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### ISOTOPIC INVESTIGATION IN THE REGION OF *PAX JULIA* DURING PALEOCHRISTIAN OCCUPATION: PALEODIETS AND MOBILITY

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In this study, diet and mobility of the Palaeochristian populations from the Roman villae of São Cucufate and Cegonha, and from the necropolis of Alpendre dos Lagares, located in the Beja region in southern Portugal, was investigated by isotopic analysis.

Osteological tissues provide information on diet and mobility of the individuals.

Isotopic analysis of  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of bones can be used to determine the food intake of ancient populations whose dietary habits are not well known due to the lack of archaeological evidence. Isotopic ratios of the bone organic ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ) and inorganic fractions ( $\delta^{13}\text{C}$ ) can provide information on the types of plants ingested, the amount of animal resources, terrestrial versus marine resources, as well as breastfeeding and weaning practices.

Individual mobility can be assessed by the measurement of  $^{87}\text{Sr}/^{86}\text{Sr}$  in the inorganic fraction of teeth and bones. The local  $^{87}\text{Sr}/^{86}\text{Sr}$  geological signature where the individual spent its childhood is recorded in the teeth, while  $^{87}\text{Sr}/^{86}\text{Sr}$  recorded in bones relates to the place where the individual spent the last 10 years before death. Comparison of the Sr isotopic signature of teeth and bones can be used to infer about

the individual's mobility pattern.

Bone isotopic analysis can be compromised by the diagenetic processes which occur during burial. In this study, FTIR (Fourier Transformed Infrared Spectroscopy) and XRD (X-Ray Diffraction) analyses were used to assess the diagenetic processes impacting the skeletons.

Dietary isotopic analysis of studied populations indicates a mixed terrestrial diet, with some small inter- and intra-population variations. Dietary isotopic values obtained for the Palaeochristian population of Pax Julia are roughly similar to Roman populations in the Mediterranean area. In terms of mobility, analysis of the Cegonha individuals proved they were mainly local with some evidence of limited movements.

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