

NORMAL REFERENCE VALUES

MALES	Age	15-24	25-34	35-44	45-54	55-64	65-74	75-84	>85
Anthropometric¹									
Height (in)		69.9	70.0	69.6	68.5	68.2	67.6	67.2	65.2
Weight (lb)		154.6	163.8	166.3	163.2	165.8	167.4	160.1	157.9
Impedance¹									
Phase Angle (°)		7.3	7.5	7.2	7.1	6.6	6.1	5.3	4.6
Body Capacitance (pF)		828	865	843	838	779	723	612	524
Resistance (ohms)		484	474	470	469	468	466	482	486
Reactance (ohms)		61.9	62.1	59.4	58.8	54.3	49.9	45.1	39.1
Mass Distribution									
Body Cell Mass (% wt)		45.4	43.5	41.1	39.6	36.8	34.1	31.5	27.5
Extracellular Mass (% wt)		43.0	41.3	41.3	40.7	41.0	41.3	42.2	41.1
Fat-Free Mass (% wt)		88.4	84.8	82.4	80.3	77.8	75.4	73.7	68.6
Fat Mass (% wt)		11.6	15.2	17.6	19.7	22.2	24.6	26.3	31.4
ECM/BCM Ratio		0.95	0.95	1.00	1.03	1.11	1.21	1.34	1.49
Body Mass Index (kg/m ²)		22.3	23.5	24.1	24.4	25.1	25.7	24.9	26.1
Basal Metabolic Rate (cals/day)		1934	1966	1938	1853	1825	1785	1669	1532
Water Compartments									
Intracellular Water (% tbw)		61.0	60.5	59.1	58.5	56.1	53.8	51.2	48.3
Extracellular Water (% tbw)		39.0	39.5	40.9	41.5	43.9	46.2	48.8	51.7
Total Body Water (% ffm)		72.4	72.4	72.5	72.2	72.0	71.9	71.6	72.5
Total Body Water (% wt)		64.1	61.4	59.7	58.0	56.0	54.2	52.8	49.7
FEMALES									
Anthropometric¹									
Height (in)		65.6	65.2	64.5	64.2	63.4	62.7	62.0	60.3
Weight (lbs)		128.6	129.4	129.4	133.4	138.5	144.6	138.0	130.3
Impedance¹									
Phase Angle (°)		6.6	6.6	6.7	6.5	6.0	5.4	4.8	4.5
Body Capacitance (pF)		603	620	641	641	583	539	466	435
Resistance (ohms)		601	582	572	557	563	555	569	570
Reactance (ohms)		69.3	66.8	66.8	63.3	58.7	52.6	47.7	44.7
Mass Distribution									
Body Cell Mass (% wt)		38.1	37.1	36.3	34.5	31.5	27.7	25.7	24.0
Extracellular Mass (% wt)		40.3	40.4	39.8	39.7	39.4	38.0	38.5	38.4
Fat-Free Mass (% wt)		78.4	77.5	76.1	74.2	70.9	65.7	64.2	62.4
Fat Mass (% wt)		21.6	22.5	23.9	25.8	29.1	34.3	35.8	37.6
ECM/BCM Ratio		1.06	1.09	1.10	1.15	1.25	1.37	1.50	1.60
Body Mass Index (kg/m ²)		21.0	21.4	21.9	22.7	24.2	25.8	25.2	25.2
Basal Metabolic Rate		1426	1420	1395	1401	1388	1345	1254	1151
Water Compartments									
Intracellular Water (% tbw)		55.6	54.5	54.3	52.9	50.0	47.3	45.1	43.7
Extracellular Water (% tbw)		44.4	45.5	45.7	47.1	50.0	52.7	54.9	56.3
Total Body Water (% ffm)		72.4	72.5	72.5	71.9	71.5	73.2	73.8	75.0
Total Body Water (% wt)		56.8	56.2	55.2	53.4	50.6	48.0	47.4	46.9

¹Kyle TG, et al. Fat-Free and Fat Mass Percentiles in 5225 Healthy Subjects Aged 15 to 96 Years. *Nutrition*, 17:534-541, 2001.