

ABSTRACTS

anterior talocrural joint linked to the mechanics of vertical climbing. Additionally, we identify talar features potentially indicating a shift in climbing style among later hominins. Our results are consistent with the hypothesis that humans evolved from an ancestor with an African ape-like positional repertoire.

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Stressed to the tooth? A pilot study of cortisol in archaeological tooth structures

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Cortisol is a glucocorticoid hormone produced through activation of the hypothalamic-pituitary-adrenal (HPA) axis. It is known as the “stress hormone” for its primary role in the body's stress response. Although a significant focus in modern clinical research, only a few studies have analyzed cortisol in archaeological human remains and these have been limited to hair. Tooth dentine and enamel preserve well archaeologically and may be possible reservoirs for detectable levels of cortisol in human skeletal remains. To test this hypothesis, 69 teeth from 65 individuals were analyzed via competitive enzyme-linked immunosorbent assay (ELISA) to assess and quantify the cortisol concentrations present within tooth structures. Selected individuals derived from five sites in France dated to between the 1st and the 7th centuries CE. In both tooth dentine and enamel, detectable concentrations of cortisol were identified in multiple teeth. However, cortisol concentrations were low and not all teeth yielded results that were measurable through cortisol ELISA. Differences in cortisol values between dentine and enamel could suggest different uptake mechanisms or timing. These results indicate that cortisol is incorporated within tooth structures and merits further investigation in both modern and archaeological contexts. Future studies of cortisol in tooth structures would greatly expand the research potential of cortisol in the past and could have implications for studies of human stress across deep time.

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Chew on this: Dental wear patterns in biomedical and wild *Macaca fascicularis* specimens

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Previous work has found that the removal or blunting of canines did not alter dental wear patterns in biomedical macaques when compared to dentally unaltered specimens. However, previous work has not compared dental wear patterns with wild specimens, leaving the question: do biomedical and wild macaques exhibit different patterns of dental wear?

We compared maxillary and mandibular dental wear patterns among three groups of male *Macaca fascicularis*: biomedical sample with altered canines ($n=16$), biomedical sample without altered canines ($n=15$), and wild specimens ($n=16$). Wear was scored following Gantt's (1979) stages for occlusal wear in cercopithecines. The scored stages were then transformed into ranked data for analysis via Kruskal-Wallis and Mann Whitney U-tests.

Statistical tests revealed that the upper M1s in unaltered biomedical specimens had significantly less wear than in the other two groups. The lower M1s in the wild specimens had significantly more wear when compared to the unaltered specimens, but not when compared to the altered specimens. The upper and lower M3s in the wild specimens had significantly more wear than both biomedical groups. These results are consistent with previous work, suggesting that the removal or alteration of canines does not affect wear patterns, but that biomedical and wild specimens experience different degrees and/or patterns of wear. This is likely due to the substantial differences in hardness and variety of foods between biomedical and wild populations. Moreover, dental wear patterns are likely

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Cranial shape changes with age in male and female adults of *Papio*

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Ontogenetic changes to skull shape from juveniles to adults have been well researched and studied, but those that occur during adulthood are less well known. In this study, we collected 45 3D landmarks with a Microscribe 3DX digitizer of 345 wild-collected baboon (Genus *Papio*) crania representing all six currently recognized subspecies. As a proxy for age, we visually scored maxillary third molars for degree of wear. Landmarks were superimposed with generalized Procrustes analysis using MorphoJ. Procrustes coordinates were regressed against natural log-transformed upper third molar wear stage using multivariate tests

for significance. We used Landmark editor to warp a surface scan to show the shape changes correlated with increased molar wear. Results demonstrated a significant effect of molar wear stage on cranial shape, even after accounting for size, but it is a subtle effect that accounts for approximately 4.5% of shape variance. As the skull ages, the face seems to get longer while the orbitals and zygomatics shift posteriorly. The sexes do not differ in the pattern of shape changes and their regression slopes are parallel, meaning that the sexes do not age differently in their cranial shapes. The degree these shape changes are a consequence of genetics or bone remodeling due to strain experienced during life is unclear. Nonetheless, if this pattern is consistent across papionins, then it may help better to diagnose fossil taxa represented by small samples where it is unclear if differences are taxonomic or due to age.

Analyzing clinician views on race and genetic ancestry for treating hypertension

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Despite general consensus that there is no biological basis to race, racial categorization is still used by clinicians to guide diagnosis and treatment plans for certain diseases. In medicine, race is commonly used as a rough proxy for unmeasured social, environmental, and genetic factors that may contribute to disease. The American College of Cardiology's JNC 8 guidelines in fact provide race-specific treatment plans for hypertension in Black versus non-Black patients, but without genetic evidence for racial differences in drug response. The goal of this ongoing empirical study is to understand how clinicians value and use genetic ancestry data and racial classifications when practicing medicine. We analyzed interview data from 21 clinicians using qualitative analysis of open-ended questions about the use of race-related information and genetic ancestry in clinical decision making, how they defined race, and general perspectives about the role of race and ancestry in medicine. We presented clinicians with video cases of mixed race patients with hypertension symptoms and genetic ancestry results to determine which racial cues were prioritized in designing treatment plans. Preliminary results indicate that clinicians generally did not follow race-specific guidelines, relying instead on personal judgement and experience. Additionally, clinicians' definitions of race were variable and most did not often prioritize genetic ancestry data over other race related variables in classifying race or treating patients. Understanding how clinicians