

Lucy and Selam's species climbed trees

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Australopithecus afarensis (the species of the well-known "Lucy" skeleton) was an upright walking species, but the question of whether it also spent much of its time in trees has been the subject of much debate, partly because a complete set of *A. afarensis* shoulder blades has never before been available for study.

For the first time, Midwestern University Professor David Green and Curator of Anthropology at the California Academy of Sciences, Zeresenay Alemseged, have thoroughly examined the two complete shoulder blades of the [fossil](#) "Selam," an exceptionally well-preserved skeleton of an *A. afarensis* child from Dikika, Ethiopia, discovered in 2000 by Dr. Alemseged. Further preparation and extensive analyses of these rare bones showed them to be quite apelike, suggesting that this species was adapted to climbing trees in addition to walking bipedally when on the ground. "The question as to whether *Australopithecus afarensis* was strictly bipedal or if they also climbed trees has been intensely debated for more than thirty years," said Dr. Green. "These remarkable fossils provide strong evidence that these individuals were still climbing at this stage in [human evolution](#)." The new findings are published in the October 26 issue of the journal *Science*.

Dr. Alemseged, assisted by Kenyan lab technician Christopher Kiarie, spent 11 years carefully extracting the two shoulder blades from the rest of the skeleton, which was encased in a sandstone block. "Because shoulder blades are paper-thin, they rarely fossilize—and when they do, they are almost always fragmentary," said Dr. Alemseged. "So finding both shoulder blades completely intact and attached to a skeleton of a

known and pivotal species was like hitting the jackpot. This study moves us a step closer toward answering the question 'When did our ancestors abandon climbing behavior?' It appears that this happened much later than many researchers have previously suggested."

Selam was a three-year-old *A. afarensis* girl who lived about 3.3 million years ago, and she represents the most complete skeleton of her kind to date. After freeing the shoulder blades from the surrounding rock, Green and Alemseged digitized them using a Microscribe, and then took detailed measurements to characterize their shape and function, comparing them to the rare shoulder fossils of other early human relatives: *Homo ergaster* ("Turkana Boy"), *Homo floresiensis* ("The Hobbit"), *A. africanus*, and two adult specimens of *A. afarensis*. They also made comparisons with an extensive modern sample of juvenile and adult chimpanzee, gorilla, orangutan, and human specimens.

The analysis of the shape and function of the bones revealed that *A. afarensis* shoulder blades are apelike, indicating a partially arboreal lifestyle. Drs. Green and Alemseged also found that, like living apes, the shoulder anatomy of juvenile and adult representatives of *A. afarensis* were quite similar. "Human scapulae change shape throughout ontogeny in a significantly different manner than closely related apes," said Dr. Green. "When we compared Selam's scapula with adult members of *Australopithecus afarensis*, it was clear that the pattern of growth was more consistent with that of apes than humans." At the same time, most researchers agree that many traits of the *A. afarensis* hip bone, lower limb, and foot are unequivocally humanlike and adapted for upright walking. "This new find confirms the pivotal place that Lucy and Selam's species occupies in human evolution," said Dr. Alemseged. "While bipedal like humans, *A. afarensis* was still a capable climber. Though not fully human, *A. afarensis* was clearly on its way."

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