

Adequate treatment of lipedema

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ILF 2021

Lipedema is a disease of loose (adipose) connective tissue (LCT). Despite a lack of visible fluid in lipedema tissue on ultrasound, extracellular fluid is higher in the tissue of women with lipedema compared to matched controls.(1) Sodium is also higher in the skin and LCT of women with lipedema(2) where sodium binds to proteoglycans in the extracellular matrix (ECM) along with water forming a gel.(3) Lipedema tissue has an enlarged extracellular matrix where proteoglycans reside.(4) In support, multiple proteoglycans are upregulated in excess adipose tissue in individuals with obesity.(5) These data suggest an increase in proteoglycan-bound salt and fluid in lipedema tissue. Binding of water to proteoglycans forming a gel can be considered as the explanation for why there is minimal to no pitting edema in lipedema tissue and why fluid does not move down the arm to the hand and the leg to the foot.

Fibrosis of lipedema tissue is present in the ECM and within fibers forming firm nodules palpable through the skin.(6) The abnormal thick, fibrotic fibers are inflexible compared to normal pliable fibers.

The aim of MCTT (Manual Connective Tissue Treatment) is to soften adipose tissue by reducing fibrosis in the retinacula cutis (skin ligaments), which form a septum between the fat lobules. MCTT improves also blood circulation and therefore metabolic function of the tissue. By reducing large fat lobules into smaller parts, it's possible to return them to a more normal metabolic state.

Making the retinacula cutis more elastic improves tissue structure and gives the skin a smoother appearance. In our experience MCTT also reduces touch sensitivity and pain. It's quite clear that we can't change conditions in the tissue without touching the patient!

The MCTT technique depends on findings after anamnesis, inspection and palpation. It's possible to feel smaller or bigger nodules and thicker fibrin-threads in lipedema LCT. Areas are located where the skin and subcutis are thicker with masses of nodules and fibrin-threads. These areas should be treated first. Especially when the adipose tissue is very sensitive, we start with the most superficial layer. In these cases, it's best to use less power and extensive, rotating grips with the palm or the lateral side of the hand. You might need to treat one spot for several minutes to get the desired reaction, meaning better mobility and/or less adipose tissue sensitivity. After this treatment, you can go deeper into the adipose tissue, and you can use the hand-knuckles or a massage-gun (percussion).

Lipedema fat tissue is treated by manipulating the subcutis without going too deep, i.e. to the deep fascia. We use various grip-techniques depending on the thickness, mobility and sensitivity of the tissue. In the pelvic and thigh area, the tissue can be squeezed by taking it between the thumb and fingers of both hands. It is also possible to block the tissue with one hand while the knuckles of the other hand applies frictional pressure against the tissue. On the lower leg it's more functional to use wide sliding grips.

The treatment we call MCTT has been influenced by both Quadrivas therapy(7, 8) and Stecco's Fascial Manipulation[®]-method,(9) among others.

MCTT is often painful, so you should always respect the patient's tolerance and reactions. We use a special program on a multi-chamber IPC (intermittent pneumatic compression)-pump as a pre-treatment to soften the tissue and make it less sensitive.

Compression is an absolute necessity after MCTT for many reasons. Both IPC-treatment and compression garments reduce pain and inflammation in the tissue as it helps to move the viscous fluid towards the lymph vessels which can be deep in lobules that themselves do not have lymphatic vessels. MCTT also

improves flow in the veins and the lymphatics and strengthens the effect of the muscle-pump. In this way the burden on the lymph-system is reduced and with it the risk of developing lymphedema. In our experience most people with lipedema tolerate CCL II level of compression garments. When not, we start with lighter compression.

It is important that the patient is measured to choose the right compression for their type of adipose tissue. In most cases, bandaging is not needed, and the patient can immediately start with compression leggings or pantyhose.

The effects of the MCTT and other modalities of therapy described above:

1. Reduction of pain
2. Palpation sensitivity decreases
3. The patient experiences firmer and smoother tissue
4. Mobility improves
5. The condition of the skin is better than before, i.e. less dry and warmer

This practice is evidence-based.

For a successful treatment, the patient is required to do his part. We therefore propose that a contract be established between the care provider and the patient so that the patient becomes involved in their care and follows joint agreements.

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