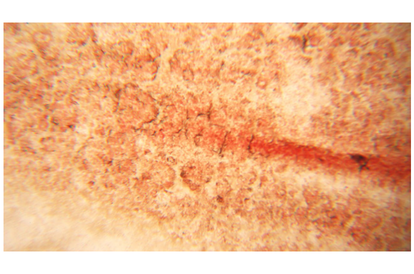
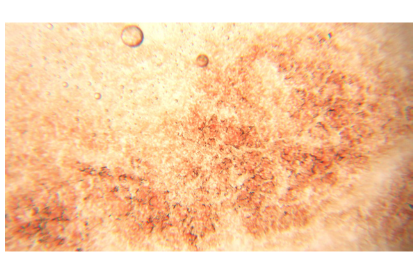
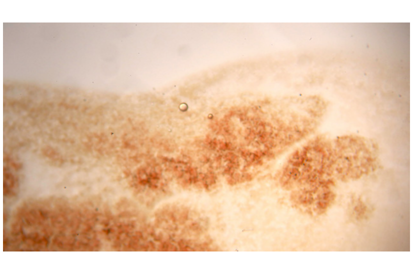
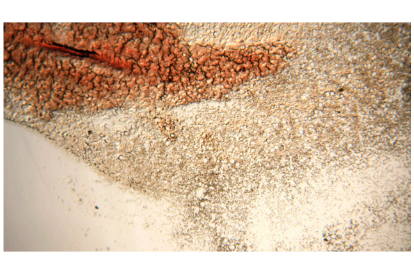
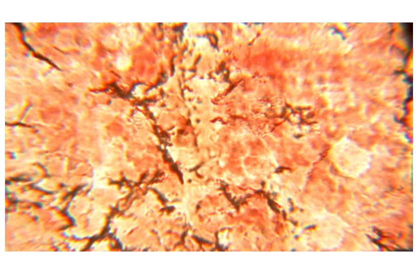
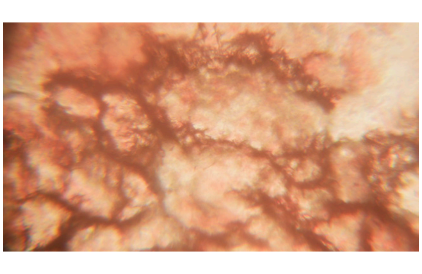
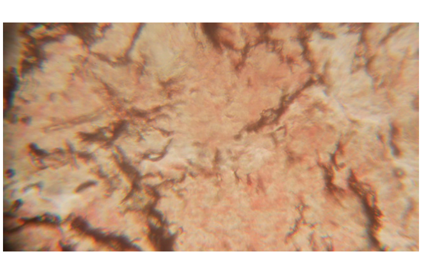
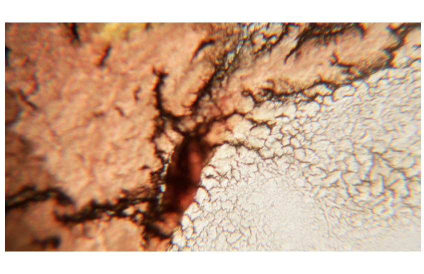
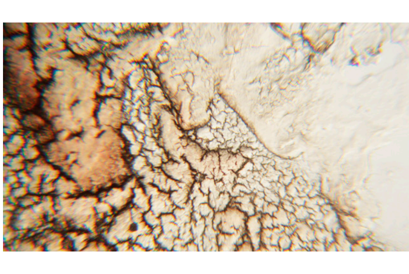
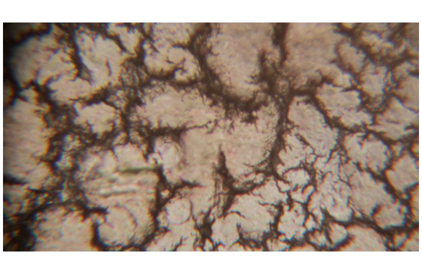
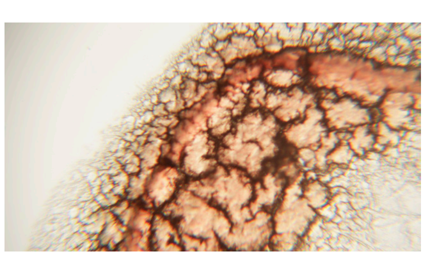
First project ideas ...

WHAT YOU WILL GET

Regional Ancestry Makeup

A breakdown of your regional ancestry by percentage, going as far back as 200,000 years

Deep Ancestry Report

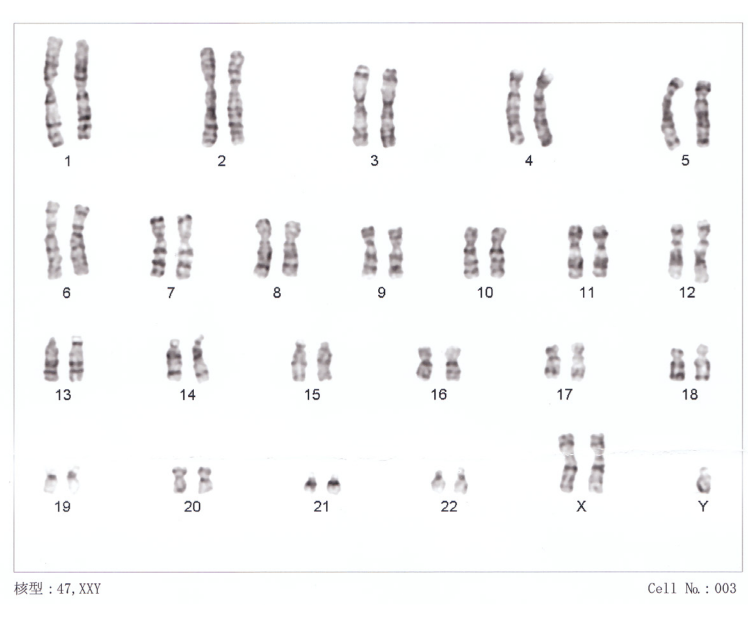
A rich report that reveals the anthropological story of your ancestors—where they lived and how they migrated.

Your Hominin Ancestry

When our ancestors first migrated out of Africa around 60,000 years ago, they met other hominin species and interbred.

NEW: Historical Genius Matches

Geno 2.0 Next Gen with Helix now includes Historical Genius Matches. Through analysis of your mitochondrial or Y-chromosome DNA, we tell you which famous "geniuses" you could be related to.



核型：47, XXY Cell No.：003

Klinefelter syndrome (KS) also known as 47,XXY or XXY, is the set of symptoms that result from two or more X chromosomes in males. The primary features are sterility and small testicles. Often symptoms may be subtle and many people do not realize they are affected.

Tests using DNA information about a single lineage (Y or mtDNA) cannot tell you detailed genealogical information

Because Y chromosome and mtDNA follow one line of inheritance (patrilineal or matrilineal), they can inform us about a single line of ancestors. But that is only one of your many ancestral lineages, and it becomes increasingly irrelevant to your total ancestry the further back in time you go: beyond more than a few generations, most people's ancestry is complex and becomes difficult to determine from genetics. Researchers choose to look at Y chromosome or mtDNA precisely because they follow a simplified pattern of inheritance that it is possible to study. The problem comes when commercial genetic ancestry tests treat this kind of data as though it is the whole story.

- Researchers look at mtDNA to follow ancestry passed along the female line. For mtDNA, everyone alive today shares a common ancestor who lived between 160,000 and 200,000 years ago.[1]
- When researchers look at Y chromosome DNA to follow ancestry through the male line, the most recent estimate is of a common ancestor who lived between 240,000 and 580,000 years ago.[2]
- If we look at sections of DNA from other parts of the genome (autosomal DNA), the date of a 'common ancestral section of DNA' (that is, a section of DNA that everyone alive today has inherited) varies from gene to gene, but has been estimated to average around 1 million years ago.[3]

- **Autosomal** tests look at chromosomes 1–22 and X. The autosomes (chromosomes 1–22) are inherited from both parents and all recent ancestors. The X-chromosome follows a special inheritance pattern. Ethnicity estimates are often included with this sort of testing.
- **Y-DNA** looks at the Y-chromosome, which is inherited father to son, and so can only be taken by males to explore their direct paternal line.
- **mtDNA** looks at the mitochondria, which is inherited from mother to child and so can be used to explore one's direct maternal line.

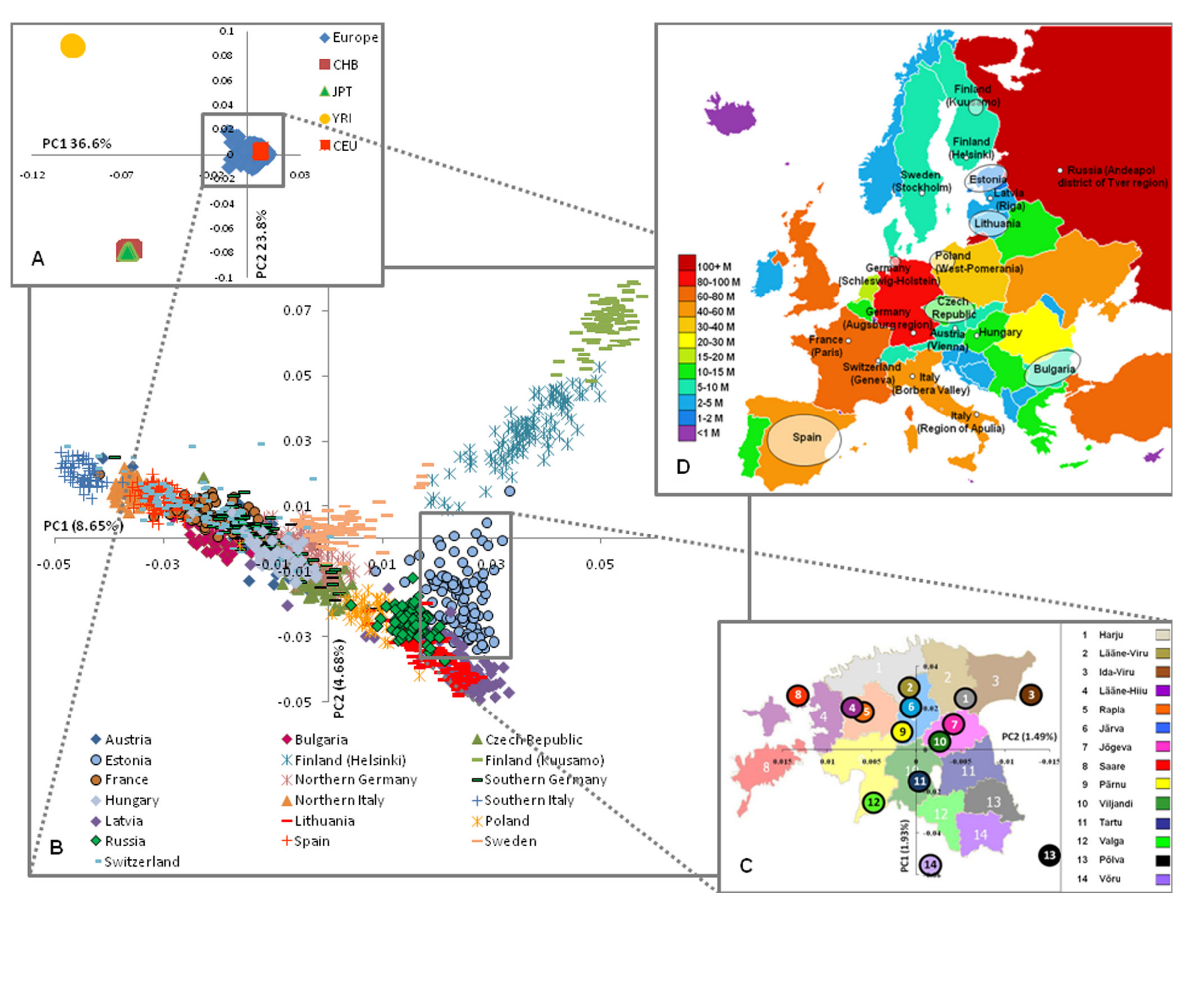
Ethnicity Estimates [edit]

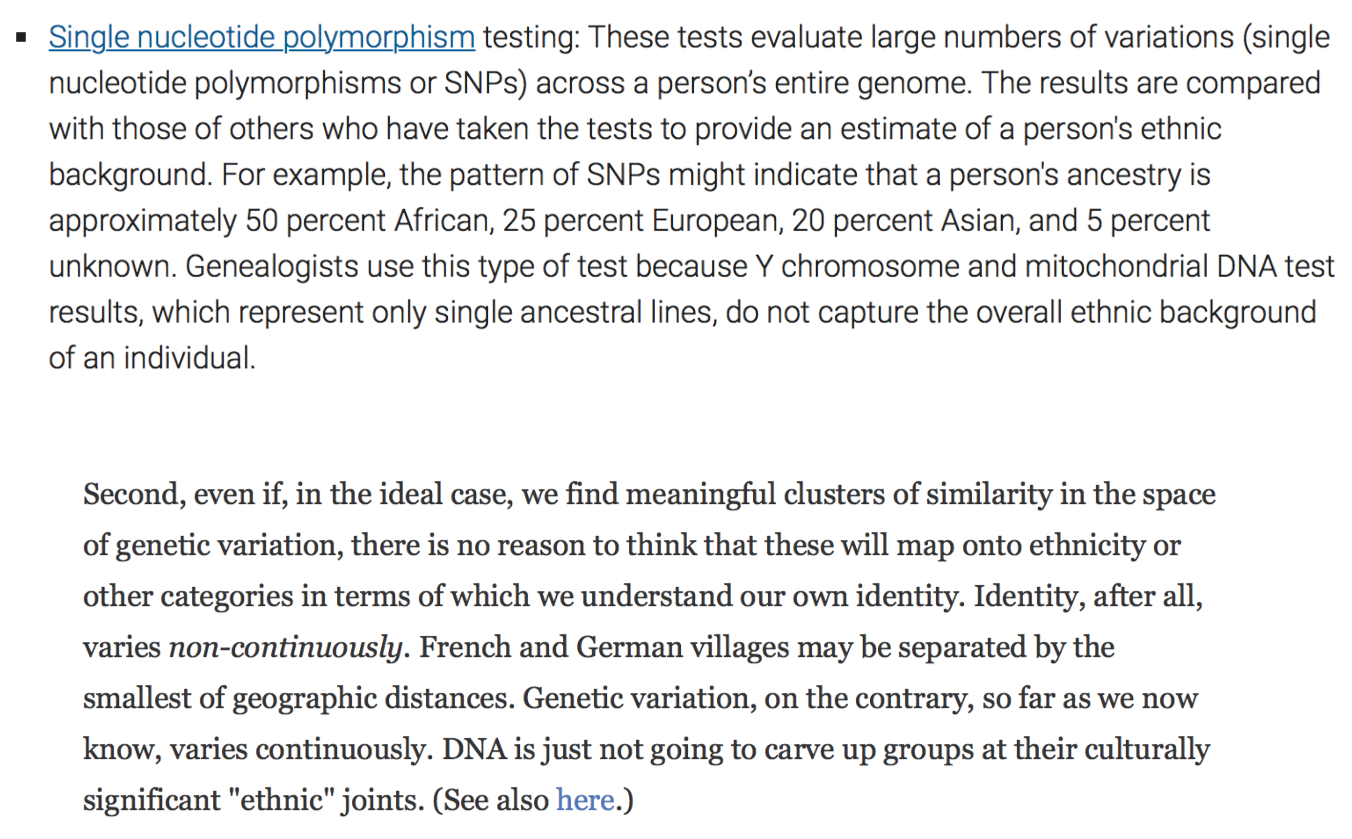
Many companies offer a percentage breakdown by ethnicity or region. Generally the world is specified into about 20–25 regions, and the approximate percentage of DNA inherited from each is stated. This is usually done by comparing the frequency of each Autosomal DNA marker tested to many population groups.[2] The reliability of this type of test is dependent on comparative population size, the number of markers tested, the ancestry informative value of the SNPs tested, and the degree of admixture in the person tested. Earlier ethnicity estimates were often wildly inaccurate, but their accuracies have since improved greatly. Usually the results at the continental level are accurate, but more specific assertions of the test may turn out to be incorrect. For example, Europeans often receive an exaggerated proportion of Scandinavian.[10] Testing companies will often regularly update their ethnicity estimate, changing an individual's ethnicity estimate.

Ethnicity tests [edit]

As discussed above, autosomal tests usually report the ethnic proportions of the individual. These attempt to measure an individual's mixed geographic heritage by identifying particular markers, called ancestry informative markers or AIM, that are associated with populations of specific geographical areas. Geneticist Adam Rutherford has written that these tests "don't necessarily show your geographical origins in the past. They show with whom you have common ancestry today."[27]

The haplogroups determined by Y-DNA and mtDNA tests are often unevenly geographically distributed. Many direct-to-consumer DNA tests described this association to infer the test-taker's ancestral homeland.[4] Most tests describe haplogroups according to their most frequently associated continent (e.g., a "European haplogroup").[4] When Leslie Emery and collaborators performed a trial of mtDNA haplogroups as a predictor of continental origin on individuals in the Human Genetic Diversity Panel (HGDP) and 1000 Genomes (1KGP) datasets, they found that only 14 of 23 haplogroups had a success rate above 50% among the HGDP samples, as did "about half" of the haplogroups in the 1KGP.[4]





General features [edit]

Genealogy software products differ in the way they support **data acquisition** (e.g. drag and drop data entry for images, flexible data formats, free defined custom attributes for persons and connections between persons, rating of sources) and **interaction** (e.g. 3D-view, name filters, full text search and dynamic pan and zoom navigation), in **reporting** (e.g.: fan charts, automatic narratives, relationship between arbitrary people, place of birth on virtual globes, statistics about number of children per family), **validation** (e.g.: consistency checks, research assistants connected to online genealogy databases), **exporting** (e.g.: export as web page, book or wall chart) and **integration** (e.g.: synchronisation with tablet version). Some software might include also fun and **entertainment** features (e.g. quizzes or slideshows).

Name	Individual view	Family view	Pedigree view	Chronology view	Ancestor charts	Ancestor narrative reports	Ancestor pedigree reports	Descendant charts	Descendant narrative reports	Fan charts	Research Manager	DNA charts	Research Guidance	Mapping
Agelong Tree	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Ahnenblatt	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes
Ancestral Quest	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Brother's Keeper	Yes	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	?	?	No	?
Family Historian[a]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Family Tree Builder	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Family Tree Maker (Windows)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	Yes	Yes
Family Tree Maker for Mac	Yes	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	Yes	?	?	No	Yes
GEDitCOM II	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Genbox Family History	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
GenealogyJ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
GenEarth	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	?	?	Yes
Genney	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	?	?	Yes
GenoPro	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	?	No	Yes
Gramps	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Heredis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Legacy Family Tree[b]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LifeLines	Yes	Yes	Yes	?	?	?	?	?	?	?	?	?	No	?
MacFamilyTree	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No	Yes
Personal Ancestral File	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	?	No	?
Reunion	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes
RootsMagic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
The Master Genealogist	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	?	No	?

a. ^ Family Historian users can also optionally install free plugins (access to the Family Historian plugin store is integrated into the program). Scripting tools are included for automation of repetitive tasks, and much more.
b. ^ Legacy Family Tree can also save DNA Test Results and Print the values. Mapping is included to automatically pinpoint and plot important locations in ancestors' lives.

- Single nucleotide polymorphism testing: These tests evaluate large numbers of variations (single nucleotide polymorphisms or SNPs) across a person's entire genome. The results are compared with those of others who have taken the tests to provide an estimate of a person's ethnic background. For example, the pattern of SNPs might indicate that a person's ancestry is approximately 50 percent African, 25 percent European, 20 percent Asian, and 5 percent unknown. Genealogists use this type of test because Y chromosome and mitochondrial DNA test results, which represent only single ancestral lines, do not capture the overall ethnic background of an individual.

Second, even if, in the ideal case, we find meaningful clusters of similarity in the space of genetic variation, there is no reason to think that these will map onto ethnicity or other categories in terms of which we understand our own identity. Identity, after all, varies *non-continuously*. French and German villages may be separated by the smallest of geographic distances. Genetic variation, on the contrary, so far as we now know, varies continuously. DNA is just not going to carve up groups at their culturally significant "ethnic" joints. (See also here.)

According to one study, "customers who were shown by the tests to have less than 28 percent of African ancestry self-describe as European American." Does this mean that their self-indentifications are incorrect? They are really black?

There's is no doubt that we *can* make — and, indeed, as scientists interested in our human origins *must* make — generalizations about the genetic makeup of populations across the globe and over time.

The question is, can it ever be more than fantasy to try to draw meaningful conclusions about an individual's origins on the basis of the sort of DNA information that is available to us now?