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**SIZE-RELATED AND DEMOGRAPHIC EFFECTS ON THE MORPHOLOGY OF  
THE LATERAL MENISCAL NOTCH OF THE PROXIMAL TIBIA**

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**Abstract**

The lateral meniscal notch of the proximal tibia is often utilized to interpret locomotor behavior and determine the taxonomic assignment of fossil hominin postcrania. However, not all humans possess a meniscal notch, and this study addresses how the size and presence of this feature is influenced by body size, sex, age, and ancestry. Though Dugan and Holliday (2009) discuss variability in this feature, previous work has failed to address the ways in which the posterior attachment of the lateral meniscus is influenced by body size and demography. In this thesis, I introduce quantitative methods for assessing the size and dimensions of the lateral meniscal notch relative to the tibial plateau in a large sample of modern humans spanning the range of human body size. Individuals who lack or have a small meniscal notch area ( $<3 \text{ mm}^2$ ) are significantly smaller in body size than those with larger notches. Those who lack or have a small notch are also significantly more likely to be female, and this difference is not explainable by body size alone. This quantitative method for analyzing the lateral meniscal notch will decrease ambiguity in the interpretation of the morphology of the proximal tibia. My results also have implications for the interpretation of the knee morphology of Plio-Pleistocene hominins, and caution should be taken in interpreting the locomotor behavior of small-bodied, female hominins on the basis of absence of the meniscal notch.