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random non-SOs. Results: (1) SOs tend to decrease with age ($r = -0.234$; $p = 0.04$) but do not increase with HR implant (3.4% SOs vs. 3.4% SOs; $p = 0.9$) or with duration of HR implantation ($r = 0.09$; $p = 0.6$); (2) SOs occur in significantly smaller osteons when compared to normal osteons (mean diameters: 146 vs. 320 microns; $p < 0.005$). The theory that SOs result from ischemia is not supported by the negative correlation of SOs with age or the lack of correlation of SOs with HR. Although we hypothesize that SOs represent the narrowed tip of osteon "closing cones", a reduction in prevalence of closing cones with age seems unlikely. Additional 3D studies are needed.

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Re-evaluating the co-occurrence and age of formation of Harris lines and linear enamel hypoplasia

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The use of indicators of systemic stresses, such as Harris lines (HL) and linear enamel hypoplasia (LEH), as a means of assessing past population health has been called into question in recent years. This study examines the ages of formation and co-occurrence of HL and LEH in a medieval British sample from the site of Poulton, which includes both adults and juveniles. A population-specific method of aging HL formation was developed for this study because our previous research revealed a different center of ossification estimation for all populations analyzed, and notable differences in growth rates among British populations across time and socioeconomic environments. As such, it is clear that standardized methods would not yield accurate ages of HL formation. The population-specific method is based on diaphyseal long bone lengths in the tibia, the element in which HL most commonly occur. Ninety Poulton individuals with dentition and complete tibiae were radiographed. Of these, 63 (70%) were found to have HL. The ages at which these lines formed were clustered into two ranges – between 2-3 and 7-11 years. LEH on the maxillary and mandibular canines was also recorded and 45 (50%) individuals presented both LEH and HL. The LEH formed mainly between the ages of 2-4 years. It is concluded that although the same stress factors may not result in the simultaneous occurrence of these two indicators, some individuals may be predisposed to both arrested growth and enamel disturbances.

Temporal variation in the neural canal among southern African foragers: implications for dynamic foraging strategies and social conditions in the later Holocene

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The terminal Later Stone Age on the southwestern African Cape features a short period of intense land use, more limited home ranges, and occasional lethal violence. Mean body sizes are smallest during this period, suggesting that some foragers experienced statural stunting. This study compares temporal variation in the size of the neural canal (NC) with that in body size ($N = 105$; $M = 56$; $F = 49$). Z-transformed mediolateral (ML) and anteroposterior (AP) NC diameters, maximum femur lengths (FXL) and femur head diameters (FXH) are regressed on radiocarbon date using polynomial regression. Mean sizes are compared before, during, and after the intensification period with one-way ANOVA. FXL, FXH, and ML-NC exhibit similar quadratic curves with a nadir between 2000 and 3000bp. Mean values are greatest after the intensification period ($p < 0.05$). However, regression models are markedly stronger for FXL and FXH than for NC (FXL $\beta_1 = -1.60$, $\beta_2 = 1.43$, $R^2 = 0.20$, $p < 0.05$; FXH $\beta_1 = -1.64$, $\beta_2 = 1.49$, $R^2 = 0.20$, $p < 0.05$; NC-ML $\beta_1 = -0.83$, $\beta_2 = 0.68$, $R^2 = 0.06$, $p < 0.05$). The attenuated change in NC size, in contrast with the apparent decrease in body size suggests that the intensification period did not strongly affect early childhood growth among those who survived to adulthood. The terminal Holocene increase in average size coincides with a possible population contraction and with the earliest regional appearance of livestock. Subsistence and demographic changes, accompanied by the shift in average body and neuroskeletal size, may signal that social conditions were shifting away from an earlier Holocene status quo.

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Anthropological studies of past societies from the Hualfin valley in northern Argentina: A preliminary report

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The Hualfin valley is located in the province of Catamarca in northwestern

Argentina. The valley has been characterized by a significant sequence of prehistoric occupation of different societies during Pre-Columbian times. The earliest agro-pastoralist societies in the area emerged in the valley between BC III and AD IV during the Formative Period. Unlike other Pre-Hispanic societies of northern Argentina, little information has been recorded about their funerary practices and the anthropological characteristics of the populations involved.

The aim of this paper is to present the preliminary results of the anthropological study of different burials recovered in the Hualfin valley corresponding to the earlier agro-pastoralist societies of the Formative Period. The skeletal sample consists of 19 individuals and was exhumed from burials in an archaeological site in the vicinities of Azampay, located in the western piedmont of the valley. The sample comprises 10 adults, including 6 females and 4 males, and 9 subadults. Dental and skeletal morphology and paleopathology are recorded, along with nonmetric and metric traits. Diverse patterns of burials are noted which may suggest social differences in these past societies. Individuals do not exhibit cranial modification as it was common in the area in later periods. The anthropological data collected in this study provide more information about the ancient peoples of the region and are a major contribution to the human biology of the area. Further studies in the Hualfin valley will allow increasing current knowledge about biocultural aspects of human populations of the Formative Period in northwestern Argentina.

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The mental eminence as a marker of sexual dimorphism in dentate and edentulous individuals: An analysis using geometric morphometry

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The mandible is often used for sex estimation as many mandibular studies have identified morphological differences among males and females. Sexual dimorphism of the mandible has also been shown to vary in relation to population samples. Specifically, the shape of the mental eminence is commonly utilized to estimate if an individual is male or female. However, mental eminence shape is not typically quantified and accuracy of traditional and often subjective non-metric methods can be poor.

Further confounding sex estimation from bony elements of the skull is the biomechanical implications of antemortem tooth loss. Several studies highlight changes in morphology of edentulous mandibles in comparison to dentate samples. Thus inquiry of quantification of the