

Britain's DNA Deep Clade Results.

DNA follows the faint traces of ancient journeys, the lost migrations of your ancestors as they moved across the face of Europe on their approach to Britain. These are journeys only DNA can trace.

As your marker moved, people who also carry it settled in its wake and their locations and frequencies are plotted below

The extent to which your YDNA has travelled is shown on the map in black



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Your genetic signature

YOUR FATHERLINE IS KURGAN

Your YDNA Markers are M512+S198+S443-

These are the key markers defining your group

These markers define your genetic signature, within your group

M458-S204-S443-

You do not belong to any of the subtypes of S198 that we have tested.

Your YDNA marker is KURGAN, and it originated on what was known as the Pontic Steppe, the vast grasslands north east of the Black Sea, what is the basin of the Volga River.

Your Y chromosome group, which tracks your paternal lineage, is R1a-M512. This group is most common in a wide geographic band from India, through Central Asia to Eastern Europe and on to Scandinavia.

Long before they crossed the North Sea to settle in Britain, your ancestors had undertaken a much longer, even more hazardous journey. After the nuclear devastation caused by the super-colossal eruption of the Indonesian volcano known as Mount Toba around 70,000BC, our species, *Homo sapiens*, almost became extinct. As tsunamis smashed into coastlines, as dark ash-clouds hid the sun for a generation, plants withered and the animals and people who depended on them starved and died. Only in east-central Africa, in the shelter of the great rift valleys, did tiny remnant bands of people survive, perhaps as few as 5,000 outlived the sunless summers. When the weather at last warmed and new growth greened the land, a remarkable exodus took place. A small group of pioneers, perhaps only two or three hundred, left the sanctuary of the rift valleys and began to walk northwards. The epic journey out of Africa had begun. And your ancestors walked with these extraordinary pioneers. When they reached the Horn of Africa, modern Djibouti, they crossed the narrow straits of the Red Sea, the Gate of Tears, and gained the farther shore, southern Arabia. And from that foothold in an empty landscape, your ancestors, the ancestors of all non-Africans, repopulated the whole of the rest of the world.



From the Yemen, the pioneers moved along the Indian Ocean coast. Some kept on moving eastwards and only 2,000 years after the crossing of the Red Sea, they had reached Australia. Others turned north, including your ancestors. And the bands who found the delta of the rivers Tigris and Euphrates followed their courses into what became known as the Fertile Crescent. From the Near East, your people crossed the Caucasus Mountains and settled in the steppes to the north.

But then, around 24,000BC, another cataclysm changed the face of our planet. Summers grew shorter, storms blew and snow stayed on the high ground all year round. The last ice age was beginning. As snow fell and the world turned to ice, people and animals fled south. Nothing and no-one could survive in what became a white landscape of devastating beauty. Your ancestors almost certainly overwintered the ice age in refuges in the Southern Ukraine. At the edge of the polar tundra, hardy communities sheltered in caves, often in steep-sided valleys and were able to survive on game and a wild harvest.



When the ice began to melt around 11,000BC, your ancestors moved north, probably very quickly, hunting right up to the edges of the retreating ice-sheets, and they once more moved into an empty landscape. The plains of the steppe may have been empty of people but the lush grasslands supported vast herds of wild horses.

In order to hunt and kill them, it seems that the Botai people of Northern Kazakhstan learned to ride horses. Around 3,500BC, it appears that they not only domesticated these animals (mares' milk was an important part of their diet) but also trained them to tolerate a human being on their backs. No archaeological or documentary evidence exists to describe this process precisely, but it is likely that orphan foals were first adopted as pets and their herd instinct forged a close relationship with human beings. The horses of Central Asia were much smaller than most modern breeds and much easier to handle. Any bridles, lead ropes or bits or other gear made from organic materials have perished but, perhaps most eloquent, the Botai liked to be buried with their horses.

Kurgan culture is so-called after the pit-graves found all over the Pontic Steppe and beyond, and in several excavations the remains of chariots were found. The small size of a horse mattered much less if it was yoked to a chariot and the major difficulty in training young animals was to persuade them that they were not being chased by what they were pulling. Chariots were used as transport but their principal function was military. A driver could be accompanied by an archer but both needed to have perfect balance if they were not to be bounced out of their vehicle as it bumped over

rough ground at speed. Tremendous skill was involved and also chariot riding gave rise to all the modern equestrian habits of plaiting horses' tails and manes. It was important to keep these from fouling the harness or the yoke.



The Kurgans may also have invented the wooden, spoked wheel and they and the Botai certainly revolutionised transport when they domesticated the horse. As important, they also spoke what philologists call Proto Indo-European. These early dialects were developed by the peoples of the Steppe and in a series of migrations both to the west and to the east; they spread versions of this language to Europe and to Northern India. Despite apparent differences and wide geographical separation, languages such as French and Iranian share a great deal.

Between 4,000BC and 1,000BC a series of waves of migration out of the Steppe, hugely accelerated by the use of horses for riding and draught, brought entire populations to Europe. An analysis of ancient DNA extracted from skeletons found in graves in Central Asia and dating from 1,500BC to the 4th century AD shows that whole populations moved. Instead of being invaded by small bands of warriors who then established themselves as a political elite who married native women, Eastern Europe saw the coming of men, women and children out of the Steppe. And in their mouths they brought the beginnings of most modern European languages.

Within the large group of R1a-M512, you carry the marker of a European sub-group, that of S198. It is common in Eastern Europe and around the Baltic Sea. It spread from there to Germany and Scandinavia – a different subgroup was carried to the British Isles by the Northmen. Not common in Britain, your marker of S198 may have made landfall in Britain, on its long journey from the Kurgans and the endless horizons of the Steppe, with the invasions and settlements of the Anglo-Saxons in the 5th and 6th centuries or with the Danes in the 9th and 10th. In either case your ancestors made an immense journey and they brought with them something central to all our lives, the language you are reading now.

Markers

Y chromosome markers begin with a letter followed by the number of the marker. The letter is usually M, S or P: M is for marker, S for SNP (which is the scientific name for the kind of marker being tested) and P for polymorphism, another word for marker. One marker we use begins with SRY, which is the name of the gene it is found in and some begin with V which is another series of markers. The markers are numbered in the order they were found or characterised by various researchers, this has no relationship to chronology or branching order.

BritainsDNA has extracted DNA from your saliva and read the genetic code at a number of variable points in your sequence of letters, points known as markers, in order to determine your personal DNA signature.

The markers we use are unique events in human history and thus define stable lineages or clusters of related chromosomes. Your blood relatives on the male line will share your DNA signature. We have tested a number of markers and your result is revealed here.

These markers are all found on a segment of DNA called the Y chromosome and it is only inherited in the male line. This means it provides no information on all your other ancestors. However, it is the most informative genetic system for identifying ancestral lineages. To find your lineage we have compared your results to published and unpublished genetic signatures as well as our extensive database.

Ancestral lineages are found at different frequencies in different populations. Some are specific to a certain region while others are more widespread. Knowing which group you are in allows you to find out where your male ancestors came from in the deep past and where your group is found today. Our map shows how far your DNA has travelled.

Some markers have not yet been tested in large samples of known heritage, particularly those that have been discovered recently, and so they, not surprisingly, are poorly understood – as yet. We make it clear in your results if this is the case. There are inevitable biases in the databases of samples available, in the markers discovered or used, and the statistical methods and study designs utilised in the published literature and elsewhere. And that therefore means that geneticists occasionally have different levels of confidence in the interpretation of some markers.

These are all the markers we tested which define your group:

- M89+
- M213+
- M9+
- P128+
- M526+
- M74+
- M173+
- S1+
- M512+
- M514+
- S198+
- S443-

When a + follows a marker name it means you carry that marker. When a - follows a marker name it means you do not carry the marker. For example S438+S244-S243-S142- means that the person carries the S438 marker, but is not in any of the subgroups defined by S244, S243 and S142. It is sometimes important to know subtype you do not belong to.

A Kurgan Web site: <http://www.iras.ucalgary.ca/~volk/sylvia/Kurgans.htm>

YOUR MOTHERLINE IS THAT OF THE INDUS VALLEY

Your mtDNA Marker is 16051G, 5390G

These are the key markers defining your group

Your genetic signature: You belong to the U2e1a subtype.

Your mitochondrial DNA group is from the INDUS VALLEY, and its mother-group is that of the early peoples of the Indian sub-continent.

Your mtDNA mother-group, which only women can pass on to their children, is U2. Your particular marker, a sub-group of U2, first arose in West Asia and it is labelled U2e. It is very rare in Britain, carried by only 0.5% of women, a frequency repeated over most of Western Europe. In Turkey, Palestine and Armenia it rises to 1% and in Iraq to 2%. U2e accounts for only 0.6% of Europeans and 1% of Near-Easterners in total. Only in India is it common and cousin-branches of your marker such as U2a, U2b and U2c make up 10% of all women.



As in your fatherline all our ancestors came out of Africa, crossed the Red Sea into what is now the Yemen. From the Yemen, the pioneers moved along the Indian Ocean coast. Some kept on moving eastwards and only 2,000 years after the crossing of the Red Sea, they had reached Australia. Only two mother-lines walked out of Africa with the pioneers. Also known as super-clusters, and labelled as M and N, they were the foundation of all mtDNA markers outside of Africa. Your marker, U2, evolved out of the N super-cluster.

The migration of your ancestors out of Africa halted on the shores of the Persian Gulf for some unknown reason. Perhaps there were deserts too difficult to cross, perhaps the climate needed to improve, or perhaps life was good. Out of the N super-cluster, the U group arose c52,000BC and began to spread. Some of your ancestors moved to the Near East, but your group migrated to South Asia.

But then, around 24,000BC, another cataclysm changed the face of our planet. Summers began to grow shorter, storms blew and snow stayed on the high ground all year round. The last ice age was beginning. As snow fell and the world turned to ice, people and animals fled south. Nothing and no-one could survive in what became a white landscape of devastating beauty. At the southern edge of the polar tundra and the windy deserts it formed, hardy communities sheltered in caves, often in steep-sided valleys and were able to survive on game and a wild harvest.

Your lineage is very ancient. In a remarkable excavation in the valley of the River Don in Southern Russia, archaeologists found the grave of a man who lived 30,000 years ago. In an oval pit, he had been buried in a foetal position with his legs tucked up and his hands balled into fists under his chin. In what seemed like a deliberate pose, his face had been turned to face downwards into the earth. When he was buried, presumably in some sort of ceremony, red ochre had been sprinkled on this man's body and in the grave. Extracted from naturally tinted clay, ochre was one of the very earliest pigments used by man, but its ceremonial significance is mysterious. It may represent a return to the earth, or the blood of a symbolic rebirth (and a very early belief in an afterlife) which would fit with the body being posed in a foetal position.

Known as the Markina Gora skeleton, he was a hunter-gatherer whose range included the fertile flatlands on the banks of the Don. Archaeologists found sophisticated flint tools and evidence that these early people could bore holes. But perhaps the most remarkable find was this man's mtDNA, what he inherited from his mother. He carried your mother-line, U2 and is your direct ancestor. The second part of this Web site refers to the Markina Gora skeleton.

http://www.kunstkamera.ru/en/temporary_exhibitions/virtual/gerasimov/09/

Your sub-group of U2e arrived in Britain very early. Pioneers with U2e certainly crossed from Europe when the weather warmed after 11,000BC, but their route was unexpected. They walked to Britain.

One of the most extraordinary effects of the ice age made that possible, an effect that was discovered by accident.

In the late summer of 1931 Captain Pilgrim Lockwood nosed his boat out of Lowestoft harbour. Bound for the Leman and Ower banks, around 25 miles off the East Anglian coast, he planned to reach the shallow water by nightfall and begin fishing. When his crew wound in the nets, Lockwood noticed what the sailors called moorlog, a black lump of peaty earth scraped off the sea bed. Too big to pick up in one piece and heave over the side, it needed to be split with a shovel. But when Lockwood struck the moorlog, he found embedded in it a beautifully made bone spear-point, the tip of a fish-spear known as a leister. It was puzzling. How did a man-made object, and one that was found to be prehistoric, come to be dredged up from under the sea bed?

The answer was more than forty years in coming. When the oil companies began to explore wide areas of the North Sea in the 1960s and 70s, geophysical surveys were commissioned. Using sonar techniques, their geologists wanted to look below the sea bed to find the tell-tale signs of oil deposits. They discovered them – but also something entirely unexpected. Flickering across their black screen were green images of a lost geography, and the oilmen realised that they had also discovered a part of our history, a place few knew existed. Here were river valleys, deltas, a large inland sea, and to the north a range of hills. These last had become the Dogger Bank and so the submerged landmass became known as Doggerland.

When a huge ice-dome, kilometres thick, had pressed down hard on Scandinavia at the height of the last ice age, it forced the Earth's crust to the south of it to rise up. For many millennia, the basin of the North Sea was dry land before a correction took place. As the ice melted, Scandinavia was lifted and Doggerland began slowly to sink. But this process took a long time and as late as 4,000BC there were still large islands in the middle of the North Sea.

This lost land, an Atlantis to the east, was a good place to live for bands of Hunter-Gatherers. Low-lying with wide deltas and networks of creeks rich in fish and bird life, it also had a freshwater inland sea (now a trench called the Outer Silver Pit) and a range of upland habitats in the Dogger Hills of the north. In the temperate forests, a wildwood that carpeted much of the sub-continent, there was also a wild harvest of fruits, berries and roots as well as woodland-dwelling game. The first of your ancestors to come to Britain may well have walked through these glades and waded the rivers of Doggerland.

When your people reached Britain, probably around 8,000BC, they had come to the ends of Europe. U2e is a signature of eastern influence and it was carried to the British Isles and Ireland both by the indigenous inhabitants and by later arrivals.

Markers

mtDNA markers begin with mt to indicate they are on the mtDNA, followed by the number of the DNA letter in the mtDNA (from 1 to 16569). In some cases we specify which letter change occurred, e.g. by putting a C after the number, e.g. mt13101C, but in other cases geneticists know what the change is without adding the letter, e.g. mt7028.

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These markers are all found on a segment of DNA called mitochondrial DNA and mtDNA is inherited in both the female and male lines but only women can pass it on. To find your lineage we have compared your results to published and unpublished genetic signatures as well as our extensive database.

Female ancestral lineages are found at different frequencies in different populations. Some are specific to a certain region while others are more widespread. Knowing which group you are in allows you to find out where your female ancestors came from in the deep past and where your group is found today. Our map shows how far your DNA has travelled.

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- 10398A
- 12705G
- 12308G
- 12372A
- 16051G
- 5390G
- 13020G