Quantum IV Standard
Bioelectrical Impedance Analyzer (BIA)

A Multilingual Body Composition Standard with USB

The portable hand-held Quantum IV Biological Impedance Analyzer (BIA) continuously precisely measures true biological resistance and reactance properties for the study of human body composition by health care professionals.

Reliability and Repeatability An important specification of the Quantum IV is the subject is free from direct contact to any active circuits or ground paths that may cause stray undefined readings. Stray capacitance and noise is canceled or suppressed from the measurement. This patented unique isolation is one of many features that gives RJL Products and the Quantum IV its unsurpassed reliability, accuracy and repeatability and the standard in BIA measurements.

Name: Roberta Sample

Test Date: 11:19 AM; February 18, 2014
Report Printed on: 11:23 AM; October 16, 2018

Height	Weight	Age	Sex	Resistance	Reactance	Frame	Target Wt.	Activity Level	Equation Set
69 in	187 lbs	64.0	Female	542.0 Ω	53.6 Ω	Medium	155 lbs	Very Light	RJL Systems

Current Test Data

	Amount			
Weight	187.0 lbs	**% of Weight**		
Fat	62.0 lbs	33.2 %		
Fat-Free Mass (FFM)	125.0 lbs	66.8 %	**% of FFM**	
Lean Dry Mass (LDM)	39.8 lbs	21.3 %	31.8 %	
Total Body Water (TBW)	85.2 lbs	45.6 %	68.2 %	**% of TBW**
Intra-Cellular Water (ICW)	42.4 lbs	22.7 %	33.9 %	49.7 %
Extra-Cellular Water (ECW)	42.8 lbs	22.9 %	34.3 %	50.3 %
Bone Mineral Content (BMC)	6.4 lbs	3.4 %	5.1 %	
Lean Soft Tissue (LST)	118.6 lbs	63.4 %	94.9 %	**% of LST**
Skeletal Muscle Mass (SMM)	54.8 lbs	29.3 %	43.9 %	46.2 %

BMI	27.8	**Phase Angle**	5.6
FMI	9.2	**Basal Metabolic Rate (BMR)**	1,715.6 kCal
FFMI	18.6	**Daily Energy Expenditure (DEE)**	2,230.2 kCal

Average Ranges

	Amount			
Weight	123.5 - 192.5 lbs	**% of Weight**		
Fat	39.6 - 84.8 lbs	31.7 - 44.9 %		
Fat-Free Mass (FFM)	81.5 - 110.1 lbs	55.1 - 68.3 %	**% of FFM**	
Lean Dry Mass (LDM)	20.5 - 27.9 lbs	13.6 - 17.6 %	23.8 - 26.8 %	
Total Body Water (TBW)	60.7 - 82.5 lbs	41.1 - 51.0 %	73.3 - 76.2 %	**% of TBW**
Intra-Cellular Water (ICW)	33.2 - 42.2 lbs	21.3 - 27.6 %	38.0 - 41.1 %	51.0 - 54.9 %
Extra-Cellular Water (ECW)	27.4 - 40.4 lbs	19.6 - 23.7 %	33.5 - 36.9 %	45.1 - 49.0 %
Bone Mineral Content (BMC)	5.6 - 8.6 lbs	4.5 - 4.6 %	6.4 - 7.9 %	
Lean Soft Tissue (LST)	77.7 - 106.9 lbs	52.0 - 67.0 %	92.1 - 93.6 %	
Skeletal Muscle Mass (SMM)	39.4 - 56.5 lbs	26.6 - 35.0 %	44.7 - 51.7 %	

BMI	22.4 - 34.3	**Phase Angle**	5.8 - 7.7
FMI	7.1 - 15.2	**Basal Metabolic Rate (BMR)**	1,172.0 - 1,481.9 kCal
FFMI	14.9 - 19.4		

Please note that these ranges represent average values taken from a treatment of the NHANES-III survey data. They are not meant to be "Clinical" or "Ideal" ranges.

Definitions of term reported in the body composition software Rev 4.3

Height - in inches (in) or centimeters (cm)
Weight - in pounds (lbs) or kilograms (kg)

Measured Resistance - the opposition to the flow of an electrical current. Higher TBW and LDM is a lower Resistance, and higher Fat and dehydration is a higher resistance.

Measured Reactance - measures the body's opposition to changes in the flow of an electrical current. Reactance is related to the capacitance of cell membranes.

Phase Angle (PA) – PA is simply the ratio of reactance over resistance. It has special meaning because no other variables are needed (height, weight and age). It is expressed in degrees, therefore, uses an arc-tangent function. NHANES phase angles range are between 4-9.

Fat - provides insulation, warmth, and energy storage and is necessary for the absorption of many vitamins.

Fat Free Mass (FFM) - also called Lean Body Mass, is everything in the body, except Fat.

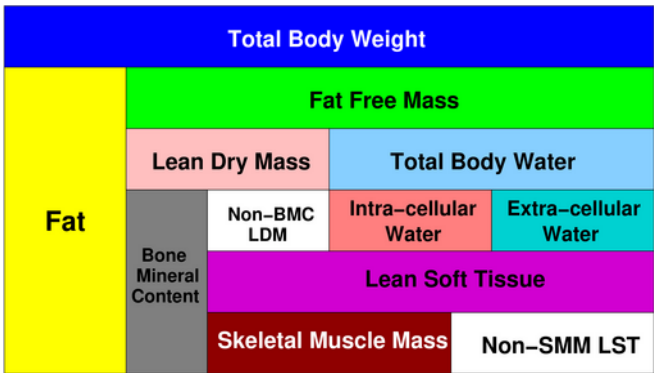
Lean Dry Mass (LDM) - is what is left after subtracting all of the water from Fat Free Mass.

Total Body Water (TBW) - is all of the water throughout the body, both inside and outside of the cells.

Intra-Cellular Water (ICW) - represents the amount of water inside cells.

Extra-Cellular Water (ECW) - represents the amount of water outside of the cells.

Bone Mineral Content (BMC) - Bones are dynamic organs that include cells, blood vessels, collagen and mineral deposits. BMC is only an estimate of the minerals in the bones and does not represent the total weight of the skeleton. It is part of Fat-Free Mass.



Lean Soft Tissue (LST) - In the same way that LDM is the result of removing all water from Fat Free Mass. Lean Soft Tissue is the result of subtracting Bone Mineral Content from Fat-Free Mass. This includes organs, muscles, connective and supportive tissues, as well as all of Total Body Water.

Skeletal Muscle Mass (SMM)- SMM are the muscles responsible for posture and movement.

Basal Metabolic Rate (BMR) - The caloric energy required to sustain life in a sedentary state for 24 hours.

Daily Energy Expenditure (DEE) - DEE adjusts the BMR value based on the selected activity level. The caloric energy required to sustain life, plus daily activities.

Body Mass Index (BMI) - BMI is derived by dividing total weight (kg) by height (meters) squared. BMI is a general measure typically used to determine if someone is overweight, but knowing actual body composition is much more accurate.

Fat Mass Index (FMI) - FMI relates fat mass to height in the same way that BMI relates total weight to height. Because it takes into account only the fat mass, it is a superior indicator of obesity compared to BMI.

Fat Free Mass Index (FFMI) - FFMI relates fat-free mass to height in the same way that FMI does to fat. Fat + FFM - Weight, FMI + FFMI = BMI