

Supporting Information

DeSilva 10.1073/pnas.0900270106

Table S1. Fossil hominin tali and tibiae measured in this study

Accession no.	Element	Geological age, millions of years	Taxon	Reference
KNM-KP 29285	Tibia	4.12	<i>Australopithecus anamensis</i>	1, 2
A.L. 333-6	Tibia	3.2	<i>A. afarensis</i>	3, 4
A.L. 333-7	Tibia	3.2	<i>A. afarensis</i>	3, 4
A.L. 288-1	Talus and tibia	3.18	<i>A. afarensis</i>	3, 5
StW 181	Tibia	2.6-2.8	<i>A. africanus</i>	6
StW 347	Talus	2.6-2.8	<i>A. africanus</i>	6, 7
StW 358	Tibia	2.6-2.8	<i>A. africanus</i>	6, 7
StW 363	Talus	2.6-2.8	<i>A. africanus</i>	6, 8
StW 389	Tibia	2.6-2.8	<i>A. africanus</i>	6, 7
StW 88	Talus	2.6-2.8	<i>A. africanus</i> or <i>Homo habilis</i> ?	6, 9
StW 514b	Tibia	2.6-2.8	<i>A. africanus</i>	6, 10
StW 486	Talus	2.6-2.8	<i>A. africanus</i>	6, 7
StW 102	Talus	2.4-2.8	<i>A. africanus</i> or <i>H. habilis</i> ?	6, 7
Omo 323-76-898	Talus	2.2	<i>Homo</i> sp.	11, 12
TM 1517	Talus	1.9-2.0	<i>Paranthropus robustus</i>	12, 13
SKX 42695	Talus	1.5-2.0	<i>P. robustus</i> or <i>Homo</i>	14
KNM-ER 1481	Tibia	1.9	<i>H. habilis</i> or <i>H. erectus</i>	11, 15, 16
KNM-ER 1500	Tibia	1.9	<i>P. boisei</i>	11, 17
KNM-ER 2596	Tibia	1.9	Hominin	11, 18
KNM-ER 1476	Talus	1.88	<i>P. boisei</i>	11, 12
OH 8	Talus	1.85	<i>H. habilis</i> or <i>P. boisei</i>	12, 19-21
OH 35	Tibia	1.85	<i>H. habilis</i>	19, 20
KNM-ER 813	Talus	1.85	<i>Homo</i> sp.	11, 12
KNM-ER 1464	Talus	1.7	<i>P. boisei</i>	11, 17
StW 567	Tibia	1.4-1.7	<i>H. erectus</i>	6, 22
KNM-ER 5428	Talus	1.6	<i>H. erectus</i>	11, 23
KNM-ER 803	Talus	1.53	<i>H. erectus</i>	11, 24
KNM-WT 15000	Tibia	1.53	<i>H. erectus</i>	25

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Table S2. Comparative morphology of the distal tibia and talus in humans, African apes, and hominins

Taxa	n	Distal tibial morphology							Talus	
		AP lateral	AP midpoint	AP medial	ML anterior	ML midpoint	ML posterior	Tibial angle, °	N	Talar angle, °
African ape	97	0.92 ± 0.06	1.00 ± 0.06	0.93 ± 0.07	1.36 ± 0.07	1.05 ± 0.05	0.83 ± 0.07	104.1 ± 3.9(n=59)	96	17.0 ± 3.2
Human	136	1.04 ± 0.05	0.99 ± 0.05	0.87 ± 0.05	1.17 ± 0.05	1.04 ± 0.04	0.94 ± 0.05	91.1 ± 2.4(n=29)	45	10.2 ± 2.3
<i>Australopithecus anamensis</i>	1	1.04	0.97	0.82	1.16	1.09	0.96	93.1	–	–
<i>A. afarensis</i>	3	1.04 ± 0.06	0.99 ± 0.02	0.85 ± 0.03	1.15 ± 0.03	1.02 ± 0.04	0.98 ± 0.03	90.8 ± 0.7	1	5.3
<i>A. africanus</i>	2	1.05 ± 0.03	1.00 ± 0.03	0.90 ± 0.01	1.10 ± 0.01	1.02 ± 0.01	0.95 ± 0.04	93.3 ± 2.2(n= 3)	4	6.9 ± 1.4
<i>Paranthropus robustus</i>	–	–	–	–	–	–	–	–	1	6.1
<i>P. boisei</i>	1	1.17	1.05	0.83	1.20	0.97	0.85	87.4	2	8.6 ± 0.2
<i>Homo</i> sp.	4	1.06 ± 0.07	0.98 ± 0.06	0.90 ± 0.01	1.13 ± 0.04	1.04 ± 0.05	0.93 ± 0.03	90.2 ± 0.9	4	8.1 ± 1.1
KNM-ER 2596	1	1.04	1.06	0.92	1.21	1.01	0.81	107.0	–	–

Fossil hominins grouped according to typically assigned species or genera (see [Table S1](#)). AP, anteroposterior; ML, mediolateral.