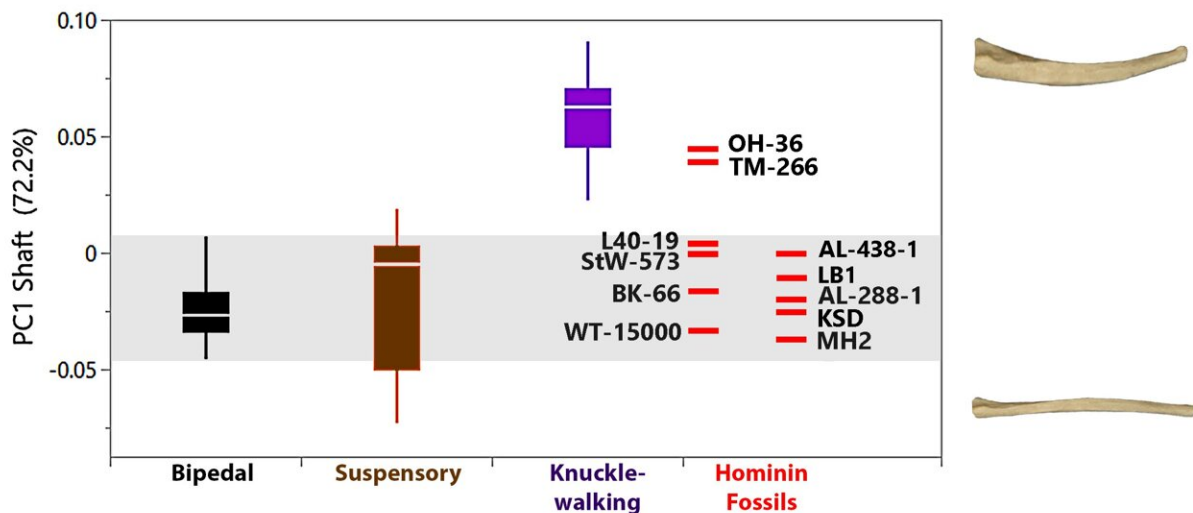


Once thought to be a biped, Sahelanthropus is instead the earliest known knuckle-walking ape, says study

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The shape of the ulna shaft in knuckle-walking African apes is distinctive.
 Credit: Figure from Meyer et al, 2023

In a new paper in the *Journal of Human Evolution*, researchers from Chaffey College, New York University, and California State University San Bernardino find the distinctive forelimb morphology of the African knuckle-walking apes in the forelimb of the roughly 7-million-year-old *Sahelanthropus tchadensis*. Only chimpanzees and gorillas exhibit robust and forward-curving ulna shafts, which are thought to serve as an

adaptation to knuckle-walking. This bone in all other primates is straight or curves backward and contrasts with humans and other fossil hominins (bipeds).

The researchers also find clear signs of knuckle-walking in OH 36, an isolated fossil dated to 1.2 million years ago, once classified as *Paranthropus boisei*. Previous research has noted that this fossil was extremely chimp-like and different from hominins. The new analysis clarifies that this fossil was indeed a knuckle-walking African ape.

With respect to *Sahelanthropus*, the team proposes two hypotheses: (1) that this species represents the earliest known knuckle-walking African ape and was not a [hominin](#), or (2) that if this species was facultatively bipedal, like chimps and [gorillas](#) it was a habitual knuckle-walker.

Supporting the first hypothesis is a recent analysis of the *Sahelanthropus tchadensis* femur which finds no evidence for bipedality. While new research from the leg and arm bones of this species strongly controverts the idea that *Sahelanthropus* was an early biped, the new evidence indicating that it was a knuckle-walking Miocene ape shifts it to a uniquely privileged evolutionary position.

More information: Marc R. Meyer et al, Knuckle-walking in *Sahelanthropus*? Locomotor inferences from the ulnae of fossil hominins and other hominoids, *Journal of Human Evolution* (2023). [DOI: 10.1016/j.jhevol.2023.103355](https://doi.org/10.1016/j.jhevol.2023.103355)

Provided by Chaffey College

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