All about lipedema

Offprint

Lymph and Health

For People with lymphedema, lipedema and related diseases


Bilder: Prof. Schmeller, www.hanse-klinik.de

Fig. 1: Lipedema stage I


Fig. 2: Lipedema stage II


Fig. 3: Lipedema stage III

Only a few years ago hardly anyone had heard anything about lipedema. Recently, however, there have been more and more reports in the media about lipedema – a disease that disfigures women physically, drives them to depression and can only be healed by liposuction. Thanks to the media hype the word 'lipedema' is now well known in large sections of the population.

Only amongst doctors in private practice does the term appear to not be so familiar. If a woman with fat, painful legs visits her doctor, it is quite likely that her doctor will tell her that she is overweight and that she should lose weight. And that without having attempted to find out WHAT has caused the fat legs. Example: A patient with significant lipedema visits her doctor. He casts a quick look over the patient and says "What's going on here? How tall are you?" The patient responds '153 centimeters' whereupon the doctor replies 'and just as heavy, right? 'The patient does not want to just let that remark go and defends herself: 'Doctor, if I weighed 153 kilos, I wouldn't be able to move. I know that I'm heavy but I've come to see you about my lipedema and I'm asking you to attend to that.'

This story is not fictional but is unfortunately a sad reality that is played out many times, one way or another, on a daily basis. Because of the widespread lack of awareness of the medical condition 'lipedema' in the medical profession, this disease is usually first diagnosed when it has reached a very advanced stage, and sequelae have already developed: In half of cases, it is not until ten years after lipedema first develops that the diagnosis is made, and in almost a quarter of cases it is even 30 years or more! Many of the women affected have to endure a living hell until a diagnosis is finally made and they receive help.

This state is absolutely scandalous because lipedema is a truly widespread disease. According to a study by Marshall and Schwahn-Schreiber, 9.7 per cent of women have a 'moderate to clearly pronounced result in the sense of clearly expanded ankles with corresponding ultrasonic results'. This means that more than

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2.7 million women would be affected in Germany. Földi quantified the frequency of lipedema at 11 per cent, which means almost 3.8 million women are affected.

The first and most important step to resolving the range of problems that lipedema patients constantly face is that those women who are affected should have a solid understanding of their medical condition and everything associated with it. Even though the lipedema will not disappear into thin air as a result of this knowledge, they will be able to find competent help. It will also boost their assurance and self-confidence. They no longer need to helplessly accept offensive statements made by some doctors and other people. Instead, they can take the wind out of the sails of these prattlers with qualified retorts and make them look quite stupid. This has quite a constructive effect!

The medical condition 'lipedema'

Lipedema is a pathological fat distribution disorder of as yet unknown origin, which occurs in women symmetrically on both legs and in some cases also on the arms.

Lipedema affects women only and never occurs before puberty. It may also develop or worsen as a result of a pregnancy, menopause or gynecological surgery (surgery to remove the uterus, ovaries, Fallopian tubes, etc.). For these reasons it is suspected that this disease has a hormonal cause.

However, there have also been cases reported in which lipedema developed after a general anesthesia or a severe stress situation (death of a loved one, divorce, severe shock, etc.). The poor woman is then often quickly 'diagnosed' as having overeaten for comfort. A family cluster of lipedema can often be seen but it can also develop spontaneously, that is, without having previously been observed in the family. And – we would like to emphasize this – skinny women are just as likely to develop lipedema as extremely obese women!

Lipedema tends to deteriorate over time. This 'progression' differs enormously between individuals, however, and cannot be predicted for an individual. Depending on the extent of the disease, we differentiate three stages of lipedema:

Stage I:
Visible tendency to develop a 'breeches' shape, the skin is smooth and even, if it is pinched (together with the subcutaneous tissue; pinch test) it develops an orange peel texture, the subcutaneous tissue feels thickened and soft, in some cases (particularly on the insides of the thighs and knees) 'polystyrene-ball like' structures can be palpated.

Stage II:
Pronounced 'breeches' shape, nodular skin surface with large dimples and nodes in the size of walnuts to apples (mattress skin), the subcutaneous tissue is thickened but still soft.

Stage III:
Subcutaneous tissue is greatly thickened and hardened, large, deforming fat folds on the insides of the thighs and the knees (chafing wounds!), in some cases fat bulges hanging over the ankles, knock-kneed posture (permanently high biomechanical stress on the joints!).

Lipedema is diagnosed principally by recording the patient's medical history, by inspection and palpation. Typical signs of lipedema:

- It always develops symmetrically on both legs.
- In about one-third of cases the arms are also affected. The fat distribution resembles that seen on the legs.
- The feet or hands are never affected. The increased adipose tissue extends at the utmost to the ankles or the wrists.
- Spontaneous (unprovoked) pain in the form of a dull feeling of swelling, pain on contact and pressure on the thighs and calves. These symptoms usually worsen as fluid is retained over the course of the day.
- Pronounced tendency to develop hematomas (bruises) even as a result of gentle knocks or pressure application due to the increased fragility of the capillaries.
- Fluid retention (orthostatic edema) in the adipose tissue during the latter part of the day, particularly during warm weather and after standing or sitting for long periods.
- The quantity of adipose tissue in the lipedema cannot be reduced by diet or exercise (dietary resistance). Even extreme starvation diets that leave the upper body and face gaunt and bony do not result in a reduction of the lipedema.
- Buttocks and legs appear disproportionate compared to the upper body. This is regardless of whether the patient is slim or overweight! The circumference of the hips is always at least 1.4 times larger than the waist circumference (waist-to-hip ratio is less than 0.7).
- A (careful!) pinch test in an area with lipedema causes pain, but not one done on the abdomen or back.
- The painfulness of the lipedema does not depend on the extent of the adipose tissue but instead on the fluid retention. Even relatively 'thin' lipedema can cause extreme pain!
- The skin in the area of lipedema feels knotty compared to the skin on the abdomen or the back.
- With slim, sporty women whose muscles are clearly apparent on the trunk (particularly on the back), the musculature in the areas with lipedema is obscured by the adipose tissue (not visible).
- The lipedema has a soft consistency (with the exception of stage III) and pressing the lipedema tissue with the thumb does not leave an impression.
- The thighs feel cold.

This is particularly important when **differentiating between lipedema and lipohypertrophy of the extremities.** The latter is very similar to lipedema due to the symmetry of the fat distribution, and there is also a certain tendency to develop hematomas, but the painfulness is not present. In contrast to lipedema, it is therefore not classified as a disease but instead a variation in the body shape. It is, however, suspected that over time lipedema can develop from lipohypertrophy of the extremities.

When lipedema is diagnosed, the doctor must differentiate it from similar conditions (**differential diagnosis**, DD for short). Along with lipohypertrophy of the extremities, the most important to name here would be:

- Peripheral (gynoid) obesity ('pear shape').
- Benign symmetric lipomatosis (Madelung's disease, Launois-Bensaude syndrome).
- Dercum's disease (lipomatosis dolorosa), differentiation from lipedema is difficult, however.
- Edema due to other causes (phlebedema, etc.).

In practice, we often observe that lipedema is confused with lymphedema. Because the latter almost never develops symmetrically, this confusion is not justified.

Diagnostic imaging techniques:

1. Using CT and MRI, localization and extent of the increased fat can be determined. Its qualitative and quantitative aspects can be determined sonographically (using ultrasound). The subcutaneous tissue in lipedema initially has evenly distributed echogenicity ('snow storm') with hyperechoic connective tissue septa compared to normal subcutaneous tissue. Later, hypoechoic regions develop, which could be attributed to the increase in the interstitial fluid.

2. Using duplex sonography with compression, the pain caused by the pressure and the incompressibility of the tissue is often proportional to the extent of the edema.

3. Indirect lymphography lipedema show a flame-shaped injection depot. The lymph collecting vessels follow a noticeably tortuous path through the expanded subcutaneous adipose tissue and do not have an expanded lumen.

The causes of the symptoms of lipedema

Orthostatic fluid retention: In the well-perfused lipedema, a large volume of tissue fluids accumulates due to the high wall permeability of the capillaries. The lymphatic system responds to this by drastically increasing its transport capacity. After long periods of standing or sitting and high temperatures, over the course of the day the accumulation of fluid can be greater than the lymphatic drainage (high-volume insufficiency). Edema then develops which diminishes when the limbs are raised and overnight (exception: see lipo-lymphedema).

Another reason for this fluid retention is the **high extensibility (= low elasticity) of the skin** in areas with lipedema. The skin does not provide resistance to muscular pressure and, as a result, the function of the muscle and joint pumps is greatly restricted. Blood 'sinks' into the blood vessels of the legs, and increased volumes of fluid are filtered into the surrounding tissue. The extensible skin is also unable to apply the opposing force to increase the tissue pressure that the lymphatic vessels require to absorb tissue fluid and transport it away. And thirdly, the "venoarterial reflex", which reduces the blood flow by restricting the supplying arteries if there is an increase in the blood pressure in the veins, is impaired. These all greatly encourage the accumulation of fluid in the tissue.

Dietary resistance: 'Normal' fat cells (depot or reserve fat) change in size when they take up or release fat. If they increase dramatically, this is referred to as hypertrophy (over-nutrition). If the size of the fat cells remains constant but their number increases, this means hyperplasia (excess cell formation) is present. Professor Brenner from the Innsbruck Medical University writes the following about lipedema: 'The histological diagnosis is a hyperplasia of the adipose tissue. The problem is that we often observe an increase in the size (hypertrophy) of these fat cells along with an increase in their number (hyperplasia). Indicative of the causality of the hyperplasia is that with lipedema the fat volume cannot be influenced by diet.' Professor Brenner's statement contains the key information that lipedema has nothing to do with excess weight caused by diet. Women who are affected by lipedema should write this down and take it with them next time they visit their doctor. Lipedema is therefore a combination of hypertrophy and hyperplasia of the fat cells. Obviously, hyperplasia predominates. Therefore, lipedema can only be 'starved' to a small degree, if at all. Poor lymphatic drainage also leads to fat deposits. The lipedema increases, which in turn worsens the lymphatic drainage and so on and so forth …

Painfulness: Pressure pain and spontaneous pain are typical of lipedema. Gentle pressure on the thigh can be extremely painful. A tender touch on the leg from the partner can trigger a loud cry. We know cases of broken relationships, because the partner could not believe that his or her tender touch causes pain, and the expression of pain was interpreted as a sign of internal rejection by the woman.

Spontaneous pain often occurs with no external cause. The reason behind this pain has not yet been clarified. Földi suspects that the fluid retention associated with the lipedema is responsible. The fat folds made up of fat cells (lobules) in lipedema are separated from one another by connective tissue septa. There are 'initial lymphatic vessels' that can absorb the tissue fluid, only in the septa but not in the lobules. However, the fluid can only seep very slowly through the labyrinthine gaps between the fat cells. A protein-rich fluid film develops around the fat cells and their capillaries. Because of this abnormal internal environment, the sensory nerves respond by sending signals to the central nervous system which interprets these as pain. Dr Reißhauer from the Charité Berlin suspects that there is a response from the nociceptors (sensory nerve endings) which convert tissue damage into pain signals. However that may be, lipedema hurts.

Lipo-lymphedema

Due to the permanently high load, the lymphatic vessels 'fatigue' over years and their transport capacity declines. The tissue fluid can no longer be drained off adequately and protein-rich edema develops. The protein deposits lead to hardening of the tissue (fibroses) and pathological changes to the lymphatic vessels (lymphangiosclerosis). This finally develops into secondary lymphedema and then lipo-lymphedema is to be diagnosed. This can be recognized by the swelling of the foot arch and a positive Stemmer's sign. Some authors characterize lipo-lymphedema as stage IV of lipedema.

Associated symptoms of lipedema

Mental stress: When the US doctors Allen and Hines described a disease called 'lipedema' for the first time in 1940, they reported that the women perceived this disease as very stressful, many were ashamed of their legs and some patients were even of the opinion that their fat legs had ruined their lives. This brings us straight to the heart of the problem that most of those women affected suffer from to an extreme.

The beauty ideal of our time is the slim figure. Women, particularly younger women, who deviate significantly from this ideal, experience feelings of shame and insecurity. Previously, when women wore long skirts, fat legs could be easily hidden away.

Now that women's clothing is dominated by short skirts, pants and tight jeans, women whose legs do not conform to the current style are the losers.

Many of them try to lose weight by starving themselves and doing intense exercise. And that works – just not for the lipedema! Even worse: in relation to their now gaunt upper body, the legs and bottom look even fatter than before. Disappointment, despair and feelings of guilt (because of the perceived failure) come up.
Added to this, there are the slurs of other people and some doctors, as well as the widespread practice of health insurance companies and government pension schemes refusing patients the necessary therapeutic measures (rehabilitation, etc.).
Some lipedema patients shift things up a gear and really mortify their bodies, while others are so frustrated that they seek comfort in food – after all, it's hopeless anyway. With the expected outcome!

Excess weight, obesity: Lipedema and excess weight are two completely different things. However, they often occur at the same time. The reason for this is that many lipedema patients attempt to reduce the amount of fat on their buttocks and legs by dieting. Unfortunately, all they achieve is the exact opposite: over time they starve themselves into excess weight. This is because the body responds to a severe reduction in the food intake by switching to a more efficient metabolic pathway (hunger metabolism). When a person switches back to 'normal' eating patterns, even considerably few calories than before are enough to put weight on. Over time every strict diet leads to an increase in weight. Due to the excess weight and the joint pains, they also do less exercise. This leads to a vicious cycle of weight gain, worsening of the joint pain, weight gain, worsening …

Eating disorders: A study of 100 lipedema patients in the lipedema clinic in Schwarzenbach am Wald (Dr med. Josef J. Stutz) came to the following conclusions: 74 per cent of the patients suffer from chronic eating disorders, 12 per cent have periodic uncontrollable binge eating attacks, 8 per cent suffer from bulimia, which are severe attacks of voracious appetite after which they attempt to avoid weight gain by inducing vomiting, extreme dieting and taking laxatives so that their eating disorder is not noticed.

What gives pause for thought, however, is that 16 per cent of the women – that is, more than one in six of the women studied – suffer from anorexia nervosa, a severe eating disorder of psychological origin. Up to 15 per cent of those with anorexia die from the disease, either due to complications such as heart failure, infections or even suicide. Those who survive suffer, in some cases for the rest of their lives, from osteoporosis, kidney failure or other long-term consequences.

Physical pain: The study by Dr Stutz mentioned above reveals just how severe the pain issue is with lipedema. The intensity of the physical pain was quantified using a standardized scale. The scale ranged from 0 (no pain) to 10 (unbearable pain). For 80 per cent of the lipedema patients in the study, the pain severity was 5 or higher and for 59 per cent it was between 7 and 10. For 11 per cent – that is, one in nine women – the pain was rated as being unbearable (10).

Psychological pain: For psychological pain the figures are even more dramatic: 90 per cent indicated experiencing pain of severity 5 and more, 77 per cent between 7 and 10, and for 40 per cent the intensity of the pain was 9 and 10!

Suicidal tendencies: In light of the problems and sufferings constantly faced by those affected by lipedema and their fears about whether and when the problems will worsen in future, it is not surprising that in a survey one in eight lipedema patients indicated that they have attempted suicide at least once. How many have been successful is not known.

Orthopedic and other disorders: As the lipedema progresses, bulges develop on the insides of the thighs. This can cause impaired gait (spreading of the legs) and incorrect biomechanical loading of the joints. Osteoarthritis of the major leg joints is a serious complication of lipedema, which can repeatedly lead to incapacity to work and even to disability. An artificial knee or hip joint often has to be implanted, but without eliminating the cause of the leg axis misalignment. Many of those affected also suffer from severe back pain, because the spine adopts an unnatural curvature when lying due to the large size of the buttocks. The chafing on the inside of the legs often leaves the skin raw. This pain is in addition to the 'normal' pain associated with lipedema. Many patients take analgesics over years, often leading to dependency as well as nerve and organ damage.

Therapeutic options

There are no medications available to treat lipedema. We strongly advise against taking diuretics and laxatives! A sensible diet and physical activity can help against excess weight but the lipedema itself is unaffected by either. Hormonal therapy can be used to treat a diagnosed hormonal imbalance. However, the lipedema does not decline as a result. This leaves only conservative and surgical methods or a combination available.

Because the cause of lipedema is not known, therapy can only achieve an improvement in the symptoms. The earlier the therapy is started, the better the prospects for good results. Unfortunately, because of the widespread lack of familiarity with this disease in our healthcare system (doctors, health insurance providers, etc.) or denial that the disease 'lipedema' exists, this opportunity is often missed.

Conservative therapy

To improve or eliminate the stretch and pressure pain symptoms and to reduce the water retention, complex physical decongestive therapy (CPDT) is used very effectively in many cases. CPDT comprises manual lymphatic drainage (MLD), compression and movement therapy, and skin care. It is a two-phase therapy whereby younger patients with stage I lipedema are often able to omit the first decongestive phase.

For patients with advanced lipedema, MLD twice a day for 45 to 60 minutes followed by compression bandaging and intensive movement therapy is necessary during the decongestive phase, depending on the severity of the symptoms. This phase usually lasts 3 to 4 weeks. Because the therapy is very elaborate, it usually has to be carried out in a specialist lymphology clinic.

MLD is used in the treatment of lipedema primarily as pain relief. It plays a lesser role in the reduction of the edema. Much more important is the compression because this counteracts the increased formation of tissue fluids and improves the venous drainage. For this reason, lipedema is not listed in the medical services catalogue as an indication for MLD. This is why many doctors do not prescribe MLD for lipedema patients. **However, if the symptoms persist despite consistently wearing the compression bandages**, MLD is also indicated for lipedema. And then **public healthcare doctors can prescribe MLD without a problem**! The Central Association of Health Insurance Funds and the National Association of Statutory Health Insurance Physicians (KBV) agreed on the following formulation in a joint question-and-answer brochure on medical services guidelines: 'Lipedema is synonymously referred to as lipo-lymphedema; accordingly, classification under LY1 or LY2 is possible and it could be treated with MLD.' LY1 (a maximum of 2 × 6 MLD sessions can be prescribed) is intended for a short-term need for treatment. With lipedema, LY2 (up to 5 × 6 = 30 MLD sessions can be prescribed) is usually considered.

Self-treatment with a device intended for home-based care (Lympha Press) for intermittent pneumatic compression therapy (IPC), also referred to as instrument-based intermittent compression therapy (IIPC), may be a sensible and cost-effective (co-payments always required for MLD!) alternative to MLD for lipedema. However, IPC and IIPC are contraindicated for decompensated heart failure, acute bacterial inflammations and recent thrombosis.

The initial phase of therapy for lipedema must be tailored to the patient's individual pain situation. Severe pain requires a gradual start to the treatment, in particular regarding the compression therapy. MLD is essential for this. Only when the pain has been reduced enough, the compression force can be increased.

The mainstay of lipedema therapy is compression. Often times, it is the only measure that can prevent a deterioration in the condition. Systematically wearing flat-knitted compression stockings is vital. Younger patients prefer round-knitted stockings, however, as these appear more elegant. In stage I of lipedema these may possibly be adequate. However, it should be made sure that they 'keep a lid on' the troubles of the disease. Otherwise, a flat-knitted compression treatment must be used. Their stiffer material prevents constrictions (when the compression hosiery has been correctly measured!) that worsen the lymphatic drainage and thus aggravate the edema and pain. **Detailed information about flat-knitted compression hosiery is available in editions 1/2011 and 3/2013 of LYMPHE & Gesundheit.**

CPDT does not reduce the circumference of the legs by much, but the fluid retention is reduced by up to 70 per cent. This eases the pain experienced by many patients. The CPDT must be carried out regularly for the rest of a patient's life, otherwise the edema returns.

Surgical therapy

The pathologically increased quantity of adipose tissue can only be removed surgically. Liposuction was developed in the 1970s for aesthetic correction of unwanted fat deposits. The techniques used at that time led, in some cases, to disappointing, sometimes catastrophic results. Since then, this field of surgery has developed enormously, and liposuction has become one of the most common cosmetic surgical procedures worldwide. It has reached high quality standards and allows exceptional results with minimal risk. It can be a good therapeutic option for lipedema, provided that there are no contraindications.

Liposuction with tumescent local anesthesia (TLA) is the most common procedure nowadays. The risks involved with TLA are so low that it has made outpatient liposuction possible. Tumescent is derived from the Latin word 'tumescere' - to inflate, to swell. TLA begins with pumping large quantities (several liters) of physiological saline containing a local anesthetic and other additives into the adipose tissue until the area to be suctioned off feels tight (tumescent).

The tumescent fluid is used to suppress pain. It constricts the blood vessels, thus preventing extensive loss of blood, loosens the tissue and separates the fat cells from each other. It produces a sort of gel that can be suctioned off with "micro-cannulas". These are quite thin so that only very small incisions are required. These are closed after liposuction using medical adhesive and no longer need to be sutured. Because no general anesthetic is used, the patient can be actively involved, e. g. by turning herself to the optimal position for suctioning.

The current standard uses blunt, thin suction cannulas that vibrate very rapidly along their length (oscillating or vibrating cannulas). These suction off only the liquid mixture made up of the tumescent fluid and the fat cells. Connective tissue and its supporting fibers, nerves, blood and lymphatic vessels are not suctioned off as well because of their greater mechanical inertia. This gentle method reduces postoperative pain, encourages rapid healing and leads to better cosmetic results.

One version of TLA is **Water-jet Assisted Liposuction (WAL)**. In this method the area to be treated is not pumped full of tumescent fluid before the procedure. The fat cells are detached from the subcutaneous cell layer using a water-jet and are then suctioned off. From its tip, a special cannula sprays a pulsating, fan-shaped water-jet with a local anesthetic and other additive into the tissue. Just behind the tip there are openings positioned on the sides of the cannula tube that suction off the water-fat mixture.

Because the tissue is not inflated when using WAL, the surgeon has good visual control of the liposuction result. This technique is gentle to blood and lymphatic vessels, allows suctioning off large quantities of fat and achieves level suction outcomes. WAL does not require premedication, and there is no need to wait for anesthesia to take effect. **Important note**: Some doctors advertise that they carry out WAL without anesthesia. This is only possible, however, when suctioning off smaller quantities of fat on less pain-sensitive areas (cosmetic surgery). In the case of lipedema, where usually large quantities of fat have to be removed, WAL is usually carried out under general anesthesia.

Dr Josef Stutz in Schwarzenbach am Wald and Bayreuth uses a very interesting modification of WAL. He makes do without general anesthesia by introducing a small volume of tumescent solution and allowing this to take effect. This does not produce any inflation (tumescence) of the areas to be suctioned, and critical dosages of local anesthesia are avoided. Another advantage is a more rapid return to normal life because the tumescent solution has already been exuded after 24 hours. Dr Stutz's method combines the benefits of TLA and WAL while avoiding their disadvantages.

There are several other techniques for liposuction such as ultrasound-assisted liposuction (UAL) or laser lipolysis. However, these have obviously not been taken up to treat lipedema. They are usually reserved for cosmetic treatments where considerably smaller quantities of fat are removed compared to liposuction for lipedema.

Axially-aligned liposuction: When suctioning off fat for cosmetic reasons, the surgeon uses a criss-cross movement of the cannula through the zone being treated to achieve the most uniform result possible. This technique, however, is not suitable for liposuction of the lipedema on the arms and legs. Only on the outsides of the thighs and on the buttocks, which are not as sensitive as the legs and arms in terms of the lymphatic vessel anatomy, the suction cannula may deviate somewhat from the axis. But everywhere on the arms and legs, the cannula must be kept parallel to the direction of the lymphatic vessels ('axially aligned'). Otherwise, the risk of injuring the lymphatic system and thus inducing secondary lymphedema is too high. This would be jumping out of the frying pan into the fire!

Professor Wilfried Schmeller, medical director of the Hanse Clinic, a specialist clinic for liposuction in Lübeck, writes: 'The previously described risk of lymphatic vessel damage due to liposuction with subsequent development of lymphedema has not been observed either experimentally or clinically when the new methods are used. Anatomical examinations after suctioning parallel to the long axis of the extremities has not detected any damage to the epifascial lymphatic vessels.'

The **maximum amount of fat that can be removed** depends on the medical condition and the age of the patient, her skin characteristics (elasticity) and a number of other factors. Only an experienced surgeon can assess all these factors. For those with normal weight, no more than 4 liters of fat should be suctioned off during each procedure. A suitable patient could definitely have 8 or more liters suctioned off during one procedure, however. As the suctioned volume increases, the risk of a cardiovascular collapse rapidly increases due to the loss of large volumes of blood and fluids. This risk is present with every liposuction procedure. It is therefore advisable to remain in the hospital for at least the first night after liposuction and to ensure adequate hydration. Depending on the extent of the lipedema, several procedures are often required. There must be an interval of at least one month between the procedures.

Pierre François Fournier, the pioneer of liposuction, considers that a good outcome for liposuction is not determined by what is suctioned off but what instead is left behind ('what you take is not as important as what you leave behind'). He refers to 'liposculpture', the most satisfying modeling of the body that is possible. Liposuction to treat lipedema does not leave any pathological adipose tissue behind. Only by completely removing the disease-specific fat cells the progression of the disease can be stopped. The earlier this happens – preferably in stage I or II of the lipedema – the better and longer lasting the results.

After the liposuction a firm, breathable compression girdle is applied. In the first few days after the surgery, the dressing material beneath the compression girdle absorbs the remaining tumescent fluid that is exuded. The girdle is usually worn day and night for a week and then for a further three weeks during the day. Some surgeons recommend wearing compression girdles for longer periods because it should have an effect on the good esthetics of the surgery result. The compression accelerates the regression of the wound areas produced in the tissue and contributes to better modeling of the body shape.

Usually, bruising and swelling are to be expected after surgery; they subside within 3 to 4 weeks; sometimes it can take longer. As for every surgical procedure, infection and impaired healing may occur after liposuction. The associated risk is less than 2 per cent because any wound infections are prevented with antibiotics or can be reliably treated with them. Scars, tissue hardening, dimples and cysts were common with earlier liposuction methods and produced unsatisfactory cosmetic results. These problems have largely been eliminated with proper application of current techniques. Extensive post-bleeding can be practically precluded these days.

In the first days after surgery, the patient may experience pain similar to aching muscles. Feelings of numbness or paresthesia are also common in the treated areas due to an irritation of the skin nerves. Normal sensations return, but in some cases not for several months. Most patients can return to everyday life activities 1 to 2 days after the liposuction. The newly shaped physical silhouette becomes apparent to some extent as early as the first week after liposuction. The final result, however, can only be assessed after about six months.

What is important for the long-term outcome of the liposuction is how the skin pulls together (skin retraction). In the first few months after surgery, the skin goes through a three-dimensional shrinkage process. This retraction is individual and differs depending on the body part. Saunas, sun, solariums and sports must be avoided in the first 6 weeks, because the UV rays can cause shifts in the skin pigments that leave behind brown spots.

Local anesthesia? General anesthesia? Sedation?

TLA is a very safe liposuction method that places relatively little stress on the body. The pain suppression is limited to the area being suctioned, and the patient is awake during the procedure and can follow the surgery. The same applies to Dr Stutz's modified WAL method. Unless there are compelling reasons advising against it, TLA or the Stutz WAL method should be used in principle. An anesthetist does not have to be present at the surgery, but some surgeons insist on it.

Some doctors – particularly plastic surgeons – carry out the liposuction under general anesthesia. They accept the associated risks because the surgery, which is quite strenuous for them, is easier and safer to carry out with a completely sedated patient. With general anesthetic, the vital functions (consciousness, breathing and circulation) of the patient must be continuously monitored by an anesthetist. One disadvantage of general anesthesia is that the patient cannot place herself into the optimal position and in some cases this is also not possible. In addition, the patient cannot get up and stand in front of the operating table after the procedure so that the results can be checked immediately. This means that any small corrections that may be necessary cannot be done straight away. Another disadvantage of general anesthesia is the risk of developing a thromboembolism, a dangerous blockage of a blood vessel caused by a blood clot.

However, general anesthesia may make sense in some cases, for very sensitive or anxious patients, for example. The treatment must then be done as an inpatient procedure with a follow-up observation period so that any complications that may develop can be dealt with immediately. Experienced medical practitioners will generally apply a general anesthesia at the lowest possible risk level.

A very elegant method is to combine TLA with **analgesia-sedation (twilight sedation)** done by a specialist anesthetist. The patient is calmer but can still respond. The surgeon does not need to monitor the patient's state and can concentrate entirely on the liposuction. The anesthetist continuously monitors the patient's pulse, blood pressure, breathing rate, oxygen saturation and so on and can, if necessary, move seamlessly to general anesthesia if the local anesthesia is not adequately suppressing the pain. And if the patient should collapse or become unconscious, the anesthetist cares for her and the surgery does not need to be interrupted. This method combines the benefits of TLA and general anesthesia and largely circumvents the disadvantages of general anesthesia.

What is highly problematic and should therefore be **rejected is the combination of TLA and general anesthesia**. The anesthetist can never assess with this combination how much of the local anesthetic has already been taken up and what is still being released from the adipose tissue. Since dosing of the anesthetic as required is also not possible in this case, there have already been fatalities.

Risks associated with liposuction

In principle, every surgical procedure is associated with risks. These risks are very low for lipedema treatment provided that any contraindication is taken into consideration and the liposuction, which is now a very safe procedure, is carried out in compliance with the respective guidelines.

Absolute contraindications include excessive expectations from (mentally stressed?) patients, allergies to components of the local anesthesia when using TLA, significant cardiopulmonary diseases, liver and kidney damage or known tendency towards convulsions. Liposuction should also not be done in cases of chronic lymphedema or severe tendency to swelling of the legs.

Relative contraindications include the use of anticoagulant medications (aspirin, ASA, warfarin, etc.), known tendency to thrombosis, severe general diseases and generalized obesity. Older patients with flaccid skin should also not have liposuction. If a patient has varicose veins, these should be removed six months before the liposuction procedure. If the venous system is severely damaged, particularly with an occlusion in the deep vein legs, liposuction should not be carried out on the legs. The age of the patient is of lesser importance than the individual medical condition (general condition, concomitant diseases, skin condition, etc.).

The long-term effect of liposuction

Because the reason for lipedema developing is not known, no-one is able to absolutely preclude that it returns some day after surgical removal. This is the strongest argument cited by opponents of liposuction. However, the results of several studies and observations of patients of various ages over longer periods (Rapprich, Schmeller, Meier-Vollrath, Cornely and so on) suggest that once lipedema has been suctioned it does not recur.

Most women who have had their lipedema removed in one or more liposuction treatments benefit in the long term from it. The earlier the therapy is started, the better the prospects for good results. At an early stage, the typical impairments that are associated with the lipedema are not as pronounced, and thus worsening of the condition is prevented. The aesthetics also benefit from the result. However, women assess the benefits they reap from the liposuction as greater the more pronounced their lipedema was before. This is because they suffered particularly badly. Their return to normal body proportions, the reduction in or elimination of water retention and thus the pain, and the reduction in the tendency to bruise as well as restricted mobility gives them back a quality of life they did not consider possible for years, sometimes decades.

A quarter of patients no longer require CPDT after liposuction to treat their lipedema while half still need it but less frequently than before. The remainders need CPDT just as frequently as before but it achieves better results.

Lipedema patients seek out liposuction in the first place to alleviate the troubles of disease and to improve their appearance. This is understandable and makes sense. The orthopedic aspect of lipedema is completely ignored not only by the patients but also by health insurance providers. Liposuction – particularly on the insides of the legs – can correct misalignment of the leg axes and prevent damage to the major leg joints. If health insurance funds would finally comprehend that the costs of implanting an artificial knee or hip joint (endoprosthesis) are many times that of liposuction, they could save a great deal of money. After all, many of the more than 400,000 joint surgeries carried out each year can be attributed to misalignments of the legs due to lipedema!

Liposuction for lipedema treatment – yes or no?

For many women with lipedema, this question almost has an existential importance. They suffer from their disease – physically and psychologically – but also are frightened about a surgery for which they do not know the associated risks.
When they ask around, they are flooded by varying and even contradictory information. For this reason, we have tried to deal with the issue here free of any embellishments and to go through the information step by step.

If there is a conservative and a surgical option available for therapy, the conservative option must be the first choice. It is non-invasive and the results can, if necessary, be reversed. If the result achieved is not satisfactory, then surgery can always be considered.

If the symptoms are improved using CPDT to such an extent that the patient can live with them, the question of 'liposuction for lipedema treatment – yes or no?' has already been answered.

If, however, the psychological strain resulting from the patient's disproportionate body shape and the associated social problems are perceived as unbearable, the question then becomes 'psychotherapy or liposuction' (we categorically rule out the third option, suicide!). If psychological treatment can resolve the problem, liposuction is not required. If CPDT and psychotherapy fail, this leaves only liposuction. Then the 'only' issue remaining is that of costs.

Costs of liposuction

Liposuction for lipedema is a very special and time-consuming intervention. The total surgery can take 2 to more than 7 hours. The costs vary enormously between doctors and depend on time and effort required; they are usually between about €2500 to over €5000. Since there is no recommendation from the Federal Joint Committee (G-BA) for liposuction, it is not a standard service provided by government health insurance. Patients therefore have to cover the costs of the treatment themselves. If, however, it is determined that liposuction to treat lipedema is medically necessary, the insurance funds can cover the costs on a case-by-case basis.

So far the costs have only been reimbursed in exceptional cases, when the physician in charge certified that continuing the conservative therapy would not achieve an improvement in the existing or worsening symptoms. The objection procedure and the dispute with the social court can last up to 3 years.

Nevertheless, there is still reason to hope that this situation is changing: In May 2014 the G-BA initiated a consultation procedure for surgical treatment of lipedema using liposuction and thus accepted a request of the patient representatives. The result of the benefit evaluation will determine whether the surgery can be done on an outpatient and inpatient basis in future and will be covered by government health insurance. The text of the decision and an explanation are published on www.g-ba.de under 'Decisions'.

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