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CELLULITE.

Cellulite strikes 90% of women: thin, obese, young and in menopause.

WHAT IT IS: With the improper term of "cellulite" one defines the modifications of the lipodermis of predominantly aesthetical nature. Actually it is an infection or it is better defined as fibro-haematose panniculopathy. Shortly, the adipose cells become little by little hard, sclerotic and swollen. The term "cellulite" commonly used is improper since, in medicine, the suffix "ite" defines an inflammatory process (for instance otitis: ear inflammation, tonsillitis: tonsils inflammation; etc.), while this is a degenerative process of the different layers of the skin and of the anatomical structures contained there. The medical term currently considered as more suitable to define this pathology is: "edematose-fibro-sclerotic panniculopathy" (E.F.P.), that well points out the after-effect of the adipose cells, determined by the edema and by the sclerosis of the reticular fibres. Cellulite appears as a consequence of an alteration of the capillary-venule permeability with deceleration of the blood flow in the micro-circulation district.

HOW IT IS FORMED. It all starts with problems of micro-peripheral circulation of the inferior limbs; in fact the venous vessels, for genetic or behavioural causes lose their elasticity. This generates a difficulty of exchange of nourishing elements from the vessels to the tissues and vice versa causing a suffering of the surrounding tissues for stasis of catabolites (refuse substances) with consequent inflammation; with the passing of time all this brings to the swelling of these tissues against the adipocitis. Here is as the cellulite appears.

PREVENTION AND CARE. Exercise, without doubt, plays an important role for the prevention and the care of the cellulite. Aerobic activity brings some great benefits: it stimulates blood and lymphatic circulation, it favours the oxygenation of tissues, it mobilises fat reserves and therefore they can be used as energetic sources. Weightlifting is not to be undervalued, as, if it is done in a methodical way, it also brings some great benefits: it stimulates testosterone, another limiting and antagonist factor of cellulite. Unfortunately modern life imposes some fast rhythms of life upon us and it often happens that for lack of time we neglect ourselves, we avoid to do exercise and to follow a healthy life style.

CELLULITE CAN BE CONSIDERED A REAL ILLNESS. The electrodiagnostic means to diagnose cellulite are as follows: thermography, ultrasonography. To cure it there are therapeutic aids such as mesotherapy, lasertherapy and ozonised bathing therapy: they are not definitive solutions, often expensive, and involve the use of medicines. Cellulite is therefore to be considered an illness with a progressively evolutionary trend, it involves epidermis and adipose tissues; it would be better to prevent it, because it is then difficult to treat it radically; it gets worse with stress, sedentariness, wrong food and garments, as well as with the numerous negative elements that accompany our daily way of living.

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In the embryonic development the adipose tissue appears approximately toward the 28th week of life and its quantitative evolution, up to the puberty, is equal for the two sexes; it is about 16% of the bodily mass. The advent of the puberty involves, under the influence of different types of hormones, some considerable modifications in the two sexes. In the males fat has a specific distribution, mainly located in the superior portion of the body and it represents about 15% of the bodily mass. In the females fat has a gynoid disposition (on the sides and on the legs above all) and it represents about 22% of the mass. This difference remains stable up to the adult age, with the particular circumstance that, after the puberty the adipocitis, in a single individual, male or female, can increase by now only their volume, for the lipidic cramming of the cellular vesicles of the adipocitis, while before that an increase of tissue fat portion was possible also for multiplication of the adipocitis themselves.

It is essential, before beginning a cellulite treatment, to establish what type of cellulite you are treating, to define the stadium and the location, to determine the greatest possible number of factors that provoked the onset or the aggravation of the illness; this preliminary procedure tends to the elimination of those negative effects that, persisting, would make the treatments ineffective or only partially effective.

To establish the complete program of the therapeutic treatments and the priority to attribute to each of them within a correct strategy of treatment, firstly it is necessary to divide them into different categories.

Since cellulite is a true illness , characterised by well-determined anatomical-functional alterations, it is obvious that it is necessary to privilege, as initial choice, those treatments that oppose its evolution and that, in any case, are useful to correct it thoroughly. The establishment of cellulite is basically linked to phenomena of blood and lymphatic micro-stasis and its evolution can be divided in various evolution stadiums:1-congestive; 2-exudative; 3 - fibrous organisational; 4 - fibrous cicatricial.

DESCRIPTION OF CELLULITE STADIUMS.

Stadiums

The first congestive stadium is characterised by a venous and lymphatic stasis, hypo-oxygenation and insufficient drain of the interstitial liquids. This happens because between the skin and the muscular bands there are cells that form the so-called adipose tissue, crossed by numerous blood vessels. The altered permeability of the capillary wall provokes the spillage of the watery part of the blood, that is called serum, with consequent stasis and accumulation in the interstitial tissue among the adipose cells; if the process is not arrested, this interstitial flooding leads to the upsetting

and dissociation of the adipose cells, followed by the breaking of the cells themselves and the formation of gaps.

If water retention continues **the second stadium (exudative)** follows where the state of hypoxia and the interstitial edema foster the dissociation and the upsetting of the reticular fibrils, the epidermis grows thin, it becomes fragile and paradoxically dehydrated, in the derma the degeneration of the collagen and elastic fibres continues and the flocculation of the connective tissue starts, that can be detected by palpation as micro-nodules.

The third stadium (fibrous organisational) (formation of the micro-nodules) is the evolutionary process of the illness, and as the phenomena of stasis increase, there is the upsetting of the whole skin structure: the connective tissue thickens, together with an almost total block of the elimination of the catabolites, the collagen and elastic fibres tend to encapsulate the degenerated adipose cells, with the formation of real micro-nodules, or of a roundish structure of microscopic dimensions.

In the fourth stadium (fibrous cicatricial) (FORMATION OF MACRONODULES) the tissue grows thick gahtering without any organization dross, stagnant nourishing elements, water, fats. Shelvings can be noticed on the derma whenever the edges are drawn near or the muscles are contracted. When this stadium of the illness is reached there is the contemporary presence of: disappearance of the typical lobulation of the adipose cells, diffused liposclerosis, important alteration of the micro-vessels, phenomena of atrophy of the epidermis, zone derma sclerosis with derma intro-flexions (responsible of the so-called "orange peel skin"). The parts affected by cellulite, because not sufficiently supplied by blood circulation, will be cold to the touch; in the points in which it will prevail the stagnation of the liquids the skin it will appear flabby, while where there will be the prevalence of nodules formations the skin will appear "very compact."

Imperfect alterations of the external aspect of the figure will correspond to these structural modifications:

· symmetrical modifications of the profile in correspondence of the zones of election;

· "orange peel" skin;

· dry epidermis with smooth surface;

· "quilt" or "mattress" skin, in the most advanced stadiums.

These alterations are accompanied by an objective and subjective symptomatology:

· presence to the touch of "micro" or "macro-nodules";

· skin hypothermia;

· possible presence of stretch marks and teleangectasie;

· skin hardly raisable in folds in a compact form; easily moved in toto in the soft form at every postural change;

· pain to the superficial and deep palpation and, often, also to the skimming;

· a feeling of cold to the extremities;

· sensation of local weight and irritation;

· nervousness;

· tendency to depression;

· possible moodiness.

The causes that originate cellulite are not well determined yet. The connective tissue is constituted by outdistanced cells and in the interstitial spaces there are some fibres (collagen and elastic) that form a sort of net. The nourishment and the comfort of the cells depend on a complex exchange of liquids and nourishing substances, carried out by the circulatory system composed of arteries, veins, lymphatic and capillary vessels.

The causes of cellulite can be divided into internal and external. Internal causes are: "heredity"', arthritis, thyroid disorders, malformations of the backbone, flat feet, constipation, bad digestion, compromised liver functionality, race, but above all hormonal unbalances like those of the estrogens that foster the retention of water in tissues.

External stirring causes can be: pregnancy (as it produces hormonal changes that can foster water retention and the formation of pads very difficult to remove), smoking, unhealthy food, overindulgence in alcoholics, coffee, fats, too violent sports, physical exercise without method, narrow garments, and finally stress, which increases the adrenaline discharges, a hormone that provokes spasms to the blood vessels with damages to the circulation.

Cellulite, a predominantly female phenomenon that ruins the life of 9 women out of 10, derives from a series of more or less serious alterations that can bring to the degeneration of the intermediate and deep skin layer (derma and hypo-derma). The distinction of cellulite in the varieties in which it can be found is important above all to trace a more precise diagnosis, and to carry out a more suitable therapeutic strategy.

There are different varieties of the cellulite illness:

- Pad-like ·
- soft or flabby ·
- edematose
- hard or compact
- fibrous ·

Typologies.

The first type (pad-like) looks like a kind of stuffing adhering to the muscles and concentrated above all on thighs and pelvis; it can have consequences on the blood circulation in the form of heavy legs, swollen ankles and varicose veins.

The second type (soft or flabby) is distributed in vast skin zones: inguinal, on the abdomen, in the inside of the thigh, in the inside of the arm. It is characterised, because of gravity, by more or less evident modifications of the form with the changes of position. The cellulite tissue is rich in water and the localizations are characterized by vague contours; nodules and some infiltration can only be noticed to the deep palpation; it is frequently associated a certain muscular hypo-tonus and the presence of teleangectasie and varicose veins. It is a variety preferably found in the asthenic-lymphatic constitution and it is often associated with obesity even if it can be found in very thin subjects.

The third type (edematose) is characterised by swellings and edemata (the simple pressure of a finger leaves a hollow for some seconds), imputable to bad circulation. It is different from the soft cellulite only for the greatest abundance of water rate, especially located in the limbs. The diagnosis in comparison to the classical edema is based on: (a) absence of a specific

causality for other clinical forms; (b) formal instability of the localizations in the different postural attitudes; (c) presence of hard cellulite plates to the deep palpation; (d) presence of the "orange peel sign";(e) absence, to the digital pressure, of the "hollow sign", always present in the edemata of circulatory or renal origin; (f) presence of a notable water quantity.

The fourth type (hard or compact) is frequent in subjects of middle-strong constitution in apparent good health state, the cellulite accumulations are compact and not very movable; they do not change form with changes of position. The impending skin is extended, hard, not very movable; it cannot be raised in folds and has a thin, almost translucent epidermal surface; the presence of areas of purplish complexion is frequent, which constitute a prelude to stretch marks due to hyper-extended skin. The palpation of these compact masses can cause feelings of pain or of simple hyperaesthesia.

The fifth type (fibrous) is generally the result of other types of cellulite (the compact type above all). The process of formation of fibrous accumulations can be fostered or accelerated by previous local curative interventions, both medical or surgical. The remarkable consistence noticeable to the touch and the deep palpation is characteristic of these cellulite localizations.

In the initial phases the various forms are hardly distinguishable. Cellulite appears gradually: the first phase is characterised by a diffused swelling that invades the connective tissue; the second phase can be distinguished to the touch and a soft pressure provokes pain; the third phase is characterised by cellulite nodules due to the formation of fibrous tissue.

The seriousness of cellulite depends on the alterations that are produced and that are very often invisible for years getting worse little by little: a sudden and spontaneous cellulite does not exist, the illness is long and irreversible if it is not adequately treated.

THE POINTS AFFECTED BY CELLULITE.

Three are the ages in which cellulite reveals itself: the puberty, the adult age (above all if there are pregnancies) and the menopause and the critical points more affected by cellulite are generally: -

· thighs (one of the most affected zones in absolute),

· hips (one of the first places where it appears),

· glutei (often mixing to real fat),

· abdomen (it appears in the form of nodules and diffused swelling),

· nape (it reveals itself in adult age in those people who are often sat)

· arms (it appears with a characteristic softness),

· legs (it extends till the ankles with diffused swelling).

The symptoms of cellulite are various, only one or more of them can appear; the most common are as follows:

· **Pain to the touch** : if the area is touched superficially or in depth an irritation is felt that lasts for a long time, at times also by skimming.

· Presence to the palpation of **micro or macro-nodules** .

· Presence of **stretch marks and teleangectasie.**

· Predisposition to **bruises** : a soft bump is enough to cause a bluish stain, due to the fragile blood vessels and the altered circulation.

· **A feeling of weight** : it is felt even if one is not tired.

· **Skin** : hardly raisable in folds in the compact form, or easily movable in the soft forms.

· **Tireness to the legs** : it reveals itself even if one has not walked a lot.

· **Pins and needles to the toes** : they reveal themselves crossing the legs.

· **Muscular pains:** they concentrate on the calf.

· **Pains at the moment of awakening** : the movements are not fluid and are fatiguing and painful.

· **Tireness** : one gets tired for the slightest thing.

· **Headache:** one suffers from frequent headache.

· **A feeling of cold** to the extremities.

· **Tension** with possible moodiness.

Is cellulite hereditary? We have seen therefore that the cellulite is problem linked to blood circulation and, as such, it is easy that is found in more people of the same family. There is not a real heredity but simply a family predisposition just as it happens for the varicose veins: it is therefore evident the more precocious the diagnosis, the greater the possibilities to defeat it.

Are all the races affected from cellulite? The racial factors have their importance. Some ethnic groups seem to be more affected by the formation of

cellulite deposits in comparison to others. Black women seem less affected by this problem in comparison to white Mediterranean women.

But even inside these groups there are exceptions: the examination of the numerous clinical data has shown that cellulite heaps are more frequent by the women of the south in comparison to those of the north and not only among the "Italian" women.

THE MAIN CAUSES WHICH FOSTER CELLULITE.

The first accused: THE FOOD FACTOR . According to many it is the more determinant. The hormonal factors in the genesis of cellulite have been considered since when the strong prevalence of this disease by the female sex especially in the critical moments of the hormonal development such as the puberty, the pregnancy and the first stadium of the menopause has been proved. Cellulite would be provoked either from a continuous and excessive production of estrogens or from repeated delays of the menstrual flow, such as to provoke continuous pre-menstrual congestive states with lesions to the connective tissue, especially to the derma.

The second accused: sedentary life. Besides family predisposition, another of the causes of the onset of cellulite and of its progress is due to sedentary life. Physical exercise, in fact, activates the circulation and, therefore, hinders the stasis of the liquids in adipose tissues; besides it invigorates muscles. A sedentary life does not stimulate the circulation and, as a consequence, it increases the possibilities of appearance and aggravation of the phenomenon cellulite.

But does cellulite affect women only? When cellulite is dealt with it is always thought that it affects only women; in fact there is a disease similar to cellulite that also affects the male sex, even if in smaller percentages, and it is called hydrolipexia. The differences between the female and male phenomenon are essentially two: the origin and the location of the pads. In the man the hydrolipexia is due to the tendency to keep liquids in the tissues: there is therefore a constitutional problem. For the affected zones, instead, it can be said that men have fat pads from the waist upwards: arms, back, abdomen but, above all, waist. In women, cellulite reveals itself, instead, on the external part of the thigh, under the glutei and in the inside part of the knee.

Surely if one is genetically predisposed to cellulite it is more difficult to fight it. The most successful means are a correct style of life, massage and surely a correct diet, low-fat and rich in bio-flavonoids (blueberry, berries). Attention also to the chloride of sodium (common salt) must be paid, as it keeps liquids; moreover one must drink a lot to stimulate diuresis; this diet must be accompanied by a good physical activity.

Pregnancy and cellulite . Also pregnancy, for a strong production of estrogens on the part of the **PLACENTAL TISSUE** , would foster the onset of cellulite. Not to forget the first stadium of the menopause, when the production of progesterone from the **ovary** suddenly decreases and the production of **estrogens** increases.

Hormones and hyper-thyroidism and cellulite. Lately it has been under discussion and it seems that cellulite does not depend on a female hormonal unbalance, but on a greater derma sensibility to the hormonal stimuli. A light degree can be physiological in women but an excess with a consequent alteration of the derma can be abnormal. This theory could justify the localization of the phenomenon cellulite only in determined points, and not in the whole connective tissue. For this reason its formation would be produced in those zones where the receptors for the female hormones are more numerous. Besides hyper-thyroidism is a dysfunction that would have a certain role in cellulite, since it seems to determine a diminution of tissue metabolism with an accumulation of refuse products.

The NEUROVEGETATIVE UNBALANCES as reactions to stressful events also have a remarkable importance. Some physicians believe that it is a psychosomatic illness and as such the importance of these unbalances that often determine vascular reactions and variations of the hormonal equilibrium is undeniable. It has been discussed a lot about the role of the **LIVER INSUFFICIENCY,** of **constipation** and of **dyspepsia** that surely contribute to determine an accumulation of toxic substances. The **liver** as "metabolizer" of these substances, (both those introduced by the outside as alcohol, spices and tobacco and those coming from cellular metabolism), allows their excretion. In case of insufficiency these substances accumulate in the organism and determine a derma inflammatory reaction that is at the base of cellulite. Also a **BAD DIGESTION** provokes a defective decomposition of food and fosters the processes of fermentation and putrefaction in the bowels, with consequent greater production of toxic substances of food origin. The bowel has the assignment to allow the absorption of the nourishing substances and to expel the refuse substances; in case of chronic constipation the refuse products stagnate in the bowels and can be reabsorbed in the circulatory system.

Diseases of the venous return and cellulite. The **DISEASES OF THE VENOUS RETURN** as origin of the cellulite are caused by the compression of the venous vessels. (The circulation of inferior limbs is based on arteries and on iliac veins (from which it originates the net that vascularizes the limbs). When, for different reasons, the big arterial ducts lose their efficiency and elasticity, there occurs a diminution of blood flow, forcing the small ducts (capillary) to an overwork to feed the panniculus adiposus. At first this overload of work provokes a wall expansion that evolves up to an increase of permeability so that the capillaries come to let the liquid part of the blood (plasma) leak between an adipocite and another, outdistancing them with consequent diminution of their exchange work.

If this situation persists the capillaries become more and more permeable and the stagnation of liquids increases up to the constitution of an **edema** . The adipocites begin the process of mutation because they are covered with some filaments of **collagen** . These fibrils increase of volume and number and, in the attempt to hold them together, they englobe them in a thick net.

How to oppose cellulite? First of all becoming aware of the morphology of our body. The more common form of cellulite in our country is characterised by a wider pelvis in comparison to the shoulders, the so-called "gynoid". Initially the fat accumulation, localised in the inferior part of the body, is a healthy event and, as long as the skin has a homogeneous complexion, the situation is still in the physiological limit. The appearance of micro-nodules recognisable to the touch represents a worsening which is to be treated immediately through regular exercise, accompanied by specific exercise destined to strengthen the superior part (shoulders and chest) to improve the general harmony of the figure.

Exactly to the opposite there is a type of morphology with the shoulders wider than the hips, more typically masculine, frequent especially in the women in menopause. In this case the fat accumulation potentially appears on the chest, on the triceps muscles, until it forms a small hump on the inferior cervical region. Generally legs are not affected, but hips and abdomen are strategic points where fat accumulates and cellulite is formed. It is advisable to practise some constant exercise.

Also sudden losses of weight or the lack of muscular tone, typical of the passing of time, can foster the formation of cellulite, particularly on the glutei, the inside of the thighs or the medial part of the arms. If adiposity concentrate instead around the knees and the thighs, especially on a bony structure which is thicker at the ankles and the knees, it may be a circulatory disease that can cause the formation of cellulite, often associated also to the presence of varicose veins. Here are some of the more suitable sports: swimming, running, cycling.