

Medical Clinic Timmins

Medical Clinic Timmins - Bioimpedance Analysis or also known as BIA is a simple and noninvasive technique used in order to ascertain body composition. The accurateness of a BIA device depends on various factors like for example the kind of device and on the number of frequencies at which measurements are taken.

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

BIA is based on two key ideas. First, the fact which the body contains water and conducts electrolytes. Water is found inside the cells inside the body, inside intracellular fluid or also known as ICF and outside the cells inside the extracellular fluid or ECF. At high frequencies the current goes through both the ICF and ECF whereas at low-level frequency, when a current passes through the ECF space it does not enter 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 of the concepts together, a fixed value for the impedance could actually be calculated from a fixed current passing through a person's body. This flow is inversely proportional to the amount of fluid. Total fluid determinations can be made specific for extracellular fluid by appropriate choice of signal frequency.