

# **A COMPARISON OF OSTEOARTHRITIS IN THE APPENDICULAR JOINTS OF INDIVIDUALS FROM THE HAMANN-TODD AND TERRY COLLECTIONS**

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ABSTRACT of a Master's Thesis in Human Biology at the University of Indianapolis  
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The Terry and Hamann-Todd Collections are used extensively as control or reference groups in many studies of biological variation and paleopathological analysis. In fact, they have served as an essential database for developing many of the analytical techniques used currently by skeletal biologists and forensic anthropologists. Often the collections are used as equivalent representations of turn-of-the-century populations. Consequently, they are sometimes combined and treated as one individual sample. However, this may not be a prudent decision because of differences in the types of activities (i.e., vocation) as well as the geographical composition of individuals from these collections.

Recently there have been studies focusing on arthritis in the Hamann-Todd Collection, in an effort to use them as reference samples for modern populations. However, previous studies of osteophytosis and spinal osteoarthritis suggest that there are differences between the Hamann-Todd and Terry Collections. Direct comparisons of osteoarthritis and osteophytosis have never been undertaken using both collections, and, of the studies that have looked at appendicular osteoarthritis, the results are not comparable due to different scoring methods. Therefore, the purpose of this thesis is test whether the Hamann-Todd and Terry Collections represent a homogenous population with respect to osteoarthritis and whether they can be used interchangeably as control groups in osteological studies.

The study sample includes 290 white and black males from the Hamann-Todd and Terry Collections. Individuals were chosen equally from four 15-year groupings (25-39, 40-54, 55-69, and 70+). Marginal lipping, surface osteophytes and eburnation were scored on all the elements of the right and left shoulder, elbow, hip, and knee, while porosity was scored at the hip.

Using an ANCOVA analysis, results show that ancestry is not a significant factor in the expression of marginal lipping at the shoulder, elbow, hip, or knee. Lipping at the elbow and knee were both significantly different between the collections. Raw frequencies reveal that lipping is more severe in the knee and elbow of males from the Hamann-Todd Collection. Eburnation occurs infrequently and is seen predominately in association with moderate and severe lipping. Conversely, surface osteophytes are a common phenomenon in osteoarthritis and occur more frequently with increasing age. The presence of surface osteophytes is significantly more severe in males from the Terry Collection. Porosity is a poor indicator of osteoarthritis at the hip because it does not co-occur with other diagnostic criteria. This study concludes that researchers should use caution when combining the two samples in studies of osteoarthritis.

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