

## TREATMENTS

Lipedema is a chronic disease with limited therapeutic options. Because the causes or drivers of disease onset remain unknown, currently available therapies are geared toward ameliorating symptoms and preserving patient health. The Dutch Lipedema Guidelines also developed clinimetrics to assess the health profiles of patients undergoing therapy for lipedema. These measurements include circumference of lipedema affected areas, mobility, strength, pain via the VAS, fatigue, weight, levels of activity, condition and walking capacity, and quality of life.<sup>7,17</sup>

### CONSERVATIVE THERAPY

The goal of conservative therapy is to aid in disease management and address the symptoms associated with lipedema.<sup>7</sup> The [Fat Disorders Research Society provides videos](#) that comprehensively describe treatment options. It is critical to note that although the treatments below are what patients and caregivers employ to address lipedema, limited research is available to understand why certain treatments are effective or ineffective for patients.

**Exercise** is a key component of conservative therapy and serves to reduce or stabilize weight, strengthen muscles, improve blood and lymph flow, and boost mental health.<sup>5,16,17,62</sup> Commonly used exercises include low-impact workouts such as walking, lymphatic yoga, rebounding, cycling, and Pilates. Aquatic exercise involves submersion in a pool to perform low-impact exercises.<sup>5,63</sup>

**Healthy eating**, such as the Rare Adipose Diet, Paleo Diet, and Anti-inflammatory Diet, is a strategy that has been used by the patient community. Although the effects and success of specific diets differ from patient to patient, regular exercise and proper nutrition will affect body fat, thereby improving a patient's well-being.<sup>16,64</sup>

**Psychosocial counseling and support groups** are important due to the mental health issues associated with lipedema. Patients are encouraged to participate in support groups, engage their friends and family, and seek the aid of mental health professionals to support disease management.<sup>5,30,62</sup>

**Locomotion (orthopedic) problems and lack of proper shoe wear** are very common in patients with lipedema and leg lymphedema. This issue negatively impacts upward transport of fluid from the legs, thereby contributing to the buildup and progression of edema. Flat feet should be analyzed and treated with adequate shoes. Mechanical hindrance due to enlarged fat deposits on the inner and upper thighs should be treated as possible, as this can directly impact patient mobility and health.<sup>65,66</sup>

**Compression therapy** involves garments that can be fitted to specific areas affected by lipedema. These include bandaging with garments with inelastic systems, and wraps with Velcro attachments to allow for easy wear and adjustment. These garments work by applying pressure to the affected limbs to keep lymph moving from the tissues into the vessels and are useful for patients who experience edema buildup, and have been reported to reduce pain.<sup>5,16,17</sup>

**Manual lymphatic drainage (MLD)**, sometimes called manual lymphatic therapy, is a specific type of massage designed to move excess interstitial fluid out of the tissues and into the lymphatic vessels. The goal of MLD is to increase the flow of lymph, thereby generating a suction effect and driving lymph from a fluid-rich area to a fluid-poor area.<sup>5,16,30,67</sup> Although MLD is standard therapy for lymphedema, its success for treating lipedema is considered unproven.<sup>17</sup>

**Complete decongestive therapy (CDT)**, also called complex decongestive therapy and decongestive lymphatic therapy, is a program that combines multiple treatment approaches to reduce the swelling and edema-related symptoms of lipedema. Tailored to the individual, CDT initially involves regular sessions with a physical therapist involving MLD or intermittent pneumatic compression, use of bandaging and compression garments, and therapeutic exercises.<sup>57</sup> Once the swelling is reduced, patient self-management involves application their own bandaging, compression, and exercise in an effort to maintain the reduction in swelling.<sup>5,16</sup> CDT and MLD have been shown to reduce capillary fragility in lipedema patients, but to what extent this impacts the disease long-term is not fully understood.<sup>57</sup>

**Deep breathing** is beneficial as it activates the diaphragm and promotes lymphatic pumping.<sup>63</sup>

**Supplements** such as Butcher's Broom and selenium have been used by patients with isolated and anecdotal reports of improvement of lymphatic flow and limb reduction.<sup>68</sup>

## LIPOSUCTION AND REDUCTIVE SURGERY

Surgery is the only available technique to correct abnormal adipose tissue. Two types of surgery have been used in lipedema treatment, liposuction and reductive surgery.

**Liposuction** is a surgical treatment that involves application of general or local (tumescent and water-assisted) anesthesia, and subsequent removal of adipose tissue through a straw-like device called a cannula.<sup>42</sup> One end of the cannula is connected to a vacuum device, and the other end is inserted through a small incision of the skin and removes fat via aspiration.

- **Tumescent liposuction** involves introduction of large volumes of tumescent solution into the subcutaneous space to tumesce (swell) the area. The solution contains an anesthetic, which induces local numbing; epinephrine, which causes constriction of blood vessels to reduce bleeding; and saline, which causes swelling of the adipose tissue. The solution is allowed to infiltrate the tissue, and its high salinity causes the adipose tissue and cells to swell and separate from the connective tissue, at which point the cannula is used to aspirate the fat.<sup>14,20,69,70</sup>
- **Water-assisted liposuction** does not involve over-swelling of the adipose tissue. Instead, small amounts of tumescent solution and water are introduced into the adipose tissue. Once sufficient numbing occurs, a modified cannula with an attached fan-shaped water jet is inserted into the subcutaneous space and applied to separate the adipose cells from the tissue, while simultaneously aspirating the solution and detached cells.<sup>71</sup>

Although liposuction has been more commonly used to treat lipedema, the Dutch lipedema guidelines state that *"[liposuction] is only the treatment of choice for patients with a suitable health profile and/or inadequate response to conservative therapy. Before using [liposuction], associated deteriorating components such as edema, obesity, unhealthy lifestyle, lack of physical activity, lack of knowledge about the disease, and psychosocial distress should be addressed. Moreover, even after liposuction, women generally require conservative therapy, and weight normalization should remain a goal."*<sup>17</sup>

**Reductive surgery**, also called excision and resection, is a more invasive procedure that involves excision of large localized deposits of lipedematous tissue, or lumps, possibly including the surrounding skin. Development of these lumps can cause the knees to twist outward (valgus deformity) or droop to the side of the leg (ptosis) and, in serious cases, lead to the inability to walk, thereby dramatically impacting the patient's life.