

Cellulite and Localized Fat

Localized fat deposits and cellulite, natural ways of storing fat, are problematic for a few reasons, one being today's aesthetic criteria that condemn it, the other being related to certain lifestyles that encourage its development.

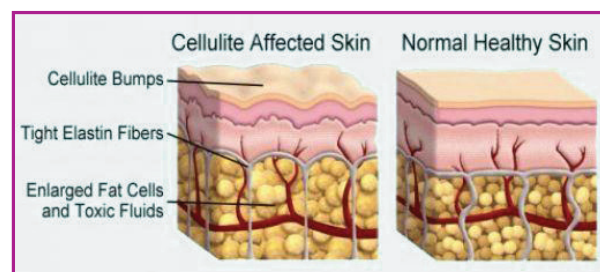
What is body fat?

A layer of fat occurs over most of the body. The primary functions of this fat layer is to provide thermoregulation, cushioning against mechanical trauma, body contour and filling of body space. Most importantly, this fat layer is a source of energy.

Adipose tissue (fat tissue) is loose connective tissue composed of adipocytes. It is technically composed of roughly only 80% fat. Its main role is to store energy in the form of lipids, although it also cushions and insulates the body. Subcutaneous fat is found just beneath the skin and has no effect on one's health as opposed to visceral fat which is found in the peritoneal cavity packed between the organs (stomach, liver, intestines, kidneys, etc.) and is linked to metabolic disturbances, such as an increased risk for cardiovascular diseases and type 2 diabetes. While visceral fat can only be reduced by diet and exercise, subcutaneous fat is more resistant to diet and exercise, and therefore it can be treated medically.

What is cellulite?

For years, many in the medical community have argued that cellulite is merely fat and can only be treated with diet and exercise. Yet, non-overweight, physically active women have also been known to show up at the spa or skin treatment center with pleas for treatments or products to address "dimpled" skin. The unfortunate truth is that 80-90% of women will get cellulite some time after they reach puberty, and not all of these women are considered overweight.



In the female body, the uppermost layer of the subcutaneous tissue (or hypodermis) consists of freestanding fat cell chambers (filled with fat cells), which are separated by vertical walls of connective tissue called septa. The apex of these upright fat chambers is in the form of an arc-like dome, which is weak and prone to collapse when undue pressure is applied. This pressure could be the result of excess weight, fluid retention or lack of strength due to little or no exercise. These larger chambers generate smaller compartments of fat cells (papillae adiposae) that cluster tightly under the skin. This combination of freestanding fat cell chambers and compartmentalized clusters of fat cells are the elements that create the change in appearance in the skin's surface known as cellulite.

Classification of cellulite:



Class 1: No spontaneous dimpling, pinch test positive for dimpling



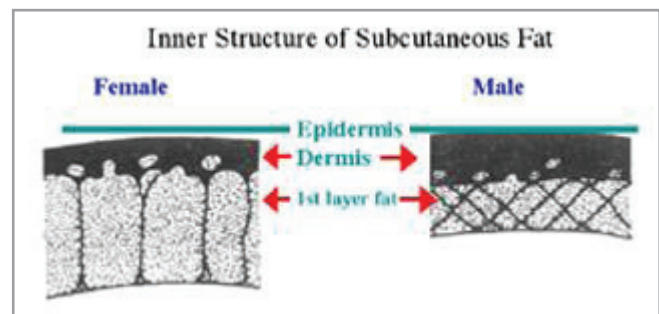
Class 2: Spontaneous dimpling while standing



Class 3: Spontaneous dimpling while standing and lying down

Cellulite in Females Vs. Males

Interestingly, when scientists compared the structure of the hypodermis in female vs. male patients, they found that the men had smaller fat cell chambers with oblique septa; this latter structural difference affords more strength to the septa and enables them to withstand collapsing under pressure. They also noted that the smaller compartments of fat cells (papillae adiposae) had the same structure in men and women. It is hypothesized that this difference in structure of fat cell chambers may predispose women to cellulite more so than men. Interestingly, men with more feminine characteristics tend to have fat cell chambers similar to women, thus inferring that hormones also play a role in controlling this aspect of our structural diversity.

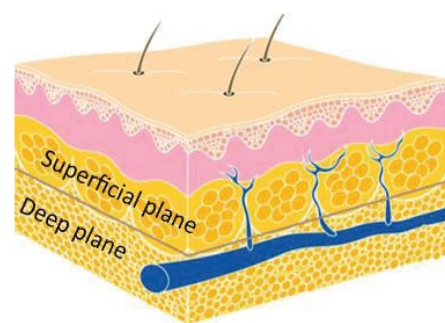


The precise cause of cellulite is most likely a combination of factors. We have already looked at the structure of the hypodermis layer and explored differences that are inherent in women. One of the causes of the rippling effect of cellulite is fluid retention in adipose tissue. The retained fluids cause visible swelling of thighs, hips and abdomen, and the toxic wastes, contained in the fluids, break down collagen and elastin fibers that help keep the skin smooth and firm.

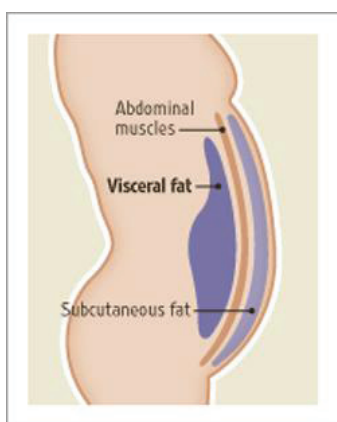
With age, there is a decrease in the number of elastin and collagen fibers in cellulite tissue as these structural proteins generally begin to stiffen and lose their flexibility. Loss of circulation to an area – whether caused by lack of exercise, too much sitting, clogged arteries or nutrient deficiency – can have a serious impact and also accelerate cellulite formation. In addition, many

commonly absorbed hormones can influence directly one's capacity to store or get rid of cellulite and fat deposits. It has been proven that our ability to store fat increases with age. It is important to keep in mind that hormone levels are naturally modified with age, in particular during major endocrine events such as puberty, pregnancy or menopause. Cellulite generally appears in areas that have poor circulation; unfortunately, once it forms it slows circulation in the given area even more. Engorging fat cells, accumulated fluids and toxins and poor circulation can exacerbate the loss of firmness. All of these factors are believed to contribute to the formation of cellulite.

Most women have a combination of concerns – extra fat tissue and cellulite, which originate respectively from the superficial plane and the deep plane of the subcutaneous fat.



Local Fat Deposites



Another concern of men and women alike are local fat deposits, that are resistant to diet and exercise. These deposits are contained in the subcutaneous fat found just beneath the skin as opposed to visceral fat which is found in the peritoneal cavity packed between various organs (stomach, liver, intestines, kidneys, etc.). While subcutaneous fat can be treated by liposuction, minimal-invasive and non-invasive treatments, visceral fat can be eliminated only by diet and exercise. Typical localized fat deposits are in the lower abdomen, outer thighs and love handles or areas of the body where cellulite is also often present. Because these deposits tend to be resistant to exercise and diet many people become discouraged when their efforts fail to

remove them. There is a growing market demand for treatment of these resistant fat deposits and a great business opportunity for medical physicians.

How can we treat excess fat?

Liposuction is the most commonly performed aesthetic surgical procedure and the traditional treatment for reduction of localized fat deposits. Liposuction is quite safe and surveys of patient satisfaction indicate that people are usually pleased with the results. Liposuction requires anaesthesia and is not selective to the fat cells; it involves surrounding tissues thus causing pain, swelling bruising and a recovery period.

Despite its potential benefits, many patients understandably do not want surgery. Most patients would prefer a non-invasive method for fat reduction and body contouring that is effective, yet comfortable and safe, with minimal down-time.

Different technologies are employed for non-invasive fat and cellulite reduction, including ultrasound, radiofrequency, infrared, vacuum, massage therapy and others.

Syneron-Candela offers a complete treatment for both cellulite and localized fat deposits combining 5 different technologies in 2 complementary devices.

- VelaShape II® offers safe, efficient and virtually painless treatment to reduce body circumference and cellulite. VelaShape II provides dramatic results with zero downtime or discomfort. This product uses a combination of technologies (radiofrequency, infrared, vacuum and massage) for treating cellulite and contouring the body.
- UltraShape® V3 uses focused ultrasound to safely deliver energy at a specific depth below the skin surface and destroy fat cells without harming other structures, such as nerves, blood vessels and connective tissue and with no discomfort. Results are immediate and long lasting.

References

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