

## Paternal Ancestry

A person's paternal ancestry can be traced by DNA on the Y-Chromosome or yDNA for short. Only men have a Y-Chromosome, which they inherited from their fathers and will pass on to their sons. However, women can easily find out about their paternal ancestry from the yDNA of a male relative, their father or brother, for instance. The yDNA traces a man's unbroken paternal line back way into the past in the same manner that your maternal ancestry is traced by mtDNA. All our paternal ancestry services are based on results of our Y-Clan analysis. This uses twenty six carefully selected Y-chromosome markers to reveal your Y-chromosome signature. Scientific research throughout the world has shown that all our paternal lines are connected somewhere in the past and that these connections can be traced by reading the yDNA. As with maternal genealogies defined by mtDNA, men tend to cluster into a small number of groups, 18 in total, which can be defined by the genetic fingerprints of their yDNA. In native Europeans, for example, there are 5 such groups, among Native Americans there are 4, among Japanese people there are 5, and so on. The men within each of these groups are all ultimately descended from just one man, their clan father. Obviously, these ancestral clan fathers were not the only men around at the time, but they were the only ones to have direct male descendants living today. The other men around, or their descendants, had either no children at all or only daughters. These clan fathers also had male ancestral lines and these ultimately converge on the common paternal ancestor of every man alive today. This man, known as "Y-Chromosome Adam", lived in Africa 60,000 - 80,000 years ago. For our classic Y-Clan service we read twenty-six elements of your yDNA fingerprint and build up a signature. By comparing it to thousands of others in our database, obtained from throughout the world, we are able to deduce your paternal clan and your ancient ancestral father. Not only will we be able to tell you from which ancient clan father you are descended, we will also give you some information as to when and where he lived. The genetic elements of your signature also change over the generations and by comparing your genetic signature with those of others it is possible to tell, on the balance of probability, how closely you are related. In many countries, surnames are also passed down from father to son, just like the Y-Chromosome. This means that you also can use your Y-Clan results to investigate your paternal lines alongside more traditional genealogical sources in a very powerful combination. For example, you will be able to compare your Y-Clan results with those of other men with the same surname to see whether you share a genetic connection. Our Chairman and founder, Prof Sykes, was the first scientist to establish this connection between surnames and Y-Chromosomes.