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## Diet and mobility during the Christian conquest of Iberia: The multi-isotopic investigation of a 12th–13th century military order in Évora, Portugal

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## ABSTRACT

The Kingdom of Portugal was established with the help of military-monastic orders, which provided important defence against Muslim armies during the 12th–13th century Christian conquest. While historical sources document the main events of this period, this research seeks to elucidate individual lifestyles and movement, aspects typically absent from written records. A multi-isotopic approach was used on skeletal material from eight Christian and two Muslim burials from Évora, Portugal (11th–13th centuries). Anthropological and archaeological evidence suggests the Christian adults belonged to the Évora Militia, which we seek to confirm through the reconstructed diet and mobility of these individuals. Stable carbon, nitrogen and sulphur isotopes were measured in bone collagen, and radiogenic strontium, carbonate stable oxygen and apatite stable carbon isotopes were measured in tooth enamel. Results of the stable oxygen and radiogenic strontium isotopes indicated diverse origins of the Christian population, while at least one individual was local. The Muslim adult was local, as anticipated. The  $\delta^{13}\text{C}_{\text{en}}$  (enamel) values provide evidence of childhood consumption of different cereals ( $\text{C}_3$  and  $\text{C}_4$ ), possibly linked to social status. The  $\delta^{13}\text{C}_{\text{coll}}$  (bone collagen) human values indicated mostly  $\text{C}_3$  diets with varying inputs of  $\text{C}_4$ , while  $\delta^{15}\text{N}$  reflected high protein intake overall. The mean diet-consumer spacing of this population was compared to other isotopic studies from Medieval Iberia and other European monastic/convent populations. A visible trend emerged in populations that likely followed religious fasting rules, including the Évora Christians. The results of this study indicate that the Order of Évora was composed of members from diverse geographic and possibly social origins, an aspect previously unclear in written sources.

## 1. Introduction

Stable isotope studies as tools to reconstruct the diet and/or mobility of populations have been used increasingly in archaeological research elsewhere in Iberia (Quiros Castillo, 2013; Alexander et al., 2015; Jiménez-Brobeil et al., 2016; Guede et al., 2017a, 2017b; Lubritto et al., 2017; MacKinnon et al., 2019). In Portugal, only a few relatively recent studies (Luxton, 2015; Curto et al., 2018; Toso et al., 2019)

applied stable isotopes to reconstruct the way of life of medieval populations. This approach is used here to investigate the Christian conquest of the Iberian Peninsula, which was a period of significant cultural, religious and ideological change. During the 12th and 13th centuries, military monastic orders were established and expanded throughout Spain and Portugal to capture cities and towns from Islamic control and protect them against recurring attacks (Faria, 2001; Farwell and Molleson, 1993). A series of excavations in the museum cellars in

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