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Past religious diversity and intolerance have profound impact on genetics of Iberian people

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New research suggests that relatively recent events had a substantial impact on patterns of genetic diversity in the southwest region of Europe. The study, published by Cell Press on December 4th in the *American Journal of Human Genetics*, shows that geographical patterns of ancestry appear to have been influenced by religious conversions of both Jews and Muslims in the Iberian Peninsula.

"Most studies of European genetic diversity have focused on large-scale variation and interpretations based on events in prehistory, but migrations and invasions in historical times may also have profound effects on genetic landscapes," explains senior study author Prof. Mark A. Jobling from the Department of Genetics at the University of Leicester. Prof. Jobling and colleagues performed a sophisticated genetic analysis of 1140 males from the Iberian Peninsula and the Balearic Islands, focusing on the Y chromosome, which is passed down from fathers to sons.

The researchers found a remarkably high level of Sephardic Jewish (19.8%) and North African (10.6%) ancestry in their large sample of Y chromosomes from the modern population. The Iberian Peninsula has a complex recent history that involves the long-term residence of these two diverse populations with distinct geographical origins and unique cultural and religious characteristics.

The large proportion of Sephardic Jewish ancestry does not fit with simple expectations from the historical record. "Despite alternative possible sources for lineages [to which] we ascribe a Sephardic Jewish origin, these proportions attest to a high level of religious conversion, whether voluntary or enforced, driven by historical episodes of social and religious intolerance that ultimately led to the integration of descendants," offers Prof. Jobling.

Additionally, the prominent North African lineage in Iberian populations exhibits low diversity, which favors its arrival after the conquest of 711 AD, and the geographical distribution of North African Ancestry in the peninsula does not reflect the initial colonization and subsequent withdrawal. "This is likely to result from later enforced population movement – more marked in some regions than others," explains Prof. Jobling.

The research demonstrates that both immigration events from the Middle East and North Africa over the last two millennia and introduction of new Y-chromosome types driven by religious conversion and intermarriage have had a dramatic impact on modern populations in Spain, Portugal, and the Balearic Islands. In addition, the findings indicate that recent history should be considered when investigating the impact of events occurring during the earlier prehistory of Europe. The research was funded by the Wellcome Trust.

Source: Cell Press