Geneticists divide African Eve's descendants into haplogroups popularly called "clans" to make the subject easier for lay people to understand. Different types of mtDNA correspond to different haplogroups. Currently, there are only 33 major haplogroups. Again, there have been different maternal lines in existence in human history, but these are the only lines that can be found in existence today.

In Africa, there is a single main lineage, known as Haplogroup L, Clan Lara, to which “African Eve” belonged. 76% of Africans belong to this clan (100% of the Pygmies and 67% of the Senegalese). The age of Haplogroup L is estimated to be 98,000 to 130,000 years. The oldest lineage is the African L1a group. The two subsequent ancient splits also happened inside Africa, originating the L1b/c and L2 haplogroups with ages of 122,000–132,000 and 85,000–95,000 years before the present respectively. These three groups still have an overwhelming sub-Saharan African implantation. The next branching, dated between 59,000–69,000 years ago, also groups currently found only in Africa (L3), and others with

The Haplogroup L2 lineage has been subdivided into several subgroups. The great majority belong to L2a, one of the most frequent and widespread mtDNA subgroup in Africa, especially East Africa as well as in African Americans (~25%). The Mandanka in Senegal are 36% L2c while 43% of Mozambiqans are L2a. The Cabo Verde islands (20% L2a), off the east coast of Africa, served as a stopping point for the transatlantic slave trade. Estimated origin times range from 120,000 years for L2d, 55,000 years for L2a and 30,000 years for L2b and L2c.

Today, L3 derivatives are present in nearly all the African populations. L3, the youngest branch, is common in East Africa and is believed to be the source of both the Asian and European lineages, about 80,000 years ago. L3 contains the progenitors of the Eurasian haplogroups M and
N. L3e is the most widespread, frequent, and ancient of the African L3 clades, comprising about one-third of all L3 types in sub-Saharan Africa. Haplogroups L3b and L3d types are predominantly West African with a substantial representation in African Americans. L3b has spilled over into North Africa and onto the Near East, with very little dispersal into either East Africa or even Central Africa. L3d is mainly West African and African American.

Haplogroup L3e is the most frequent and ancient of the African L3 types and is thought to have originated in central or eastern Africa about 46,000 years ago, and was a hitchhiker of much later dispersal and local expansion events, with the rise of food production and iron smelting. Enforced migration of African Slaves to the Americas translocated L3e clades, the descendents of whom in Brazil and the Caribbean still reflect their African ancestries.

Paleolithic Africa: Culture of the Vasikela !Kung
Geneticists believe that the population of the Vasikela !Kung (L1a) of the northwestern Kalahari desert in southern Africa is the population that lies nearest to the root of the human mitochondrial DNA tree. Another population that is almost equally old is that of the Biaka pygmies of Central Africa (L1b). The L2 populations of the Mbuti Pygmies (L2a) and the Sengalese (L2c) are almost as ancient.

The hunter-gatherer lifestyles of the !Kung Bushmen may be the best approximation today of what it was like to live in Africa at the time of the earliest humans. The !Kung population is currently located in isolated areas of Botswana, Angola, and Namibia. They refer to themselves as the Zhun/twasi, "the real people". The semi-arid region in which they live features some trees but is mostly brush and grass-covered low hills and flat spaces. Rainfall during the wet season varies from only five to forty inches. Temperatures during the winter are frequently below freezing, but during the summer are well above 100F. The villages, consisting of 10-30 people, are semi-permanent; once the water source dries up, the band has to carry their belongings to a new site where a reliable source of water can be located. The huts are small and built of grass with all doors facing the center, circling a large communal area where children play, women cook, and all family life except for sleeping takes place. A fire is burning in front of each hut at all times.

The !Kung are hunter gatherers, adapting to their semi-arid environment by gathering roots, berries, fruits, and nuts that they gather from the desert, and from the meat provided by the hunters. Both women and men possess a remarkable knowledge of the many edible foods available, and of the medicinal and toxic properties of different species. !Kung men are responsible for providing the meat, although women might occasionally kill small mammals. Game is not plentiful and the hunters sometimes must travel great distances. Meat is usually sparse and is shared fairly among the group when a hunter is successful. Every part of the animal is used; hides are tanned for blankets and bones are cracked for the marrow. Typical game
sought in the hunt includes wildebeest, gemsbok, and giraffe; they also kill various reptiles and birds, and collect honey when it is available. The men provide household tools and maintain a supply of poison tipped arrows and spears for hunting.

!Kung women provide the majority of the food, spending two to three days a week foraging varying distances from the camp, and are also responsible for child care, gathering wood for fires, carrying water, and cooking. Typical foods they might return with are mongongo nuts, baobab fruits, water roots, bitter melon, or !Gwa berries. Children are left at home to be watched over by those remaining in camp, but nursing children are carried on these foraging trips, adding to the load the !Kung women must carry. Leisure time in !Kung camps is spent singing, visiting, playing games, and storytelling. They have no formal authority figure or chief, but govern themselves by group consensus. Disputes are resolved through lengthy discussions where all involved have a chance to make their thoughts heard until some agreement is reached. Travel to visit relatives occurs during or following the rainy season, when a source of water and food is assured during the trip. During the dry winter months, a number of bands may settle around one permanent spring. During this time, ritual life increases, including the frequency of trance dances.

Prehistoric Saharan Africa
At one time the Sahara was fairly moist, and it was populated from the time of human origins. The Sahara Desert includes significant mountain ranges, such as the Tassili N’Ajjer. Before North Africa became very dry, this was the home to fishermen, hunters and herdsmen in great numbers, and their diffusion as the desert became inhospitable had a significant effect upon the emergence of Ancient Kemet (Egypt), the states to the West where savannah met forest, and the Mediterranean coast to the North. Thirty thousand rock paintings and engravings in all mountainous areas are known, half from Tassili in Algeria. The earliest phase is called the Bubalus Period (~5500 – 3500 BC), and the art shows animals that became extinct in the area, including the buffalo (bubalus), elephant, rhinoceros, and hippopotamus. The men are armed with clubs, throwing sticks, axes and bows, but never spears.

During the Cattle Period (~3500 – 1500 BC), the appearance of cattle and rams suggests the beginning of a herding economy. The domestication of the local wild Bos africanus cattle probably originated in the Sahara. Sheep and goats were also domesticated and spread from the
Sahara to Cyrinaica and Khartoum ~4500BC. The economic shift to cattle herding was accompanied by a change in settlement patterns, with settlements extending far out into the plain, such as this site at Adrar Bouis in the Tenere desert. Evidence suggests such villages covered a considerable large area and supported a large population, but building materials were insubstantial and left little trace. The horse seems to have been introduced by the Sea Peoples in about 1200 B.C., and with the horse came Cretan influence. Camel were thought to have been introduced in about 700 B.C.

Urban settlement began at a very early date in Africa. The earliest urban settlements were stone-walled towns in southern Mauritania that date back to sometime in the second millennium BC. An explosion of urban settlement in the Sahel region immediately south of the Sahara began between 600 and 200 BC. The Sahel is a hot, dry savannah that can support human agriculture and settlement. The first urban settlements were Sahelian: Jenne, Gao, and Kumbi (later Kumbi Saleh, the capital of the kingdom of Ghana). All of these urban centers grew up in oasis and river regions which could support such large populations.

Migrations:
When modern humans first started to leave Africa, about 50,000 years ago by present reckoning, they probably consisted of small groups of hunter-gatherers a few hundred strong. In their determined exploration of the world before them, they must have overcome, with the primitive means at their disposal, the extreme rigors of climate, terrain and perhaps the archaic human populations like the fearsome Neanderthals who had preceded them out of Africa.

African south of the Sahara lived largely in nomadic, hunter-gatherer groups up until 200 BC. However, early sub-Saharan Africans developed metallurgy at a very early stage, possibly even before other peoples. Around 1400 BC, East Africans began producing steel in carbon furnaces (steel was invented in the west in the eighteenth century).
African south of the Sahara lived largely in nomadic, hunter-gatherer groups up until 200 BC. However, early sub-Saharan Africans developed metallurgy at a very early stage, possibly even before other peoples. Around 1400 BC, East Africans began producing steel in carbon furnaces (steel was invented in the west in the eighteenth century).

The Iron Age itself came very early to Africa, probably around the sixth century BC, in Ethiopia, the Great Lakes region, Tanzania, and Nigeria. Iron technology, however, only spread slowly across Africa; it wasn’t until the first century AD that the smelting of iron began to rapidly spread throughout the continent.

**Bantu Migrations:**
The instrument of that spread was the Bantu migrations (dark brown arrows). Haplogroup L3 has been implicated in the Bantu expansion and L2 contributes 36% to the southeastern Bantu population. Bantu is a family of languages that are closely related and represent the largest linguistic family of African languages. The most recent archaeological and linguistic evidence suggested that the Bantu migrations originated in West Africa about 3,000 - 4,000 years ago, spreading both east and south. They migrated south into the rain forest regions around the Congo and they migrated east into the East African highlands. Wherever they migrated, they imposed their language, which mixed with and replaced indigenous languages. How they managed to impose their language on such a wide range of people across such a huge swathe of territory is anyone's guess. Further migrations in the first millennium then displaced the earlier Bantu immigrants, who pushed farther east and south. These Bantu immigrants would eventually found the civilization of the Mwenumatapa, or "Great Zimbabwe" civilization. Not only did the Bantu spread iron-smelting techniques across Africa, they also were responsible for diffusing agriculture, particularly agriculture of high-yield crops such as yams, bananas, and plantains. The spread of agriculture led to the explosive growth of village life all throughout Africa.
Urban settlement began at a very early date in Africa. The earliest urban settlements were stone-walled towns in southern Mauritania that date back to sometime in the second millennium BC. An explosion of urban settlement in the Sahel region immediately south of the Sahara began between 600 and 200 BC. The Sahel is a hot, dry savannah that can support human agriculture and settlement. The first urban settlements were Sahelian: Jenne, Gao, and Kumbi (later Kumbi Saleh, the capital of the kingdom of Ghana). All of these urban centers grew up in oasis and river regions which could support such large populations.

**African Slave Trade:**

Your ancestors are likely to have participated in the African Slave Trade. The exact numbers of Africans shipped overseas during the slave trade are hotly debated - estimates range between 10 and 28 million. Between 1450 and 1900 at least 12 million Africans were taken across the Atlantic - mainly to colonies in North America, South America, and the West Indies. Brazil imported 35% of those slaves, mostly of whom came from west central Africa. European traders would export manufactured goods to the west coast of Africa where they would be exchanged for slaves. However, Europe did not have a monopoly on slavery. Muslim traders also exported as many as 17 million slaves to the coast of the Indian Ocean, the Middle East, and North Africa. Within central Africa, the slave trade led to huge population upheavals. Coastal tribes fled slave-raiding parties, and captured slaves were redistributed to different regions in Africa. Slaves were obtained from along the west coast of Africa with the full and active co-operation of African kings and merchants. There were occasional military campaigns organized by Europeans to capture slaves, especially by the Portuguese in what is now Angola, but this accounts for only a small percentage of the total. In return, the African kings and merchants received various trade goods including beads, cowrie shells (used as money), textiles, brandy, horses, and perhaps most importantly, guns. The guns were used to help expand empires and obtain more slaves, until they were finally used against the European colonizers.

This information is meant to give you a plausible snapshot of what life was like when and where your maternal line originated. It combines the results of ongoing archaeological, linguistic and genetic research. Because the study of human pre-history is not exact and must rely on assumptions, scientists may disagree about the best interpretation of existing knowledge. As additional research results become available our assumptions may be updated or change completely. Your maternal inheritance is a small part of your overall inheritance but provides you with one of the clearest earliest views of your ancestry. It's like finding an especially beautiful and informative artifact in the remains of an ancient village or campsite. Genelex hopes
that this information has been exciting and informative to you. We are honored to have played a role in your search for your genetic ancestors.

Percentage of Population that are Haplogroup L2:

<table>
<thead>
<tr>
<th>Origin</th>
<th>L2a</th>
<th>L2b</th>
<th>L2c</th>
<th>L2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabo Verde</td>
<td>20</td>
<td>4</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Senegal</td>
<td>16</td>
<td>8</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>23</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Dominican Rep</td>
<td>15</td>
<td>7</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Brazil</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mozambique</td>
<td>43</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>!Kung/Khwe</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

References