

# What is a BIA? (And why do you need one?)

Bioelectrical Impedance Analysis or Bioimpedance Analysis (BIA) is a method of assessing your “body composition”—the measurement of body fat in relation to lean body mass. It is an integral part of a health and nutrition assessment.

*Improving your BIA measurement by lowering your percentage of unhealthy body fat can help reduce your risk to a variety of serious health conditions.*

## Why is Body Composition Important to My Health?

Research has shown that body composition is directly related to health. A normal balance of body fat is

associated with good health and longevity. Excess fat in relation to lean body mass, a condition known as altered body composition, can greatly increase your risks to cardiovascular disease, diabetes, and more. BIA fosters early detection of an improper balance in your body composition, which allows for earlier intervention and prevention. BIA also provides a measurement of fluid and body mass that can be a critical assessment tool for your current state of health.

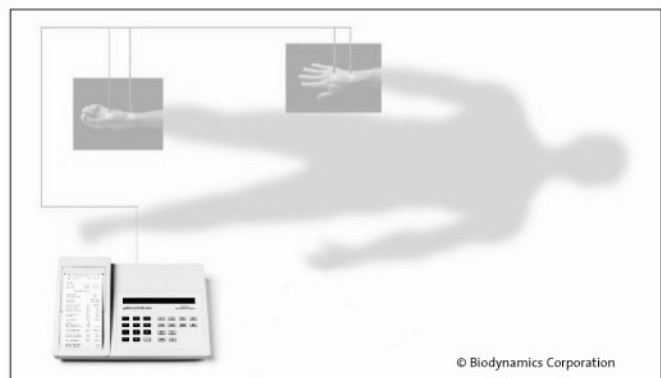
BIA also serves to measure your progress as you work to improve your health. Improving your BIA measurement, or maintaining a healthy BIA measurement, can help keep your body functioning properly for healthy aging and reduced risk to illness. With your BIA results, we can recommend a

personalized dietary plan, nutritional supplements, and exercise to help you support optimal health and well-being for a lifetime.

## How Does a BIA Work?

BIA is much more sophisticated than your bathroom scale, but just as painless—and almost as quick. BIA is a simple procedure that can be performed right in our office in a matter of minutes with the help of a sophisticated, computerized analysis.

This analyzer “calculates” your tissue and fluid compartments—using an imperceptible electrical current passed through pads placed on one hand and foot as you lie comfortably clothed on an exam table. In just minutes, we’ll have very accurate measurements to help create an effective, personalized program to improve your health status.



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***I care. I listen.***

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***** BIOIMPEDANCE ANALYSIS *****			
Date:	02/21/03	Time:	11:40 am
Patient:	_____		
Sex:	Male	Height:	75.0 in
Age:	35	Weight:	160.0 lbs
MEASUREMENTS RESULTS			
Phase Angle:	6.5 °		
Body Capacitance:	617 pF		
Resistance:	583.5 ohms		
Reactance:	66.8 ohms		
Mass Distribution	lbs	percent	
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Body Cell Mass:	63.9	39.9	
Extracellular Mass:	68.9	43.2	
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Fat Free Mass:	132.8	83.1	
Fat Mass:	27.2	16.9	
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Total Weight:	160.0	100.0	
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ECM/BCM:	1.08		
Body Mass Index:	20.0		
Basal Metabolic Rate:	1881	cals	
Water Compartments	liters	percent	
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Intracellular Water:	24.3	57.3	
Extracellular Water:	18.1	42.7	
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Total Body Water:	42.4	100.0	
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TBW/Fat Free Mass:	70.4		
TBW/Total Weight:	58.4		

## Interpreting Your BIA Results

We will go over your results in detail. Briefly, here are the measurements your BIA will provide:

**Phase Angle**—Calculated using the measurements of resistance and reactance, which are indicators of cellular health independent of weight. Normal values vary with age and gender.

**Body Capacitance**—An indicator of the quantity of healthy cell membranes in the body.

**Resistance**—Related to body water. Since more water is stored in fat-free mass, a higher value indicates healthier, lean tissue.

**Reactance**—The ability of cells to store energy (related to body capacitance). A low reactance indicates a breakdown in cell membranes' selective permeability. A

higher reactance means healthier cells.

**Body Cell Mass**—The “living” cells of the body, such as those found in muscle, organs, blood, and immune cells. Also includes intracellular water (water contained within your cells).

**Extracellular Mass**—The amount of water in your body that is found outside your cells.

**Fat-Free Mass**—A measure of total nonfat body compartments (also called lean body mass). Contains most of the body's water.

**Fat Mass**—The amount of stored fat in the body.

**ECM/BCM**—Ratio of extracellular mass (ECM) to body cell mass (BCM). A lower value, indicating a higher ratio of living to inactive mass, is desirable. Normal values are near 1.0 (a 50/50 distribution).

**Body Mass Index (BMI)**—A ratio of weight to height used as a quick measure of health status. Values from 19-24 are desirable.

**Basal Metabolic Rate**—Based on fat-free mass, the number of calories your body uses each day, not counting the extra calories you burn through exercise.

**Intracellular Water (ICW)**—Water volume of body cell mass (i.e., water in the “living” cells).

**Extracellular Water (ECW)**—Water volume outside the body cell mass (i.e., water in the “inactive” cells).

**Total Body Water (TBW)**—Sum of ICW and ECW.

**TBW/Fat-Free Mass**—The percentage of fat-free mass that is water.

**TBW/Total Weight**—The percentage of total weight that is water.

## Follow-Up Tests

We can conduct a series of follow-up BIA tests to monitor your health and measure your progress.

