

ABSTRACTS

from the physical activity sub-study (SAGE-PA) conducted in Uganda in 2013. Physical activity data were collected using ActiGraph GT3X accelerometers worn by 168 participants (71 men, 97 women) over 7 days. Associations between age, sex, lifestyle, and physical activity measures were examined to understand which factors mitigate decreased physical activity with age. We hypothesized that lifestyle factors like socioeconomic status, social support, and engagement in social activities would have significant effects on physical activity based on age and sex. Age was negatively correlated with activity energy expenditure (AEE) in men ($p < 0.001$) and women ($p < 0.001$). Women in this study were significantly younger than men ($p < 0.05$), so One-Way ANCOVAs controlling for age compared AEE between sexes, finding no significant differences. While AEE was not correlated with age in women who were married, it was negatively correlated with age in women who were divorced/separated ($p = 0.01$) and widowed ($p < 0.001$). The reverse was true for men, with married men showing negative correlations between AEE and age ($p < 0.01$). These preliminary analyses suggest that marital status, a measure of social support, differentially affects physical activity based on age and sex. Further analyses examine relationships between physical activity and other lifestyle factors.

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Macroscopic, microscopic and molecular biomarkers for age estimation: The role of environmental factors

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Inaccuracy in the estimation of age from the adult skeleton arises from individual and population variation in processes of skeletal ageing that can be attributed, at least in part, to the effects of environmental and genetic factors. The influence of these factors gives rise to reduced correlations between the expression of skeletal indicators ('age biomarkers') and chronological age, and may also be responsible for variation between populations in patterns of age-related change in the skeleton. Here I review the evidence for the effects of environmental factors on macroscopic age markers in the pelvic joint surfaces, microscopic markers in cortical bone and the dentition, and molecular markers in skeletal protein and DNA. The macroscopic markers (acetabulum, auricular surface and pubic symphysis) have the lowest correlations with age, typically in the range $r = 0.4$ to 0.6 , and appear to show the largest potential influence of environmental variables, especially of body size. Microscopic markers tend to show higher correlations with age, typically $r =$

0.5 to 0.9 , as well as less variation between populations in the relationship between biomarkers and chronological age. Nevertheless, significant effects of body size and diet on bone remodelling have been reported in some studies. Molecular biomarkers have the highest correlations with age (usually $r > 0.7$) but some effects of disease and immunity and of drug use history on age-related molecular changes have been detected. Much of this evidence has been acquired within the last decade and further research on a wider range of biomarkers is needed.

Biological sex assessment methods: A meta-analysis of trends in recent (2006-2015) forensic and archaeological research

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Biological sex assessment methods are integral to human identification and productive forensic and archaeological research. Given the differing agendas of forensics and archaeology, the aim of this study was to evaluate the potential for greater collaboration between these fields in developing sex assessment methods and to highlight the most fruitful lines of research to target in future studies.

This review utilized statistical analyses, examining data from five major journals, to assess the nature of sex assessment methods research in recent (2006-2015) forensic and archaeological publications. The way in which error was reported, anatomical regions of study, populations studied, types of study (revised, refined, testing, or comparison), and approaches (morphological, metric, biomedical, three-dimensional, or molecular) were all considered.

The results of these topics were presented hierarchically according to the importance of the findings. There was a deficit in standardized measures of error and accuracy in both fields. The skull, an anatomical region purported to be the second most accurate in sex assessment, was most studied. However, it yielded the lowest overall reported percentage of accuracy. The testing of published methods was lacking in both fields. Bias towards certain populations was evident in developing sex assessment methods, which demands greater collaboration between archaeology and forensics. Lastly, archaeology and forensics both favored metric approaches. Molecular approaches were more prevalently used in published archaeological research. These results will guide the organization of future biological sex assessment studies to fill these gaps in recent research.

New primitive micromomyid plesiadapiform from the Wutu Formation, Shandong Province, China

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Micromomyid plesiadapiforms are diminutive euarchontan mammals previously known only from the late Paleocene and early Eocene of western North America. We describe the first potential Asian record for this clade, based on a partial dentary from the Wutu Basin in east-central China. IVPP V11990 is a right dentary fragment preserving the crowns of p2 (partial), p3-4, m2 (taloid), and m3. The lower dental formula and certain aspects of the lower anterior dentition remain ambiguous because of breakage. Among plesiadapiforms, the new Chinese taxon resembles micromomyids in being very small and having a hypertrophied p4 trigonid with a fairly developed taloid. However, it is more plesiomorphic than any known micromomyid in lacking a trenchant p4 paracristid, which has traditionally been used to diagnose the North American members of this family. Among micromomyids, the Wutu taxon most closely resembles the oldest known species, *Foxomomys fremdi*, from the middle Tiffanian (Ti-3) of Alberta, Canada, in possessing a relatively small and narrow p3, a relatively narrow p4, and tall trigonid cusps and a slightly enlarged, yet cuspidate hypoconulid on m3. Phylogenetic analysis reconstructs the new Chinese taxon as the basal-most member of the Micromomyidae and provides further support for a rather basal position for Micromomyidae among plesiadapiforms. Although the age of the Wutu fauna remains controversial (late Paleocene or early Eocene), this specimen further documents trans-Beringian plesiadapiform dispersal during or before the Tiffanian and suggests that important aspects of early plesiadapiform evolution are inadequately sampled in the Paleocene of Asia.

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Zika, Maternal Stress and Prematurity in Puerto Rico: Navigating Unforeseen Vulnerabilities

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This poster describes work in Puerto Rico with pregnant women at risk for Zika-affected offspring, prematurity and low birth weight. Our