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## Non-sagittal movements of shank and foot in some marsupials

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Considerable doubt exists concerning foot movements in Thylacinae, as well as in extant small marsupials, and their relevance to human bipedal gait. Historical footage freely accessible via the internet shows images in which thylacine feet are kept horizontally in sway. For a clearer image, we analyzed an archived live videotape of a walking wombat, frame-by-frame. From take-off, the lateral side of the wombat foot stays continuously lifted, causing throughout everted foot positions during sway. Non-sagittal movements in another marsupial, the common opossum, appear to be biomechanically “guided” by the cardan-like ankle joint transmitting shank axial rotation to foot-eversion or foot-inversion (1). Tracings of an *in vivo* opossum X-ray, displaying shank and foot, confirm that *collum fibulae* and *spatium interosseum cruris* are reliable landmarks to describe these non-sagittal hind-limb movements (1). Only since recently, quantitative measurements in higher primates e.g. man, allow extrapolating these data to bipedal gait. In man, after take-off, just a short distinct foot eversion helps to clear the foot from the surface, mainly during the onset of sway (2).

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