

Medical Clinic Kingston

Medical Clinic Kingston - Bioimpedance Analysis or BIA is a really simple and noninvasive method utilized to determine body composition. The accurateness of a BIA machine is dependent upon various things like the particular type of instrument and on the number of frequencies at which measurements are taken.

Originally used over 30 years ago, BIA machines calculate the total water content of the body. By means of passing a very low strength electrical current through an individual's body the impedance to the flow of the current can be determined.

BIA is based on 2 main concepts. First of all, the reality which an individual's body has water as well as conducts electrolytes. Water is found in the cells within the body, in intracellular fluid or otherwise known as ICF and outside the cells within the extracellular fluid or likewise known as ECF. At high frequencies the current passes through both the ECF and ICF while at low frequency, when a current passes through the ECF space it does not penetrate the cell membrane.

Second idea 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 going through the body. This current is inversely proportional to the amount of fluid. Total fluid determinations can actually be made specific for extracellular fluid by appropriate choice of signal frequency.