
Genome-wide investigation of the West European Mesolithic-Neolithic transition

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Résumé

In recent years the expansion of early farmers from the Near East across Europe has been investigated in greater detail using genomic data. Incoming farmer groups have been shown to have a clear Near Eastern/Anatolian cultural and genetic background with only limited biological contact with autochthonous hunter-gatherers for at least two millennia, despite considerable evidence of mutual material exchange. The contribution of hunter-gatherer ancestry is very low in Central and Southeastern Europe, whereas early farmers from the Iberian Peninsula showed generally higher genetic contribution, albeit with regional variations.

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Other parts of western Europe, in particular modern-day France, are less well-studied despite the fact that this region archaeologically displays a complex mosaic pattern of interaction with late Mesolithic hunter-gatherer societies. Here, archaeological research also attests the convergence/overlap of two main routes (Danubian and Mediterranean) of the Neolithic expansion of early farmers. Despite this crucial geographic position in the process of Europe's Neolithisation, thus far only mitochondrial DNA studies have explored the underlying biology of these interactions. Analyses of maternal lineages of 7000-year-old farmers from northern France suggest equivalent contributions of maternal lineages from farmer groups associated with both expansion routes to local gene pools, as well as a higher proportion of hunter-gatherer lineages than described for regions in Central or Southern Europe.

As part of a joint collaboration between French and German teams, we will generate the first detailed genomic data from Western European individuals. We will analyse a wide variety of geographical and cultural contexts, from the 7th to the 4th millennium BCE, and will investigate whether the archaeologically derived entities also represent genetically homogenous clusters. Through a solid contextualisation with archaeological data, this will allow us to shed light on cultural/biological contacts, modes of exchange, and to carry out demographic modelling. Here, we will present our project outline and preliminary data investigating the complexity and variability in cultural and biological interactions between human groups during the Neolithic period in Western Europe.

Mots-Clés: Ancient DNA, Neolithic, Mesolithic, Neolithic transition, population genetics