

Data S1: Designation and location of anatomical landmarks placed on each bone.

Bone	Anatomical LM	Curve sliding semi-LM	Surface sliding semi-LM	Total
Humerus	35	639	1437	2111
Radius	23	393	920	1336
Ulna	21	343	822	1142
Femur	27	612	1031	1670
Tibia	24	384	854	1262
Fibula	12	269	454	735

Table S1A: Total number of anatomical landmarks (LM), curve sliding and surface sliding semi-landmarks for each bone.

LM	Designation
1	Most distal point of the lateral border of the bicipital groove
2	Most proximal point of the lateral border of the bicipital groove
3	Most proximal point of the intermediate tubercle
4	Most proximal point of the medial border of the bicipital groove
5	Most distal point of the medial border of the bicipital groove
6	Most distal point of the intermediate tubercle
7	Most medial point of the top of the lesser tubercle
8	Most cranial point of the lesser tubercle convexity
9	Most medio-caudal point of the lesser tubercle convexity
10	Most medial point of the humeral head surface
11	Most caudo-distal point of the humeral head surface
12	Contact point between the tricipital line and the caudal border of the articular head surface
13	Most lateral point of the humeral head surface
14	Most caudal point of the greater tubercle convexity
15	Most proximal point of the greater tubercle convexity
16	Most cranial point of the greater tubercle convexity crest
17	Most proximal point of the m. infraspinatus lateral insertion
18	Most distal point of the m. infraspinatus lateral insertion
19	Most proximal point of the deltoid tuberosity
20	Most distal point of the deltoid tuberosity
21	Most proximal point of the epicondylar crest tuberosity
22	Most distal point of the epicondylar crest tuberosity
23	Most lateral point of the lateral epicondyle
24	Most distal point of the lateral epicondyle
25	Most proximo-lateral point of the capitulum
26	Most cranio-proximal point of contact between the trochlea and the capitulum
27	Most cranial point of the trochlea groove
28	Most cranio-medial point of the dorsal side of the trochlea
29	Most distal contact point between the trochlea border and the medial development of the trochlea lip
30	Most cranio-medial point of the ventral side of the trochlea
31	Most cranio-lateral point of the ventral side of the trochlea
32	Most caudo-distal point of contact between the capitulum and the trochlea
33	Most medial point of the medial epicondyle
34	Most caudal point of the medial epicondyle
35	Most lateral point of the medial epicondyle

Table S1B: Designation of anatomical landmarks on the humerus.

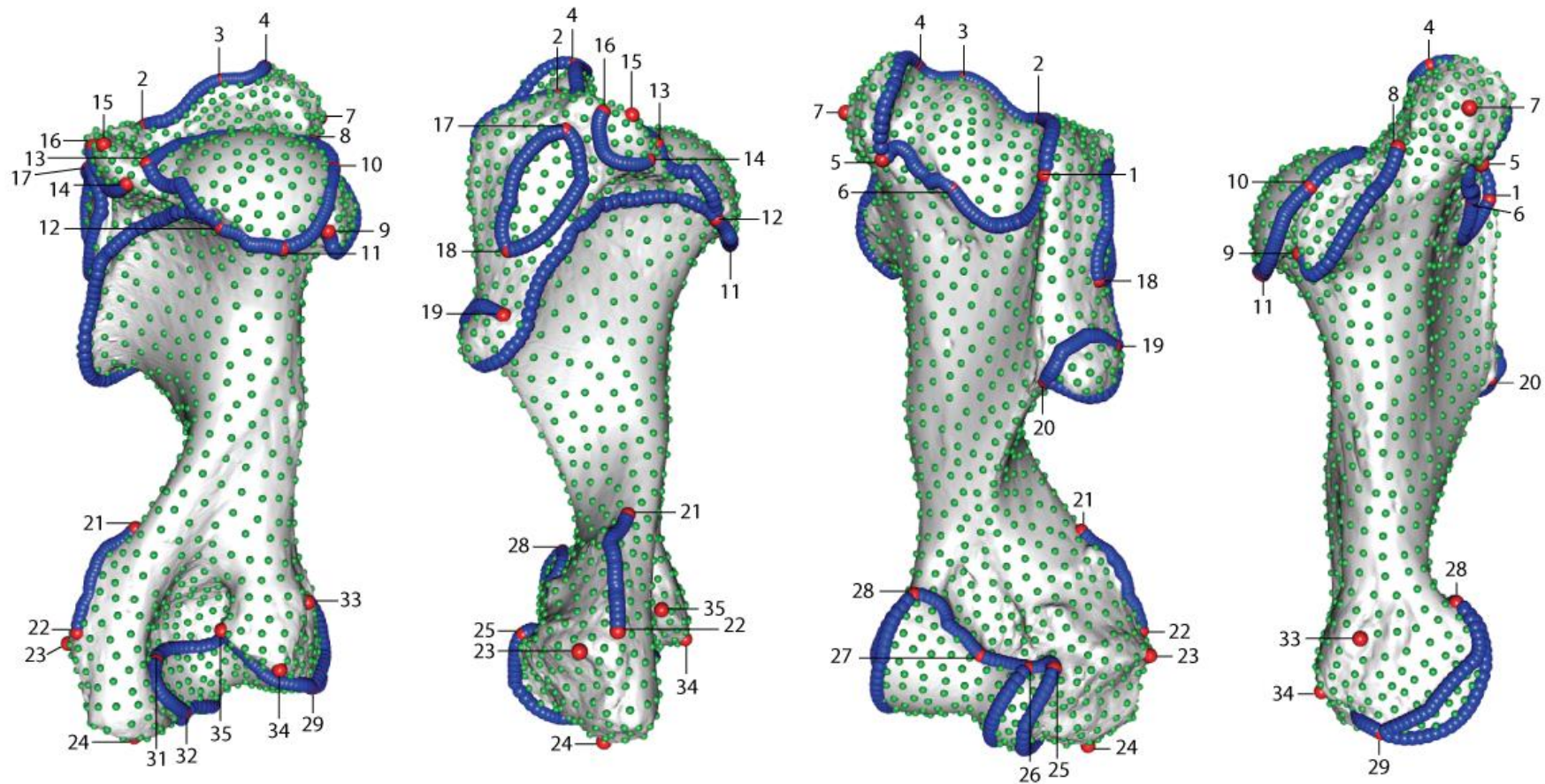


Figure S1C: Location of anatomical landmarks (red spheres), curve sliding (blue spheres) and surface sliding (green spheres) semi-landmarks placed on the humerus. From left to right: caudal, lateral, cranial and medial views. Numbers refer to anatomical landmarks designation detailed in Table S1B. Landmark n°30 situated in the olecranon fossa cannot be seen.

LM	Designation
1	Most caudo-lateral point of the lateral glenoid cavity
2	Most cranio-lateral point of the lateral glenoid cavity
3	Tip of the coronoid process
4	Most cranial point of the medial glenoid cavity
5	Most caudo-medial point of the medial glenoid cavity
6	Tip of the palmar process of the glenoid cavity ridge
7	Most cranial point of the lateral insertion relief
8	Most lateral point of the lateral insertion relief
9	Most caudo-distal point of the proximo-lateral articular facet for the ulna
10	Most caudo-distal point of the proximo-medial articular facet for the ulna
11	Most proximal point of the interosseous crest (= most distal point of the interosseous space)
12	Most distal point of the interosseous crest (crossing the distal epiphysis line)
13	Most cranio-lateral point of the disto-lateral articulation surface for ulna
14	Most proximo-lateral point of the disto-lateral articulation surface for ulna
15	Most caudo-lateral point of the disto-lateral articulation surface for ulna
16	Most medial point of the transversal crest
17	Tip of the radial styloid process
18	Maximum of curvature of the cranial ridge of the articular facet for the scaphoid
19	Most cranio-lateral point of the articular facet for the scaphoid
20	Most lateral point of the articular facet for the semilunar
21	Most caudo-lateral point of the articular facet for the semilunar
22	Most caudo-lateral point of the articular facet for the scaphoid
23	Most cranio-proximal point of the medial facet of distal radius

Table S1D: Designation of anatomical landmarks on the radius.

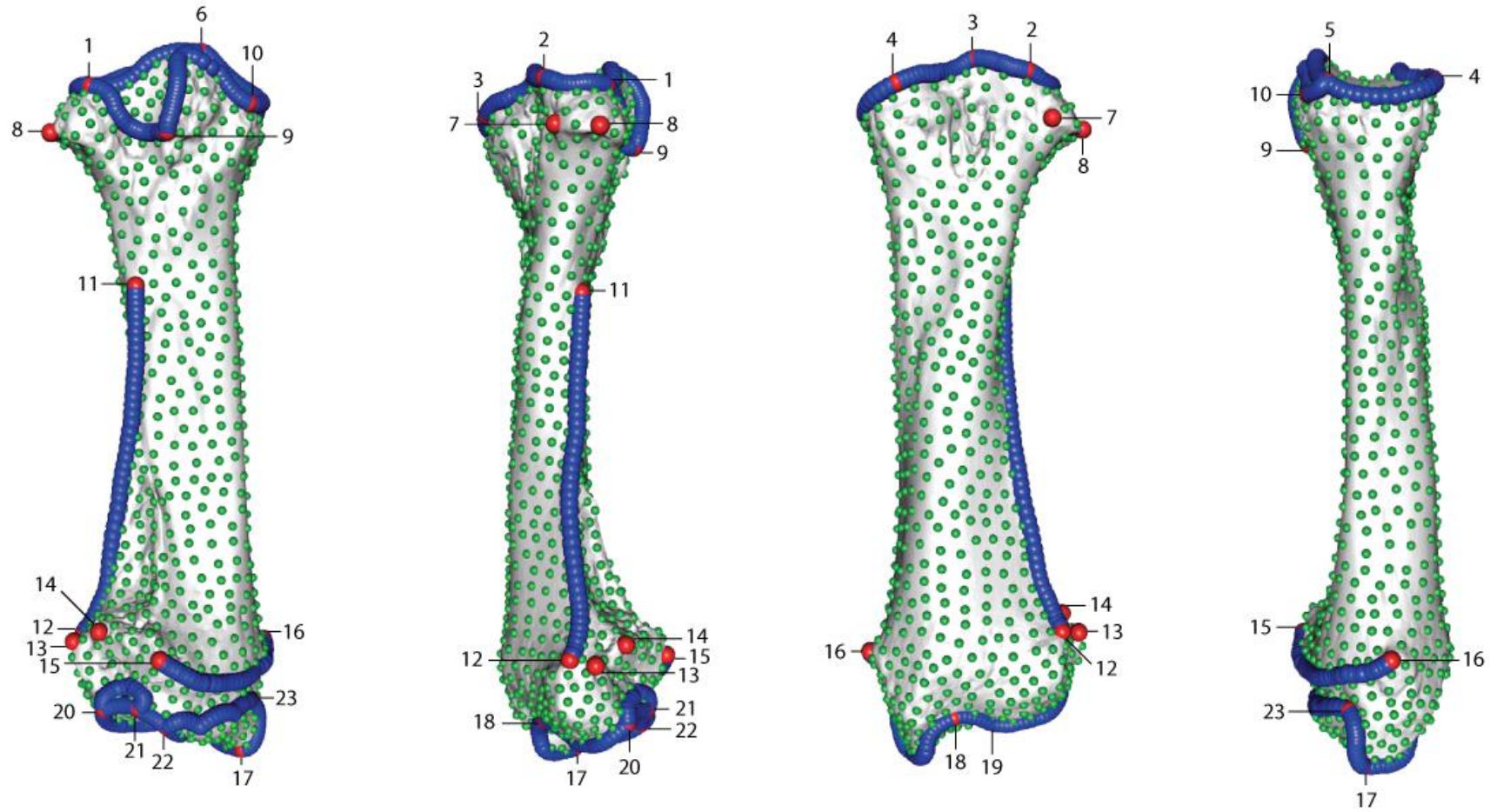


Figure S1E: Location of anatomical landmarks (red spheres), curve sliding (blue spheres) and surface sliding (green spheres) semi-landmarks placed on the radius. From left to right: caudal, lateral, cranial and medial views. Numbers refer to anatomical landmarks designation detailed in Table S1D.

LM	Designation
1	Most proximo-cranial point of the olecranon tuberosity cranial border
2	Most lateral point of the olecranon tuberosity
3	Most caudo-distal point of the olecranon tuberosity
4	Most medial point of the olecranon tuberosity
5	Most proximal point of the olecranon tuberosity
6	Cranial tip of the anconeal process
7	Most distal point of the lateral part of the trochlear notch articular surface
8	Maximum concavity point of the distal border of the trochlear notch articular surface
9	Most distal point of the medial part of the trochlear notch articular surface
10	Most distal point of the proximo-medial articular facet for the radius
11	Most distal point of the proximo-lateral articular facet for the radius
12	Most distal point of the proximal synostosis surface for the radius (= most proximal point of the interosseous space)
13	Most medio-caudal point of the distal radio-ulnar synostosis surface
14	Most disto-medial point of the articular surface with the semilunar bone
15	Most cranio-lateral point of the articular surface with the semilunar bone
16	Most disto-lateral point of the articular surface with the semilunar bone
17	Most cranio-lateral point of the distal radio-ulnar synostosis surface
18	Most lateral point of the distal epiphysis
19	Caudo-distal tip of ulnar styloid process
20	Most proximal contact point between the articular surfaces for the pisiform and the triquetrum
21	Most distal contact point between the caudal border of the ulna and the articular surface with the pisiform

Table S1F: Designation of anatomical landmarks on the ulna.

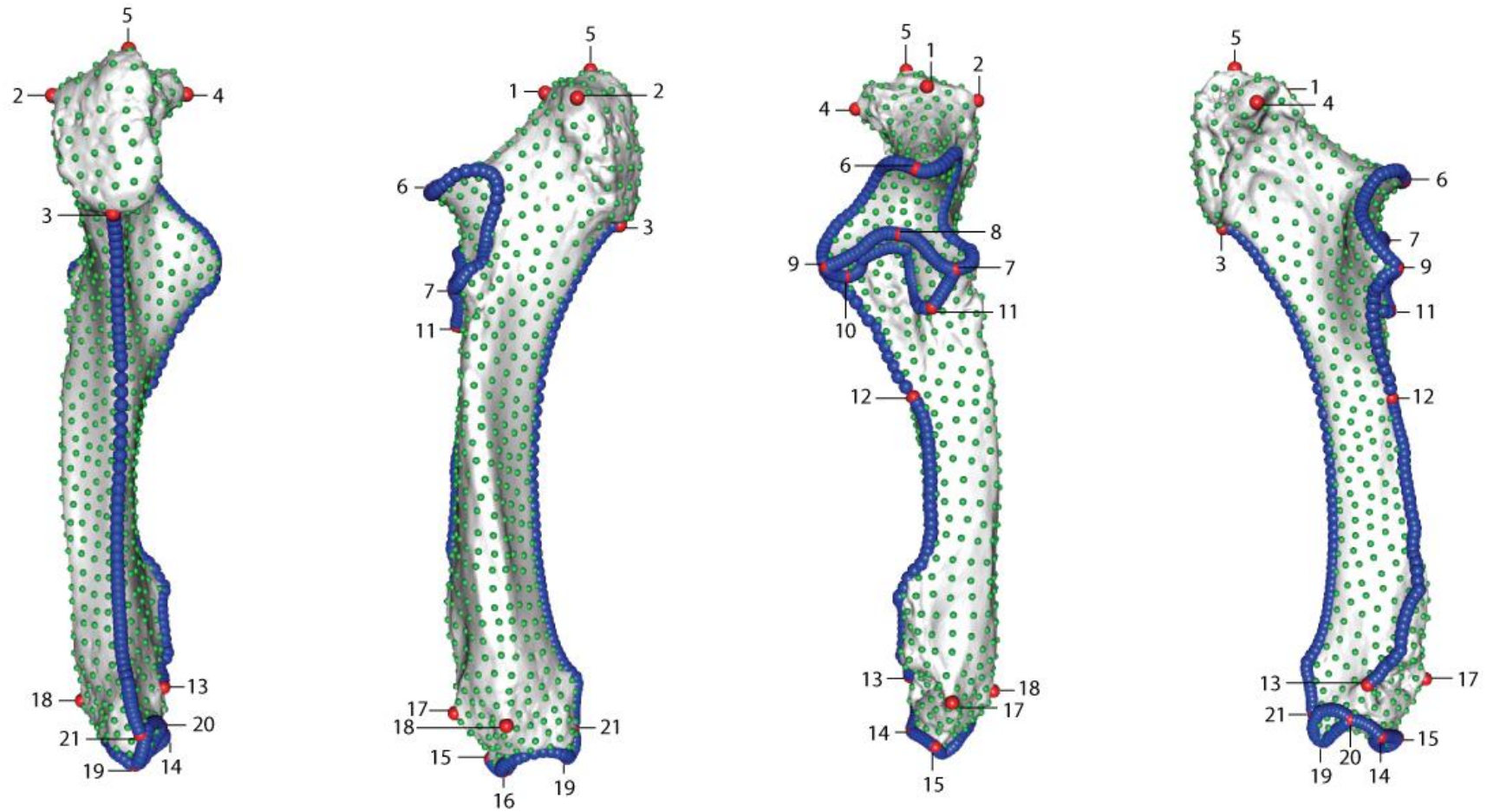


Figure S1G: Location of anatomical landmarks (red spheres), curve sliding (blue spheres) and surface sliding (green spheres) semi-landmarks placed on the ulna. From left to right: caudal, lateral, cranial and medial views. Numbers refer to anatomical landmarks designation detailed in Table S1F.

LM	Designation
1	Most proximo-cranial point of the greater trochanter
2	Most proximo-caudal point of the greater trochanter
3	Most medial point of the greater trochanter convexity
4	Most distal point of the intertrochanteric crest
5	Most disto-caudal point of the greater trochanter
6	Most cranio-lateral point of the convexity of the greater trochanter
7	Most proximal contact point between the intertrochanteric line and the medial line of the cranial face
8	Most lateral point of the border of the head
9	Most proximal point of the lesser trochanter
10	Most distal point of the lesser trochanter
11	Most proximal point of the gluteal tuberosity on the third trochanter
12	Most distal point of the gluteal tuberosity on the third trochanter
13	Most medial point of the medial epicondyle
14	Contact point between the intercondylar line and the medial condyle
15	Contact point between the intercondylar line and the lateral condyle
16	Most lateral point of the lateral epicondyle
17	Most proximal point of the lateral lip of the trochlea
18	Most proximal point of the trochlear groove
19	Most proximal point of the medial lip of the trochlea
20	Most distal point of the medial lip of the trochlea
21	Distal maximum of curvature of the trochlear groove
22	Most distal point of the lateral lip of the trochlea
23	Most medial point of the fossa extensoria
24	Most lateral point of the fossa extensoria
25	Most cranial point of the fossa extensoria
26	Most proximo-medial point of the lateral condyle articular surface
27	Most proximo-lateral point of the medial condyle articular surface

Table S1H: Designation of anatomical landmarks on the femur.

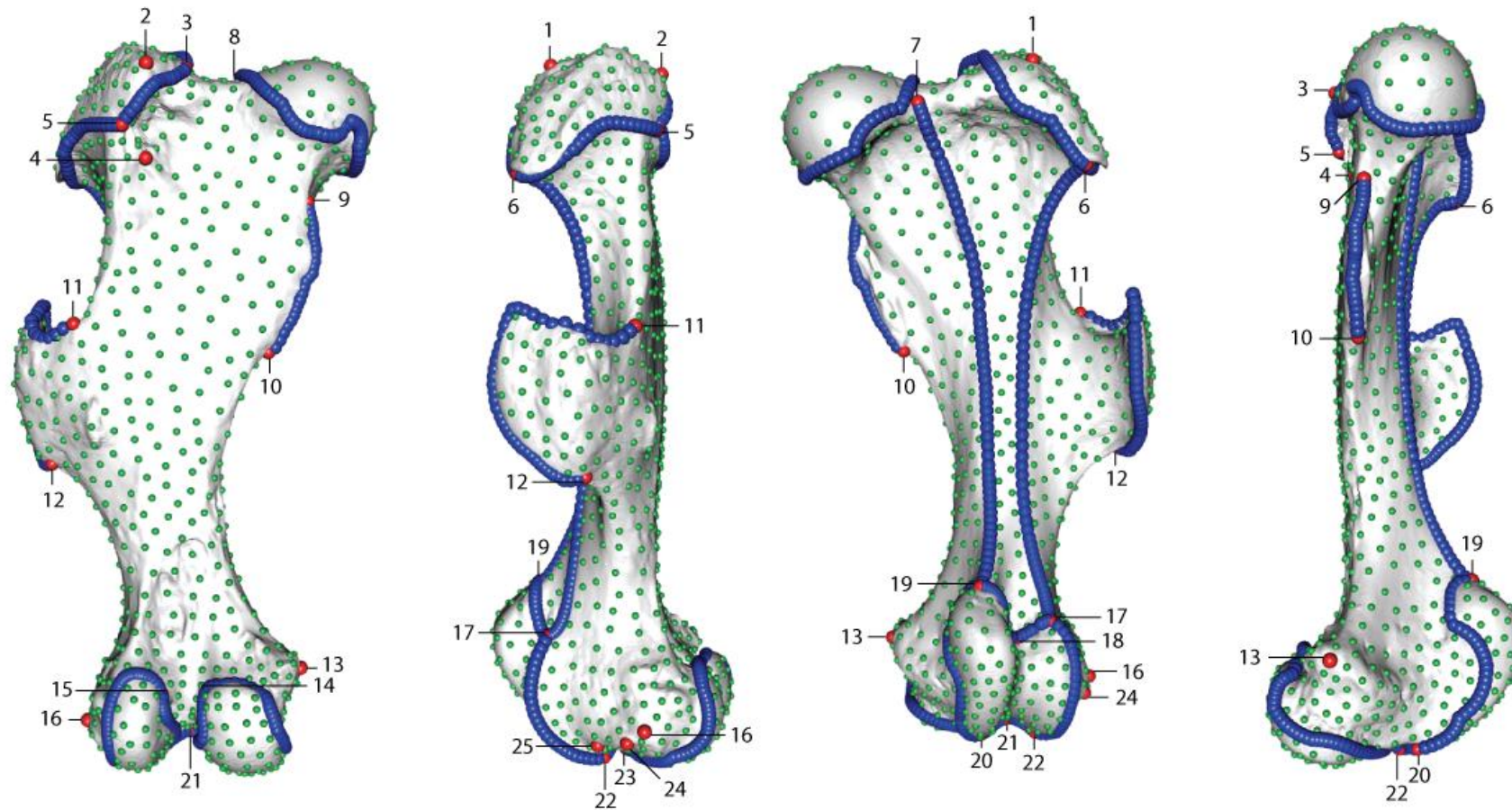


Figure S1I: Location of anatomical landmarks (red spheres), curve sliding (blue spheres) and surface sliding (green spheres) semi-landmarks placed on the femur. From left to right: caudal, lateral, cranial and medial views. Numbers refer to anatomical landmarks designation detailed in Table S1H. Landmarks n°26 and 27 situated in the intercondylar space cannot be seen.

LM	Designation
1	Most proximal point of the lateral tubercle of the intercondylar eminence
2	Most proximo-cranial point of the lateral tubercle of the intercondylar eminence
3	Most cranial point of the articular surface of the lateral condyle
4	Most caudal point of the articular surface of the lateral condyle
5	Most caudal point of the lateral tubercle of the intercondylar eminence
6	Most caudo-proximal point of the medial tubercle of the intercondylar eminence
7	Most proximal point of the medial tubercle of the intercondylar eminence
8	Most cranial point of the articular surface of the medial condyle
9	Most caudal point of the articular surface of the medial condyle
10	Most proximal point of the proximal tibio-fibular synostosis surface
11	Most distal point of the proximal tibio-fibular synostosis surface
12	Most proximal point of the lateral part of the tibial tuberosity
13	Most distal point of the lateral part of the tibial tuberosity
14	Most distal point of the tibial tuberosity groove
15	Most proximal point of the medial part of the tibial tuberosity
16	Most caudal point of the medial condyle
17	Most proximal point of the distal tibio-fibular synostosis surface
18	Most caudo-lateral point of the distal articular surface
19	Most cranio-lateral point of the distal articular surface
20	Most cranio-distal point of the intermediate ridge of the distal articular surface
21	Most distal point of the contact between the medial malleolus and the distal articular surface
22	Most distal point of the medial part of the distal articular surface
23	Most caudo-distal point of the intermediate ridge of the distal articular surface
24	Most medial point of the medial malleolus

Table S1J: Designation of anatomical landmarks on the tibia.

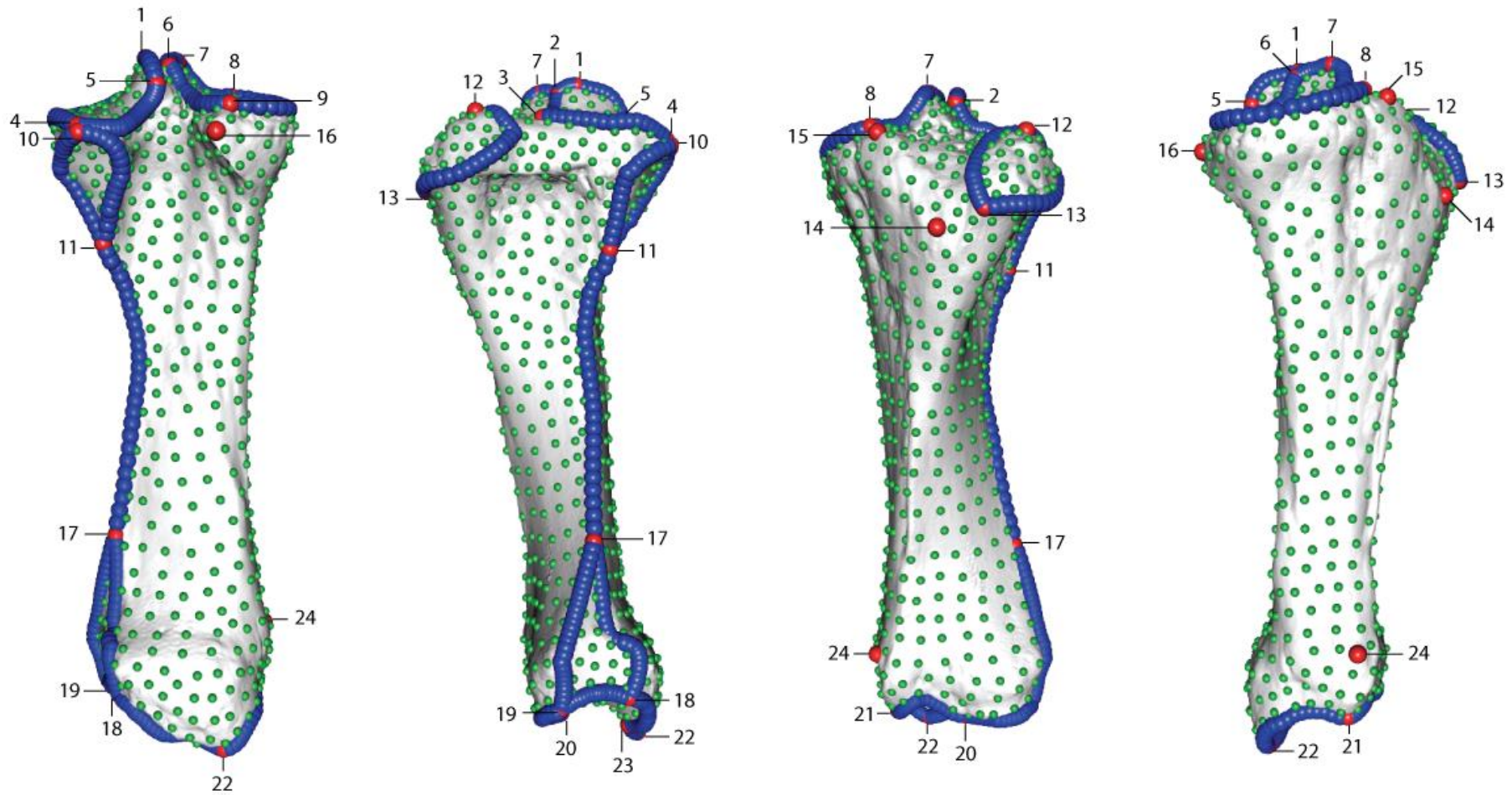


Figure S1K: Location of anatomical landmarks (red spheres), curve sliding (blue spheres) and surface sliding (green spheres) semi-landmarks placed on the tibia. From left to right: caudal, lateral, cranial and medial views. Numbers refer to anatomical landmarks designation detailed in Table S1J.

LM	Designation
1	Most proximal point of the proximal tibio-fibular synostosis surface
2	Most caudo-medial point of the proximal tibio-fibular synostosis surface
3	Most cranio-lateral point of the proximal tibio-fibular synostosis surface
4	Most proximal point of the distal tibio-fibular synostosis surface
5	Most caudal point of the distal articular facet
6	Most distal point of the caudal part of the distal articular facet
7	Most distal point of the cranial part of the distal articular facet
8	Most cranial point of the distal articular facet
9	Distal tip of the caudal ridge of the lateral malleolar sulcus
10	Distal tip of the cranial ridge of the lateral malleolar sulcus
11	Most lateral point of the cranial ridge of the lateral malleolar sulcus
12	Most disto-medial point of the proximal epiphysis = end of the latero-caudal crest

Table S1L: Designation of anatomical landmarks on the fibula.

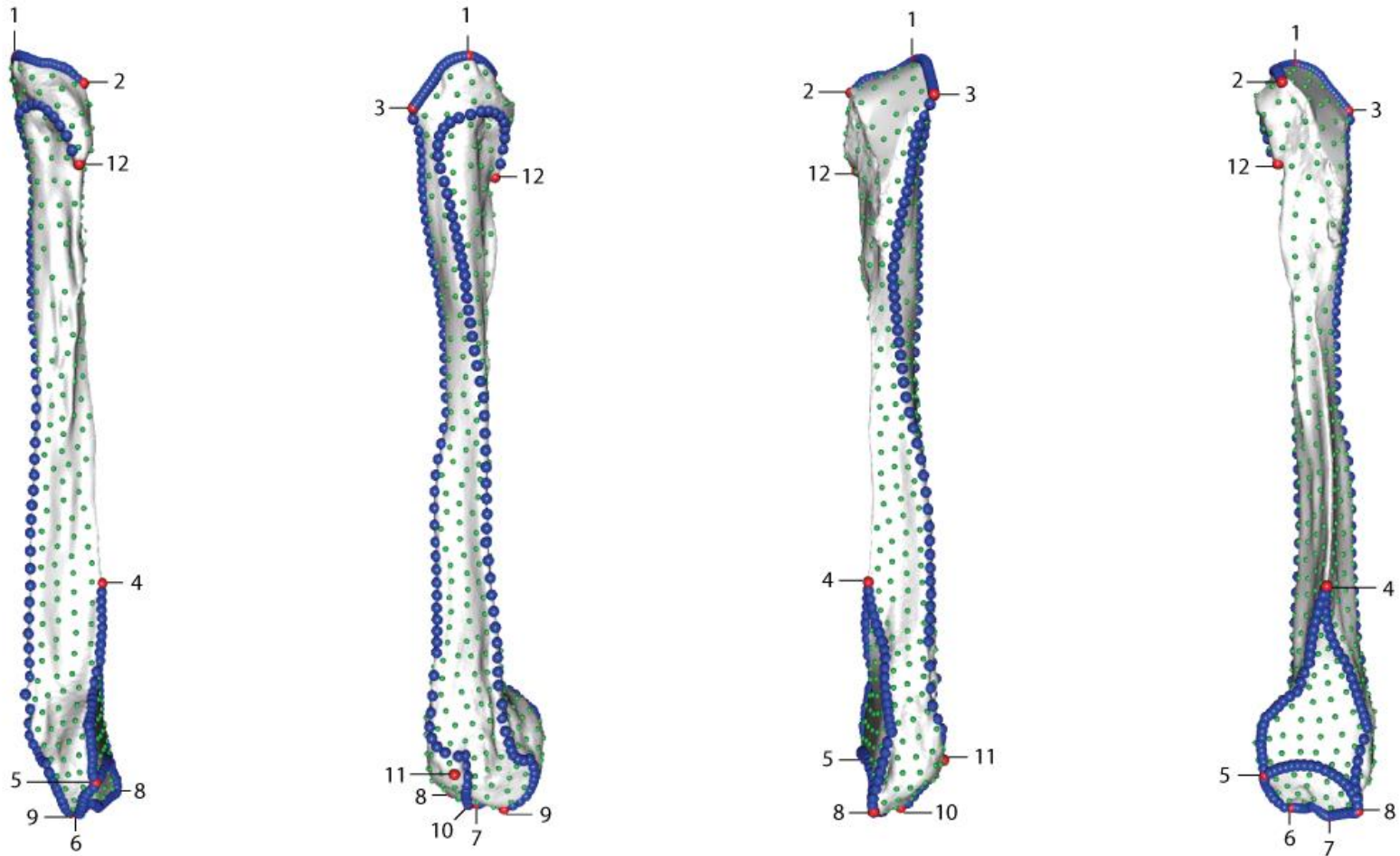


Figure S1M: Location of anatomical landmarks (red spheres), curve sliding (blue spheres) and surface sliding (green spheres) semi-landmarks placed on the fibula. From left to right: caudal, lateral, cranial and medial views. Numbers refer to anatomical landmarks designation detailed in Table S1L.