

Abstract Submitted  
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**Bone strength and athletic ability in hominids: *Ardipithecus ramidus* to *Homo sapiens*** S.A. LEE, University of Toledo — The ability of the femur to resist bending stresses is determined by its midlength cross-sectional geometry, its length and the elastic properties of the mineral part of the bone. The animal's athletic ability, determined by a "bone strength index," is limited by this femoral bending strength in relation to the loads on the femur. This analysis is applied to the fossil record for *Homo sapiens*, *Homo neanderthalensis*, *Homo erectus*, *Homo habilis*, *Australopithecus afarensis* and *Ardipithecus ramidus*. Evidence that the femoral bone strength index of modern *Homo sapiens* has weakened over the last 50,000 years is found.

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