



RECOMMENDATION

A new method for measuring clavicular curvature

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A recommendation of

Taylor C, Masao F, Njau JK, Songita AV, and Hlusko LJ (2023). OH 89: A newly described ~1.8-million-year-old hominid clavicle from Olduvai Gorge. *bioRxiv* 526656, ver. 6 peer-reviewed by PCI Paleo. DOI: 10.1101/2023.02.02.526656

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The evolution of the hominid clavicle has not been studied in depth by paleoanthropologists given its high morphological variability and the scarcity of complete diagnosable specimens. A nearly complete *Nacholapithecus* clavicle from Kenya (Senut et al., 2004) together with a fragment from *Ardipithecus* from the Afar region of Ethiopia (Lovejoy et al., 2009) complete our knowledge of the Miocene record. The *Australopithecus* collection of clavicles from Eastern and South African Plio-Pleistocene sites is slightly more abundant but mostly represented by fragmentary specimens. The number of fossil clavicles increases for the genus *Homo* from more recent sites and thus our potential knowledge about the shoulder evolution.

In their new contribution, Taylor et al. (2023) present a detailed analysis of OH 89, a 1.8-million-year-old partial hominin clavicle recovered from Olduvai Gorge (Tanzania). The work goes over previous studies which included clavicles found in the hominid fossil record. The text is accompanied by useful tables of data and a series of excellent photographs. It is a great opportunity to learn its role in the evolution of the hominid shoulder gird as clavicles are relatively poorly preserved in the fossil record compared to other long bones. The study compares the specimen OH 89 with five other hominid clavicles and a sample of 25 modern clavicles, 30 *Gorilla*, 31 *Pan* and 7 *Papio*. The authors propose a new methodology for measuring clavicular curvature using measurements of sternal and acromial curvature, from which an overall curvature measurement is calculated. The study of OH 89 provides good evidence about the hominid who lived 1.8 million years ago in the Olduvai Gorge region. This time period is especially relevant because it can help to understand the morphological changes that occurred between *Australopithecus* and the appearance of *Homo*. The authors conclude that OH 89 is the largest of the hominid clavicles included in the analysis. Although they are not able to assign this partial element to species level, this clavicle from Olduvai is at the larger end of the variation observed in *Homo sapiens* and show similarities to modern humans, especially when analysing the estimated sinusoidal curvature.

