out of Africa. She likely lived in southwest Asia, perhaps in the Arabian peninsula, and her descendants lived and migrated alongside members of haplogroup N. Along the way, R gave rise to a number of branches that are major haplogroups in their own right.

10,000 Years Ago

Haplogroup V

Haplogroup V is primarily European branch of R, and traces back to a woman who likely lived during the last peak of the Ice Age. Her branch may have expanded from the Iberian Peninsula or another warmer refuge along the Mediterranean Sea. As the Ice receded, her descendants migrated northward along the Atlantic coast and through central Europe to Scandinavia.

10,000 Years Ago

Origin and Migrations of Haplogroup V

Recent evidence suggests that the members of haplogroup V descend from a woman who lived in Europe approximately 10,000 years ago. When her ancestors arrived in Europe is more of a mystery. They may have migrated to the west from the Middle East before the last great peak of the Ice Age, which occurred around 20,000 years ago. This wave of cold covered the continental interior in icy tundra and pushed Europe's human population south into a few temperate enclaves in the south along the Mediterranean. Haplogroup V likely arose in one of these refuges in the Iberian Peninsula, or perhaps in southeastern Europe.

The geographic range of haplogroup V began expanding once consistently warmer conditions arrived about 11,500 years ago. One migration carried it northward along the Atlantic to a low-lying coastal plain rich in game and marine food sources such as seals and sea birds. Known as Doggerland, that region lies under the North Sea today – because so much water was locked up in the polar ice sheets during and immediately after the Ice Age, sea level was lower in the past than it is today.

Doggerland slipped beneath the waves about 9,000 years ago, but haplogroup V remains at levels of about 5% in countries that border the Atlantic and especially the North Sea. It is most abundant today in Scotland and northern Germany. A separate post-Ice Age migration carried haplogroup V through central Europe to western Russia and the Scandinavian Arctic.

V2

8,000 Years Ago

Your maternal haplogroup, V2, traces back to a woman who lived approximately 8,000 years ago.

That's nearly 320 generations ago! What happened between then and now? As researchers and citizen scientists discover more about your haplogroup, new details may be added to the story of your maternal line.

Today

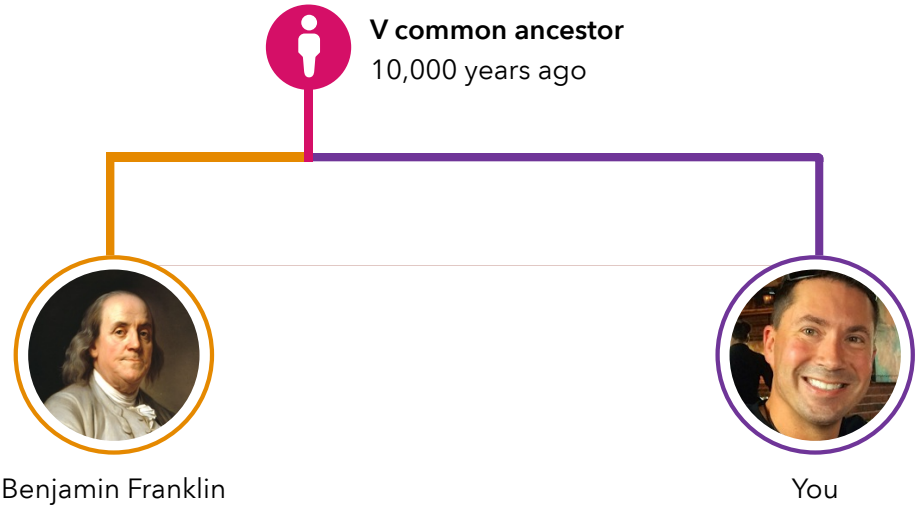
V2 is relatively uncommon among 23andMe customers.

Today, you share your haplogroup with all the maternal-line descendants of the common ancestor of V2, including other 23andMe customers.

1 in 630

23andMe customers share your haplogroup assignment.

Benjamin Franklin also belonged to V



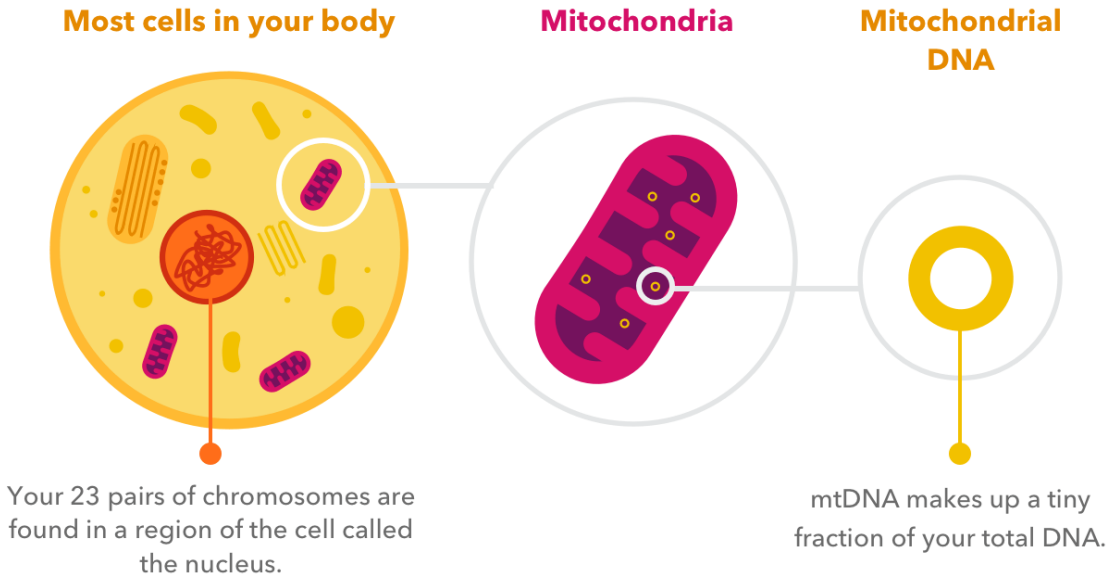
Benjamin Franklin (1706-1790), inventor and Founding Father of the United States of America, belonged to haplogroup V. Among his many political and technological accomplishments, Franklin is known for helping draft the Declaration of Independence and the Constitution, shaping the birth of the Nation. Franklin shared his maternal haplogroup with his nine full siblings, which they inherited from their mother Abiah Folger.

The Genetics of Maternal Haplogroups

Mitochondrial DNA

Maternal haplogroups are determined by sets of genetic variants in a tiny, unusual loop of DNA called mitochondrial DNA (mtDNA). As the name suggests, mtDNA is found in the mitochondria, small but mighty structures inside our cells that turn fuel from the food we eat into energy.

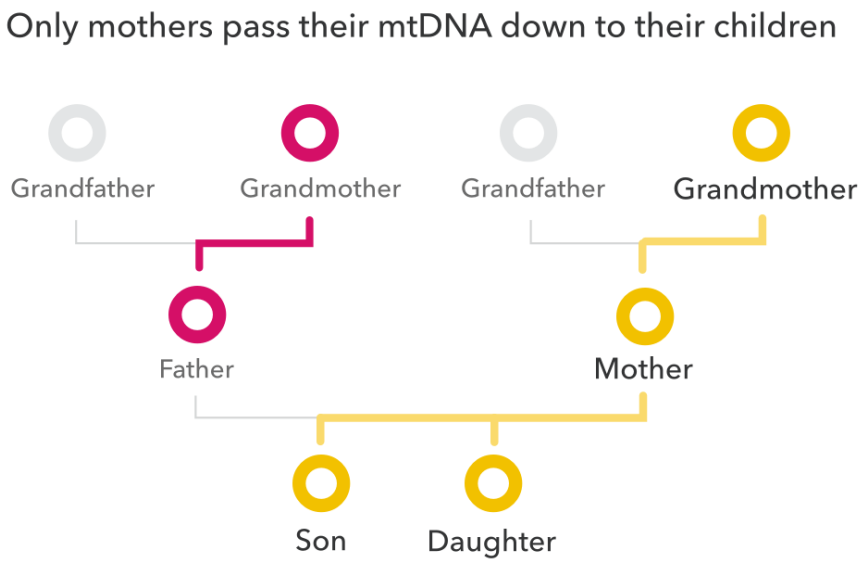
Mitochondria evolved over billions of years from an independent bacterial cell that was engulfed by another cell. Instead of becoming lunch, the bacterium helped its new host use oxygen to produce energy. Over time it completely lost its independence and became an integrated part of the larger cell. However, your mitochondria still contain a small, separate piece of genetic code: your mtDNA.



Maternal Inheritance

Researchers are able to trace the history of maternal haplogroups back in time because of the unusual way mtDNA is inherited. Each generation, mothers pass essentially identical copies of their mtDNA down to their children. Both males and females inherit mitochondrial DNA from their mothers, but only females pass it on.

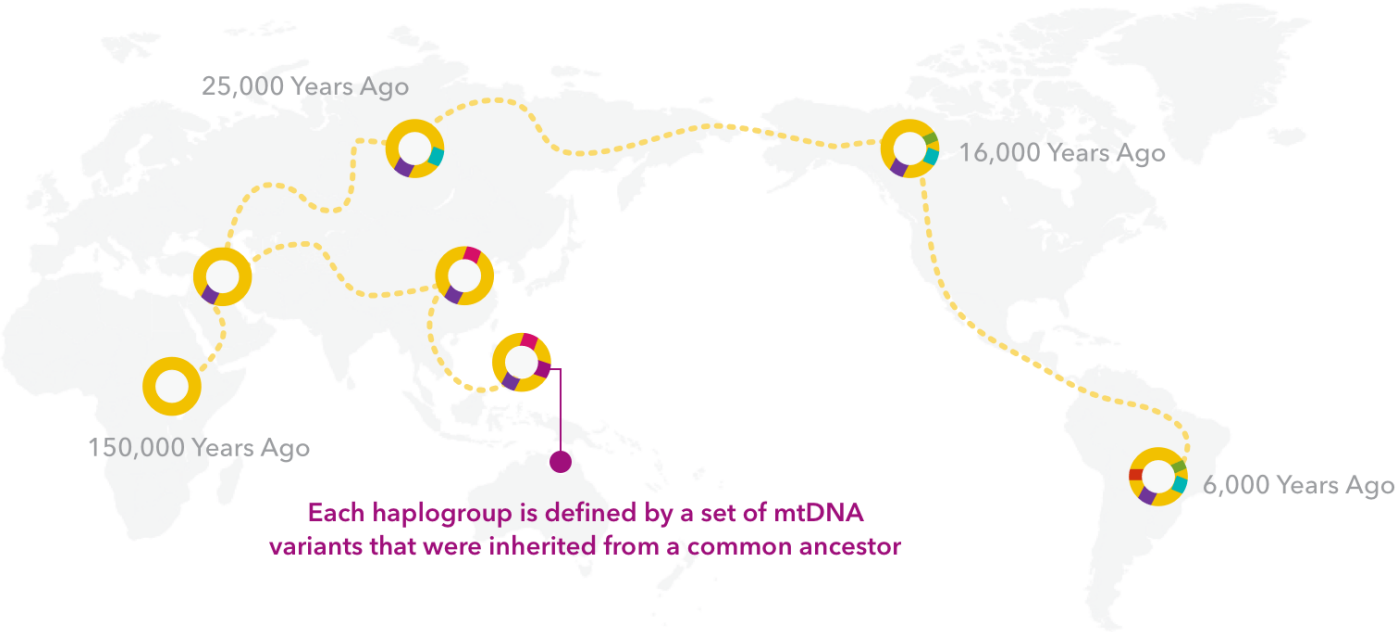
However, mtDNA isn't copied perfectly every time. Every so often, a mutation – a change in the DNA sequence – occurs and is passed on to the following generations. Over many generations, mtDNA mutations stack up in patterns that uniquely mark individual maternal lines.



Tracing Female Migrations

Geneticists can compare the different patterns of mutations in mtDNA sequences from around the world by constructing a tree that shows how all maternal lines are related to one another. Each maternal haplogroup describes individual branches – or closely related groups of branches – on this tree.

Because closely related haplogroups tend to share geographic roots, researchers can use the modern distributions of haplogroups around the world to try to determine where each haplogroup arose, and how and when its members reached their current locations.



Do more with your Haplogroup results.

- Contribute to research and help us understand patterns of genetic variation around the world.
- Visit DNA Relatives to identify relatives that may be on your maternal line.
- Visit the Forums to meet other customers interested in discussing haplogroups.

Scientific Details

Your haplogroup is determined by your mitochondrial DNA.

Each generation, mothers pass down copies of their mitochondrial DNA (mtDNA) to their children. While most of your genome exists in 23 pairs of chromosomes that exchange pieces between generations in a process called recombination, mtDNA is transmitted unshuffled. Because of this unusual pattern of inheritance, mtDNA contains rich information about maternal lineages.

A small number of DNA changes, called mutations, generally occur from one generation to the next. Because mtDNA does not recombine between generations, these mutations accumulate in patterns that uniquely mark individual lineages. Scientists can compare the sequence differences that result by constructing a tree. This tree shows how maternal lineages relate to one another, including the observation that they all share a most recent common ancestor approximately 150,000 to 200,000 years ago.

The term "haplogroup" refers to a family of lineages that share a common ancestor and, therefore, a particular set of mutations. We identify your haplogroup by determining which branches of the mtDNA tree correspond to your DNA. Because more closely related lineages tend to share geographic roots, your haplogroup can provide insight into the origins of some of your ancient maternal-line ancestors.

Maternal haplogroups are named with sequences of letters and numbers that reflect the structure of the tree and how the branches relate to one another.

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[https://blog.23andme.com/ancestry/founding-fathers-dna/]

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Change Log

Your report may occasionally be updated based on new information. This Change Log describes updates and revisions to this report.

Date	Change
May 8, 2017	The standalone Maternal Haplogroup report was created, featuring new design elements and content.
Oct. 21, 2015	Haplogroups report created.

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