

# Abstracts of AAPA Poster and Podium Presentations

\* indicates a student prize contestant.

## The effects of pregnancy and lactation on the maternal skeleton: A historical perspective.

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The effects of parity and lactation on the maternal skeleton, and the contribution they make to bone fragility in post-reproductive years, is not well understood. Site-specific bone loss has been reported during pregnancy in some studies, while other have found no significant change in bone density at all, and parity has been reported as protective against fracture. Bone loss has been shown to occur with lactation, however, the degree and subsequent recovery of bone loss remains controversial. From an evolutionary perspective, it seems maladaptive that the female skeleton be incapable of efficient bone maintenance under the normal conditions of pregnancy and lactation. Human females share similar reproductive patterns with the genetically closest non-human primates. For example, non-industrialized female life cycles are typically characterized by late menarche, frequent pregnancies, prolonged lactation, and early menopause. Reproductive patterns have changed substantially only within the last century, causing a dramatic shift in the hormonal milieu of modern western females. The study of female skeletons in historical past populations gives us a unique opportunity to examine the skeletal effects of reproductive patterns that are more consistent with those followed throughout the majority of female evolution. A study was made of trabecular architecture and bone density in British medieval and post-Medieval female skeletons. 5mm thick coronal sections from lumbar vertebrae (n=56, divided in three age categories) were scanned in a DEXA scanner (Piximus, Lunar Corp.) for measurement of bone mineral density, and then x-rayed for image analysis of trabecular structure and connectivity. Females from both populations showed little fragility fracture, significant loss of bone density and architecture at an early age, and no significant losses between middle and old age, in contrast to modern populations. We suggest that the patterns of bone loss found in archaeological female populations may reflect the many changes that have occurred in reproductive behavior.

## Your species or mine? Blurred species definitions and the Neandertal debate.

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Heated debate continues to revolve around the fate of the Neandertals. Much of this debate centers on whether Neandertals were conspecific with living humans or were their own species, *Homo neanderthalensis*. Species designations are typically intended to make statements about reproductive continuity and discontinuity, thus we should expect that different species designations in regards to Neandertals reflect different interpretations of gene flow between Neandertals and the *Homo sapiens* population that succeeded them.

This study tested the hypothesis that the different species designations given to Neandertals reflect different interpretations of the degree of admixture between Neandertals and modern humans. Publications on Neandertals and the modern human origins debate spanning the last decade were reviewed in terms of views on species designations and Neandertal-modern human admixture.

In many if not most cases, different species designations did not reflect drastically different interpretations of gene flow between Neandertals and modern humans. Although scholars with widely opposite interpretations regarding admixture also have opposing species designations (e.g., CL Brace and I Tattersall), many others, with similar views on admixture, favor different species designations (e.g., G Brauer and FH Smith). Even those often viewed as opposites in the modern human origins debate, such as CB Stringer and MH Wolpoff, agree that some admixture occurred, but they differ in their Neandertal species designations. Thus, although there is considerable debate about which species name should be used for Neandertals, clearly there is very little agreement, and even less active debate, concerning what these specific designations actually mean. Although a few authors (e.g., Y Rak, I Tattersall, and MH Wolpoff) are explicit in their use of species concepts, species definitions are generally ambiguous in writings on the fate of the Neandertals.

## Osteoarthritis in the Middle Neolithic population from Västerbjers, Gotland, Sweden.

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Several stone age sites with associated cemeteries has been found scattered along the former shorelines on the island of Gotland, central Baltic Sea. The cemetery at Västerbjers, Gothen Parish, was excavated in the thirties. In all, 50 graves were excavated. Radiocarbon datings performed on the skeletal remains indicates a date of ca. 4000 BP, i.e. the Middle-Neolithic period. Archaeologically, the material unearthed at Västerbjers belongs to the Pitted-Ware tradition. The Pitted-Ware tradition is characterized by artefacts indicating a maritime subsistence. This is corroborated with respect to stable carbon isotopes. Further, no caries has been identified in the dentitions, suggesting a lack of carbohydrates in the diet. However, traces of domesticated animals may be occasionally identified (pig and cattle).

Osteoarthritis is a major health problem in modern societies. As advanced osteoarthritis may be identified in archaeological specimens, paleopathological findings may broaden our perspectives concerning etiology and epidemiology. This presentation will focus on the presence of osteoarthritis in the hunter-gatherer population from Västerbjers. Several specimens bear signs of the disease (eburnation). Among other things, two individuals were affected by osteoarthritis in the knee joint (one patello-femoral and one tibio-femoral).

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## Atherosclerosis, a sign that people became old-aged in the Middle ages?

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Today, atherosclerosis is a major cause of death in the industrialized world. The changes that are associated with atherosclerosis usually are localized to special locations in the artery. A common place for atheroma is the carotissiphon, the S-formed curve that the carotis/carotid artery makes when it has entered the base of the skull. Today we know that risk fac-