What are the best skeletal indicators of handedness?

Margret B. White  
*Cleveland State University*

Anne Su  
*Cleveland State University*, a.su@csuohio.edu

Follow this and additional works at: https://engagedscholarship.csuohio.edu/u_poster_2014

Part of the Musculoskeletal System Commons

How does access to this work benefit you? Let us know!

**Recommended Citation**  
https://engagedscholarship.csuohio.edu/u_poster_2014/39

This Article is brought to you for free and open access by the Undergraduate Research Posters at EngagedScholarship@CSU. It has been accepted for inclusion in Undergraduate Research Posters 2014 by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.
What are the best skeletal indicators of handedness?

College of Sciences and Health Professions

Student Researcher: Margret B. White

Faculty Advisor: Anne Su

Abstract

Previous research indicates that there are asymmetries in limb bone structure and dimensions. It is hypothesized that these asymmetries are the result of hand preference, or repeated unilateral mechanical loading. The aim of this study was to first identify the best skeletal indicators of handedness by means of a comprehensive literature search. Based on the previous findings of other researchers, we examined non-pathological male individuals (N=19, aged 20-35) from the Hamann-Todd Skeletal Collection at the Cleveland Museum of Natural History for asymmetry of paired second metacarpals, by measuring the difference between right and left diameters at mid-shaft. We also tested relationships between metacarpal diameter and age and weight. Results indicate that there is asymmetry, with right metacarpals being significantly thicker in diameter than left metacarpals. We found no relationship between absolute thickness and either age or weight. But we unexpectedly found an inverse relationship between asymmetry and weight. Similar to previous researchers, our results indicate noteworthy asymmetries that may be interpreted as the functional adaptation of the upper-limb bones, hinting at side preference.