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# Stable isotope reconstruction of the "Mediterranean" diet throughout the millennia

*Reconstruction isotopique du régime alimentaire "méditerranéen" à travers les millénaires*

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- <sup>1</sup> Human and animal bones, as well as botanical remains recovered from archaeological sites, preserve the carbon, nitrogen and sulphur ( $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ,  $\delta^{34}\text{S}$ ) signatures of their last years of life. These isotope ratios are connected to the protein portion of the diet and can be used to investigate the dietary strategies of past populations. Several studies have already been undertaken on this topic across the Mediterranean basin. This paper aims at reconstructing the diet in the Mediterranean basin in the past, using a meta-analysis approach on already published isotopic data. The purpose is to identify, if possible, when and how the diet of prehistoric communities changed in what we identify today as "Mediterranean diet", recognised as part of the Intangible Cultural Heritage by UNESCO in 2010. A statistical Bayesian method is employed to look at trends and shifts that took place from the Neolithic to the Iron Age (6000-600 BCE ca.). Spatio-temporal models can help us observe how communities dealt with social and economic changes at different times in history: from the rise of farming economies in the Neolithic, and the introduction of metal working in the Copper Age, to the increasing social stratification of the Bronze Age, and the local fragmentation of societies in the Iron Age. Likewise, these models can show us similarities and differences across different areas, to investigate the different feeding strategies applied simultaneously by different communities. Since this approach is completely based on already published data, it offers a non-invasive and non-destructive alternative for reconstructing past diets. Moreover, it allows spatial and chronological gaps in the literature to be identified, thus enabling future invasive and destructive research to be

directed towards those areas and periods not yet investigated through stable isotope analysis.

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