

Medical Clinic St. John's

Medical Clinic St. John's - Bioimpedance Analysis or also known as BIA is a really straightforward and noninvasive method utilized so as to calculate body composition. The accurateness of a BIA machine is dependent upon several factors like for example the particular kind of machine and on the number of frequencies at which measurements are taken.

Initially utilized more than 30 years ago, BIA devices determine the total water content of an individual's body. By way of passing an extremely low level electrical current through a person's body the impedance to the flow of the current can be calculated.

There are actually 2 main ideas which BIA is based upon. First, an individual's body contains water and conducts electrolytes. Water can be found inside the bodies cells, within the ICF or also known as intracellular fluid in addition to outside of the cells within the ECF or extracellular fluid. At high frequencies the current goes through both the ICF and ECF whereas at low frequency, while a current passes through the ECF space it does not penetrate the cell membrane.

Second concept relates to the impedance of a geometrical system related to conductor length or its signal frequency over a cross sectional area. Putting all the concepts together, a fixed value for the impedance could actually be measured from a fixed current going through an individual's body. This current is inversely proportional to the quantity of fluid. Total fluid determinations could be made specific for extracellular fluid by appropriate choice of signal frequency.