

TABLE 105. PHYSICAL PROPERTIES, BLOOD CONTENT, AND GROSS CONTENT OF REFERENCE MAN

1 Organ, tissue, or component	2 Weight <i>in situ</i>		3 Total blood		4 Residual blood	
	g	Page	ml	Page	ml	Page
1 Total body	70,000	13	5,200	33	..	..
1a Total soft tissue	60,000	Diff.	..	..	..	..
2 Adipose tissue	15,000	44	270	44	270	44
3 Subcutaneous (hypodermis)*	7,500	44	140	Based on adip.	140	Based on adip.
4 Other separable*	5,000*	44	90	Based on adip.	90	Based on adip.
5 Interstitial	1,000	44	..	..	..	..
6 Yellow marrow (see skeleton)	1,500	79	20	74	..	..
7 Adrenals (2)*	14*	204	3.3	206	0.6	206
8 Aorta*	100*	Est.	..	..	..	..
9 Contents*	190*	Est.	180	Definition	..	..
10 Blood	5,500	33	5,200	33	..	..
11 Plasma	3,100	39	..	..	..	..
12 Erythrocytes	2,400	36	..	..	..	..
13 Blood vessels* (see notes for Table 105)	200*	Est.	..	..	..	..
14 Contents* (except aorta and pulmonary)	3,000*	Est.	2,900	Definition	..	..
15 Body fat	13,500	43	..	..	..	..
16 Essential	1,500	43	..	..	..	..
17 Nonessential	12,000	43	..	..	..	..
18 Body water	42,000	29	..	..	..	..
19 Extracellular	18,000	32	..	..	..	..
20 Intracellular	24,000	32	..	..	..	..
21 Cartilage (see skeleton)	1,100	80	..	..	..	..
22 Connective tissue	3,400	Sum; 81	..	..	..	..
23 Tendons and fascia	1,400	81	..	..	..	..
24 Periarticular tissue	1,500	81	..	..	..	..
25 Other connective tissue	500	81	..	..	..	..
26 Separable connective tissue*	1,600*	276	..	..	..	..
27 Central nervous system*	1,430*	Sum of brain and spinal cord	32	Sum	..	..
28 Brain	1,400	213	31	215	..	..
29 Cerebrum	1,200	213	..	..	..	..
30 Cerebellum	150	213	..	..	..	..
31 Brain stem	30	213	..	..	..	..
32 Spinal cord	30	217	..	..	..	..
33 Contents (cerebrospinal fluid)*	120*	219	..	..	..	..

(Asterisked quantities make up the totality of Reference Man—see notes for Table 105)

5 Water		6 Ash		7 Fat		8 Protein		9 Specific gravity	
g	Page	g	Page	g	Page	g	Page	g	Page
42,000	24	3,700	24	13,300	24	10,600	24	1.07	26
38,700	Diff.	400	Diff.	11,400	Diff.	8,700	Diff.	..	..
2,300	44	30	Est.	12,000	44	750	44	0.92	44
1,100*	Based on adip.	15*	Based on adip.	6,000*	Based on adip.	380*	Based on adip.	0.92	Based on adip.
750*	Based on adip.	10*	Based on adip.	4,000*	Based on adip.	250*	Based on adip.	0.92	Based on adip.
150	Based on adip.	2.0	Based on adip.	800	Based on adip.	50	Based on adip.	0.92	Based on adip.
230	79	3	79	1,200	79	60	79	0.98	97
8*	205	0.06*	206	3.6*	205	2.2*	Diff.	1.02	205
70*	121	1.4*	121	1.5*	121	27*	121	..	..
150*	Based on blood	1.9*	Based on blood	1.2*	Based on blood	34*	Based on blood	1.06	34
4,400	34	55	34	36	34	990	34	1.06	34
2,900	40	29	40	23	40	210	40	1.03	39
1,500	37	26	Diff.	13	Diff.	780	Diff.	1.09	36
150*	121	1.2*	122	..	122	48*	122	..	..
2,400*	Based on blood	30*	Based on blood	20*	Based on blood	540*	Based on blood	1.06	Based on blood
..	..	..	..	13,500	43	..	..	0.92	Based on adip.
..	..	..	..	1,500	43	..	..	0.92	Based on adip.
..	..	..	..	12,000	43	..	..	0.92	Based on adip
42,000	29	..	..	..	..	..	..	1.0	Def.
18,000	32	..	..	..	..	..	..	1.0	Def.
24,000	32	..	..	..	..	..	..	1.0	Def.
860	80	45	80	14	80	180	80	1.1	80
2,100	81	140	Based on cart.	44	Based on cart.	1,200	Based on cart.	1.2	81
880	Based on con. tis.	57	Based on cart.	14	Based on con. tis.	520	Based on con. tis.	1.2	81
950	Based on con. tis.	62	Based on cart.	15	Based on con. tis.	560	Based on con. tis.	1.2	81
320	Based on con. tis.	21	Based on cart.	5	Based on con. tis.	180	Based on con. tis.	1.2	81
1,000*	Based on con. tis.	66*	Based on cart.	21*	Based on con. tis.	580*	Based on con. tis.	1.2	81
1,100*	Based on brain	21*	Based on brain	160*	Based on brain	110*	Based on brain	..	..
1,100	214	21	214	150	214	110	214	1.03	215
930	Based on brain	18	Based on brain	130	Based on brain	96	Based on brain	..	..
120	Based on brain	2.3	Based on brain	13	Based on brain	12	Based on brain	..	..
23	Based on brain	0.45	Based on brain	3.3	Based on brain	2.4	Based on brain	1.04	218
..
120*	219	0.8*	Est.	..	..	0.03*	219	1.01	219
								1.03	219

TABLE 105. PHYSICAL PROPERTIES, BLOOD CONTENT, AND GROSS CONTENT OF REFERENCE MAN (*continued*)

1 Organ, tissue or component	2 Weight <i>in situ</i>		3 Total blood		4 Residual blood	
	g	Page	ml	Page	ml	Page
34 Eyes (2)*	15*	219	..	..	..	..
35 Lenses (2)	0.4	229	..	..	..	..
36 Gall bladder*	10*	148	..	..	..	..
37 Contents (bile)*	62*	Vol. x, dens est.	..	..	..	..
38 GI tract*	1,200*	136	..	..	..	..
39 Contents (food plus digestive fluids)*	1,005*	137	..	..	..	..
40 Esophagus	40	129	..	..	..	..
41 Stomach	150	131	6.0	134	..	..
42 Contents	250	137	..	..	..	..
43 Intestine	1,000	136	..	..	..	..
44 Contents	750	137	..	..	..	..
45 Small intestine	640	136	..	..	..	..
46 Contents	400	137	..	..	..	..
47 Duodenum	60	136	..	..	..	..
48 Jejunum	280	136	..	..	..	..
49 Ileum	300	136	..	..	..	..
50 Large intestine	370	136	..	..	..	..
51 Contents	355	137	..	..	..	..
52 Upper large intestine	210	136	..	..	..	..
53 Contents	220	137	..	..	..	..
54 Ascending colon and cecum	90	136	..	..	..	..
55 Transverse colon	120	136	..	..	..	..
56 Lower large intestine	160	136	..	..	..	..
57 Contents	135	137	..	..	..	..
58 Descending colon	90	136	..	..	..	..
59 Sigmoid colon	50	136	..	..	..	..
60 Rectum	20	136	..	..	..	..
61 Hair*	20*	58	..	..	..	..
62 Heart*	330*	115	53	117	13	117
63 Contents* (av.)	500*	115	500	..	..	..
64 Kidneys (2)*	310*	175	70	177	25	177
65 Larynx*	28*	154	..	..	..	..
66 Liver*	1,800*	146	250	147	..	..
67 Lung*	1,000*	173	530	173	100	173
68 Parenchyma (includes bronchial tree plus capillary blood)	570	173	..	..	100	173
69 Blood (arterial and venous)	430	173	400	Def.	..	..

(Asterisked quantities make up the totality of Reference Man—see notes for table 105)

5 Water		6 Ash		7 Fat		8 Protein		9 Specific gravity	
g	Page	g	Page	g	Page	g	Page	g	Page
..	..	..	..	..	..	..	..	1.1	..
0.27	225	0.0016	225	0.008	225	0.14	225	..	225
7.3*	149	0.07*	149	..	..	..	..	..	..
53*	149	0.6*	149	1.2*	149	0.26*	149	1.03	149
			Based on inorg. matter						
950*	Based on intest.	10*	Based on intest.	74*	Based on intest.	160*	Based on intest.	1.04	..
900*	Est.	..	..	..	..	..	..	..	..
30	130	0.36	130	..	..	..	..	1.04	130
110	134	1.2	134	9.3	134	20	134	1.05	134
790	143	8.0	143	62	143	130	143	1.04	144
510	Based on intest.	5.1	Based on intest.	40	Based on intest.	83	Based on intest.	1.04	144
47	Based on intest.	0.48	Based on intest.	3.7	Based on intest.	7.8	Based on intest.	1.05	144
220	Based on intest.	2.2	Based on intest.	17	Based on intest.	36	Based on intest.	1.04	144
240	Based on intest.	2.4	Based on intest.	19	Based on intest.	39	Based on intest.	1.04	144
290	Based on intest.	2.3	Based on intest.	23	Based on intest.	48	Based on intest.	1.04	144
170	Based on intest.	1.4	Based on intest.	13	Based on intest.	27	Based on intest.	1.04	Based on LI
71	Based on intest.	0.72	Based on intest.	5.6	Based on intest.	12	Based on intest.	1.04	Based on LI
95	Based on intest.	0.96	Based on intest.	7.4	Based on intest.	16	Based on intest.	1.04	Based on LI
130	Based on intest.	1.3	Based on intest.	9.9	Based on intest.	21	Based on intest.	1.04	Based on LI
71	Based on intest.	0.72	Based on intest.	5.6	Based on intest.	3.8	Based on intest.	1.04	Based on LI
40	Based on intest.	0.40	Based on intest.	3.1	Based on intest.	6.5	Based on intest.	1.04	Based on LI
16	Based on intest.	0.16	Based on intest.	1.2	Based on intest.	2.6	Based on intest.	1.04	Based on LI
1.7*	59	0.10*	59	0.5*	Diff.	18*	59	1.3	59
240*	116	3.6*	117	33*	117	55*	116	1.03	117
400*	Based on blood	5*	Based on blood	3.3*	Based on blood	90*	Based on blood	1.06	Based on blood
240*	176	3.4*	176	16*	176	53*	176	1.05	176
19*	155	0.84*	155					1.08	155
1,300*	146	23*	147	120*	147	320*	147		
780*	Sum	11*	Sum	9.9*	Sum	177*	Sum	1.05 deflated	163
								0.26 inflated	163
430	164	6.3	Based on lung;	7.1	Based on lung;	100	Based on lung;	1.00	164
350	Based on blood	4.3	Based on blood	2.8	Based on blood	77	Based on blood	1.06	Based on blood

TABLE 105. PHYSICAL PROPERTIES, BLOOD CONTENT, AND GROSS CONTENT OF REFERENCE MAN (continued)

1 Organ, tissue or component	2 Weight <i>in situ</i>		3 Total blood		4 Residual blood	
	g	Page	ml	Page	ml	Page
70 Bronchial tree	30	173	..	..	..	..
71 Lymphocytes	1,500	98	..	..	..	..
72 Lymphatic tissue	700	101	..	..	..	..
73 Lymph nodes (dissectible)*	250*	Est.	..	..	9.4	101
74 Miscellaneous*	2,956*	By difference				
75 Solid soft tissue (nasopharynx, etc.)	2,600	Estimated	..	..	..	..
76 Fluid (synovial, pleural, etc.)	350	Estimated	..	..	..	..
77 Muscle (skeletal)*	28,000*	109	700	111	250	111
78 Nails (20)*	3*	59	..	..	..	..
79 Pancreas*	100*	150	..	..	3.0	151
80 Parathyroid (4)*	0.12*	201	..	..	..	..
81 Pineal*	0.18*	206	..	..	..	..
82 Pituitary	0.6*	208	0.056	209	..	..
83 Prostate*	16*	185	..	..	..	..
84 Salivary glands (6)*	85*	125	8.2	125	..	..
85 Parotid (2)	50	125	4.8	125	..	..
86 Submaxillary (2)	25	125	2.4	125	..	..
87 Sublingual (2)	10	125	0.96	125	..	..
88 Skeleton*	10,000*	79	350	74	..	..
89 Bone	5,000	79	250	74	..	..
90 Cortical	4,000	79	..	..	..	..
91 Trabecular	1,000	79	..	..	..	..
92 Red marrow	1,500	79	80	74	..	..
93 Yellow marrow	1,500	79	20	74	..	..
94 Cartilage	1,100	79	..	..	..	..
95 Periarticular tissue (skeletal)	900	79	..	..	..	..
96 Skin*	2,600*	54	65	55	..	..
97 Epidermis	100	54	..	..	..	..
98 Dermis	2,500	54	..	..	..	..
99 Hypodermis (see adipose tissue)	7,500	54	..	..	..	..
100 Spleen*	180*	102	90	104	40	105
101 Teeth (32)*	46*	83	..	..	..	..
102 Enamel	10	Estimated	..	..	..	..
103 Dentin	35	Estimated	..	..	..	..
104 Pulp	1	Estimated	..	..	..	..
105 Testes (2)*	35*	182	1.3	184	..	..
106 Thymus*	20*	106	6.0	107	..	..
107 Thyroid*	20*	199	3.6	200	..	..
108 Tongue*	70*	123	..	..	..	..
109 Tonsils (2 palatine)*	4*	127	..	..	..	..
110 Trachea*	10*	157	..	..	..	..
111 Ureters (2)*	16*	177	..	..	..	..
112 Urethra*	10*	181	..	..	..	..
113 Urinary bladder*	45*	179	..	..	..	..
114 Contents (urine)*	102*	Vol. x dens. estimated	..	..	..	..

(Asterisked quantities make up the totality of Reference Man—see notes for Table 105)

5 Water		6 Ash		7 Fat		8 Protein		9 Specific gravity	
g	Page	g	Page	g	Page	g	Page	g	Page
..
..
..
..
1,770*	Based on	..	..	..	..	..	..	..	..
350	TB 29	..	..	..	..	..	..	..	..
	Est.	..	..	..	..	..	..	..	..
22,000*	110	340*	110	620*	110	4,800*	110	1.04	112
0.2*	62	..	..	..	..	..	..	1.3	62
71*	150	1.2*	151	8*	150	13*	150	1.05	151
0.5*	209	..	..	..	..	..	..	1.05	207
..	..	..	..	..	..	..	..	1.07	209
13*	186	0.2*	186	0.2*	186	2.4*	Diff.	1.05	186
64*	Est.	..	..	..	..	..	..	1.05	125
..	..	..	..	..	..	..	..	1.05	125
..	..	..	..	..	..	..	..	1.05	125
..	..	..	..	..	..	..	..	1.05	125
3,300*	79	2,800	79	1,900*	79	1,900*	79	1.4	65
850	79	2,700	79	50	79	1,300	79	2.2	65
600	79	2,200	79	40	79	1,000	79	1.85	71
230	79	500	79	10	79	240	79	1.08	71
600	79	9	79	600	79	300	79	1.03	97
230	79	3	79	1,200	79	60	79	0.98	97
860	79	45	79	14	79	180	79	1.1	80
570	79	37	79	12	79	140	79	1.1	65
1,600*	55	18*	55	260*	55	750*	55	1.10	56
..	..	..	..	..	..	..	..	1.15	56
..	..	..	..	..	..	..	..	1.12	56
..	..	..	..	..	..	..	..	0.97	56
140*	104	2.5*	104	2.9*	104	35*	104	1.06	104
4.2*	85	34*	85	..	..	8.3*	85	2.10	85
0.28	85	9.6	85	..	..	0.12	85	..	..
..	..	..	..	..	..	(insol.)	..	..	..
3.9	85	25	85	..	..	0.16	85	..	..
..	..	..	..	..	..	(insol.)	..	..	..
0.7	Est.	0.1	Est.	0.01	85	0.6	85	..	..
28*	184	0.39*	184	1.1*	184	4.2*	184	1.04	183
16*	107	0.15*	107	..	..	..	..	1.03	107
15*	200	0.22*	200	2.0*	dif.;	2.8*	200	1.05	200
46*	124	0.70*	124	14*	124	12*	124	..	..
3*	Est.	..	..	..	..	..	..	..	..
6*	158	0.16*	158	..	..	..	..	1.08	158
11*	178	..	..	..	..	..	..	..	..
7.5*	182	..	..	..	..	..	..	..	..
29*	180	0.36*	180	..	..	..	..	..	..
95*	354	1.1*	Est.	..	..	6.2*	355	1.02	354

