

Spanish hunter-gatherer had blue eyes and dark skin

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La Braña 1, the name used to baptize a 7,000-year-old individual from the Mesolithic Period, had blue eyes and dark skin. Credit: Spanish National Research Council

La Braña 1, name used to baptize a 7,000 years old individual from the Mesolithic Period, whose remains were recovered at La Braña-Arintero site in Valdelugueros (León, Spain) had blue eyes and dark skin. These details are the result of a study conducted by Carles Lalueza-Fox, researcher from the Spanish National Research Council (CSIC), in collaboration with the Centre for GeoGenetics (Denmark). La Braña 1 represents the first recovered genome of an European hunter-gatherer. The research is published in *Nature*.

The Mesolithic, a period that lasted from 10,000 to 5,000 years ago (between the Paleolithic and the Neolithic), ends with the advent of agriculture and livestock farming, coming from the Middle-East. The

arrival of the Neolithic, with a carbohydrate-based diet and new pathogens transmitted by domesticated animals, entailed metabolic and immunological challenges that were reflected in genetic adaptations of post-Mesolithic populations. Among these is the ability to digest lactose, which La Braña individual could not do.

Lalueza-Fox states: "However, the biggest surprise was to discover that this individual possessed African versions in the genes that determine the light pigmentation of the current Europeans, which indicates that he had dark skin, although we can not know the exact shade".

CSIC researcher, who works at the Institute of Evolutionary Biology (a joint centre of CSIC and the University Pompeu Fabra (UPF), located in Barcelona, adds: "Even more surprising was to find that he possessed the genetic variations that produce blue eyes in current Europeans, resulting in a unique phenotype in a genome that is otherwise clearly northern European".

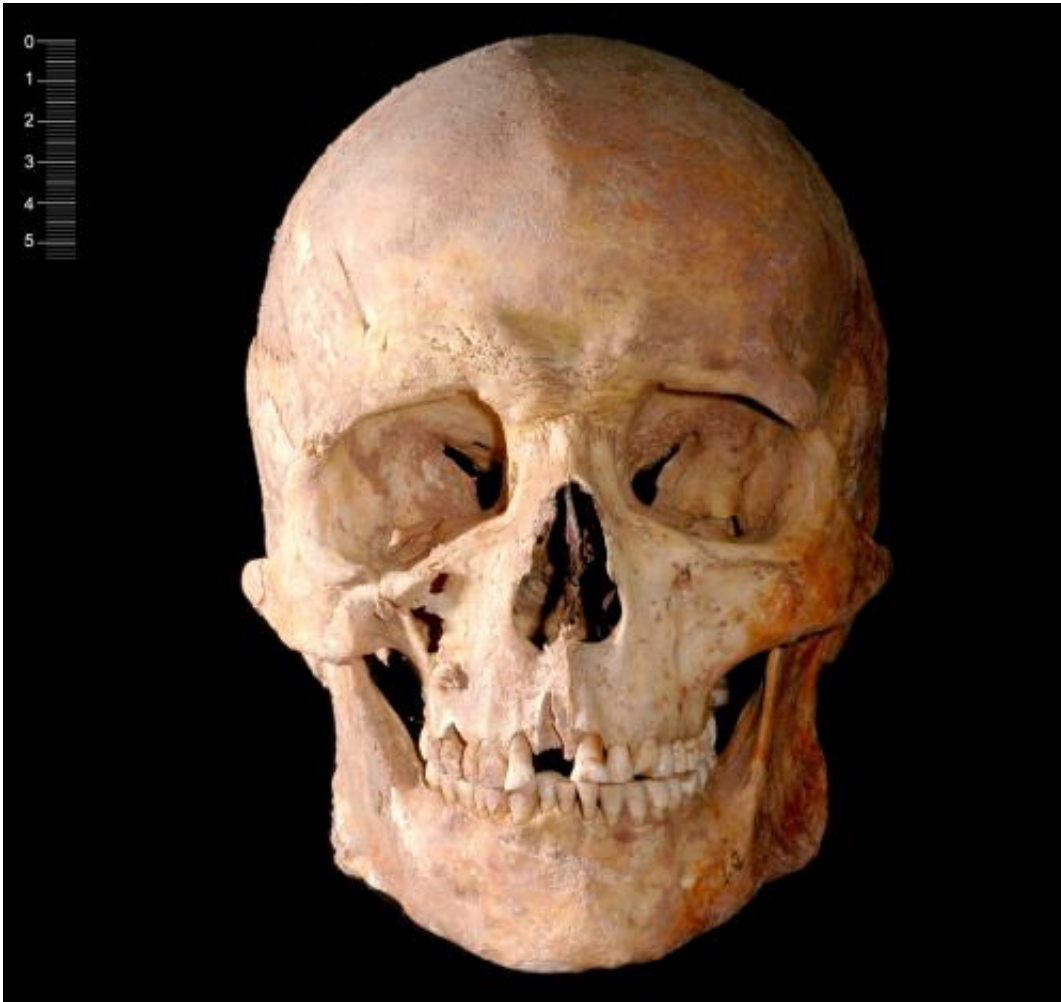


The skeleton of La Braña 1, as it was discovered in 2006. Credit: J.M. Vidal Encina

The study of the genome suggests that current populations nearest to La Braña 1 are in northern Europe, such as Sweden and Finland. In addition, the work points out that La Braña 1 has a common ancestor with the settlers of the Upper Paleolithic site of Mal'ta, located in Lake Baikal (Siberia), whose genome was recovered a few months ago. Lalueza-Fox concludes: "These data indicate that there is genetic continuity in the populations of central and western Eurasia. In fact, these data are consistent with the archeological remains, as in other excavations in Europe and Russia, including the site of Mal'ta, anthropomorphic figures –called Paleolithic Venus– have been recovered and they are very similar to each other".

DNA with an "exceptional" preservation

La Braña-Arintero site was discovered by chance in 2006 and excavated by Julio Manuel Vidal Encinas, archeologist of the Council of Castilla y León. The cave, located in a cold mountainous area with a steady temperature and 1,500 meters below the sea level, contributed to the "exceptional" preservation of the DNA from two individuals found inside, and they were called La Braña 1 and La Braña 2.



Frontal view of the La Braña 1 skull. Credit: J.M. Vidal Encina

According to Iñigo Olalde, lead author of the study, "the intention of the team is to try to recover the genome of the individual called La Braña 2, which is worse preserved, in order to keep obtaining information about the genetic characteristics of these early Europeans".

More information: Paper: [dx.doi.org/10.1038/nature12960](https://doi.org/10.1038/nature12960)

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