Ape-Like Feet: Evolution or Shoes?

Written by Administrator Friday, 23 August 2013 00:59 -

Ape-like feet: evolution or shoes? asks the headline in the Daily Mail 30 May 2013 about a study on human feet also reported in New Scientist and Wired Science 30 May 2013 and BBC News 31 May 2013. Human feet are very different from ape feet. The most obvious difference is that apes have long flexible toes with the big toe being opposed to the other toes, like a thumb. Another significant difference is that human feet have a stiff arch, but ape feet are flat and bend in the middle. This bend is called a "mid tarsal break" and gives ape feet the flexibility needed for tree climbing.

Jeremy DeSilva and Simone Gill of Boston University took videos of the feet of people walking bare foot over a carpet fitted with pressure sensors, and then analysed the results to see how much bending occurred in the midfoot. They found 13 of the 398 people they studied had some flexibility similar to a mid-tarsal break in apes. In spite of this, there was no significant difference in the way they walked, although they did have flatter feet than average and a tendency to roll the feet inwards as they were walking.

Robin Huw Crompton at the University of Liverpool, UK, who has also studied flexible feet, suggests they are a relic of our tree-dwelling days.

Tracy Kivell, a palaeoanthropologist from the Max Planck Institute for Evolutionary Anthropology, told BBC News: "The research has implications for how we interpret the fossil record and the evolution of these features. It's good to understand the normal variation among humans before we go figure out what it means in the fossil record".

However, De Silva suggests that flexible feet would have been a disadvantage when human ancestors came down from the trees, but is a trait that has reappeared recently. He commented: "My guess is that we are getting more variation than ever before, perhaps because shoes have impacted foot anatomy". The Daily mail summarised the research as: "One in 13 of us share the same bendy, tree-climbing feet as chimps but scientists can't decide if it's down to evolution or our SHOES!" (emphasis in original)

BBC, Daily Mail, New Scientist, Wired Science

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Editorial Comment: This evidence will not help interpret the fossil record, as very few foot bones are preserved in the record, and they certainly cannot walk. The shape of the bones alone will not tell scientists if their owners had flexible or stiff feet. The people who had the flexible feet in the Boston study had the same foot bones as those with stiffer feet. Having some extra flexibility in the mid-foot will not enable humans to climb trees in the way apes do, and it is not evidence that our feet were once ape feet. It just means some people have some loose ligaments, and as anyone who has really flat feet will tell you it is not an advantage. There is no evidence it can be blamed on shoes either. In fact, it is a sign that human feet, like the rest of our bodies, are degenerating downwards, not evolving upwards. (Ref. anthropology, gait)

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