

TABLE 4.1 Anthropometric Data

Segment	Definition	Segment Weight/Total Body Weight	Center of Mass/ Segment Length		Radius of Gyration/ Segment Length		Density
			Proximal	Distal	C of G	Proximal	Distal
Hand	Wrist axis/knuckle II middle finger	0.006 M	0.506	0.494 P	0.297	0.587	0.577 M
Forearm	Elbow axis/ulnar styloid	0.016 M	0.430	0.570 P	0.303	0.526	0.647 M
Upper arm	Glenohumeral axis/elbow axis	0.028 M	0.436	0.564 P	0.322	0.542	0.645 M
Forearm and hand	Elbow axis/ulnar styloid	0.022 M	0.682	0.318 P	0.468	0.827	0.565 P
Total arm	Glenohumeral joint/ulnar styloid	0.050 M	0.530	0.470 P	0.368	0.645	0.596 P
Foot	Lateral malleolus/head metatarsal II	0.0145 M	0.50	0.50 P	0.475	0.690	0.690 P
Leg	Femoral condyles/medial malleolus	0.0465 M	0.433	0.567 P	0.302	0.528	0.643 M
Thigh	Greater trochanter/femoral condyles	0.100 M	0.433	0.567 P	0.323	0.540	0.653 M
Foot and leg	Femoral condyles/medial malleolus	0.061 M	0.606	0.394 P	0.416	0.735	0.572 P
Total leg	Greater trochanter/medial malleolus	0.161 M	0.447	0.553 P	0.326	0.560	0.650 P
Head and neck	C7-T1 and 1st rib/ear canal	0.081 M	1.000	— PC	0.495	0.116	— PC
Shoulder mass	Sternoclavicular joint/glenohumeral axis	—	0.712	0.288	—	—	—
Thorax	C7-T1/T12-L1 and diaphragm*	0.216 PC	0.82	0.18	—	—	0.92
Abdomen	T12-L1/L4-L5*	0.139 LC	0.44	0.56	—	—	—
Pelvis	L4-L5/greater trochanter*	0.142 LC	0.105	0.895	—	—	—
Thorax and abdomen	C7-T1/L4-L5*	0.355 LC	0.63	0.37	—	—	—
Abdomen and pelvis	T12-L1/greater trochanter*	0.281 PC	0.27	0.73	—	—	1.01
Trunk	Greater trochanter/glenohumeral joint*	0.497 M	0.50	0.50	—	—	1.03
Trunk head neck	Greater trochanter/glenohumeral joint*	0.578 MC	0.66	0.34 P	0.503	0.830	0.607 M
Head, arms, and trunk (HAT)	Greater trochanter/glenohumeral joint*	0.678 MC	0.626	0.374 PC	0.496	0.798	0.621 PC
HAT	Greater trochanter/mid rib	0.678	1.142	—	0.903	1.456	—

\*NOTE: These segments are presented relative to the length between the greater trochanter and the glenohumeral joint.  
Source Codes: M, Dempster via Miller and Nelson; *Biomechanics of Sport*, Lea and Febiger, Philadelphia, 1973. P, Dempster via Plagenhoef; *Patterns of Human Motion*, Prentice-Hall, Inc. Englewood Cliffs, NJ, 1971. L, Dempster via Plagenhoef from living subjects; *Patterns of Human Motion*, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1971. C, Calculated.