Until a few decades ago, adipose tissue was considered a functional anatomic component whose main, if not exclusive physiological activity, was to accumulate energy reserves in the form of triacylglycerol and to eventually release it in the form of long-chain fatty acids as a source of energy. Therefore the hormone dependant intra-adipocyte lipolysis and liposynthesis were the only two metabolic processes attributed to adipose tissue, particularly the white adipose tissue.

In recent years interest, research and understanding of the physiology of both the white and gray adipose tissues has seen unexpected growth, above all in the field of the medical science associated with improving aesthetics but also by anatomists, endocrinologists and molecular biologists.

Today, adipose tissue is considered much more than an energy storage site. It is a source of hormones, growth factors, cytokines and signaling molecules that regulate body metabolism. Much more we know about adipocyte life cycle and about factors involved and effecting his proliferation, growth arrest, clonal expansion, terminal differentiation and apoptosis. In addition subcutaneous adipose tissue is a superficial organ, easy to collect and manage and contains large amounts of stem cells.

The influence of the subcutaneous adipose tissue in producing a correct anatomical appearance is well know by all, even by those who are not in the medical profession. The possibility of harvesting and transplanting it, destroying or removing it mechanically, chemically or by means of physical agents has greatly expanded the horizons of the medical-surgical science intended to improve the appearance of the body.

Even within the context of certain diseases, congenital, acquired or iatrogenic, which affect adipose tissue, in recent times an increased possibility to treat them with clinical results that are continuously more satisfying has been seen. Take for example a lipoedema or atrophic and hypotrophic lipodystrophies, as well as gynoid lipodystrophy (cellulite), and the hypertrophy as the so called “Buffalo Hump” in HIV+ patients being treated with antiretroviral drugs.

This issue of the EJAMED dedicated to subcutaneous adipose, contains several articles written by authors of international fame.
The first article written by German authors Wollina et Heinig evaluates the effectiveness of laser-assisted liposuction using thin cannulas for the treatment of lipodema. The next article, written by Jamah et Gelidan highlights the excellent aesthetic results, which can be obtained with lipofilling of the breast with a series of highly significant iconographic materials. Another article written by Leibashoff et al. evaluates the effectiveness and tolerability of two methods of liposuction combined with ultrasound and laserlysis. The last article written by Salti and Motelee highlights by means of ex-vivo histological studies the greater adipocytolytic effectiveness obtained by associating external ultrasound with infiltrations of solutions that promote adipose cell lysis with respect to the single methodologies.

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