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Jaime Schwartz, MD
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January 17, 2024

Re: Patient: Stephanie Brakefield
ID #: 217800565307
DOB: 07/17/1963

To Whom It May Concern,
We are requesting a **GAP EXCEPTION review** for surgery to treat the diagnosed disease Lipedema. We are requesting a 3-month Authorization to cover the first staged procedure.

I have also attached for your review:

1. Letters and notes from non -surgeons documenting this patient's Lipedema diagnosis.
2. Proof of attempts to manage conditions with conservative treatment.
3. Letter of medical necessity, exam notes and surgical plan from Dr Schwartz
4. Patient letters describing how Lipedema is affecting her life
5. Photos
6. articles and documentation on the treatment of Liposuction for the treatment of Lipedema.

Patients with Lipedema have been misdiagnosed despite this disease identified by the Mayo clinic in the 1940s. Thank you for your attention to this important matter and ensuring a high-quality review of this request.

Please feel free to contact me if you require any additional information.

Best regards,
Jae Arellano
Total Lipedema Care
Jaime S. Schwartz, MD, FACS
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Associate Clinical Professor of Surgery- USC Keck School of Medicine Division of Plastic and Reconstructive Surgery
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Visit Note - December 21, 2023

PMS ID: 115636PAT000001146 Sex: Female DOB: 07/17/1963 Phone: (615) 485-3415 MRN: MM0000001136

Medical History

Obtained and Reviewed December 21, 2023.
Arthritis: mild arthritis in knees, thumb joints
Autoimmune disease: Hashimoto's hypothyroidism
Circulatory care: venous insufficiency: have had vein ligations in the past, also see current venous findings
Easy bruising
Ehlers-Danlos syndrome: hypermobile
H/O: pregnancy: 4 healthy pregnancies and births
Hypothyroidism: Hashimoto's
Lipedema: diagnosed in 2022
Other: recurrent viral meningitis
Gestational age at birth: 40 weeks
Birth weight: 7 lbs, 7 oz
Forceps delivery: No

Surgical History

Obtained and Reviewed December 21, 2023.
Other: vein ligation

Plastic Surgery History

Plastic Surgery History
None

Family History of Breast Cancer

Do you have a family history of breast cancer?: Yes
Mother: at age 62

Family History of Malignant Hyperthermia and Anesthesia Sensitivity

Do you have a family history of malignant hyperthermia or severe reactions to anesthesia?: No

Herbal Medications and Supplements

Do you take any herbal medications or supplements?: Yes
Vitamin B: methyl B12
Vitamin C
Vitamin D: k2 d3

Skin Conditions

None

Chief Complaint: Lipedema

HPI: This is a 60 year old female who is being seen for a chief complaint of Lipedema. Stephanie Brakefield presents today for a telemedicine exam for lipedema.
who initially diagnosed you with your condition? Dr Aaron Aday
When did your condition start or when do you think it started? Pregnancy
Have you ever noticed your legs were larger than the rest of your body or larger than people of your same age? At what age? 30
Is your tissue painful? Yes
If yes, at what age and/or after what event did the pain start?
Menopause around age 56
Which areas of the body are you experiencing pain?
g. Front of thighs h. Back of thighs
i. Inner thighs j. Front of calves
k. Back of calves l. Inner calves m. Ankles
Are there areas of your body that are tender to the touch? If yes, where?
g. Front of thighs h. Back of thighs
i. Inner thighs j. Front of calves
k. Back of calves l. Inner calves
On a comparative pain scale of 1-10 (10 being the most painful), what pain level are you experiencing on a daily basis? 3 / 10
What pain level do you experience on a bad day? 5 / 10
What pain level do you experience on a good day? 2 / 10
Do you experience swelling? Yes
If yes, where on the body do you experience swelling?
g. Front of thighs h. Back of thighs
i. Inner thighs j. Front of calves
k. Back of calves l. Inner calves m. Ankles
Do you swell more standing for long periods of time? Yes
How long (minutes) can you stand without swelling, pain or other issues?
d. 11-20 minutes
Do you swell sitting for long periods of time? Yes
How long can you sit without swelling, pain or other issues?
g. > 60 minutes
Do you swell or does your swelling worsen in the heat? vYes
Do you elevate your legs to make them feel better? Yes
Does any swelling you have resolve with elevation or sleeping overnight? Yes
Are there any areas of your body that you don't lose fat tissue from by diet or exercise? (choose all that apply)
a. Upper arms c. Breasts d. Abdomen
h. Abdomen i. Front of thighs j. Back of thighs
k. Inner thighs l. Front of calves
m. Back of calves n. Inner calves o. Ankles
Have you been able to lose weight on an eating plan? Yes
Have any of the following medications or supplements been helpful for your signs and symptoms? (Choose any that apply)
Phentermine
Dextroamphetamine/Adderall
Diosmin, MPFF or Vasculera
Ozempic, Wegovy or other
GLP-1 agonist
Metformin
What eating plans have you tried that improved your symptoms, including swelling and pain?
Anti-inflammatory Intermittent fasting
What activities are you unable to perform?
I can no longer run or squat, and it makes me very sad
What exercise do you do? Walking Pilates Biking, swimming
Do you experience extreme fatigue defined as a lingering tiredness that is constant and limiting; in other

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Skin Protection

Do you wear sunscreen?: Yes
If Yes, what SPF?: 50
Do you tan in a tanning salon?: No

Family History of Melanoma

Do you have a family history of Melanoma?: No

Social History

Sexually active with one partner

Patient feels safe at home

EtOH none

Single Question Alcohol Screening: 0 days
Caffeine Use: Once a day
Exercise: Once a day
Occupation: Self employed fashion designer
Place of Residence: 901 Cantrell Ave
Nashville, TN 37215
Smoking status - Never smoker
Driving status:
Drives in the Daytime
Drives at Night: starting to experience starbursts around lights

Medications

Other: c-progesterone 100mg sr capsule 1 daily
c-estradiol 4mg/ml medium #2264 2 clicks daily
c-t3-10mcg/t4-112mcg ir caps 1 daily

Vitamin K2 D3
Methyl B12
Vitamin C
Biotin
Synbiotic

Allergies

No known drug allergies

words, unexplained, persistent, and relapsing exhaustion. No

Do you have brain fog? No

Choose all parts of your body where you have heavy tissue:

Front of thighs Back of thighs Inner thighs

Front of calves Back of calves Inner calves

As a child did you amuse your friends by contorting your body into strange shapes OR could you do the splits? Yes

Can you now (or could you ever) bend your thumb to touch your forearm? Yes

Can you now (or could you ever) place your hands flat on the floor without bending your knees? Yes

As a child or teenager did your shoulder or kneecap dislocate on more than one occasion? No

Do you consider yourself doublejointed? No

Do you wear compression garments? Yes

How long have you worn compression? > one year

What are the benefits of wearing your compression garments?

None of the above

Have you tried the following manual therapy: manual lymphatic drainage (MLD) therapy as part of complete decongestive therapy? Yes

If you tried MLD, did it improve your symptoms? No

Have you tried the following manual therapy: Deep tissue therapy such as myofascial release, Roling, Swedish massage, Thai massage, etc. No

Do you have an intermittent pneumatic compression (IPC) pump? Yes

If you have an IPC pump how often do you use it? Once a day

Which of the following therapies have you tried and received benefit for your symptoms (Choose all that apply):

Acupuncture

Foam rollers, gua sha tools, other rollers or tools

Does your physical health interfere with your social activities? No

What do you do for work? Self employed fashion designer

Does your physical health interfere with your work? No

Do you bruise easily? Yes

How often do you find bruises on your body? Weekly

Do you have spider veins? Yes

Do you have varicose veins? Yes

Do you have venous insufficiency? Yes

Have you ever had a vein procedure such as injection of detergent or radio frequency ablation or stripping to close one of your veins? Yes

If your veins were ever treated, did your symptoms improve? Yes

Have you ever experienced a blood clot or have been diagnosed with deep vein thrombosis (DVT)/pulmonary embolus? No

Do you feel hard nodules, lumps, or "grains" under the skin in areas with affected tissue? Yes

What areas of your body have nodules, lumps or grains?

Abdomen Front of thighs Back of thighs Inner thighs Front of calves Back of calves Inner calves

Rate your overall health? Good

What was your highest weight in pounds? 180

What was your lowest weight in pounds? 125

Have you participated in a supervised weight loss program such as a bariatric surgery program, a weight loss clinic, a supervised dietary program, a nutritionist supervised program, a personal trainer or other? Yes

If you participated in a supervised weight loss program, did your affected tissue reduce or did your symptoms improve? No

If you have previously had any surgical procedures for your condition, did your symptoms improve after the surgery? I have not had surgery

Her lipedema worsened in menopause. She went off hormones one month ago because they were not making her feel better. Her lipedema increased on hormones. Estradiol 4 mg/ml (2 clicks in the AM) was a cream and the c-progesterone was a 100 mg SR capsule pill at night. Estradiol was 6.0. Postmenopausal range 6-54.7. Progesterone 1 and previous was at 0.3. Postmenopausal range was 0-0.1.

Her daughter has EDS but does not have lipedema yet (it is likely early).

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Her older daughter after she had babies has lipedema.

Menopausal, her sleep was not great but now off hormones her sleep is better. She usually sleeps for 8 hours but poor sleep for her is getting up to go to the bathroom 1-2 times per night. She was having some hot flashes and brain fog but she also has EDS.

Her TC 207

HDL 66

TG 125

HDL-p 32.7

Small LDL 327 (on 12/8 last year it was 97) - variation is normal and you are still in the normal range

LDL size 21.7

Lp-IR <25

LDL-9 1246 (<1000) This is lower than December one year ago

LDL-c 119 (0-99) down from December

A1C 5.5%

DHEAS 81.1 Normal

Ferritin was high 166 (15-150) Previous result was 230

Historical Summary:

Ht: 5'9"

Wt: 170

BMI: 25.1

Pregnancies: 4

Children: 4

Exam:

An examination was performed.

Comprehensive Lower Extremity

Appearance: **well developed and well groomed.**

Memory: Appropriate recent and remote memory with appropriate history provision

Judgment and Insight: Appropriate judgment, insight, interpersonal dynamics and expectations of encounter and goals of treatment

Orientation: Alert and oriented to person, place, time.

Mood: Mood and affect well-adjusted, pleasant and cooperative, appropriate for clinical and encounter circumstances

Additional Exam Findings: **THIS EXAM IS BASED ON PHOTOGRAPHS REVIEWED AND INTERACTION WITH THE PATIENT DURING THE TELEMEDICINE EXAM**

LOOSE CONNECTIVE (FAT) TISSUE EXAM

HEAD AND NECK

Facial nodules: ____ Yes ____ **x** ____ No

Supraclavicular fat: **x** ____ Normal ____ Increased

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ARMS

Upper arm nodules: ☐ Yes ☒ No (the texture of the skin appears to have fibrotic indentations)

Lower arm nodules: ☐ Yes ☒ No

Hanging tissue upper arm: ☒ Yes ☐ No

Heavy tissue on upper arm: ☐ Yes ☒ No (arm tissue is heavier than it was)

Tissue on upper arm overhangs elbow: ☐ Yes ☒ No (there is some hanging tissue)

Wrist cuff: ☐ Yes ☒ No

TORSO

CHEST (UPPER ANTERIOR TORSO)

Chest/Upper Torso: ☒ Normal fat ☐ Increased (very thin)

Folds of tissue lateral breasts: ☒ Yes ☐ No

Chest nodules : ☐ Yes ☒ No

Edema of the torso: ☐ Yes ☒ No

ABDOMEN (ANTERIOR LOWER TORSO)

Panniculus: ☒ Yes ☐ No (underwear makes a mark and her belly hangs over the top of the underwear)

Heavy panniculus: ☒ Yes ☐ No

Abdomen nodules: ☒ Yes ☐ No

BACK (POSTERIOR TORSO)

Dorsocervical fat pad: ☐ Yes ☒ No

Upper back lipomas: ☐ Yes ☒ No

Upper back nodules: ☐ Yes ☒ No

Lower back lipomas: ☐ Yes ☒ No

Lower back nodules: ☒ Yes ☐ No (from her waist down she has nodules)

Connective tissue fold on sides of the back (can be area under bra): ☐ Yes ☐ No

Lordosis: ☐ Yes ☒ No

Shelf of tissue above the buttocks: ☐ Yes ☒ No (she has a pad of fat on her hips and she feels it may progress to cover the upper buttocks)

LEGS

THIGHS

Striae: ☐ Yes ☒ No

Mattress pattern thigh tissue: ☒ Yes ☐ No

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Thigh lipomas: ☐ Yes ☒ NoThigh nodules: ☒ Yes ☐ No**KNEES**Fat overhanging knee: ☒ Yes ☐ No (there is a lot of fat around the knee and this is the area where she has the most pain - it is hard for her to bend her knees)Fat covers knees: ☐ Yes ☒ NoFat covers shins: ☐ Yes ☒ No (however there are nodules over the shin bone)Medial knee lobules: ☒ Yes ☐ No**CALVES**Calf lipomas: ☐ Yes ☒ NoCalf nodules: ☒ Yes ☐ NoStovepipe legs: ☐ Yes ☒ NoIncreased tissue on calves: ☒ Yes ☐ No**ANKLES**Ankle cuff: ☐ Yes ☒ No (if she stands for longer periods a cuff will appear; socks leave a huge indentation)Fat around lateral malleoli: ☒ Yes ☐ NoFat around medial malleoli: ☒ Yes ☐ No**FEET**Stemmer negative: ☒ Yes ☐ NoFlat feet: ☐ Yes ☒ No (she recently had to get inserts in her shoes from a podiatrist)**LEG PAIN**Pain medial legs above knee: ☒ Yes ☐ NoPain medial legs below knee: ☒ Yes ☐ NoPain medial ankles: ☒ Yes ☐ No (her feet and ankles hurt her all the time as it is hard to walk)**VASCULAR EXAM**Telangiectasia/Spider Veins: ☒ Yes ☐ NoVisible Varicose Veins: ☒ Yes ☐ NoNon-pitting edema (spongy tissue with increased interstitial glycosaminoglycans): ☒ Yes ☐ NoPitting edema: ☒ Yes ☐ No (occasionally she has +1 pitting edema)**JOINTS**Valgus of knees: ☐ Yes ☒ NoVarus of ankles: ☒ Yes ☐ No**GENERAL**

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Tissue tender in areas affected: ☒ Yes ☐ No

Hands and Feet Not Affected: ☒ Yes ☐ No

Bruising currently: ☒ Yes ☐ No (right calf; left calf above her ankle; one on left upper thigh)

Labs/Imaging: Photos viewed

The Brief Environmental Exposure and Sensitivity Inventory (BREESI) is a 3-item screener for chemical intolerance with excellent predictive validity. 1/3 positive confirming chemical sensitivity.

The lower extremity functional scale (LEFS) is a measure of disability for the legs. Lower scores indicate more dysfunction.

Score = 51

Minimum score: 0 Maximum score: 80 The lower the score the greater the disability.

Five Questions for Hypermobility: 3/5

A positive answer for two or more questions has a sensitivity of 91%, a specificity of 75% for predicting hypermobile joints (BMC Musculoskelet Disord. 2020; 21: 174).

Tests

1. Telemedicine

Test: Consent for telemedicine visit obtained.

Additional comments: The patient gave permission for this telemedicine visit.

Dr. Herbst has a medical license or approval for this telemedicine visit in the patient's state.

I performed this visit using real-time telehealth tools, including a ModMed, RingCentral (or phone) connection between my location and the patient's location. Prior to initiating the services, I obtained the patient's informed verbal consent to perform this visit using the telehealth tools and answered all the questions the patient had about the telehealth interaction.

Originating Site: Total Lipedema Care, Tucson, AZ

Home Distant Site:

Physical exam, if recorded, is based on patient reported information or obtained through peripheral.

Impression/Plan:

1. Lipedema:

Diagnostic Criteria for lipedema (modified from Wold, Allen and Hines, 1951, and Herbst et al., 2021, Standard of Care for Lipedema in the US)

This patient meets the following criteria for lipedema unless specified

Female

Family history of lipedema
Bilateral & symmetrical manifestation with minimal involvement of the feet
Disproportionate adipocyte hypertrophy of the lower extremities in relationship to the trunk
Minimal to no pitting edema
Negative Kaposi–Stemmer sign
Pain, tenderness on pressure
Easy bruising
Persistent enlargement after elevation of the extremities or weight loss
Arms are affected 80% of the time
Hypothermia of the skin
Swelling worsens with orthostasis in summer
Lipedema tissue unaffected by caloric restriction, exercise, bariatric surgery
Vascular manifestation such as cherry angiomas, telangiectasia, venous disease

Lipedema Stage 2 Type III and IV
Lipedema of the abdomen, hips and buttocks

Lipedema is a congenital enlargement (hyperplasia of the adipose tissue) of the loose connective (fat) tissue on the legs almost exclusively seen in women by the third decade. According to an epidemiologic study by Földi E and Földi M, lipedema affects 11% of the female population. Lipedema was initially described by Allen and Hines in 1940; its etiology remains unknown and it remains under-diagnosed. Classically women with lipedema have disproportionate bodies with larger legs and hips than arms and waist. In 1951 Wold et al. analyzed 119 cases and provided the diagnostic criteria for lipedema:

- 1) Almost exclusive occurrence in women
- 2) Bilateral and symmetrical manifestation with minimal involvement of the feet
- 3) Minimal pitting edema; the Kaposi-Stemmer sign is negative
- 4) Pain, tenderness on pressure
- 5) Increased vascular fragility; easy bruising
- 6) Persistent enlargement after elevation of the extremities or weight loss
- 7) Arms are affected 80% of the time
- 8) Hypothermia of the skin
- 9) Swelling worsens with orthostasis in summer
- 10) Unaffected by caloric restriction

The stage of disease refers to how the skin and tissue appear visually:

When the skin is still smooth, the lipedema is stage 1.

When the skin and tissue have indentations in a mattress pattern, the lipedema is stage 2. Lipedema stage 3 has larger out-pockets of tissue.

The types of lipedema refer to the location of the fat:

Type I: In the area of the buttocks and hips (saddle bag phenomenon)

Type II: Buttocks to knees, with formation of folds of fat around the inner side of the knee

Type III: Buttocks to ankles

Type IV: Arms

Type V: Legs

In lipedema, there are increased macrophages in tissue, a microangiopathy (leading to increased bruising), dilation of subdermal capillaries which can be seen as telangiectasias and petechiae on the skin, dilation and leakage of lymphatic vessels in the subcutaneous fat - leaking lymphatics into subcutaneous fat increases growth of adipose tissue in mouse models.

Diuretics such as Lasix concentrate proteins in the interstitium increasing the work load of the lymphatic system. Do not use diuretics.

Corticosteroids should be avoided as they weaken blood vessels (and lymphatics) and cause a rebound increase in adipose growth once stopped.

For any surgery, there must be professional manual lymphatic drainage at minimum one week before and for four weeks after the surgery - longer if there is a slow recovery. In lipedema and lymphedema (lymphatic dysfunction), there is difficulty in handling all the fluid and inflammation after surgery. This means there is a need for hands on MLD from a trained practitioner.

Mismanagement of MLD after surgery would risk the development of difficult to control lymphedema. Adequate MLD after surgery is standard of care (<https://pubmed.ncbi.nlm.nih.gov/34049453/>).

I counseled the patient on the following for lipedema.

Compression: Continue current compression.

Change Tissue Structure: Many people with subcutaneous adipose tissue (SAT) disorders have fibrosis and/or contracted fascia in

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their tissue that changes the shape, altering blood and lymph flow. While manual lymphatic drainage is important to move fluid through tissues, it cannot improve flow through the tissue long-term. Reducing the fibrosis allows for a return to normal vasculature and flow through the tissue. Improving flow through the skin can include use of the Gaiam Pressure Point Massager. Tools that can help improve the flow deeper in the tissue include a muscle massage roller stick such as the SPRI Tiger Tail. There are many different styles of these sticks so find one online, or at a sports store near you. Use to roll up and down a limb, the abdomen, back or buttocks, and spot treat by rolling back and forth over tender areas. You can also use a Gua Sha tool to complete long strokes deeply in the tissue and short strokes around joints. Try an index knobby for point treatment over lipomas or fibrotic areas, or an octopus hand massager to carry with you in your purse or backpack.

Manual therapy: Continue self MLD

Diet: Continue current diet and make sure you get enough protein.

Exercise: Continue current exercise regimen. It is ok to walk right after surgery but check with Dr Schwartz on his recommendations.

Your progesterone level was higher than the postmenopausal range. Based on the data from the ARK1C1 gene, progesterone makes fat grow at least in one family with lipedema. I would wait at least 6 months before checking. The risk for cardiovascular disease does increase in women in menopause.

Monitor your lipid panel, Lp(a), CRP, homocysteine. You can reduce the risk of cardiovascular disease with diet and exercise. I would suggest checking an essential fatty acid profile to find out if you have sufficient omega-3-fatty acids versus the omega-6-fatty acids.

Reduce leakiness/inflammation on the outside of the vessel:

Diosmin: Diosmin known by the brand name VASCULERA is a specially formulated prescription medical food product for the clinical dietary management of the metabolic processes of chronic venous insufficiency. The Orphan Drug Amendment to the FDCA of 1988 defines "medical food" as a food which is formulated to be consumed or administered enterally under the supervision of a physician and which is intended for the specific dietary management of a disease or condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by medical evaluation. VASCULERA (diosmiplex) consists of a specially formulated proprietary blend of micronized, highly purified diosmin glycoside in combination with alkaline granules, alka4-complex. Diosmin glycoside manages venous inflammation, accumulation of polymorphonuclear leukocytes, platelets and other thrombotic components as well as edema, caused by a deterioration of venous vessel walls. Alka4-complex works by buffering stomach acid and managing blood pH to affect local metabolic acidosis in veins. Each VASCULERA tablet contains 600 mg of diosmin glycoside (diosmin), a micronized, highly purified flavonoid fraction (from citrus) with hesperidoside constituents. In clinical trials, this level of intake has been shown to manage chronic venous insufficiency (CVI). VASCULERA contains the following other ingredients as fillers and excipients: microcrystalline cellulose, steric acid, croscarmellose sodium, povidone, silicon dioxide, hydroxypropyl methylcellulose, glycerine USP, and water. Tablets do not contain fructose, glucose, sucrose, lactose, gluten, maltodextrin, tree nuts, peanuts, or flavors. VASCULERA is suitable for vegans. VASCULERA acts by restoring toward normal the metabolic aspects of CVI including modulation of venous tone and capillary resistance, management of lymphatic drainage and inflammation in the microcirculation. Preclinical and clinical data suggest that the diosmin glycoside in VASCULERA manages venous tone by increasing smooth muscle contractility. In addition, diosmin has been shown to decrease edema by increasing lymphatic contractility and drainage. Finally, diosmin manages the oxidative and inflammatory factors induced by VHI. Alka4-complex has been shown in preclinical and clinical studies to act as an acid buffering agent in the gut and to counteract the effects of increased acid production systemically. No evidence of drug incompatibility (drug interaction) has been reported in clinical trials or in post-marketing reports after almost 20 years of use in Europe. No toxic effects have been reported in the literature. My favorite over the counter diosmin is either Doctor's Best, Vein Support with DiosVein and MenaQ7 Veggie Caps. The company that makes Vasculera suggests using Blink Pharmacy to get the best price. Blink Pharmacy Plus U.S. Blink Pharmacy address: 3 Penn Center West Suite 320 Pittsburgh, PA 15276. Call Blink Pharmacy phone: 844-963-0320 to confirm your prescription. You can go to www.blinkpharmacy.com to sign up and pay for your prescription electronically. Your prescription will be shipped free to your home. You can also purchase a similar product over the counter: VITASUPPORTMD Vein Formula (MPFF). This is an OTC supplement that is easy to absorb. START THREE MONTHS BEFORE SURGERY AND RESTART AFTER SURGERY ONCE YOU ARE HEALED.

Reduce leakiness on the inside of the blood vessels (protect the glycocalyx):

Arteriosil: Arteriosil is the only product that has been specifically proven to regenerate a damaged endothelial glycocalyx, the all-important inner lining of the blood vessels. That's because its primary ingredient is rhamnan sulfate derived from a very rare seaweed, *Monostroma nitidum*. This natural substance provides the building blocks your body can use to restore the glycocalyx. This particular seaweed is wildcrafted in pristine areas and harvested by indigenous people. It's been eaten as a health-giving delicacy for thousands of years. For Arteriosil, the seaweed is carefully monitored for contaminants such as heavy metals, pesticides, and radioactivity. In addition, Arteriosil contains extracts from no less than 22 organic fruits and vegetables, selected for

vascular health. They include green tea, tomato, broccoli, garlic, grape seed and more. These compounds are very rich in polyphenols which help to reduce the inflammation caused by stress, aging, high sugar intake, and other common factors. It would be almost impossible to eat enough of each fruit and vegetable daily to have similar effects.

Ordering Arterasil: If you are interested in ordering Arterasil, please visit <https://flow.arterasil.com>

You will need my practitioner referral code to place an order which is FLOW.

START THREE MONTHS BEFORE SURGERY AND RESTART AFTER SURGERY ONCE YOU ARE HEALED.

2. Hypermobile Ehlers-Danlos Syndrome:: Hypermobility is thought to be the same or similar to Ehlers Danlos Syndrome hypermobile type (EDS-HT). The gene for EDS-HT is not known although tenascin-X made from the TNXB gene has been found in some families. Tenascin-X plays an important role in organizing and maintaining the structure of tissues that support the body's muscles, joints, organs, and skin (connective tissues). In particular, studies suggest that it helps to regulate the production and assembly of certain types of collagen. Collagens are a family of proteins that strengthen and support connective tissues throughout the body. Tenascin-X is also involved in regulating the structure and stability of elastic fibers, which provide flexibility and stretchiness (elasticity) to connective tissues. Fat tissue is known as "connective tissue" which consists of connective tissue proteins in sheets called fascia, as well as fat cells. Blood vessels, nerves and lymphatics pass through fat on fascia highways and fat lobules slide on thin wet fascia ropes between skin and muscle accommodating movement. When there are changes in the genes causing connective tissue proteins to be differently formed, skin loses its ability to maintain shape, blood vessels leak, lymph vessels dilate and fail to pump and the fascia ropes tighten and inhibit movement. Skin stretches losing shape, fluid, protein and cell wastes sit in fat, and fat cells grow and proliferate in this nutrient-rich environment. Joints, muscles, tendons, and ligaments are looser and more fragile. Not everyone with hypermobility develops symptoms. Different genetic changes may also result in similar symptoms. Fat disorders, including lipomas, may result from changes in genes important in mobility. The diagnosis of EDS-HT based on history and a clinical exam. Women with hypermobile joints have a risk of osteoporosis and should have a DEXA scan for bone disease at menopause. You can read more about Ehlers danlos hypermobile type here: <http://www.ncbi.nlm.nih.gov/books/NBK1279/> and here: <https://www.cda-adc.ca/jcda/vol-67/issue-6/330.html>

Please fill out this form: <https://www.ehlers-danlos.com/heds-diagnostic-checklist/>

This form will help us evaluate whether you have hypermobile Ehlers Danlos syndrome. You will need a DEXA scan and a heart ECHO to answer some of the questions. The form may require one or more of your doctors to help you.

Connective Tissue issue: You have been diagnosed with hypermobile joints, a connective tissue disease, or other connective tissue disease.

There are two imaging tests that should be done for anyone with hypermobile tissue:

A DEXA scan to assess for osteopenia or osteoporosis.

An ECHOCardiogram to assess for dilation of the aortic root. A dilated aortic root is uncommon in people who have generalized hypermobile joints or hypermobile Ehlers Danlos Syndrome, however, it is prudent to check the aortic root and for cardiac valvular dysfunction at least once. The ECHO should be ordered by your primary physician as it usually requires a pre-authorization and is best done in network.

To improve your connective tissue, I suggest the following:

Vitamin C is a very good anti-inflammatory vitamin. The best way to take vitamin C is by intravenous infusion. If you have any chance to get an infusion and feel comfortable with it, it is a great way to reduce inflammation (PMC4492638).

Read more here: <https://lpi.oregonstate.edu/mic/health-disease/inflammation>

Buy an easy to absorb vitamin C including:

a) My favorite is a yummy Vanilla Caramel Liposomal Vitamin C plus R-Lipoic Acid from Researched Nutritionals. You need my code to order this: HBSMD. Read more here: <https://www.researchednutritionals.com/product/c-rla-vanilla-caramel-liposomal-vitamin-c-gmo-free/>

b) Liposomal Vitamin C - 4 fl. oz (120 ml) by Quicksilver Scientific

c) or LivOn Laboratories- Lypo-Spheric Vitamin C

d) or ProtoSorb™ C is a unique formulation featuring Transport C-PLUS® Threonic Acid, which has been shown to enhance uptake of Vitamin C

e) or Bio C 1:1™ combines high-potency vitamin C with a standardized, full-spectrum, citrus bioflavonoid complex.

Take enough vitamin D to keep your blood 25-OH-vitamin D level in the normal range. You can start with 2000 units per day and increase over time as needed. Blood levels should be checked every 12 weeks until stable.

Move every day either walking, swimming, Tai Chi, whole body vibration or other exercise.

Keep the tissue supple with rollers, instruments such as gua sha tools, muscle massagers, etc.

Eat a healthy diet low in processed carbohydrates to keep inflammation down.

CONTINUE YOUR MVI FOR THE VITAMIN D AND C

Low dose naltrexone (LDN): Naltrexone is an opiate antagonist, blocking opioid receptors in the brain and eliminating the feeling of pleasure caused by e.g. drinking alcohol. Endogenous opioids (opioids produced by our own bodies, such as endorphins) are important for our well-being. The Neurologist Bernard Bihari in the early 1980s noticed that very small doses of naltrexone (low dose naltrexone - LDN) taken at bedtime only blocked the opioid receptors transiently, which stimulated the body to produce more of its endogenous opioids and produced no significant side effects.

When taking LDN, some people experience problems with sleeping during the first week. Nausea, feeling "high", gas and bloating, hunger pangs and increased spasticity may occur in the beginning and usually go away in a few days. LDN is normally taken every night between 9 PM and 3 AM, as the body produces most of its endorphins between 2 AM and 5 AM. Sometimes it is taken in the morning if there are significant sleep disturbances, especially in CFS/ME. Finnish doctor Olli Polo has even prescribed it to be taken several times a day (in CFS/ME) with good results.

LDN can safely be taken with almost all medications, foods or supplements, but because it is an opiate antagonist it cannot be taken with any narcotic painkillers (opiates), including tramadol and taking it with immunosuppressive drugs (like corticosteroids) may cause the drugs to "cancel out" each other's effects, as LDN is an immunostimulant. However, some doctors believe LDN can be taken with some opioids and some immunosuppressants. There are reports of incompatibility with ketamine and Roaccutane. The only absolute contraindication is a past organ transplant, because that requires immunosuppressive medication for life, and thus taking an immunostimulant might cause graft rejection.

Evidence shows naltrexone binds to be micro-glial toll 4 receptor decreasing glial release of chemotherapy kinds and cytokines which may decrease neuropathic pain and or pain associated with central sensitized patient. Two small clinical trials conducted at Stanford she'll benefit in fibromyalgia. There are positive case reports and complex regional pain syndrome, and positive studies for Crohn's disease and multiple sclerosis.

Any doctor can prescribe LDN as an "ex tempore" prescription, which must be filled by a compounding pharmacy. Some people use foreign pharmacies, as it is legal in most countries to order medications from abroad with a valid prescription. LDN may be formulated as capsules or liquid, but the liquid has to be refrigerated and is less convenient when traveling. It is recommended that calcium carbonate is not used as a filler for tablets. The recommended dose is 4.5 mg, but some people, especially those with severe MS, only take 3 mg. Often prescriptions are written for 1.5 mg capsules so that the patient can try taking either two or three at once. LDN is also relatively inexpensive, usually costing between \$15 and \$40 a month.

3. Lymphedema Stage 1 (resolves with elevation and sleeping overnight)

4.

5. **Chronic Peripheral Venous Insufficiency**

(I87.2)

Follow up PRN

The patient has consented to a telehealth visit using a video streaming service.

Staff:

Karen Herbst (Primary Provider) (Bill Under)

Electronically Signed By: Karen Herbst, 12/21/2023 10:10 AM MST

Name: Stephanie L. Brakefield | DOB: 7/17/1963 | MRN: 009157835 | PCP: Teresa Megan Zoffuto, MD | Legal Name: Stephanie L. Brakefield

Letter Details

VANDERBILT HEALTH

Vanderbilt Heart One Hundred Oaks
719 Thompson Ln
Suite 22100
Nashville TN 37204

Ms. Stephanie L. Brakefield

1/10/2024

RE: Stephanie Brakefield DOB: 7/17/1963

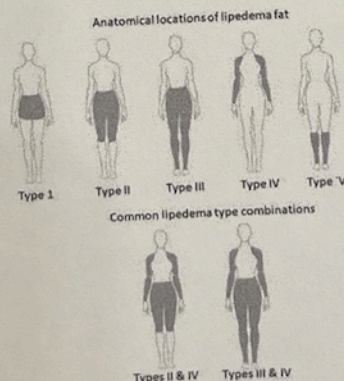
To whom it may concern:

On 1/30/2023, I examined Stephanie Brakefield. Upon exam, it is evident that she has lipedema.

Lipedema is a chronic disorder presenting in women during puberty or other times of hormonal change such as childbirth or menopause, characterized by symmetric enlargement of nodular, painful abnormal disposition of subcutaneous adipose tissue. Lipedema was first named as a medical condition in 1940 at the Mayo Clinic. Diagnosis is largely clinical and based on criteria initially established in 1951 at the National Institutes of Health. Lipedema starts in the lower extremities leading to circumferential bilateral lower extremity enlargement typically seen extending from the hips to the ankles resulting in edema, pain, and bruising; with secondary lymphedema, fibrosis, and spreading of abnormal tissues to the trunk and arms during later stages.

Lipedema is a hereditary disease, and variants in the gene AKR1C1 may increase risk for this disease. It also clearly manifests as a connective tissue disorder characterized by hypertrophic adipocytes, inflammatory cells, and dilated leaky blood and lymphatic vessels.

Ms. Brakefield has lipedema in her legs and hips, including nodules and pain in these areas. Her hands, feet, and upper trunk have been spared and show little or no sign of the disease. She has the other signs of lipedema, including a negative Stemmer's sign, abnormal fat pad development, and disproportionate deposition of dystrophic fat. Her exam is most consistent with Type II lipedema.



Ms. Brakefield has tried conservative measures for many months. While conservative therapies can reduce

swelling and pain for a short time, relieving the symptoms and progression in the long-term.

Also, please note that lipedema is distinct from obesity, although some, not all, patients can be obese. The adipose tissue accumulation is bilateral and symmetrical in the extremities, with sparing of the feet and hands from the fat accumulation. A hallmark of earlier stages of lipedema is the discrepancy in fatty tissue of the extremities compared to the trunk. This is in contrast to the fat associated with lifestyle-induced obesity, which is usually global and proportionate, affecting the hands and feet as well.

Women with lipedema find it difficult to lose weight before a needed surgery or other procedures. There is a significant number of women with lipedema who had failed bariatric surgery because they were already controlling their diet just not losing weight.

Besides the many painful nodules that women with lipedema have, studies indicate that women with lipedema do not have the muscle strength of people who only have obesity and are subject to more injuries and have poorer functional capacity.

Thus, to improve function and reduce pain, lipedema surgery is recommended for Stephanie Brakefield.

Please do not hesitate to contact me with any further questions.

Sincerely,
Aaron W. Aday, MD, MSc, FAHA, FSVM

Patient (Stephanie L Brakefield)

DOB(7/17/1963)

This letter was initially viewed by Stephanie L Brakefield at 1/10/2024 8:36 PM.

Final Details for Order #112-0517325-3146638

Print this page for your records.

Order Placed: October 11, 2022

Amazon.com order number: 112-0517325-3146638

Order Total: \$763.66

Shipped on October 12, 2022

Items Ordered

1 of: *Normatec Pulse 2.0 Leg Recovery System Standard Size for Athlete Leg Recovery with Normatec's Patented Dynamic Compression Massage Technology*

Price

\$699.00

Sold by: Orva Stores ([seller profile](#))

Supplied by: Other

FSA or HSA eligible

Condition: New

Shipping Address:

Stephanie Brakefield
901 CANTRELL AVE
NASHVILLE, TN 37215-1052
United States

Shipping Speed:

FREE Prime Delivery

Payment information

Payment Method:

Visa ending in 0392

Billing address

Stephanie Brakefield
901 CANTRELL AVE
NASHVILLE, TN 37215-1052
United States

Item(s) Subtotal: \$699.00

Shipping & Handling: \$0.00

Total before tax: \$699.00

Estimated tax to be collected: \$64.66

Grand Total: \$763.66

FSA or HSA eligible

FSA or HSA eligible amount (includes taxes & shipping): \$763.66

Credit Card transactions

Visa ending in 0392: October 12, 2022: \$763.66

To view the status of your order, return to [Order Summary](#).

Receipt from Pretty In Pink Boutique

retty In Pink Boutique via Square <receipts@messaging.squareup.com>

Tue, Sep 6, 2022 at 2:55 F

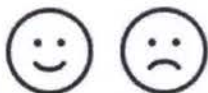
Reply-To: Pretty In Pink Boutique via Square

:CAESKBIAGhpyX29peXZjbmJ5aWl6dHFzenJpcmZ0Z29jeillZGIhbG9ndWUilHfXQgqMvWxnJPLTkeArazcfIlgA9kgMWvuOxtMkmbJO@reply2.squareup.cor

o: thebrakefields@gmail.com

Now when you shop at sellers who use Square, your receipts will be delivered automatically.

[Not your receipt?](#)



Let Pretty In Pink Boutique know how your experience was

\$63.20

compression tights.

I have also bought compression tights from Bradley Drugs 5206 Charlotte Pike Nashville 37209 but don't have the receipts

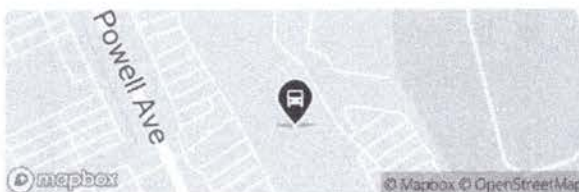
Vanderbilt Location × 1

\$63.20

Customer transaction made at the Vanderbilt location.

Total

\$63.20



I also often wear CW-X compression workout tights which I prefer overall

Pretty In Pink Boutique

Last Location

615-777-7465





Home / Women's Compression Tights / Endurance Generator Joint & Muscle Support Compression Tight

NEW

Endurance Generator Joint & Muscle Support Compression Tight

\$180

★★★★☆ 192 Reviews

COLOR Black/Gradient Rooibos



SIZE

[Size Guide](#)



[COMPARE TIGHTS](#)

ADD TO BAG — \$180

Pay in 4 interest-free installments of \$31.99 with [shop Pay](#) [Learn more](#)

KEY FEATURES



POPULAR FOR

Running HIIT Weight Training OCR

DESCRIPTION

The CW-X Endurance Generator Compression Tights offer unparalleled support to muscles and joints during high endurance activity. Features the patented EXO-WEB support panel biomechanically placed to contour your muscles and joints to provide support and stability without restricting your body's range of motion. These tights combine compression with the benefits of kinesiology tape. The four-way stretch and sweat-wicking fabric provide critical temperature management and breathability, making your workout comfortable and efficient. The unique blend of fabrics and features assist in optimizing performance and reducing the chance of injury.

Also comes in 3/4 Length and Shorts.

These are the exercise tights I prefer (I do not have the receipt for the most recent pair I bought)

POPULAR SEARCH TERMS

Black

Shorts

Get 10% Off

Final Details for Order #111-6738020-4355428

[Print this page for your records.](#)

Order Placed: December 7, 2017

Amazon.com order number: 111-6738020-4355428

Order Total: \$259.47

Shipped on December 8, 2017

Items Ordered

Price

1 of: *CW-X Women's Endurance Generator Tights, Black/Rainbow, Large*

\$124.00

Sold by: Amazon.com Services LLC

Supplied by: Other

Condition: New

1 of: *CW-X Women's Endurance Generator Tights, Black/Rainbow, Large*

\$124.00

Sold by: Sporty Side ([seller profile](#))

Supplied by: Other

Condition: New

Shipping Address:

Stephanie Brakefield
901 CANTRELL AVE
NASHVILLE, TN 37215-1052
United States

Shipping Speed:

Two-Day Shipping

Payment information

Payment Method:

Mastercard ending in 6352

Item(s) Subtotal: \$248.00

Shipping & Handling: \$0.00

Total before tax: \$248.00

Estimated tax to be collected: \$11.47

Grand Total: \$259.47

Billing address

Stephanie Brakefield
901 CANTRELL AVE
NASHVILLE, TN 37215-1052
United States

To view the status of your order, return to [Order Summary](#).

Progress Notes

Amanda Marie Morrison at 8/3/2022 12:20 PM

Attestation with edits by Aaron Weldon Aday at 8/8/2022 1:19 PM

I saw the patient on: 8/3/2022

I saw and evaluated the patient. I discussed the care with the fellow and agree with the findings and plan as documented in the attached note.

Aaron Weldon Aday, MD

Vascular Medicine Clinic Note

Date of Service: 8/3/2022

PATIENT NAME: Stephanie L Brakefield

MRN: 009157835

DOB: 7/17/1963

Subjective

History of Present Illness:

Stephanie L Brakefield is a 59 y.o. female here for evaluation of lower extremity discomfort and concern for lipedema. As a child and through puberty, she had no issues with her legs. She first noticed issues with her legs during pregnancy in 1991. During that time, she developed an increase in varicose veins and spider veins and developed associated leg heaviness as well as increased fat deposition in the thighs with tender nodularity. She wore compression stockings for this and each of her subsequent pregnancies. In 2003 after she finished having children she underwent lower extremity venous ligation after ultrasound noted reflux, then again underwent vein ligation 2017. Since then, she reports her knees and feet have become more painful and less mobile. She noticed a drastic change with menopause in the last 2 years including increased swelling, pain, fat deposition and nodularity in the thighs, hips, and lower stomach that is disproportionate to her upper body. Her calves were previously unaffected and she feels the fat then traveled into her calves. Her daughter is a nurse and mentioned she should be evaluated for lipedema which is why she presents to today's clinic.

On review of systems, she endorses easy bruising over the lower extremities. She is highly sensitive to pressure. Reports her feet swell some where her toes will look like sausages but her legs swell more than her feet. Pain and heaviness in the lower extremities worsens throughout the day. She denies any issues in her arms. She reports her legs look like her moms and grandmother's, who both were suspected of having lipedema. She participates in daily exercise with biking, swimming, walking, or pilates. She wears compression tights while exercising which improves the knee pain and other leg symptoms.

Past Medical History:

Past Medical History:

Diagnosis

- Autoimmune disease (CMS/HCC)
- Disease of thyroid gland
- Ehlers-Danlos disease
- Joint pain
- Lipedema
- Lymphedema
- Osteoarthritis
- Vision impairment

Date

2018 contacts

Past Surgical History:

Procedure	Laterality	Date
• SEPTOPLASTY (30520)	Left	06/18/2009
ENDOSCOPIC SPHENOIDOTOMY (31287); SUBMUCOUS RESECTION INFERIOR TURBinate(S) (30140);		
• VEIN LIGATION		
twice		

Allergies:

No Known Allergies

Medications:

Current Outpatient Medications:

- cyanocobalamin (vit B-12) ER 1,000 mcg tablet, extended release (CYANOCOBALAMIN), Take 1,000 mcg by mouth daily., Disp: , Rfl:
- docosahexanoic acid/epa (FISH OIL ORAL), Take by mouth daily., Disp: , Rfl:
- estradiol 10 mcg vaginal tablet, daily., Disp: , Rfl:
- LEVOTHYROXINE SODIUM (SYNTHROID ORAL), Take 112 mcg by mouth daily. , Disp: , Rfl:
- liothyronine (CYTOMEL) 5 mcg tablet, Take by mouth., Disp: , Rfl:

Social History:

Social History

Socioeconomic History

- | | |
|----------------------------|-------------|
| • Marital status: | Married |
| Spouse name: | Not on file |
| • Number of children: | Not on file |
| • Years of education: | Not on file |
| • Highest education level: | Not on file |

Occupational History

- Not on file

Tobacco Use

- | | |
|----------------------|--------------|
| • Smoking status: | Never Smoker |
| • Smokeless tobacco: | Never Used |

Substance and Sexual Activity

- | | |
|--------------------|-------|
| • Alcohol use: | No |
| • Drug use: | Never |
| • Sexual activity: | Defer |

Other Topics

- | | |
|---------------|---------|
| • Not on file | Concern |
|---------------|---------|

Social History Narrative

Married w/ 4 children
homemaker
Lives in Nashville
No tobacco, illicit drugs
etoh: 4-5 glasses wine per week

Social Determinants of Health

Financial Resource Strain: Not on file
Food Insecurity: Not on file
Transportation Needs: Not on file
Physical Activity: Not on file
Stress: Not on file
Social Connections: Not on file
Intimate Partner Violence: Not on file
Housing Stability: Not on file

Family History:

Family History

Problem	Relation	Age of Onset
---------	----------	--------------

• Breast cancer	Mother
• Other (lipedema)	Mother
• Colorectal Cancer	Father
• Other (lipedema)	Maternal Grandmother
• Diabetes	Maternal Grandfather
• Ehlers-Danlos syndrome	Daughter
• Other (Potts)	Daughter
• Epilepsy	Child
• Lupus	Neg Hx
• Rheum arthritis	Neg Hx

Review of Systems:

All other systems reviewed and are negative except as noted in the HPI.

Objective:

Physical Exam:

BP (l) 125/58 (BP Location: Left arm, Patient Position: Sitting) | Ht 175.3 cm (69") | Wt 77.6 kg (171 lb) | SpO2 99% | BMI 25.25 kg/m²

General: AAO X 3, NAD

HEENT: Head normocephalic, atraumatic. Extraocular movements intact.

Neck: Supple, JVP ~6cm H2O, no carotid bruits or cervical lymphadenopathy.

CV: RRR, normal S1/S2, no murmurs, rubs, gallops, or heaves.

	RIGHT	LEFT	
CAROTID	2+	2+	No bruit
DP	2+	2+	
PT	2+	2+	

Lungs: Lungs clear bilaterally, moving air well, breath sounds symmetric. No rhonchi, rales or wheezes.

Abd: Abdomen soft, non-tender, non-distended with bowel sounds. No organomegaly. No bruits noted.

MS: Normal ROM BLE and with preserved strength in all 4 extremities.

Neuro: No neurological deficits.

Skin: Warm, dry and intact. Dystrophic, symmetric fat apparent in the hips, thighs, and lower legs that is disproportionate to her upper body. Dystrophic foot extended to mid-calves without cuffing at the ankles. Fat pad present distal to bilateral knees. Some squaring of the toes with creases at the bases. Slight pitting edema in the dorsal foot surfaces. Negative Stemmer's sign bilaterally. Palpable nodules in the thighs. Telangiectasias present on both lower extremities.

PERTINENT LABORATORY FINDINGS:

No results found for: WBC, HGB, HCT, MCV, PLT

Lab Results

Component	Value	Date
GLUCOSE	99	04/19/2022
CALCIUM	10.6 (H)	04/19/2022
NA	141	04/19/2022
K	4.2	04/19/2022
CARDIOXIDE	28	04/19/2022
CL	105	04/19/2022
BUN	13	04/19/2022
CREATBLD	0.88	04/19/2022

Lab Results

Component	Value	Date
CHLPL	236 (H)	04/19/2022

Lab Results

Component	Value	Date
HDL	63	04/19/2022

Lab Results

Component	Value	Date
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Lab Results

Component	Value	Date
TRIGLYCERIDE	168 (H)	04/19/2022

No results found for: BTYPENATRIUR

ECG Review:

None

TTE:

None

ASSESSMENT/PLAN: 59 y.o. female here for evaluation of lower extremity discomfort and concern for lipedema.

Assessment**Lipedema**

Her presentation is consistent with lipedema. Supporting features include the disproportionate development of dystrophic fat in the hips and legs that developed with pregnancy and worsened with menopause, late involvement of the calves, progressive pain and sensitivity to pressure, easy bruising, telangiectasias, and a family history of lipedema. This is type II lipedema, which explains the lack of cuffing at the ankles. Discussed treatment for likely concurrent lymphedema, also discussed limitations in lipedema treatment beyond surgery. She is willing to undergo MLD to see how her symptoms respond. Depending on her symptoms and whether she experiences progressive debility, she may require surgical intervention in the future.

- trial MLD, assess degree of symptomatic relief at follow
- continue compression for symptomatic relief
- recommended continued adherence to exercise regimen and dietary modifications

Lymphedema

Does have some evidence of lymphedema in association with lipedema given history of pedal edema. She would benefit from a trial of MLD therapy given her biggest complaint is leg pain/heaviness at the end of the day. At return visit, we will assess how much symptomatic improvement this offers.

- recommended continued compression, elevation
- MLD referral

FOLLOW-UP:

As needed

Amanda Morrison, MD
PGY-4, Vascular Medicine Fellow

Name: Stephanie L Brakefield | DOB: 7/17/1963 | MRN: 009157835 | PCP: Teresa Megan Zoffuto, MD | Legal Name: Stephanie L Brakefield

Progress Notes

Aaron Weldon Aday at 1/30/2023 2:20 PM

Vascular Medicine Clinic Note

Date of Service: 1/30/2023

PATIENT NAME: Stephanie L Brakefield

MRN: 009157835

DOB: 7/17/1963

Subjective

History of Present Illness:

Stephanie L Brakefield is a 59 y.o. female with a history of lipedema here for follow-up. Since her last visit, she completed a course of manual lymphatic drainage. She feels that using a compression pump (Hyperice Normatec) at home provides her the most relief. Her compression hose tends to bunch at her knees, which is uncomfortable, but she finds workout tights by CW-X are the most comfortable. She is trying an elimination diet, which tends to help with some of her systemic symptoms, although she doesn't think it is particularly helpful for her legs. She still exercises daily and at a high level. However, she feels her legs are worsening. Her legs feel heavy, and standing for prolonged periods is painful.

She has no chest pain or shortness of breath, even with strenuous exertion.

Past Medical History:

Past Medical History:

Diagnosis

- Autoimmune disease (CMS/HCC)
- Disease of thyroid gland
- Ehlers-Danlos disease
- Joint pain
- Lipedema
- Lymphedema
- Osteoarthritis
- Vision impairment

Date

2018 contacts

Past Surgical History:

Past Surgical History:

Procedure

- SEPTOPLASTY (30520)
ENDOSCOPIC SPHENOIDOTOMY (31287); SUBMUCOUS RESECTION INFERIOR
TURBinate(S) (30140);
- VEIN LIGATION
twice

Laterality

Left

Date

06/18/2009

Allergies:

No Known Allergies

Medications:

Current Outpatient Medications:

- UNABLE TO FIND, Compound medication: C-T3-10mcg\112mcg IR capsule. Take one capsule daily, Disp: 30 each, Rfl: 0

Social History:

Social History

- Marital status: Married
- Spouse name: Not on file
- Number of children: Not on file
- Years of education: Not on file
- Highest education level: Not on file

Occupational History

- Not on file

Tobacco Use

- Smoking status: Never
- Smokeless tobacco: Never

Substance and Sexual Activity

- Alcohol use: No
- Drug use: Never
- Sexual activity: Defer

Other Topics

- Not on file

Social History Narrative

Married w/ 4 children

homemaker

Lives in Nashville

No tobacco, illicit drugs

etoh: 4-5 glasses wine per week

Social Determinants of Health

Financial Resource Strain: Not on file

Food Insecurity: Not on file

Transportation Needs: Not on file

Physical Activity: Not on file

Stress: Not on file

Social Connections: Not on file

Intimate Partner Violence: Not on file

Housing Stability: Not on file

Family History:

Family History

Problem	Relation	Age of Onset
• Colorectal Cancer	Mother	
• Breast cancer	Mother	
• Other (lipedema)	Mother	
• Colorectal Cancer	Father	
• Other (lipedema)	Maternal Grandmother	
• Diabetes	Maternal Grandfather	
• Ehlers-Danlos syndrome	Daughter	
• Other (Potts)	Daughter	
• Epilepsy	Child	
• Lupus	Neg Hx	
• Rheum arthritis	Neg Hx	

Review of Systems:

All other systems reviewed and are negative except as noted in the HPI.

Objective:

Physical Exam:

BP 131/76 (BP Location: Left arm, Patient Position: Sitting, Cuff size : 11 - Adult) | Pulse 80 | Ht 175.3 cm (69") | Wt 78.9 kg (174 lb) | SpO2 99% | BMI 25.70 kg/m²

General: AAO X 3, NAD

HEENT: Head normocephalic, atraumatic. Extraocular movements intact.

Neck: Supple, JVP ~6cm H2O, no carotid bruits or cervical lymphadenopathy.

CV: RRR, normal S1/S2, no murmurs, rubs, gallops, or heaves.

RIGHT

LEFT

DP	2+	2+
PT	2+	2+

Lungs: Lungs clear bilaterally, moving air well, breath sounds symmetric. No rhonchi, rales or wheezes.

Abd: Abdomen soft, non-tender, non-distended with bowel sounds. No organomegaly. No bruits noted.

MS: Normal ROM BLE and with preserved strength in all 4 extremities.

Neuro: No neurological deficits.

Skin: Warm, dry and intact. Dystrophic, symmetric fat apparent in the hips, thighs, and lower legs that is disproportionate to her upper body. Dystrophic foot extended to mid-calves without cuffing at the ankles. Fat pad present distal to bilateral knees. Some squaring of the toes with creases at the bases. Slight pitting edema in the dorsal foot surfaces. Negative Stemmer's sign bilaterally. Palpable nodules in the thighs. Telangiectasias present on both lower extremities.

PERTINENT LABORATORY FINDINGS:

No results found for: WBC, HGB, HCT, MCV, PLT

Lab Results

Component	Value	Date
GLUCOSE	81	10/21/2022
CALCIUM	9.2	10/21/2022
NA	144	10/21/2022
K	4.9 (H)	10/21/2022
CARDIOXIDE	26	10/21/2022
CL	108 (H)	10/21/2022
BUN	14	10/21/2022
CREATBLD	0.87	10/21/2022

Lab Results

Component	Value	Date
CHLPL	236 (H)	04/19/2022

Lab Results

Component	Value	Date
HDL	63	04/19/2022

Lab Results

Component	Value	Date
LDLCALC	139 (H)	04/19/2022

Lab Results

Component	Value	Date
TRIGLYCERIDE	168 (H)	04/19/2022

No results found for: BTYPENATRIUR

ECG Review:

None

TTE:

None

ASSESSMENT/PLAN: 59 y.o. female here for follow-up of lipedema.

Assessment

Lipedema

Given her progressive symptoms despite aggressive conservative therapy and a normal body weight, I think it is reasonable to consider surgery.

- will refer to our plastic surgery clinic
- continue using compression and lymphedema pump
- continue exercise regimen
- will try to identify a lipedema support group for women with her degree of physical activity

DP	2+	2+
PT	2+	2+

Lungs: Lungs clear bilaterally, moving air well, breath sounds symmetric. No rhonchi, rales or wheezes.

Abd: Abdomen soft, non-tender, non-distended with bowel sounds. No organomegaly. No bruits noted.

MS: Normal ROM BLE and with preserved strength in all 4 extremities.

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PERTINENT LABORATORY FINDINGS:

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CL	108 (H)	10/21/2022
BUN	14	10/21/2022
CREATBLD	0.87	10/21/2022

Lab Results

Component	Value	Date
CHLPL	236 (H)	04/19/2022

Lab Results

Component	Value	Date
HDL	63	04/19/2022

Lab Results

Component	Value	Date
LDLCALC	139 (H)	04/19/2022

Lab Results

Component	Value	Date
TRIGLYCERIDE	168 (H)	04/19/2022

No results found for: BTYPENATRIUR

ECG Review:

None

TTE:

None

ASSESSMENT/PLAN: 59 y.o. female here for follow-up of lipedema.

Assessment

Lipedema

Given her progressive symptoms despite aggressive conservative therapy and a normal body weight, I think it is reasonable to consider surgery.

- will refer to our plastic surgery clinic
- continue using compression and lymphedema pump
- continue exercise regimen
- will try to identify a lipedema support group for women with her degree of physical activity

~~venous insufficiency,~~

She has a history of venous intervention, although her current exam does not suggest severe venous insufficiency. That said, given her history and her symptoms, we will repeat a venous reflux study to assess for venous valvular incompetence that may be amenable to intervention.

FOLLOW-UP: prn

Aaron Aday, MD

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She has a history of venous intervention, although her current exam does not suggest severe venous insufficiency. That said, given her history and her symptoms, we will repeat a venous reflux study to assess for venous valvular incompetence that may be amenable to intervention.

FOLLOW-UP: prn

Aaron Aday, MD

All visits for MLD from Franjic

OCT
3
2022

Treatment

Jadranko Franjic
Vanderbilt Dayani Center



View notes



View After Visit Summary®

SEP
13
2022

Treatment

Jadranko Franjic
Vanderbilt Dayani Center



View notes



View After Visit Summary®

AUG
25
2022

Treatment

Jadranko Franjic
Vanderbilt Dayani Center



View notes



View After Visit Summary®

AUG
18
2022

Treatment

Jadranko Franjic
Vanderbilt Dayani Center



View notes



View After Visit Summary®

AUG
11
2022

Evaluation

Jadranko Franjic
Vanderbilt Dayani Center



View notes



View After Visit Summary®

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All visits for MLD from Franjic

OCT
3
2022

Treatment
Jadranko Franjic
Vanderbilt Dayani Center

 View notes

 View After Visit Summary®

SEP
13
2022

Treatment
Jadranko Franjic
Vanderbilt Dayani Center

 View notes

 View After Visit Summary®

AUG
25
2022

Treatment
Jadranko Franjic
Vanderbilt Dayani Center

 View notes

 View After Visit Summary®

AUG
18
2022

Treatment
Jadranko Franjic
Vanderbilt Dayani Center

 View notes

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AUG
11
2022

Evaluation
Jadranko Franjic
Vanderbilt Dayani Center

 View notes

 View After Visit Summary®

R



Name: Stephanie L Brakefield | DOB: 7/17/1963 | MRN: 009157835 | PCP: Teresa Megan Zoffuto, MD | Legal Name: Stephanie L Brakefield

From my last visit with Franjic

Progress Notes

Jadranko Franjic at 10/3/2022 9:30 AM

Physical Therapy Lymphedema Daily Note

Name: Stephanie L Brakefield
MRN: 009157835
DOB: 7/17/1963
Date: 10/3/2022
Referring Provider: Aday, Aaron Weldon, MD
Visit Number: 5

Important Dates
Onset Date: 08/03/22
Progress Note Due: 10/11/22
Progress Note Due Visit: 8
Plan of Care Expiration: 11/11/22

Stephanie L Brakefield is a 59 y.o. female with diagnosis of

	ICD-9-	ICD-10-
1. Lipedema	CM 782.3	CM R60.9
2. Lymphedema	457.1	I89.0

Precautions: Lymphedema precautions

SUBJECTIVE: Patient reported that she is doing good. Swelling in legs is about the same. She went to pick up garment but was wrong order and she received knee high stockings instead of pantyhose. She had to reorder garment again. Meanwhile, she tried with knee high stockings and they helped some. She hopes to receive pantyhose garment this or next week.

Pain Assessment:
Pain Location: Knees and feet
Pain Score: 3

Medical Chaperone: No sensitive areas addressed today.

OBJECTIVE:
Measurement taken on B-lat. LE:

Circumferential Measurements (in cm):

Right Lower Extremity	Left Lower Extremity
0cm (13cm from 2nd MTP): 26	0cm (13cm from 2nd MTP): 26.6
4cm: 22	4cm: 21.8
8cm: 24.2	8cm: 24.7
12cm: 29.5	12cm: 28.8
16cm: 33.2	16cm: 32.9
20cm: 36.6	20cm: 36.6
24cm: 39.4	24cm: 39.3
28cm: 40.2	28cm: 39.8
32cm: 39.3	32cm: 38.8
36cm: 37.3	36cm: 37
40cm: 38	40cm: 38.8
44cm: 43.4	44cm: 43.8
48cm: 46.3	48cm: 46.3
52cm: 50.4	52cm: 50

Name: Stephanie L Brakefield | DOB: 7/17/1963 | MRN: 009157835 | PCP: Teresa Megan Zoffuto, MD | Legal Name: Stephanie L Brakefield

From my last visit with Franjic

Progress Notes

Jadranko Franjic at 10/3/2022 9:30 AM

Physical Therapy Lymphedema Daily Note

Name: Stephanie L Brakefield
MRN: 009157835
DOB: 7/17/1963
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Important Dates
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20cm: 36.6	20cm: 36.6
24cm: 39.4	24cm: 39.3
28cm: 40.2	28cm: 39.8
32cm: 39.3	32cm: 38.8
36cm: 37.3	36cm: 37
40cm: 38	40cm: 38.8
44cm: 43.4	44cm: 43.8
48cm: 46.3	48cm: 46.3
52cm: 50.4	52cm: 50

60cm: 57.4	60cm: 57
64cm: 59.8	64cm: 59.6
68cm: 64.4	68cm: 63
72cm: 67.8	72cm: 67.2
76cm: 71.5	76cm: 70
Foot at 2nd MTP: 22.2	Foot at 2nd MTP: 22.3
Foot 4cm from 2nd MTP: 23	Foot 4cm from 2nd MTP: 23
BLE Lymph Totals/Difference	
Right Total Volume: 13635.81	
Left Total Volume: 13438.04	
% Difference (R vs. L) : -1.45 %	
Date of Previous Volume Measurement:	
08/11/22	
Right Previous Volume: 14492.13	
Right % Change in Volume: -5.91	
Left Previous Volume: 13675.01	
Left % Change in Volume: -1.73	

Lipedema (stage 1) in B-lat. LE and lipo-lymphedema, stage 1, in lower legs remain slightly decreased in comparison with last visit.

Today's Treatment

Patient supine: short neck treatment. Deep abdominal breathing technique. Opened Lnn. Axillary and Lnn. Inguinal B-lat. And inguino-axillary anastomoses B-lat. Manual lymphatic drainage treatment (MLD) on B-lat. LE anterior. Patient prone: MLD B-lat. LE posterior. Patient supine: MLD B-lat. LE anterior.

Measurement taken on B-lat. LE. Reviewed with the patient self-MLD technique and proper donning and doffing technique of compression garment. Patient demonstrated understanding of techniques.

Home Exercises Include:

Patient will practice self-MLD technique at home.

Patient will start to wear compression garment when receives garment.

Home Exercise Program given to patient: Verbal

Type of assist and/or percentage cueing needed to complete exercises: Verbal, Non-Verbal (demonstration), Manual and Minimum cueing

Patient Educated on: Procedure, Self-Care and Proper donning and doffing technique of compression garment.

Pain Interventions: Exercise within range without pain, Compression and Manual lymphatic drainage

ASSESSMENT:

Patient's response to today's treatment: Patient reported after treatment that she is doing good. Measurement taken today has shown that in comparison with initial evaluation measurement swelling in right LE decreased for 5.9 % and in left LE for 1.7 %. Patient demonstrated proficiency for self-management of lipo-lymphedema. Patient subjectively reported no improvement with functional abilities. Patient obtained knee high compression garment (secondary wrong order) but should receive recommended pantyhose garment this or next week. Patient is discharged from POC.

PLAN:

60cm: 57.4	60cm: 57
64cm: 59.8	64cm: 59.6
68cm: 64.4	68cm: 63
72cm: 67.8	72cm: 67.2
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PLAN:

Treatment Plan Discharge patient from 10/3/22

Treatment Time:
Therapeutic Interventions
Manual Therapy: 80
Therapy Total Treatment Time
Total Treatment Time: 80

Session Time:
Start Time: 0930
Stop Time: 1050

Therapist: Jadranko Franjic, PT, CLT-LANA
Date 10/3/2022

Physical Therapy Discharge Summary

Name: Stephanie L Brakefield
MRN: 009157835
DOB: 7/17/1963
Date: 10/3/2022

Treatment Diagnosis:

- | | Diagnosis | Plan |
|----|------------|------|
| 1. | Lipedema | |
| 2. | Lymphedema | |

Progress Report Period: to 10/3/2022

Criteria for termination of care: Patient has plateaued

Subjective report: Patient reported after treatment that she is doing good.

Objective: Measurement taken today has shown that in comparison with initial evaluation measurement swelling in right LE decreased for 5.9 % and in left LE for 1.7 %. Patient demonstrated proficiency for self-management of lipo-lymphedema.

ORTHO ALL PROMS

Some values may be hidden. Unless noted otherwise, only the newest values recorded on each date are displayed.

PROM ALL ORTHO SCORES		1/21/22
LEFS SCORE		65

Current Functional Status: Patient subjectively reported no improvement with functional abilities.
PATIENT SPECIFIC FUNCTIONAL SCALE (PSFS): Functional activities that patient is currently unable to perform or finds difficult to perform due to orthopaedic or other medical problem.
0-10 scale (0 = unable to perform activity; 10 = able to perform activity at prior level)

PSFS

Activity #1: Fitness, walking

Score: 8

Activity #2: Standing for longer than 15 minutes

Score: 2

Activity #3: Deep squats

Score: 0

Average Score: 3.33

Change in Average Score: 0.33

(Minimal detectable change for average score is 2 points for single item 3 points)

Plan of Care/Goals

Goals Updated: 10/3/2022

Short Term goals include:

short term

Goal 1: Swelling of affected area will decrease by 5 %. Not met. Measurement taken today has shown that swelling in right LE decreased for 5.9 % and in left LE for 1.7 %.

Goal 2: Pain will decrease to 1/10. Not met. Status: 3/10. In progress, continue.

Goal 3: Client/Caregiver's will be instructed in self bandaging techniques. Status: if needed. N/A.

Goal 4: Client/Caregiver will be instructed in self manual lymphatic techniques. Status: Patient instructed for manual lymphatic drainage (MLD) treatment technique and demonstrated understanding of technique.

Goal 5: Client/Caregiver will be instructed in a Home Exercise Program. Status: Patient is doing bicycling and walking for exercises.

Short term goal time frame (in weeks): 2

Long Term Goals include:

Long Term

Goal 1: Swelling of affected area will decrease by 8%. Not met. See STGL 1.

Goal 2: Pain will decrease to 0/10. Not met. See STGL 2.

Goal 3: Patient will demonstrate proper posture awareness and be proficient in home exercise program. Status:

Goal 4: Improve PSFS to: 5.0. Not met. Mild improvement. Status: 3.3.

Goal 5: Patient will be independent with self care management of lymphedema (skin care, self manual lymph drainage, self bandage). Status: Met.

Goal 6: Therapist will assess for an appropriate compression garment and instruct patient/caregiver on proper donning and doffing techniques. Status: Compression garment assessed, recommendation given. Patient was fitted for garment and is waiting for garment to arrive.

Long term goal time frame (in weeks): 4

Patient stated goal: "Decrease swelling and pain".

DAYANI GOALS

Some values may be hidden. Unless noted otherwise, only the newest values recorded on each date are displayed.

DAYANI GOALS

8/10/22

What are your goals for therapy? (When we are finished with physical therapy, how will you know we helped you?)

Full range of motion, decreased pain and swelling

Goals Status: Goals not met due to: Progress plateaued

Discharge Recommendations communicated to patient:

Patient to continue with home exercises program as prescribed

Therapist: Jadenka Frazier, PT, CMT, LANA

Appointments with Richard when I first started trying to figure out what was wrong with my legs

NOV 5 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	OCT 8 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	Re 
SEP 19 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	SEP 13 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	
SEP 3 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	AUG 28 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	
AUG 20 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	AUG 9 2019 Treatment Julie A Richard Osher Center for Integrative Health at Vanderbilt  View After Visit Summary®	

Appointments w/ Wingate when I first started trying to figure out what was wrong with my legs. Deep tissue massage seemed to help knee pain slightly

OCT Treatment

28
2019
Brian M Wingate
Osher Center for Integrative Health at
Vanderbilt

 [View After Visit Summary®](#)

OCT Treatment

1
2019
Brian M Wingate
Osher Center for Integrative Health at Vanderbilt

 [View After Visit Summary®](#)

Relat



SEP Treatment

26
2019
Brian M Wingate
Osher Center for Integrative Health at
Vanderbilt

 [View After Visit Summary®](#)

SEP Treatment

12
2019
Brian M Wingate
Osher Center for Integrative Health at
Vanderbilt

 [View After Visit Summary®](#)

SEP Treatment

5
2019
Brian M Wingate
Osher Center for Integrative Health at Vanderbilt

 [View After Visit Summary®](#)

AUG Treatment

29
2019
Brian M Wingate
Osher Center for Integrative Health at
Vanderbilt

 [View After Visit Summary®](#)

AUG Treatment

19
2019
Brian M Wingate
Osher Center for Integrative Health at
Vanderbilt

 [View After Visit Summary®](#)

JUL Treatment

29
2019
Brian M Wingate
Osher Center for Integrative Health at
Vanderbilt

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Acupuncture with Zhu - didn't get any relief

NOV Clinical Support

5

Chongbin Zhu

Osher Center for Integrative Health at Vanderbilt

2019



View After Visit Summary®

OCT Clinical Support

24

Chongbin Zhu

Osher Center for Integrative Health at

2019 Vanderbilt



View After Visit Summary®

OCT Clinical Support

10

Chongbin Zhu

Osher Center for Integrative Health at

2019 Vanderbilt



View After Visit Summary®

OCT Clinical Support

2

Chongbin Zhu

Osher Center for Integrative Health at Vanderbilt

2019



View After Visit Summary®

SEP Clinical Support

26

Chongbin Zhu

Osher Center for Integrative Health at

2019 Vanderbilt



View After Visit Summary®

SEP Retail

19

Chongbin Zhu

Osher Center for Integrative Health at

2019 Vanderbilt



View After Visit Summary®

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 04/16/2019 11:30AM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** New Patient Exam, inflammation - hashi history, ehler's danlos**History of Present Illness:**

Stopped running and high impact activities several years ago due to the knees. Pain originally started with hashimoto's diagnosis. Calmed down with change in exercise and meds then. Workouts stayed low impact and then realized that knees started again and went back to func med doctor.

Knees and thumbs, hips, DJD in spine

- history of bike wreck 5 years ago and neck pain and low back pain. Can get episodes of pain when tired from standing or being tense.

- Low back pain, notices in plank these days.

Right posterior leg ache and tension when seated for very long], gets painful slightly numb posterior leg.

Right knee more pain last few weeks. Seems to catch at times, worse on heel strike. Ache is nearly constant nagging. Squatting painful before 90 degree squat. Can do it but it hurts..

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	99203		1.00 UN	OFFICE O/P NEW LOW 30-44 MIN
CPT	97810		1.00 UN	ACUPUNCT W/O STIMUL 15 MIN
CPT	97811		1.00 UN	ACUPUNCT W/O STIMUL ADDL 15M
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min



The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 04/16/2019 11:30AM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Check-In Information:

Patient was referred by: Emily Spring Where the patient found our practice: Referral

Specialists patient is currently seeing:

Additional comments made by patient: Diagnosed with Ehler's Danlos recently which explains some of my joint issues.

Check-In Reasons for Visit:

HEALTH CONCERNS:

Stephanie Brakefield #1 health concern managing arthritis and joint pain.

Stephanie Brakefield is looking to: take care of my problem and go on to "achieve optimal health and wellness".

Her primary doctor is: Emily Spring

In relation to your primary complaint:

Stephanie Brakefield describes the complaint as: arthritis and joint point in knees, basal thumb joints, hips.

Degenerative disk disease.

Problem started Several years ago but has gotten much worse in the last year.

She first sought treatment A couple of years ago.

Another doctor has treated Stephanie Brakefield for this condition.

Chiropractor has treated Stephanie Brakefield.

She has tried Lifestyle Change, Chiropractic.

Stephanie has not experienced intolerance or reactions to treatments.

Stephanie Brakefield states the Yes change in symptoms. Problem frequency: Constant

Problem lasts All day. Problem interferes with Daily routine, Recreation.

She uses Exercise/ Stretch, Other to relieve symptoms.

Other symptom relievers: Collagen, diet changes. It's been Years since Stephanie Brakefield felt good.

She pain description: Sharp, Aching, Other Other types of pain: constant aching with more intense pain upon moving the joints

Bending makes the problem worse.

SYMPTOMS:

Low Back Pain



The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Sex: F

Visit: 04/16/2019 11:30AM

Chart: BRST000002

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Joint Stiffness

Knee Pain

She believes Ehlers Danlos and years of teaching high impact aerobics is the cause.

ALLERGIES/ SENSITIVITIES:

She has Many sensitivities but no true allergies. Things checked below are some of the sensitivities. food allergy.

Wheat

Dairy

Soy

Peanuts

MEDICATIONS:

SUPPLEMENTS: She take Vitamins/ Supplements or Herbs. Emily Spring recommended taking them.

SCARS/SURGICAL PROCEDURES:

She has had surgical procedures. She has scars?

HABITS:

Alcohol: None

Coffee: Light

Soda/ Diet Soda: None

Tobacco: None

Drugs: None

Stress Level: Light

Exercise: 5-7x/wk

Exercise Type: Aerobic, Weights

Sleep: 7-8 hrs

Meals/day: 3

Water/day: 32-64 oz

**The Dearing Clinic**

Patient: Stephanie Brakefield
Provider: Dr. Justin Dearing
Office: Old 8119

DOB: 07/17/1963
Visit: 04/23/2019 4:00PM
Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F
Chart: BRST000002

Chief Complaint: Knee pains improved the following day. thumbs same and low bacdk increased in pain.

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 06/19/2019 11:30AM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** Exam and Treatment**History of Present Illness:**

Low back and shoulders are feeling great and the thumb arthritis. Knees are better overall with continued pain in squatting..

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.269	Flail joint, unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 05/28/2019 11:45AM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** Exam and Treatment**History of Present Illness:**

Knees no longer ache all day. Thumbs have improved a lot. And low back pain has significantly improved. Knees can tell when overworking.

Has really nailed down the diet with food sensitivities. Narrowed down and reduced histamine levels down to zero. Able to vary diet quite a bit now. Took a year to figure it out. Reduced thyroid meds with food..

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.269	Flail joint, unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.5	Low back pain
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Plan:

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CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 05/16/2019 8:30AM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** Exam and Treatment**Assessment:**

Type	Code	Description
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.569	Pain in unspecified knee

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 05/13/2019 3:30PM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** Exam and Treatment**Assessment:**

Type	Code	Description
ICD-10-CM Condition	M54.5	Low back pain

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 05/06/2019 11:15AM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** Exam and Treatment**Assessment:**

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140		1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic**

Patient: Stephanie Brakefield
Provider: Dr. Justin Dearing
Office: Old 8119

DOB: 07/17/1963
Visit: 05/08/2019 11:00AM
Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F
Chart: BRST000002

Chief Complaint: Exam and Treatment**Assessment:**

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

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CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Sex:** F**Visit:** 04/30/2019 12:00PM**Chart:** BRST000002**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Chief Complaint:** Exam and Treatment**Assessment:**

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN

**The Dearing Clinic****Patient:** Stephanie Brakefield**Provider:** Dr. Justin Dearing**Office:** Old 8119**DOB:** 07/17/1963**Visit:** 05/02/2019 1:30PM**Address:** 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027**Sex:** F**Chart:** BRST000002**Chief Complaint:** Exam and Treatment**Assessment:**

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140		1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

Name: Stephanie L Brakefield | DOB: 7/17/1963 | MRN: 009157835 | PCP: Teresa Megan Zoffuto, MD | Legal Name: Stephanie L Brakefield

NUC LYMPHOSCINTIGRAPHY

Collected on May 19, 2023 3:42 PM

Samantha Stifler May 25, 7:34 AM

Hi Mrs Brakefield,

Good news!

The lymphedema test was normal. If you are still interested in trying liposuction or want to discuss options for lipedema please let us know.

Stay well,
Samantha PA-C

Results

Impression

Normal lymphangiogram of the bilateral lower extremities. Normal progression of activity to the ilioinguinal lymph nodes bilaterally.

Electronically signed by Mary Koran, MD on 5/19/2023 3:45 PM

Narrative

NUCLEAR MEDICINE LYMPHOSCINTIGRAPHY, 5/18/2023

Clinical History: Bilateral lower extremity swelling.

Comparison: None.

Radiopharmaceutical: 0.5 mCi of technetium 99m sulfur colloid injected subcutaneously via two injections into the second and fourth intraluminal webs of the bilateral feet for a total of 2 mCi.

Technique:

Following subcutaneous administration of the radiopharmaceutical, anterior and posterior dynamic images of the bilateral lower extremities were acquired immediately with delayed anterior and posterior body images at 10 minutes, 30 minutes, 90 minutes.

Findings:

Bilateral flow is seen extending along multiple lymphatic channels in both legs which coalesce to form a single channel at the level of the popliteal fossa. Activity seen within multiple lymph nodes are seen

within the inguinal region. At 90 minutes,
activity is present within the liver.

Ordering provider: Samantha Stifler

Reading physician: Mary Ellen Koran

Study date: May 19, 2023 3:45 PM

Collection date: May 19, 2023 3:42 PM

Result date: May 19, 2023 3:45 PM

Result status: Final

VASCULAR VENOUS REFLUX LOWER EXTREMITY BILATERAL

Results

- **RIGHT:** No deep or superficial vein thrombosis in the right lower extremity. There is reflux in the common femoral vein and the popliteal vein. The great saphenous vein is not seen due to previous treatment. There is a superficial vessel at the proximal thigh that continues to proximal calf ranging from 3.5mm - 4.9mm in size and .6secs - 13.4 secs of reflux. No reflux is detected in the small saphenous vein.
- **LEFT:** No deep or superficial vein thrombosis in the left lower extremity. There is reflux in the popliteal vein. There is reflux in the great saphenous vein at the saphenofemoral junction. There is reflux in the small saphenous vein from proximal calf to distal calf. Revascularization is seen at the junction and proximal small saphenous vein.

Right SSPC dia
mm

Value
2.50

Left GSPT dia
mm

Value
4.50

Left GSDT dia
mm

Value
3.80

Left GSMT dia
mm

Value
3.40

Left GSPC dia
mm

Value
3.90

Left SSPC dia
mm

Value
2.80

Left SSDC dia
mm

Value
3.30

Left SSMC dia
mm

Value
4.00

Right SSPC reflux

s

Value
0.00

Left pop reflux

s

Value
12.00

Left GSJ reflux

s

Value
0.60

Left GSJ dia

mm

Value
8.40

Left GSPT reflux

s

Value
0.00

Left GSMT reflux

s

Value
0.00

Left GSDT reflux

s

Value
0.00

Left GSK reflux

s

Value
0.00

Left GSK dia

mm

Value
5.10

Left GSPC reflux

s

Value
0.00

Left SSPC reflux

s

Value
11.40

Left SSMC reflux

s

Value
5.60

Left SSDC reflux

s

Value
1.50

Left AAS Prox Thigh Reflux

s

Value
0.00

Left AAS Prox Thigh Diameter mm Value 4.50	Left Proximal Calf Varicose Vein mm Value 3.40
Right com fem reflux s Value 1.20	Right pop reflux s Value 7.00

 Scan 1

Ordering provider: Aaron Weldon Aday
Reading physician: Mark David Iafrati
Study date: February 21, 2023 3:44 PM
Result date: February 21, 2023 3:44 PM
Result status: Final

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\$63.20

Vanderbilt Location × 1\$63.20

Customer transaction made at the Vanderbilt location.


Total\$63.20



Pretty In Pink Boutique
Last Location
615-777-7465

75°F
Sunny

Search



7:49 PM
11/7/2023

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 04/30/2019 12:00PM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
ICD-10-CM Condition	Q79.6	Ehlers-Danlos syndrome

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 05/02/2019 1:30PM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee
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CPT	97140		1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 05/06/2019 11:15AM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.569	Pain in unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.2	Cervicalgia
ICD-10-CM Condition	M54.5	Low back pain
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Plan:

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CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 05/13/2019 3:30PM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

Assessment:

Type	Code	Description
ICD-10-CM Condition	M54.5	Low back pain

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
CPT	97813		1.00 UN	ACUPUNCT W/STIMUL 15 MIN
HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 05/16/2019 8:30AM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

Assessment:

Type	Code	Description
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.569	Pain in unspecified knee

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
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HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 05/28/2019 11:45AM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

History of Present Illness:

Knees no longer ache all day. Thumbs have improved a lot. And low back pain has significantly improved. Knees can tell when overworking.

Has really nailed down the diet with food sensitivities. Narrowed down and reduced histamine levels down to zero. Able to vary diet quite a bit now. Took a year to figure it out. Reduced thyroid meds with food..

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.269	Flail joint, unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee

Plan:

Type	Code	Modifiers	Quantity	Description
CPT	98941		1.00 UN	CHIROPRACT MANJ 3-4 REGIONS
CPT	97140	59	1.00 UN	MANUAL THERAPY 1/> REGIONS
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HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

The Dearing Clinic



Patient: Stephanie Brakefield

Provider: Dr. Justin Dearing

Office: Old 8119

DOB: 07/17/1963

Visit: 06/19/2019 11:30AM

Address: 8119 Isabella Ln. Suite 103, Brentwood, TN, 37027

Sex: F

Chart: BRST000002

Chief Complaint: Exam and Treatment

History of Present Illness:

Low back and shoulders are feeling great and the thumb arthritis. Knees are better overall with continued pain in squatting..

Assessment:

Type	Code	Description
ICD-10-CM Condition	M25.269	Flail joint, unspecified knee
ICD-10-CM Condition	M25.549	Pain in joints of unspecified hand
ICD-10-CM Condition	M54.5	Low back pain
ICD-10-CM Condition	M25.769	Osteophyte, unspecified knee

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HCPCS	S8948		1.00 UN	Low-level laser trmt 15 min

Visit Note - November 3, 2023

PMS ID: 115636PAT000001146 Sex: Female DOB: 07/17/1963 Phone: (615) 485-3415 MRN: MM0000001136

Medical History

Arthritis: mild arthritis in knees, thumb joints
Autoimmune disease: Hashimoto's hypothyroidism
Circulatory care: venous insufficiency: have had vein ligations in the past, also see current venous findings
Easy bruising
Ehlers-Danlos syndrome: hypermobile
H/O: pregnancy: 4 healthy pregnancies and births
Hypothyroidism: Hashimoto's
Lipedema: diagnosed in 2022
Other: recurrent viral meningitis
Gestational age at birth: 40 weeks
Birth weight: 7 lbs, 7 oz
Forceps delivery: No

Surgical History

Other: vein ligation

Plastic Surgery History

Plastic Surgery History
None

Family History of Breast Cancer

Do you have a family history of breast cancer?: Yes
Mother: at age 62

Family History of Malignant Hyperthermia and Anesthesia Sensitivity

Do you have a family history of malignant hyperthermia or severe reactions to anesthesia?: No

Herbal Medications and Supplements

Do you take any herbal medications or supplements?: Yes
Vitamin B: methyl B12
Vitamin C
Vitamin D: k2 d3

Skin Conditions

None

Skin Protection

Do you wear sunscreen?: Yes
If Yes, what SPF?: 50

Chief Complaint: Lipedema Consultation

HPI: This is a 60 year old female who is being seen for a lipedema consultation for lipedema affecting the legs, thighs, arms, abdomen, pubic area, buttocks, hip shelf, and knees.

Legs:

- Location: Anterior and Posterior
- Tenderness: Yes
- Lipomas: Yes
- Bruising: Yes
- Pain: Yes
- Cuffing: No
- Dimpling: Yes

Thighs:

- Location: Anterior and Posterior
- Tenderness: Yes
- Lipomas: Yes
- Bruising: Yes
- Pain: Yes
- Dimpling: Yes

Arms:

- Tenderness: Yes
- Lipomas: Note sure
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Abdomen:

- Tenderness: Yes
- Lipomas: Not sure
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Pubic Area:

- Tenderness: Yes
- Lipomas: Not sure
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes

Buttocks:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes
- Dimpling: Yes

Hip Shelf:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes
- Spongy Adipose Tissue: Yes
- Dimpling: Yes

Knees:

- Tenderness: Yes
- Lipomas: Yes
- Thickened Tender Subcutaneous Fat: Yes

Do you tan in a tanning salon?: No

Family History of Melanoma

Do you have a family history of Melanoma?: No

Social History

Sexually active with one partner

Patient feels safe at home

EtOH none

Single Question Alcohol Screening: 0 days
Caffeine Use: Once a day
Exercise: Once a day
Occupation: Self employed fashion designer
Place of Residence: 901 Cantrell Ave
Nashville, TN 37215
Smoking status - Never smoker
Driving status:
Drives in the Daytime
Drives at Night: starting to experience starbursts around lights

Medications

Other: c-progesterone 100mg sr capsule 1 daily
c-estradiol 4mg/ml medium #2264 2 clicks daily
c-t3-10mcg/t4-112mcg ir caps 1 daily

Vitamin K2 D3
Methyl B12
Vitamin C
Biotin
Synbiotic

- Spongy Adipose Tissue: Yes

Duration: 45 years

Associated Diagnoses: Ehlers Danlos, Venous Disease, Varicose veins, Lipomas, Connective Tissue Disease, and Hashimoto's thyroid disease

Similarly Affected Family Members: mother, grandmother, and daughter

Pedicures: Yes (patient is not able to tolerate pedicure massages)

Do You Wear Boots: Cannot since last year

Lipedema Worsened By: puberty, pregnancy, and menopause

Swelling Occurs With: standing, sitting, and end of day

Previous Treatments: Elevation (no change), Compression Garments for 12 weeks or more (no change), Manual Lymphatic Drainage for 12 weeks or more (no change), Sequential Pumps for 12 week or more (better), and Diet (Anti-inflammatory (no change))

Difficulty Walking: Yes

Flexibility: Moderately Flexible

Cooler Areas: none

Easy Bruising: legs, thighs, and calves

Pain: with movement (Worst Pain: 6 out of 10), when touched (Lowest Pain: 2 out of 10), and when sleeping

Ability to move a chair from one room to another: Without any difficulty

Ability to bend down and pick up clothing from the floor: With a little difficulty

Ability to to stand for one hour: Unable to do

Ability to do chores such as vacuuming or yard work: Without any difficulty

Ability to push open a heavy door: Without any difficulty

Ability to exercise for an hour: With a little difficulty

Ability to carry a heavy object (over 10 pounds /5 kg): Without any difficulty

Ability to stand up from an armless straight chair: Without any difficulty

Ability to dress yourself, including tying shoelaces and buttoning your clothes: Without any difficulty

Ability to able to dry your back with a towel: Without any difficulty

The patient understands and agrees that they must continue wearing compression garments after their surgery.

Vitals:

Date	Taken By	B.P.	Pulse	Resp.	O2 Sat.	Temp.	Ht.	Wt.	BMI	BSA
11/03/23 14:04	Lohman, Sara						69.0 in*	170.0 lbs*	25.1	1.9
	FiO2									

* Patient Reported

Exam:

An examination was performed.

Base

Appearance: well developed and nourished

Memory: Appropriate recent and remote memory with appropriate history provision

Judgment and Insight: Appropriate judgment, insight, interpersonal dynamics and expectations of encounter and goals of treatment

Orientation: Alert and oriented to person, place, time.

Mood: Mood and affect well-adjusted, pleasant and cooperative, appropriate for clinical and encounter circumstances

Skin Inspection: Normal skin inspection without rashes or concerning lesions

Visit Note - November 3, 2023

PMS ID: 115636PAT000001146 Sex: Female DOB: 07/17/1963 Phone: (615) 485-3415 MRN: MM0000001136

Skin Palpation: Normal skin palpation without rashes or concerning lesions

Comprehensive Upper Extremity

LN Exam: Normal lymphatic exam without lymphadenopathy in cranial, cervical, axillary and inguinal regions

Right Upper arm Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease**

Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.

Left Upper arm Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease**

Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.

Right Forearm Inspection: **forearm tenderness. Vascular manifestation such as cherry angiomas, telangiectasia, venous disease**

Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.

Left Forearm Inspection: **forearm tenderness. Vascular manifestation such as cherry angiomas, telangiectasia, venous disease**

Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.

Right Hand Inspection: Normal alignment, no deformity, no tenderness, no warmth

Right Hand Stability: Stable

Right Hand Special: Normal

Left Hand Inspection: Normal alignment, no deformity, no tenderness, no warmth

Left Hand Stability: Stable

Left Hand Special: Normal

Digit Inspection: **Negative Stemmer Sign Fingers/Toes**

Right UE Peripheral Pulses: normal radial and ulnar pulses, without thrill, good capillary refill

Right UE Peripheral Sensation intact to light touch throughout peripheral nerve distributions

Coordination: Coordination normal.

Left UE Peripheral Pulses: normal radial and ulnar pulses, without thrill, good capillary refill

Left UE Peripheral Sensation intact to light touch throughout peripheral nerve distributions

Cosmetic Abdominoplasty

Appearance: **overweight.**

Abdominal Survey: **mass, right lower quadrant, mass, left lower quadrant, tenderness, right lower quadrant, and tenderness, left lower quadrant Superficial masses and tenderness c/w Lipedema**

Visit Note - November 3, 2023

PMS ID: 115636PAT000001146 Sex: Female DOB: 07/17/1963 Phone: (615) 485-3415 MRN: MM0000001136

Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema

Hernia Exam: Normal abdominal wall without hernias or bulges

Respiratory Effort: Normal respiratory effort without labored breathing or accessory muscle use

Right LE Peripheral Pulses: normal femoral, posterior tibialis and dorsal pedis pulses, brisk capillary refill

Left LE Peripheral Pulses: normal posterior tibialis and dorsal pedis pulses, brisk capillary refill

Comprehensive Lower Extremity

Gait: **scissor**.

Right Thigh Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema, Persistent Enlargement of after elevation of extremity or weight loss Persistent Enlargement of after elevation of extremity or weight loss.**

Left Thigh Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema, Persistent Enlargement of after elevation of extremity or weight loss Persistent Enlargement of after elevation of extremity or weight loss.**

Right Knee Inspection: **valgus alignment. Medial Lobules, Tissue Overhanging or Covering Knee.**

Left Knee Inspection: **valgus alignment. Medial Lobules, Tissue Overhanging or Covering Knee.**

Right Leg Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.**

Left Leg Inspection: **Vascular manifestation such as cherry angiomas, telangiectasia, venous disease Lipedema Nodules, Pain, Tenderness, Skin Hypothermia, Easy Bruising, No Pitting Edema Persistent Enlargement of after elevation of extremity or weight loss.**

Right Ankle Inspection: **varus hindfoot. Ankle Cuff.**

Left Ankle Inspection: **varus hindfoot. Ankle Cuff.**

Right LE Sensation intact to light touch throughout peripheral nerve distributions

Left LE Sensation intact to light touch throughout peripheral nerve distributions

Peripheral Vascular

Lower Extremity Venous:

Right Lower Extremity Venous: **edema, severe**

Visit Note - November 3, 2023

PMS ID: Sex: DOB: Phone: MRN:
115636PAT000001146 Female 07/17/1963 (615) 485-3415 MM0000001136

Left Lower Extremity Venous: **edema, severe**

Impression/Plan:

1. Lipedema: Associated diagnoses: Localized Adiposity, Obesity, Subcutaneous Fat, Varicose veins of bilateral lower extremities with pain, Lymphedema, not elsewhere classified, and Edema, unspecified

Plan: Counseling - Lipedema

I counseled the patient regarding the following:

Skin care: Treatments include diet, exercise, and compression. If there is associated lymphedema, patients can benefit from manual lymphatic drainage. Liposuction has also been used to treat this condition.

Expectations: Lipedema is a chronic condition characterized by excessive fat deposits on the legs, thighs, and buttocks. It can also affect the upper arms. The condition can be painful and can cause easy bruising. The cause is unknown. It may be genetic and because the condition affects almost exclusively women, it has been postulated that hormones may play a role in development of the condition.

Contact office if: Lipedema causes pain or discomfort.

Lipedema is a chronic disease presenting in women during puberty or other times of hormonal, weight and/or shape change such as pregnancy or menopause, characterized by symmetric enlargement of nodular, painful deposition of inflamed and fibrotic subcutaneous adipose tissue. Lipedema was first named as a medical condition in 1940 at the Mayo Clinic¹ and in Germany.² The diagnosis of lipedema is largely clinical and based on criteria initially established in 1951 by Drs. Wold, Allen and Hines.³ Lipedema starts in the lower extremities leading to circumferential bilateral lower extremity enlargement typically seen extending from the below the umbilicus to the ankles resulting in edema, pain and bruising; with secondary lymphedema, fibrosis and spreading of abnormal tissues to the trunk and arms occurs during later stages. Unfortunately as the lipedema tissue grows, the deep fascia and muscle are also affected reducing the function of the lymphatic pump.

Lipedema is a hereditary disease and recently the first mutated gene AKR1C1 was discovered resulting in a slower and less efficient reduction of progesterone to hydroxyprogesterone and increased subcutaneous fat deposition in variant carriers, confirming hormones as important in lipedema.⁴ Lipedema also clearly manifests as a connective tissue disorder characterized by loss of elasticity in the skin⁵ and the aorta,⁶ hypertrophic adipocytes, inflammatory cells, and dilated leaky blood and lymphatic vessels.^{7, 8}

She has lipedema in her legs, arms and trunk that includes nodules and pain in these areas. Her hands, feet, and upper trunk have been spared. She has other signs of lipedema including a negative Stemmer's sign and abnormal fat pad development, disproportion, pain and dysmobility.

She also might be developing early stages of lipo-lymphedema and thus her lipedema needs to be treated.] She has tried conservative measures for many months and while conservative therapies can reduce swelling and pain for a short time, removing the diseased tissue with surgery is necessary to reduce symptoms and progression long-term.

Lipedema is distinct from non-lipedema obesity, although some, not all, patients can be obese. The adipose tissue accumulation is bilateral and symmetrical in the extremities, with the feet and hands spared from lipedema fat accumulation unless there is loss of elasticity as in hypermobile Ehlers Danlos where the skin has lost elasticity and fat can grow on the hand (with or without obesity). A hallmark of earlier stages of lipedema is the discrepancy in fatty tissue of the extremities compared to the trunk. This is in contrast to the fat associated with lifestyle-induced obesity, which is usually global and proportionate, affecting the abdomen equal or greater than the hips.

Women with lipedema find it difficult to lose weight before a needed surgery or other procedures. There is a significant number of women with lipedema who have failed bariatric surgery because they were already controlling their diet but just not losing weight.⁹⁻¹¹

Besides the many painful nodules that women with lipedema have, studies indicate that women with lipedema do not have the muscle strength like people who have non-lipedema obesity, are subject to more injuries and have poorer functional capacity.¹² Thus, to improve function and reduce pain, lipedema surgery is recommended.¹³

I counseled the patient regarding the following:

Lipodystrophy Care: Cosmetic body contour dissatisfaction may be due to excess skin, stretch marks, bulging, fat excess, muscle weakness, and other complaints. Abdominoplasty, liposuction and other body contouring techniques are performed to help correct these issues. Surgery is commonly performed on an outpatient basis, although overnight hospitalization may be indicated in some patients, particularly those undergoing large body contouring operations. Aesthetic body contouring deformities may improve somewhat with diet control, exercise, rest, and proper skin care, including avoidance of excess sun and abstinence from nicotine. Specific preoperative and postoperative instructions will be provided for surgery.

Expectations: Body contour aesthetic concerns may be the result of obesity or overweight, pregnancy, genetic factors, sun damage, prior surgery, hernias, and other factors. Aesthetic surgery for these concerns is generally not performed for the purposes of weight loss. Rather, overweight patients are advised to lose weight in a controlled, supervised manner until a maintainable

plateau weight is achieved before undergoing body contouring operations, in order to optimize results and reduce surgical risks. Liposuction often does not correct wrinkling, roundness, or laxity or fullness on the abdomen or other body locations. Liposuction is also performed for contouring purposes, rather than weight loss intent. Skin retraction may not be complete with liposuction, and excess skin may require surgical removal for full correction. Use of garments after surgery is advised and instructions will be provided. Risks, benefits, expectations and alternatives to liposuction have been explained in detail, including, but not limited to, the risks of infection, bleeding, injury to nerves or abdominal organs, bulging, contour irregularities, inadequate skin retraction, persistent deformity, seromas, deep venous thrombosis, pulmonary embolism, fat embolism, scarring, delayed healing, and other risks. Aftercare and possible use of drains have been explained. No guarantee or warranty regarding cosmetic outcome or longevity of results was given or implied.

Contact office if: the patient develops concerning symptoms such as severe abdominal pain, nausea, vomiting, diarrhea, fever, excessive or unusual drainage, swelling, redness, difficulty breathing, bleeding, or other concerning symptoms. Please contact the office if additional procedures or a change to the recommended treatment plan are desired. Fees for cosmetic procedures are valid for a limited time, as specified on the fee schedule, and are subject to change at the practice's discretion. Please contact the office with any questions regarding fee schedule, payment policy, product concerns, or preoperative and postoperative questions. The risks, benefits, expectations and alternatives of liposuction were discussed and include but are not limited to: infection, bruising, lumpiness, pain, anesthesia reaction, dysesthesia, scarring in treatment area or puncture point, vasovagal reactions, tachycardia, nausea, necrosis, ulceration, color change and asymmetry.

I discussed the following surgical options with the patient:

Abdominoplasty: Abdominoplasty is the medical term for what is commonly referred to as a tummy tuck. It is a procedure performed to remove excess skin and draping fat from the lower abdomen. It is performed for the purpose of body contouring, not for the purpose of helping patients lose weight. While tissue removed during the procedure has some weight, the procedure is strictly not a procedure for weight loss. Patients seeking to lose weight are best suited by losing the weight through supervised diet and exercise until a stable, more desirable weight is achieved and maintained prior to the surgery. Abdominoplasty is performed through an incision low in the abdomen, usually in the same crease as a C-section would be performed in the suprapubic crease. The skin and fat are undermined off the muscle layer and the muscle layer is typically tightened with a plication procedure. An incision is also performed around the belly button (umbilicus) to allow it to be repositioned when the skin is redraped. After release, the excess tissues are removed and the belly button is delivered through a hole in the tightened skin. Typically, the hole created for release of the umbilicus is within the skin that is ultimately removed. However, in some cases, the hole must be closed and results in a small scar in the lower abdomen below the new hole created for delivery of the belly button. Drains may be used to evacuate fluid from under the fat layer to permit healing. They are usually removed within the first 10-14 days. A postoperative garment and/or binder will be required for several weeks to 2 months to aid in shaping. The scar will usually go through changes over the course of 6-12 months before final maturity. Scar revisions are occasionally required. Placement of the surgical incisions may be aided by the patient bringing typical swimwear, which can help to optimize concealment of the scar. Early ambulation after surgery is important to reduce risks of blood clot formation.

Back Lift: A Back Lift involves removal of adipose tissue and skin. Significant incisions may be required to remove redundant skin. The risks, benefits, expectations and alternatives (including incisional approaches and minimally invasive or noninvasive techniques) have been discussed and include, but are not limited to, the risks of infection, bleeding, injury to nerves/vessels/other structures, contour irregularities, asymmetry, fat necrosis, delayed healing, visible scarring, dissatisfaction with cosmetic outcome and possibility of unplanned return to the operating room. All questions were answered to the patient's satisfaction. No guarantee or warranty was given or implied regarding cosmetic outcome, longevity of results, or satisfaction therewith.

Brachioplasty: Brachioplasty involves removal of the redundant skin, and some excess fat, on the upper arm. The incision is either fashioned along the inner arm seam, or along the back of the arm, and it may be extended into the axilla (armpit) area. It may traverse the length of the upper arm all the way to (and even beyond) the elbow crease. The excess skin is removed and the remaining skin is closed together to improve the cylindrical shape of the arm. Care is paid to avoid overresection of skin in order to reduce the risk of inability to close the incision completely at the time of surgery, which is a possibility with significant skin removal when the skin swells. The incision may be numb and may take 3-5 weeks to heal to closure. Scar maturation may take 6-12 months. Drains may be used for up to 10-14 days in many patients.

Breast Reduction: Breast reduction involves removal of breast tissue and skin. Significant incisions may be required to remove redundant skin. The risks, benefits, expectations and alternatives to breast reduction (including incisional approaches and pedicle selection) have been discussed and include, but are not limited to, the risks of infection, bleeding, injury to nerves/vessels/other structures, contour irregularities, asymmetry, fat necrosis, nipple loss, loss of nipple sensation, delayed healing, visible scarring, dissatisfaction with cosmetic outcome and possibility of unplanned return to the operating room. All questions were answered to the patient's satisfaction. No guarantee or warranty was given or implied regarding cosmetic outcome, longevity of results, or satisfaction therewith.

Fleur-de-Lis Technique: The fleur-de-lis technique involves both horizontal and vertical incisions resulting in an inverted-T shaped scar. This variant of abdominoplasty design is appropriate for many patients with massive weight loss, who have excess skin and fat in both horizontal and vertical directions. The vertical scar is not easily concealable in two-piece bathing garments but may be a reasonable trade-off for many patients in order to secure a better overall contour and correction of skin redundancy. Healing may take 1-2 weeks longer than what would otherwise be required for standard abdominoplasty incisions.

Liposuction: Liposuction may improve contour irregularities and volume excesses. Tumescence fluid with local anesthetics and other medications is used to reduce postoperative bleeding and pain. Fat removal may be enhanced by ultrasound, Vaser, power or other assisted techniques. Repeated sessions of liposuction may be required. Liposuction is a procedure to contour the body's shape, not to help the patient lose weight. A very small amount of weight may be lost as a result of the suctioning of fat, but sustained weight improvement requires attention to diet and exercise. Under no circumstances should the patient expect liposuction to create significant weight loss through the surgery itself. The risks, benefits, expectations and alternatives to liposuction have been discussed and include, but are not limited to, the risks of infection, bleeding, injury to nerves/vessels/other structures, contour irregularities, asymmetry, fat necrosis, nipple loss, loss of nipple sensation, delayed healing, visible scarring, dissatisfaction with cosmetic outcome and possibility of unplanned return to the operating room. All questions were answered to the patient's satisfaction.

Lower Body Lift: A lower body lift is an extensive technique that includes abdominoplasty, often combined with circumferential correction of excess skin on the back (belt lipectomy or circumferential tioroplasty), as well as bilateral medial and lateral thigh lifting. Incisions include the standard abdominoplasty incision as well as scars on the inner thighs, and a possible extension of the abdominal scar all the way around the back. This procedure is often performed on a hospital setting where overnight hospitalization can be offered, due to the typical length of surgery and extent of incisions. Delayed healing, seromas and scars are common issues with this operation, but the resultant improvement in body contour is often rather dramatic. Early ambulation after surgery is important to reduce risks of blood clot formation. Multiple drains are usually required.

Medial Thigh Lift: A medial thigh lift is a procedure done to remove excess skin on the thighs, and may be combined with abdominoplasty or body lifting (belt lipectomy or circumferential tioroplasty). Incisions are made on the inner thighs, and may be confined to the groin creases in some cases, though many patients require extensions of the incisions down the thigh to remove the excess properly. When combined with body lifting, incisions also include a lower abdominal incision and a possible extension of the abdominal scar all the way around the back. Standard medial thigh lifting may be performed on an outpatient basis, usually under general anesthesia. Delayed healing, seromas, numbness in the thighs and scars are common issues with this operation, but the resultant improvement in body contour is often rather dramatic. Concealment of scars may be difficult in shorts, skirts or bathing suits. Early ambulation after surgery is important to reduce risks of blood clot formation. Drains are often in place for 10-14 days, although some patients require longer periods of drainage due to proximity of the thigh lymphatic vessels to the treatment area. The postoperative garments can also help significantly reduce the fluid accumulation.

Panniculectomy: Panniculectomy is a procedure involving removal of the excess apron of skin and fat below the belly button. In contrast to abdominoplasty, it usually does not involve undermining of the skin well above the belly button. In addition, muscle plication of the abdominal wall may not be performed in panniculectomy. Panniculectomy may be required medically in patients with severe recurrent infections or rashes in the crease below the pannus. Delayed healing and fluid collections are not uncommon. Risks also include, but are not limited to, infection, bleeding, deep venous thrombosis (blood clots), scarring, persistent excess tissue, cosmetic dissatisfaction, and other risks.

Power-Assisted Liposuction: Power-assistance involves the use of a power source to oscillate the suction cannula device to reduce manual effort for the surgeon. In other respects, it is similar to standard liposuction.

Lipodystrophy Option Other: Lipedema Reduction Surgery with Lymphatic Sparing Liposuction (LSL) and Manual Lipedema Extraction (MLE)

LRS surgical stage options:

Anterior thighs - 15879-50-22

Anterior legs - 15879-50-22

Abdomen - 15877-22

Arms - 15878-50-22

Buttock Shelf/Hips 15877-22

Posterior Thighs - 15879-50-22

Posterior Legs - 15879-50-22

Panniculectomy - 15839

Arm lift - 15836-50-22

Thigh lift - 15832-50-22

Visit Note - November 3, 2023

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After counseling, we decided on the following plan: Power-Assisted Liposuction and Lipodystrophy Option Other and LRS surgical stages:

1-Anterior thighs - 15879-50-22
1-Anterior legs - 15879-50-22
1-Abdomen - 15877-22
1-Abdominoplasty

2-Arms - 15878-50-22
2-Buttock Shelf/Hips 15877-22
2-Posterior Thighs - 15879-50-22
2-Posterior Legs - 15879-50-22

Paniclectomy - 15839
Arm lift - 15836-50-22
Thigh lift - 15832-50-22.

I discussed the following miscellaneous information with the patient:

May need to stage procedures more due to volume as well as medical clearance.

Nicotine Abstinence: I counseled regarding the risks of nicotine exposure, including delayed healing, infection, perioperative cardiovascular events and possible need for extended wound care or return to surgery.

Imaging Studies: Imaging studies including CT scans or MRI's may be appropriate to help determine the extent of deformity or to rule out hernias, and to help guide treatment.

Follow up PRN for: Preoperative Appointment, Discussion of Procedure, Additional Consultation, Preoperative Marking**Staff:**

Jaime Schwartz (Primary Provider) (Bill Under)

Electronically Signed By: Jaime Schwartz, 11/07/2023 12:16 PM PST

Total Lipedema Care
Dr. Jaime Schwartz
240 S. La Cienega Blvd.
Suite 200
Beverly Hills, CA 90211

November 3, 2023

RE: Stephanie Brakefield

DOB: 07/17/1963

To Whom It May Concern:

I am writing on behalf of Stephanie Brakefield for coverage of medically necessary lipedema surgery. Miss Brakefield has a chronic progressive debilitating disorder called **Lipedema**. This condition is transmitted genetically as an autosomal dominant pattern disease.

The patient has diseased lipedema tissue accumulation in their arms, thighs, legs, and ankles. My approach is to manually extract as much of the diseased tissue as is safely possible per the attached **Surgical Plan** using a staged process involving 2 and a pending to be staged surgeries. In early stages, lipedema can be present on the legs, hips, and buttocks and 80% of women have it on their arms. Lipedema, in later stages, can also be present in the lower abdomen or other parts of the body and can negatively interact with obesity. Lipedema surgery includes liposuction of the diseased tissue, manual removal of nodules, and excision of excess skin.

There are published guidelines for diagnosing lipedema and an International Consensus Agreement on diagnosis in 2019. Diagnosis is by physical exam. S1 Guidelines J Dtsch Dermatol Ges 2017 Jul;15(7):758-767; International Consensus on the Prevention of Progression of Lipedema. <https://www.ncbi.nlm.nih.gov/pubmed/3135643> 3

Although there is variability among patients, clinicians look for the following:

- Onset at puberty, pregnancy, and menopause-progressive with age
- The affected limbs feel tight and heavy (especially at end of day even with elevation)
- Increase in adipose tissue usually starting in legs
- Reduced ambulation, decreased social activity
- Pain to the touch or pressure
- Easy bruising
- Hands and feet not affected
- Cuffs or bulges around joints (not in Type 1 or Type II Lipedema)
- Negative Stemmer sign (not in late-stage lipedema)
- Palpable spheroids in lipedema fat

As documented in my attached notes, the patient demonstrates most, if not all, of lipedema diagnostic signs. Note, per the International Consensus, a waist-height and waist-hip ratio are not criteria for diagnosis since, as it progresses, lipedema can occur in other areas like the trunk and arms. Non-pitting edema also is present in early stages of lipedema but can be unreliable because secondary lymphedema is common as the disease progresses.

The patient has tried to manage this condition through conservative measures such as diet, exercise, compression garments and manual lymphatic drainage. The patient's functioning in their everyday life is impacted by lipedema.

Reduced caloric intake, physical activity, and even bariatric surgery do not reduce the abnormal subcutaneous lipedema tissue which likely results from the growth of a brown stem cell population with lymphatic dysfunction in lipedema. *Lipedema, a Frequently Unrecognized Problem*, Fonder & Loveless et al., Journal of the American Academy of Dermatology, 2007, 57(2), S1-S3. Thus, lipedema tissue must be surgically removed.

Lipedema is a chronic, progressive disease, which if left untreated, can lead to multiple secondary and life-threatening health problems. These include circulatory problems (due to pressure on lymph vessels); a disruption of the lymphatic system causing dangerous lymphedema; joint problems in the spine and lower extremities; and a reduction in mobility leading to impaired quality of living. *Lipedema: An Overview of its Clinical Manifestations, Diagnosis and Treatment of the Disproportional Fatty Deposition Syndrome*, Forner-Cordero & Szolnoky, Clin Obes 2012 Jun;2(3-4): 86-95.

The only successful treatment for Lipedema is lipedema surgery. This is not a cosmetic procedure but a medically necessary surgery. Following liposuction surgery, patients can resume activities, return to work, and avoid the cascade of medical and surgical issues that result from Lipedema. Ms. Brakefield will be prescribed compression following surgery to assist in her healing. Multiple studies demonstrate the long-term effectiveness of lipedema surgery to relieve the pain, swelling, and immobility caused by lipedema. Also, see links to Aetna, Anthem and Premiera Blue Cross plans coverage policy on lipedema surgery that describes the diagnoses and treatment in additional detail. Highmark, Excellus, Care1st, and other smaller plans also cover lipedema.

http://www.aetna.com/cpb/medical/data/1_99/0031.html

https://www.anthem.com/dam/medpolicies/abc/active/policies/mp_pw_a050277.html

<https://www.premiera.com/medicalpolicies/7.01.567.pdf>

Please contact me if you require further information.

Thank you,

Total Lipedema Care
Tax ID: 85-2749142
NPI # 1003417833

TLC Surgical Center
TAX ID # 83-3724406
NPI: 1104469105

SURGICAL PLAN
Stephanie Brakefield
DOB: 07/17/1963

Diagnosis Code R60.9, M79.604, M79.605, M79.601, M79.602

Stage 1:

Lipedema reduction surgery bi-lateral lower extremity anterior

CPT Code 15879 Modifiers -50

Lipedema reduction surgery bi-lateral lower extremity anterior

CPT Code 15879 Modifiers -50

Lipedema reduction surgery trunk (abdomen)

CPT Code 15877

Excision excessive skin and tissue (Abdominoplasty)

CPT Code 15839

Stage 2:

Lipedema reduction surgery bi-lateral upper extremity

CPT Code 15878 Modifiers -50

Lipedema reduction surgery bi-lateral upper extremity (forearm)

CPT Code 15878 Modifiers -50

Lipedema reduction surgery trunk (buttocks) RT

CPT Code 15877

Lipedema reduction surgery trunk (buttocks) LT

CPT Code 15877

Lipedema reduction surgery trunk (hip shelf) RT

CPT Code 15877

Lipedema reduction surgery trunk (hip shelf) LT

CPT Code 15877

Lipedema reduction surgery bi-lateral lower extremity posterior

CPT Code 15879 Modifiers -50

Lipedema reduction surgery bi-lateral lower extremity posterior

CPT Code 15879 Modifiers -50

Pending to be staged:

Excision excessive skin and tissue (Panniculectomy)

CPT Code 15839

Bi-lateral excision skin. / Subcutaneous tissue upper extremity

CPT code 15836-50 RT/LT

Bi-lateral excision skin. / Subcutaneous tissue lower extremity

CPT code 15832-50 RT/LT

Note that the surgical plan can change depending on how the patient responds to surgery. It will take approximately 12 months to complete this plan, so we ask for approval to reflect that time period.

Total Lipedema Care
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TLC Surgical Center
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EFFECTIVENESS OF LIPEDEMA SURGERY

There are approximately 1,000 lipedema surgeries performed every year in the United States. They are essential to improving function and reducing pain for patients suffering from this disease.

An August 2014 review of the forty-seven publications from 1982 to 2014, found agreement of the forty-seven publications from 1982 to 2014, found agreement that lipectomy is an applicable and effective treatment for chronic medical conditions such as lipedema. *Liposuction: A Surgical Tool to Improve the Quality of Life after Morbid Medical Conditions: Review of Literature*, Elkhatib HA 2014 *Anaplastology* 3:133. Lipectomy for lipedema has a definite positive and long-lasting effect. *Liposuction is an Effective Treatment for Lipedema-Results of a Study with 25 Patients*, Rapprich. Stefan, MD et al, *Journal of the German Soc of Derm*: Vol 9, (2012); p 33-40. (the majority of patients no longer require prolonged further therapy. Reduction of pain and drastic improvement in the patient's quality of life is noted in all patients.)

Liposuction has ceased to define a specific procedure and became synonymous with a surgical technique or tool the same as the surgical knife, laser, electrocautery, suture material, or even wound-dressing products. *Functional and Therapeutic Indications of Liposuction: Personal Experience and Review of the Literature*, Bishara Atiyeh 2015 *Annals of Plastic Surgery* 75(2). Liposuction results in fewer complications such as hematoma formation, skin necrosis, wound infection, and dehiscence with delayed healing and prolonged hospital stay. *Aesthetic or Functional Indications for Liposuction*, Michel Costagliola, MD et al, *Aesthetic Surgery Journal*, Volume 33, Issue 8, November 2013, Pages 1212–1213. In other words, liposuction is to surgical lipectomy what endoscopic cholecystectomy is to open surgical cholecystectomy.

Lipedema surgery decreases the mechanical stress on lymphatic vessels sufficiently to allow for the cessation of compression garment use beyond the initial postoperative period. *Long-term Outcome After Surgical Treatment of Lipedema*, Anne Warren Peled, MD, et al, *Annals of Plastic Surgery* Volume 68, Number 3, March 2012.

The international expert in lipedema, Dr. Josef Stutz, has studied the effects on the health of his patients for many years. The effects in a patient's body from the unusual gait from lipedema fat storage around the knees causes multiple joint complications. Stutz concluded that lipectomy is the only treatment that can remove the mechanical impediment to normal gait and prevent joint deterioration. *Liposuction of Lipedema for Prevention of Later Joint Complications*; Stutz, Josef MD, *Vasomed*, Vol 23 (2011).

Wollina and colleagues reported on 111 patients mostly with advanced lipedema treated by this technique in our center between 2007 and 2018. The median pain level before treatment was 7.8 and 2.2 at the end of the treatment. An improvement of mobility could be achieved in all patients. Bruising was also reduced. Serious adverse events were observed in 1.2% of procedures, the infection rate was 0% and the bleeding rate was 0.3%. Liposuction is an effective treatment for painful lipedema. *Dermatol Ther.* 2019 Mar; 32(2) In another study of 209 patients, quality of life increased significantly after surgery with a reduction of pain and swelling and decreased tendency to easy bruising. Bauer and colleagues, *New Insights on Lipedema: The Enigmatic Disease of the Peripheral Fat.* *Plast. Reconstr Surg.* 2019 Dec. 144(6)

Thus, lipedema surgery is safe, effective, and the standard of care for many, many years. Indeed, the International Consensus Conference on Lipedema issued conclusions that although lipedema has been underdiagnosed in places like the United States, multiple studies from Germany have reported long-term benefits for as long as eight years after lipedema surgery. <https://www.ncbi.nlm.nih.gov/pubmed/3135643> 3

My Lipedema Story

*Definitely started after my pregnancies. I just thought it was cellulite and was just bummed because I work out regularly (at that time I was teaching aerobics at 5x week, regularly running races and biking) and have a great diet, but I chalked it up to a "side effect" of having 4 beautiful babies in 7 years. Also had terrible varicose veins but again chalked it up to having babies and tried not to let vanity take over.

*May have started earlier because I can't remember a time since high school that socks didn't leave an impression on my legs/ankles. It didn't matter how loose they seemed to be made, they always made marks on my legs. I could never understand why other people didn't have that problem.

*As the years progressed, it got much worse in my thighs. Embarrassed to show my legs, nothing reduced the size. Varicose veins worsened. Leg swelling and pain became so great I finally saw a vascular doc (Dr. Stephen Lutzak at Williamson Co Med Center). Had vein ligations in both legs. Really helped with pain.

*More varicose veins and increased leg pain and swelling (probably 7 years later). Had another ligation. Had to quit running due to leg pain.

*Started having knee pain, gastro issues, increased swelling, etc around 2017. Started seeing Emily Spring at Maxwell Clinic. Found I was sensitive to many foods and had high histamine levels and started an elimination diet. Felt pretty good from 2017-2019.

*Knee pain got worse summer of 2019. Best way to describe it is trying to bend a balloon that is too full of air. Had to quit all high impact activities. Started rowing, swimming, walking, biking. Dimpling in legs and size increases.

*Saw orthopedists, podiatrist, acupuncture, Physical therapy, massage, dry needling, red light therapy, chiropractor, TENS stimulator and some weird tinctures I drank for 6 weeks (obviously, I was willing to try anything. Nothing helped except 1 round of steroid shots in my knees that truly stopped the pain and returned my mobility for 3-4 months (it was life changing) but then it stopped working. We tried it again with no positive results.

* Menopause around 2019.

*Suddenly don't recognize my body from the waist down. Thighs are much larger and extremely dimply. Dimpling has moved into my calves as well. Whole leg seems swollen, painful to touch, bruising, heavy and standing for any amount of time is very uncomfortable.

*Diagnosed with EDS Hypermobility in summer of 2019, so I assumed many of my symptoms were related to that.

*My daughter (who also has EDS) suggested I look into Lipedema because it often is a comorbidity of EDS. The pictures and descriptions I encountered could have been my legs and my story.

*Has now effected my hips, abdomen, and seems to be moving into my upper arms. I have gained a ton of weight despite diet and exercise (I have gone from a size 8 pant in 2019 to a tight size 12 now) and I have recently noticed my arms are resembling those with lipedema.

*I started seeing a rapid increase in lipedema in my legs around 9/23.

*I should note that I started on bioidentical hormones in February of 2023 to hopefully correct extremely low progesterone and estrogen post menopause (symptoms: night sweats, trouble sleeping, menopause belly, vaginal dryness, fatigue). ** I have read one or two studies that feel increasing estrogen may be harmful for lipedema or some that say it may be helpful, so I have quite taking bioidentical hormones as of 12/1/23 until I can find out if they are causing the rapid progression**

*I have tried compression hose which never seem to stay up and bunch and tighten around my knees. Instead I wear CW-X compression recovery workout tights which seem to have more compression and help more. I just

*I do 1 hour of compression therapy on my legs every day with the Hyperice Normatec pneumatic leg compression sleeves

*I eat a plant based anti inflammatory diet that is also free of gluten and dairy

*I dry brush, foam roll, elevate and do self lymphatic massage regularly.

*Recent bone density results showed some osteopenia.

*Recent venous ultrasound showed reflux in both legs.

*Recent mammogram was normal.

Exercising and being active is one of the most important things to me and has been my whole life. I have exercised 3-7 days a week every week since I joined the cross country team in sixth grade (that was a LONG time ago, and being active has become a big part of who I am). I have had to quit doing so many of the activities I enjoy and do not want to digress further. My husband and I have planned to bike from Nashville to California or Canada to the Keys in 2024 (or 2025 if I have lipedema surgery in 2024) . I will be crushed if that's not possible!











Standard of care for lipedema in the United States

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Phlebology

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Abstract

Background: Lipedema is a loose connective tissue disease predominantly in women identified by increased nodular and fibrotic adipose tissue on the buttocks, hips and limbs that develops at times of hormone, weight and shape change including puberty, pregnancy, and menopause. Lipedema tissue may be very painful and can severely impair mobility. Non-lipedema obesity, lymphedema, venous disease, and hypermobile joints are comorbidities. Lipedema tissue is difficult to reduce by diet, exercise, or bariatric surgery.

Methods: This paper is a consensus guideline on lipedema written by a US committee following the Delphi Method. Consensus statements are rated for strength using the GRADE system.

Results: Eighty-five consensus statements outline lipedema pathophysiology, and medical, surgical, vascular, and other therapeutic recommendations. Future research topics are suggested.

Conclusion: These guidelines improve the understanding of the loose connective tissue disease, lipedema, to advance our understanding towards early diagnosis, treatments, and ultimately a cure for affected individuals.

Keywords

Lipedema, lymphedema, hypermobility, chronic venous disease, standard of care

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Introduction

Lipedema is a disease of fibrotic loose connective (adipose) tissue (LCT) on the lower abdomen, hips, buttocks, and limbs of females, sparing the trunk, hands, and feet. Lipedema is rare in men. A trigger for the development of lipedema tissue may be an increase in fluid and connective tissue remodeling that occurs alongside body changes during puberty, childbirth, menopause, stress associated with lifestyle change, or by altering tissue structure after surgery or trauma.¹ A hallmark of lipedema tissue is inflammation^{2,3} resulting in tissue fibrosis and pain, and in some cases, the tissue may become numb.⁴

First described in 1940 by Allen and Hines at Mayo Clinic in the US⁵ and by Moncorps from Germany,⁶ lipedema remains under-recognized in part, because it is assumed to be a usual hereditary component of female fat.⁷ Lipedema is confused with non-lipedema obesity or lymphedema due to increased leg size.⁸ Under-recognition or misdiagnosis can delay identification of lipedema for decades.⁷ Therefore, patient access to appropriate and timely treatment is often diminished⁹ and patients frequently find themselves blamed for their condition, including self-blame.¹⁰ However, lipedema can be treated to reduce pain and edema, maintain mobility, and improve quality of life while slowing disease progression, therefore timely diagnosis is paramount.

Lipedema is identified by clinical exam¹¹ with diagnostic criteria to help guide the clinical diagnosis (Figure 1). Skin and lipedema LCT are graded by stage and location (Figure 2). Lipedema tissue, body mass index (BMI), metabolic disease and lymphedema increase with stage.^{4,12}

Although guidelines are available from other countries,^{13–17} a published guideline remains an unmet medical need to improve and expand care for people with lipedema in the US.

Methods

In 2019, 21 lipedema expert panelists and a parliamentarian gathered at the *Fat Disorders Resource Society Annual Meeting* in 2019 to review the literature and develop consensus SOC guidelines for lipedema in the US. A structured questionnaire of 96 consensus statements in REDCap¹⁸ was completed by all panelists prior to the meeting, then panelist average responses were summarized, presented and discussed at the meeting (Round 1). After presentations on SOC guidelines from other countries including pathophysiology, diagnostic criteria,^{13–17} imaging, and medical, manual, and surgical treatments for patients with lipedema, consensus, defined as 75% agreement amongst panelists, was reached on 90 statements (Round 2). Panelist responses to the summary were collected, summarized again by representative panelists, and presented to panelists two more times to reach a final consensus on 85 statements following the Delphi survey technique.¹⁹

Consensus statements were scored by panelists and averaged using the GRADE system²⁰ which classifies recommendations as strong (Grade 1 or ⊕) or weak (Grade 2 or ⊕⊕), according to the balance between benefits, risks, burden, and cost, and the degree of confidence in estimates of benefits, risks, and burden, and quality of evidence as high (Grade A), moderate (Grade B), or low (Grade C) according to factors including the risk of bias, precision of estimates, the consistency of the results, and the directness of the

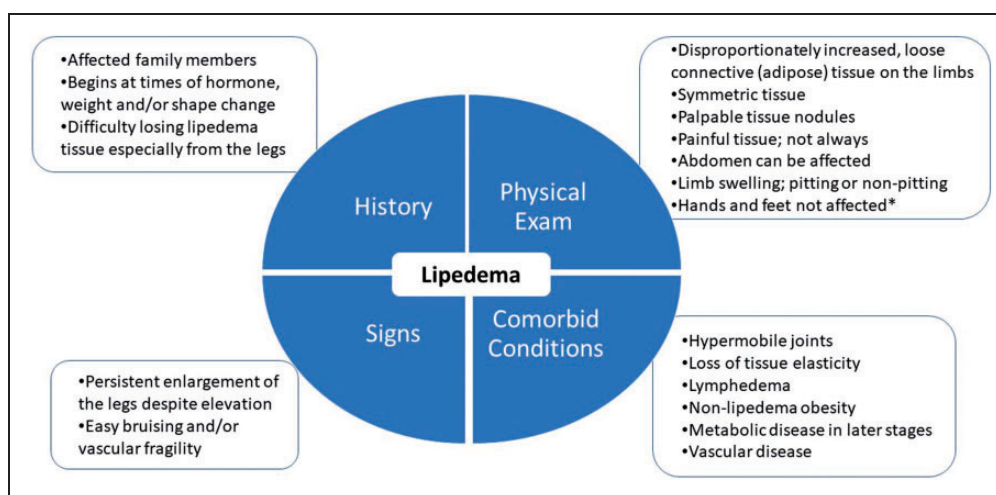


Figure 1. Diagnostic considerations for lipedema supported by expert opinion of the United States standard of care committee.

*~30% of women with lipedema can have fat tissue on the hands likely due to loss of elasticity in the tissue.⁴

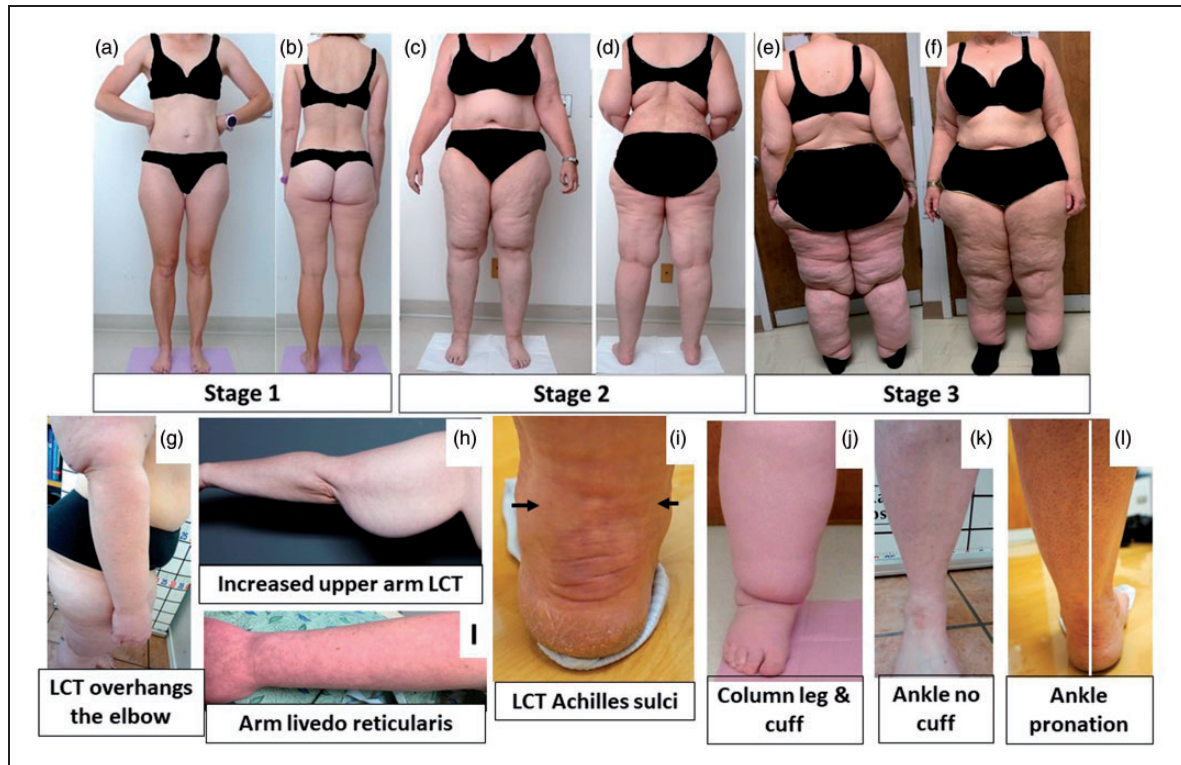


Figure 2. Stages and features of lipedema. (a) to (f): Front and back pictures of women with lipedema Stages 1 to 3. Staging references the legs, however women pictured also have arm involvement. Stage 1 skin has a smooth texture with subdermal pebble-like feel due to underlying loose connective tissue fibrosis. Lipedema Stage 2 women have more lipedema tissue than women with Stage 1 and skin dimpling due to progressed fibrotic changes and excess tissue. Palpable nodules may be more numerous and larger. Note the full Achilles sulci in pictures (d) to (f). In Lipedema Stage 2 arms, the tissue begins to hang off the arm and full arm involvement shows a more pronounced wrist cuff. Lipedema Stage 3 features increased lipedema tissue more fibrotic in texture with numerous large subdermal nodules and overhanging lobules of tissue. Patient (e) and (f) has lipedema, non-lipedema obesity and lipolymphedema. Types I to V describe the locations of lipedema tissue. Type I, lipedema tissue is present under the umbilicus and over hips and buttocks, Type II, under the umbilicus to knees (a, b), Type III, under the umbilicus to ankles (c to f), Type IV, arms (a to f) and Type V, lower legs (not shown). A tissue cuff at the ankle or wrist may be present in all stages. (g): Lipedema tissue overhangs the elbow. (h): Lipedema tissue often hangs well below the arm due to loss of elasticity and heaviness of the tissue. (i): Livedo reticularis is often a feature of lipedema. (j): Close view of tissue filling the Achilles sulci. (k): Close view of a column type lipedema leg with an obvious ankle cuff. (l): An ankle of a woman with lipedema without an ankle cuff (compare to (k)). (m): Pronation of the ankle commonly found in women with lipedema. Consent was obtained for use of all photos. LCT: loose connective tissue.

evidence as suggested by UpToDate.²¹ References evaluated to score consensus statements in this document follow the statement directly and/or in succeeding paragraph(s) or sections.

US SOC meeting goals

1. Agree on a description of lipedema and a consensus SOC for the US.
2. Develop and publish clinical practice guidelines for use by providers, patients, and families.

This consensus standard of care guideline accomplishes Goal 1. Additional content is available online.²² Consensus statements are graded to reflect the strength or weakness based on the current published evidence.

1.0 Lipedema overview

1.1 Lipedema should be regarded as a LCT disease versus a disease of just adipocytes (fat).^{11,23} (⊕A)

Fat is a loose connective tissue. In addition to adipocytes, immune cells and fibroblasts, LCT has an extracellular matrix of fibers (e.g. collagen and elastin) that supports, protects, and connects tissues. Blood vessels and cells contribute fluid to the extracellular matrix. Fluid exits through lymphatic vessels²⁴ or remains in the tissue bound to glycosaminoglycans and proteoglycans. Glycosaminoglycans bind sodium and water due to their strong negative charge. Glycosaminoglycans increase when extracellular matrix water and/or salt increases.

When excess fluid is present, LCT becomes compliant,²⁵ allowing more fluid to collect, stimulating proteoglycan synthesis. Excess fluid limits cell access to oxygen resulting in hypoxia, inflammation and fibrosis.²⁶ Extracellular matrix fluid, free and bound to proteoglycans, also increases in lymphedema.^{27,28} When excess fluid collects in the extracellular matrix, it is called edema.²⁹

1.2 Extracellular matrix edema in lipedema tissue is bound to proteoglycans. (⊕C)

Despite a lack of visible fluid in lipedema tissue on ultrasound,³⁰ extracellular fluid is higher in the tissue of women with lipedema compared to matched controls.³¹ Sodium is also higher in the skin and LCT of women with lipedema.³² Lipedema tissue has an enlarged extracellular matrix where proteoglycans reside.^{2,33} In support, multiple proteoglycans are upregulated in excess adipose tissue in individuals with obesity.³⁴ These data suggest an increase in proteoglycan-bound fluid in lipedema tissue.

1.3 Lipedema has a distinct distribution of pathologic tissue that differs from non-lipedema obesity (Figure 2).⁸ (⊕A)

In women with lipedema, but without non-lipedema obesity, gynoid (not truncal) loose connective tissue is

disproportionately increased and fibrotic (Figures 2 and 3), with greater numbers of M2 macrophages, unlike the prevalence of M1 macrophages in non-lipedema obesity.^{2,35} Furthermore, an inflammatory angiogenesis³ is present in lipedema LCT but not in the tissue of people with non-lipedema obesity.³⁶

1.4 Lipedema LCT can affect the abdomen.¹² (⊕B)

Lipedema tissue is on the abdomen,⁴ often with metabolic disease (Figures 1 and 2).¹²

1.5 Disproportionate distribution of lipedema tissue along with joint hypermobility and muscle weakness³⁷ impact postural stability and balance often resulting in a hyperlordotic curve in the lumbar spine, valgus knee, ankle pronation and plantar arch flattening.³⁸ (⊕B)

1.6 Lipedema tissue is resistant to reduction by diet, exercise, or bariatric surgery.^{39–42} (⊕B)

When weight loss occurs, a greater degree of tissue is lost from the trunk exaggerating the disproportion. Fibrosis of LCT, as in lipedema, inhibits weight loss by usual measures.⁴³

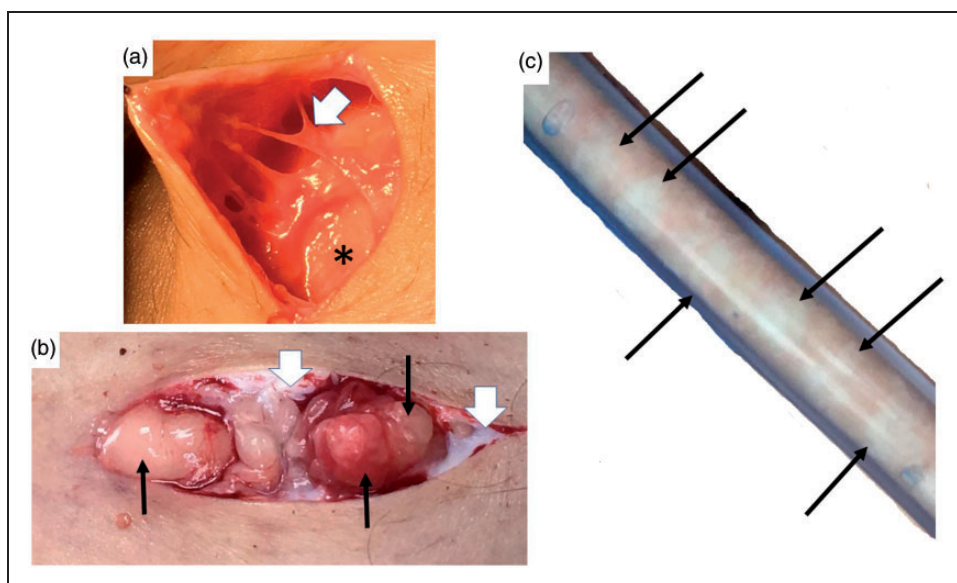


Figure 3. Nodules and thickened extracellular matrix fibers in lipedema calf loose connective tissue. (a) Example of thick fibrotic fibers (white arrowhead) connecting skin to superficial fascia (*). The abnormal fibers when palpated through the wound are firm and thick and less mobile due to fibrosis in comparison to adjacent fibers. (b) Three nodules under the skin (black arrows) that can be palpated through the skin as firm and that when removed feel firm. Notice extensive scar under the skin (white arrowheads). (c) Lipedema nodules (black arrows) intermingled amongst yellow fat obtained during modified suction lipectomy. Source: Photos courtesy of Jaime Schwartz.

1.7 Rice-grain, pearl-sized or larger nodules in LCT should be part of the diagnostic criteria for lipedema (Figure 1).^{4,42} (⊕B)

Fibrosis of lipedema tissue is present in the extracellular matrix space² and within fibers forming fibrotic nodules palpable through the skin (Figure 3).

1.8 A Microangiopathy of blood and lymphatic vessels underlies lipedema pathology. (⊕B)

Lipedema LCT can have capillary fragility⁴⁴ and livedo reticularis (Figure 2) and are prone to easy bruising. Increased numbers of dilated micro-blood vessels in lipedema³ contribute excess fluid to the extracellular matrix. Elevated M2 macrophages,^{2,3} lymphocyte subtypes² and platelet factor 4, an inflammatory marker elevated in conditions of lymphatic disease including all stages of lipedema,⁴⁵ suggest inflammation drives the microangiopathy in lipedema. Impairment in lymphatic outflow in lipedema contributes to excess fluid in the extracellular matrix.⁴⁶

1.9 Comorbidities of lipedema include lymphedema,⁴ non-lipedema obesity,¹² venous disease (5.0 Arterial and venous disorders in lipedema section) and joint disease (Figure 1; Table 1). (⊕A)

Hypermobility joints were present in ~50% of women with lipedema consistent with a connective tissue disease, such as hypermobile Ehlers Danlos Syndrome.¹² Reduced elasticity of the skin²⁵ and aorta⁴⁷ in women with lipedema confirm lipedema as a connective tissue disease.⁴⁸ Comorbidities should individually be evaluated and treated based on current guidelines for each disease.

1.10 Assessment for hypermobility by the Beighton criteria⁴⁹ or questionnaire⁵⁰ should be considered when lipedema is diagnosed. (⊕C)

1.11 When there is a concern that lymphedema is present concurrently with lipedema, a nuclear medicine lymphangioscintigraphy exam of the legs, arms or both, should be conducted to assess the integrity and function of the lymphatic system.⁴⁶ (⊕A) This exam may also guide treatment when lymphedema is present. Lymphangioscintigraphy findings in lipedema include convoluted lymphatic vessels in the legs that slow transit of radionuclide.⁴⁶ (⊕A)

1.12 Women with lipedema who develop lymphedema have lipolymphedema. (⊕A) Lipolymphedema is lipedema that has progressed to clinically identifiable lymphedema, a risk that increases concomitant with stage.⁴

1.13 Lipedema tissue is frequently painful especially when touched. (⊕B)

On a numerical pain scale from 0 (none) to 10 (unbearable), 80% of women with lipedema scored ≥ 5 , and 11% rated their pain as unbearable.⁵¹ The etiology of pain in lipedema is unclear,⁵² though histology findings of inflammation and hypoxia may be contributing elements.^{2,3} Painful lipedema tissue may be misdiagnosed as fibromyalgia.

Painful lipedema tissue is not an absolute requirement for the diagnosis of lipedema (Figure 1).⁵² In a seminal paper on lipedema, only 40%–50% of women had pain or tenderness in the tissue.⁵³ Conservative therapies can reduce lipedema tissue pain (3.0

Table 1. Multidisciplinary team to assess people with lipedema at any time including prior to lipedema reduction surgery.

Team	Domain
Medical	Lipedema, lymphedema, bariatric, dermatological, endocrine, gastrointestinal, neurological, orthopedic, pain, sleep, vascular
Nutrition	Healthy and sustainable eating plan
Behavioral/Psychiatric	Depression, anxiety, eating disorders, body dysmorphic disorder ¹⁴ ; especially prior to any life-changing surgery or significant dietary change
Compression specialist	Compression garment selection and fitting
Certified lymphatic therapist	Tissue structure and mobilization, lymphatic function, nutrition, posture, gait, exercise, home self-care

Conservative and other therapies section), yet people still retain a diagnosis of lipedema. In a family with lipedema and no pain, a gene mutation in *AKR1C1*, reducing aldo-keto reductase activity, should increase levels of the potent analgesic, allopregnanolone,⁵⁴ while at the same time decreasing prostaglandin F2 α levels and raising progesterone levels, both of which stimulate adipogenesis.⁵⁵

1.14 Lipedema is a common disease. ($\oplus C$)

Prevalence estimates for lipedema range from 6.5% in children in the US,⁵⁶ 6%–8% in women in Germany,¹⁶ and 15%–19%^{57,58} in vascular clinics. If these numbers are valid and applied to the US population, then millions of women in the US have lipedema.

1.15 Lipedema can be inherited. ($\oplus B$)

Genes for lipedema are thought to pass from parent to offspring in an autosomal dominant manner with sex limitation.^{59,60} One gene for lipedema has been identified, *AKR1C1*, a gene encoding for aldo-keto reductase that catalyzes the reduction of progesterone to its inactive form.⁵⁵ Elevation of progesterone due to a mutation in *AKR1C1* should increase adipogenesis, as in lipedema.⁶¹ Genes associated with lipedema as part of a syndrome have been reviewed.⁶²

1.16 Lipohypertrophy is a condition in women that is very similar to lipedema but without edema and pain.⁴² Women with lipohypertrophy have tissue that looks like lipedema, have difficulty losing weight, but do not have pain or edema. Some authors state lipohypertrophy is a pre-lipedema condition⁶³ while others consider it a synonym for lipedema.⁷ Lipohypertrophy is also used to describe obesity affecting the limbs and trunk.⁶⁴ More research is needed to determine if lipohypertrophy is different from lipedema. ($\oplus C$)

1.17 Lipedema and its concomitant pain and inability to lose tissue mass by usual measures can increase the incidence of depression, anxiety, or eating disorders.⁶⁵ ($\oplus B$)

Eighty-five percent of women state lipedema affects their mental health, coping abilities and self-esteem.⁶⁶ Depression was observed in 18%–35% of people with lipedema, exceeding average population prevalence levels.⁶⁷ On a standardized measure of health-related quality of life, anxiety or depression was found in 42% of people with lipedema.⁶⁸ In other studies, self-

reported anxiety affected 18%–30% of people with lipedema.^{69,70} Psychological pain scores were also high in women with lipedema.⁵¹ Early diagnosis and treatment may mitigate the impact of lipedema on mental health.

In a study of 100 people with lipedema, 74% had a history of eating disorders, 12% with periodic binge eating attacks, 8% with bulimia, and 16% with anorexia nervosa.⁷¹

1.18 A Mental health consultation should be offered to people with lipedema when there are signs and symptoms of depression, anxiety or eating disorders. ($\oplus B$)

Improved mental health increases self-care by women with lipedema.⁷²

2.0 Medical treatment

2.1 Signs and symptoms of lipedema can be treated to maintain and improve quality of life including pain, edema, and mobility; earlier treatment provides better results.^{17,42,64,66,73} ($\oplus B$)

2.2 A Complete patient evaluation and assessment identifies impairments that can be addressed with medications, therapy, or referrals to other providers (Table 1).^{11,17} ($\oplus C$)

2.3 Barriers to treatment of lipedema include difficulty of self-care, mobility limitations, social stigma attached to increased body size and physical limitations, anxiety, depression,⁶⁵ lack of social support,¹² availability of knowledgeable healthcare providers and affordability of services and limitations of some non-surgical treatments to reduce lipedema tissue.^{37,66,74} ($\oplus B$)

There are no known medications that specifically treat lipedema.

2.4 Use of medications and supplements for lipedema should focus on reducing tissue inflammation, fibrosis, swelling, and pain.¹¹ ($\oplus \oplus C$)

Medications for metabolic complications that arise from obesity in people with lipedema should follow standard guidelines.⁷⁵ ($\oplus A$)

2.5 Medications that increase edema should be avoided in people with lipedema.¹¹ (⊕A)

2.6 Medications that promote weight gain should be avoided and replaced with medications that are weight neutral or that promote weight loss when possible.⁷⁶ (⊕A)

2.7 Thiazolidinediones increase subcutaneous adipose tissue and should be avoided in people with lipedema.⁷⁷ (⊕C)

2.8 Long-term use of diuretics should be avoided in people with lipedema.⁷⁸ (⊕B)

Diuretics do not treat the main cause of edema in lipedema which is inflammation.^{2,3}

2.9 Sympathomimetic amines that constrict arterioles and lower intracapillary pressure can be considered for edema treatment.⁷⁸ (⊕⊕C)

People with lipedema treated with sympathomimetic amines had reduced weight, body size, edema and pain and improved quality of life.⁶⁹

2.10 Metformin should be considered for people with lipedema and metabolic complications. (⊕A)

Metformin inhibits hypoxia-induced fibrosis in adipose tissue,⁷⁹ and can reverse fibrosis after injury.⁸⁰

2.11 Thyroid function should be assessed in people with lipedema. (⊕A)

Hypothyroidism was found in 27%–36% of women with lipedema.^{4,67,70}

2.12 Diosmin can be considered for treatment of lipedema tissue. (⊕⊕C)

Diosmin, a biologically active polyphenol often in combination with its precursor, hesperidin, reduces oxidative stress markers in people with chronic venous disease,⁸¹ improves venous elasticity,⁸² functions as a lymphagogue reducing edema,⁸¹ reduces microvascular permeability,⁸³ and improves vascular,⁸⁴ neuropathic⁸⁵ and radicular pain.

2.13 Eating plans for people with lipedema should minimize postprandial insulin and glucose fluctuations (⊕C) and be sustainable long-term. (⊕C)

Healthy eating patterns for lipedema can be whole food, enzyme rich, plant-based^{86,87} or ketogenic.⁸⁸ Research favors vegetable-based low-carbohydrate diets which correlate with decreased all-cause mortality over animal-based diets.⁸⁹

2.14 Vitamin D levels should be monitored and normalized for people with lipedema. (⊕C)

Vitamin D levels decrease with increasing BMI.⁹⁰

2.15 Lipedema tissue does not reduce significantly after diet, exercise, or bariatric surgery^{39–42} likely due to the fibrotic component of loose connective tissue. (⊕C)

Weight reduction of non-lipedema obesity is beneficial to reduce metabolic complications following published guidelines.⁷⁵ A BMI greater than 50 kg/m² can induce metabolic complications, lymphedema and exacerbate lipedema.⁹¹

2.16 Women with lipedema may have sleep issues including sleep apnea; sleep assessment should be considered especially in later stages.⁴ (⊕C)

2.17 While sex hormones can affect fluid retention, a causative role for sex hormones in the expression of lipedema remains speculative. When necessary, lower doses of sex hormones for birth control or hormone replacement should be considered.¹¹ (⊕⊕C)

3.0. Conservative and other therapies

3.1 People with lipedema should be assessed for lipedema, lymphedema, posture, balance, muscle strength, gait and joint hypermobility by a therapist with certified lymphedema therapist (CLT) training.⁹² (⊕C)

People with lipedema may benefit from postural and core exercises,¹² muscle strengthening exercises, gait training, neuromuscular re-education, and deep abdominal breathing to increase lymphatic flow⁹³ and stimulate the parasympathetic system. Education and

training should be performed by a qualified practitioner.

3.2. Standard conservative therapy for lipedema includes nutritional guidance (2.0 Medical treatment section), manual therapy, compression garments, recommendations for a pneumatic compression device (external pump)^{94,95} and a home exercise plan.³⁷ (⊕C)

3.3. Manual therapies, sequential pneumatic compression pumps^{96,97} and exercise⁹⁸ should improve lipedema tissue by decreasing pain and increasing lymphatic flux, which in turn increases movement of glycosaminoglycans from the extracellular matrix into lymphatic vessels.⁹⁹ (⊕C)

3.4. Standard manual therapy for lipedema includes soft tissue mobilization to reduce pain, inflammation^{100,101} and musculoskeletal restrictions, and manual lymphatic drainage as part of an individualized comprehensive therapy program to stimulate lymphatic flow and reduce edema.¹⁰² (⊕C)

3.5. Lipedema tissue should be mobilized deeper with myofascial release, other manual techniques or instrument assisted soft tissue therapy to reduce fibrotic restrictions and improve the interstitial space while considering patient tolerance and tissue integrity.^{100,101} These therapies do not harm the lymphatic system. (⊕C)

3.6. Compression needs vary depending on patient presentation, pain, and physical ability to don/doff

garments or compression bandages (Table 2).^{16,103} (⊕A)

3.7. Compression garments for lipedema provide comfort and reduce pain by supporting the tissues especially if there is interference by lipedema tissue pads,¹⁰⁴ and manage edema.^{7,105} (⊕B)

3.8. Selection of compression styles, fabric and strength should be individualized. Compression garment styles can be combined to cover the arms, hands, legs, feet, trunk, or pelvis.¹⁰³ (⊕C)

Fabrics range from lightweight and micro-massage, to circular knit to flat knit, the latter providing the strongest containment.¹⁰⁶ Certified lymphedema therapists may suggest modifications for compression garments, inelastic compression garments, “donning aides”, or adaptive equipment. Multilayer, short-stretch compression wraps, or inelastic Velcro may be required to contain fluid. The strength of garments or the compression class level is made independent of fabric type and according to lipedema stage (Table 2). If pain increases with compression, the compression class level may be decreased, or garments layered. A higher compression class level does not equate to better results.¹⁰³

3.9. Pneumatic compression devices stimulate lymphatic flow⁹⁶ and are an option for at-home lipedema and lymphedema management when there are no contraindications.^{96,107} (⊕A)

Pneumatic compression devices provide pain reduction and may provide better control of swelling than self-manual lymphatic drainage.¹⁰⁸ Use of pneumatic compression devices and early mobilization can reduce the risk of deep venous thromboembolism following lipedema reduction surgery.¹⁰⁹ Pressure levels can be altered and cotton padding added between the skin

Table 2. Compression class level (CCL) recommendations for lipedema.^a

Stage	Recommendation
Stage 1	Micro-massage garment (10–20 mm Hg) as needed.
Stage 2	Micro-massage, CCL I or II as tolerated when pain, swelling or heaviness are present.
Stage 3	Micro-massage; CCL I or CCL II as tolerated when pain, swelling or heaviness are present. May have to layer different garments.
Lipedema with lipolymphedema	CCL should be determined individually based on patient presentation, physical ability and tolerance, and caregiver support. May have to layer different garments.

^aCCL I = ~20–30 mmHg, CCL II = ~30–40 mmHg.

and device if discomfort is experienced with pneumatic compression device use.⁶⁴

3.10. Exercise programs for people with lipedema should be individually prescribed, started slowly, and progressed as tolerated.^{37,66} (⊕B)

3.11. Mobility can be improved by therapeutic interventions for flexibility, posture, joint protection, strengthening (including pelvic floor) and conditioning.^{37,66} (⊕B)

3.12. Beneficial home exercise plans for people with lipedema include swimming/aquatics, elliptical machines, yoga, stationary bikes, whole body vibration and walking. Impact levels may vary but should remain tolerable and sustainable for long-term adherence.^{37,66} (⊕C)

3.13. People with lipedema undertaking exercise programs ideally would be followed long-term with regular assessment.³⁷ (⊕C)

3.14. Home care for lipedema (self-management or with caregiver assistance) is essential to mitigate progression and optimize quality of life.¹⁰ (⊕C)

Daily self-care includes skin care (to prevent breakdown under fat lobules, and to prevent infection when lymphedema is present), compression garments, pneumatic compression pumps, self-massage, a healthy eating plan, home exercise plan, adequate sleep and psychosocial support including social networks.

4.0. Surgical treatment

4.1. Lipedema reduction surgery is currently the only available technique for removing abnormal lipedema tissue such as adipocytes, nodules, fibrotic extracellular matrix, and other non-adipocyte components. It is also the only treatment that slows progression of lipedema and ideally would be performed before complications and disabilities from lipedema develop.^{110,111} (⊕C)

4.2. Lipedema reduction surgery utilizes suction lipectomy (liposuction), excision and manual

extraction that spares blood and lymphatic vessels.¹⁷ (⊕⊕C)

Lipedema reduction surgery significantly improves symptoms,^{110–112} mobility, stance, gait,³⁸ valgus rotation/deformity of the knee and ankle, quality of life, and redistributes and restores the plantar arch.¹¹³ It also improves lymphatic symptoms, reducing the need for compression and manual therapy^{110–112,114} and improves lymphatic function as shown by radionuclide lymphangioscintigraphy.¹¹⁵

The types of suction lipectomy recommended for people with lipedema are based around tumescent liposuction which uses a solution injected into the tissue to decrease pain and bleeding.¹¹⁶ Other mechanical methods can also be used such as Water Assisted Liposuction (WAL)^{114,117} and Power Assisted Liposuction (PAL).¹¹⁸

To date, all studies showing clinical improvements for women with lipedema used tumescence or WAL techniques.^{110–112,119} There is little published information on the safety of laser or ultrasound technology for removing lipedema tissue.

4.3. Candidates for lipedema reduction surgery should generally be in good health

People with lipedema are different from the general population in that BMI is not a reliable indicator of overall health.¹⁷ (⊕C)

4.4. There is no age limit for which people will benefit from lipedema reduction surgery.¹⁷ (⊕C)

4.5. Indications for lipedema reduction surgery include a diagnosis of lipedema with demonstrated compliance and adherence to or failure of conservative therapies (3.0 Conservative and other therapies section).^{13–17,66} (⊕C)

4.6. Lipedema reduction surgery does not fit traditional volume limits for liposuction

Debulking lipedema tissue may require larger than traditional suction aspirate volumes¹²⁰ and multiple surgeries with proper intervals in-between. This is not cosmetic liposuction as there are mobility, pain and health benefits when removing lipedema tissue.^{13–17} (⊕⊕B)

4.7. Women with lipedema should be treated with conservative therapy prior to lipedema reduction therapy (4.0 Surgical treatment section). People may travel to receive surgery and rely on a therapy team in their hometown for pre- and post-operative care. In the weeks before surgery, a certified lymphedema therapist can perform a pre-surgical screening to guide “prehab” exercise, perform manual therapies and recommend compression garments for the patient.^{13–17} (⊕⊕B)

4.8. If the patient has lipolymphedema, complete decongestive therapy performed prior to surgery should include an intensive volume reduction phase, ideally 3–4 treatments per week.¹⁰⁷ (⊕C)

4.9. Before surgery, two sets of off the shelf, made to measure or inelastic garments or a combination of micro-massage garment and short stretch bandages should be prescribed.¹⁰⁷ Compression garments should be replaced 3 or 4 times during the first year. Garments must be worn regularly as non-compliance risks a rebound of edema.¹⁰⁷ (⊕C)

4.10. People with lipedema, especially higher stages, are at increased risk for venous thromboembolism and pulmonary embolus after surgery. We recommend venous thromboembolism risk stratification and treatment when indicated (5.0 Arterial and venous disorders in lipedema section). (⊕A)

4.11. A Pre-surgical venous duplex ultrasound and/or treatment of chronic venous disease should be considered especially in patients with lipolymphedema prior to lipedema reduction surgery.¹²¹ (⊕⊕A)

Varicose veins from chronic venous disease increase the risk of venous thromboembolism in the legs;¹²² treatment of chronic venous disease decreases this risk.¹²³ Varicose veins may increase the risk of intra-operative blood loss during surgical treatment of lipedema.¹²⁴

4.12. Lipedema reduction surgery can be safely accomplished in an outpatient setting

Consider overnight observation after surgery for significant comorbid medical illness or high-volume aspirate.¹⁷ (⊕⊕B)

4.13. Lipedema reduction surgery can be safely performed under local or general anesthesia.¹⁷ (⊕B)

4.14. Lipedema reduction surgery is not without risk and may cause long-term complications including lymphatic injury.¹²⁵ (⊕C)

4.15. Lipedema reduction surgery should be performed by surgeons experienced in the care of people with lipedema, with expert knowledge of the anatomy and function of lymphatic collection systems, using meticulous care to avoid lymphatic injury.^{66,116} (⊕B)

4.16. Lipedema reduction surgery may be less effective in advanced stages of lipedema⁶⁶ and in women with lipedema and severe obesity^{110–112,119} although recent data demonstrate a greater reduction of symptoms in more advanced cases.⁷³ Surgery may involve multiple procedures, however, the optimal time between procedures is unknown. (⊕⊕B)

4.17. Blunt cannulas no larger than 2–4 mm should be used during lipedema reduction surgery

Larger cannulas increase the risk for lymphatic injury, and the risk of rare, but deadly fat embolism. Cannulas greater than 4 mm should only be used in people with advanced stage lipedema and only for deep plane liposuction.¹²⁶ (⊕C)

4.18. Longitudinal technique should be used during lipedema reduction surgery to avoid damaging lymphatic vessels.¹²⁷ (⊕C)

4.19. Anemia is a risk with large volume liposuction in people with lipedema

Hemoglobin levels should be followed pre- and post-operatively in higher risk individuals.¹²⁸ (⊕C)

4.20. Large tissue sacks may remain after successful surgery and weight loss, for which subsequent plastic surgery in the form of dermo-lipectomy may be required. (⊕C)

These surgical recommendations align with published standard of care guidelines and long-term studies.^{16,110–112,119} UK guidelines suggest lipedema reduction

surgery after 6–12 months of adherence to conservative therapy.¹³ Dutch guidelines suggest lipedema reduction surgery for people no longer responding to conservative therapy.⁶⁶ We recommend women with lipedema discuss lipedema reduction surgery with healthcare providers for a pre-surgical assessment, get a referral to a trained therapist (3.0 Conservative and other therapies section), and be assessed for significant and treatable vascular disease (5.0 Arterial and venous disorders in lipedema section) prior to undergoing lipedema reduction surgery.

4.21. People with early stage lipedema should wear a postoperative compression garment for at least 2–3 months to manage post-operative edema.¹⁰⁷

People with advanced lipedema and/or lipolymphedema may need to continue compression garments for life.^{15,120} *If people find it difficult to don and doff compression garments, two garments with a lesser level compression can be layered to achieve adequate compression.* (⊕C)

4.22. Post-surgical care should be performed by a certified lymphedema therapist 2–3 times a week as soon after surgery as possible until swelling subsides.^{120,129} *Certified lymphedema therapists or a qualified fitter can monitor compression needs.* (⊕⊕B)

4.23. Complete decongestive therapy is either no longer needed or the need reduced in people after recovery from lipedema reduction surgery.¹¹² (⊕⊕A)

5.0. Arterial and venous disorders in lipedema

5.1. The arterial and venous vascular status of people with lipedema should be evaluated.^{47,121} (⊕⊕C)

Most people with lipedema have leg pain, all have leg swelling, either pitting or non-pitting, and many have underlying chronic venous disease.¹²¹

The physical examination should include inspection and palpation of pulses in the limbs. Pulse palpation in people with lipedema may be difficult and painful due to limb size.

5.2. It is important to differentiate leg pain in lipedema from peripheral arterial disease. (⊕⊕A)

Peripheral arterial disease is common especially when major risk factors are present.¹³⁰ Compression garments are a standard treatment for people with lipedema with signs of lymphatic impairment; however, compression garments are contraindicated for people with severe peripheral arterial disease.

5.3. If peripheral arterial disease is clinically suspected, ankle brachial index is recommended with whole leg or single segment (foot and ankle) assessment. (⊕A)

Arm or leg enlargement in lipedema may affect accuracy of the blood pressure measurements in this test and cause pain.¹³¹ If performing an ankle brachial index is not possible, measurement of a toe brachial index may be helpful. Forearm or wrist blood pressure measurement may be an alternative in this population. Other options include using a 4MHz Doppler ultrasound probe (over the standard 8 MHz probe) and/or a larger blood pressure cuff.¹³²

The arterial duplex ultrasound can eliminate the need for invasive procedures such as arteriography or computed tomography angiography.

5.4. Common venous conditions seen in people with lipedema include increased risk for venous thromboembolism and conditions associated with chronic venous disease: varicose veins, chronic venous insufficiency, and telangiectasias (spider veins).¹²¹ (⊕C)

5.5. Lipedema, especially later stages, is associated with multiple comorbid conditions that increase the risk of venous thromboembolism, which includes superficial thrombophlebitis, deep vein thrombosis and pulmonary embolism.¹³³ (⊕C)

5.6. Providers should perform a venous thromboembolism risk assessment score¹³⁴ for people with lipedema and follow venous thromboembolism prophylaxis treatment guidelines. (⊕C)

Independent risk factors for venous thromboembolism based on Caprini risk stratification,¹³⁴ especially for women with Stage 3 lipedema include:

- BMI >40 kg/m² (1 point)

- Varicose veins (1 point)
- Swollen legs, including loss of definition of bony prominences (1 point)
- Decreased mobility¹¹³ (1 point) (⊕A)

5.7. Chronic venous disease can present with leg swelling and pain and should be considered in the differential diagnosis of lipedema. (⊕B)

Chronic venous disease is the most common vascular disorder in all populations. Chronic venous disease is the presence of morphological (i.e., venous dilation) or functional (e.g., venous reflux) abnormalities manifested by symptoms and/or signs indicating the need for further investigation or treatment. There is little data on lipedema and chronic venous disease. Two studies state ~25% of women with lipedema have venous disease and one study showed 50% of women with lipedema and lipolymphedema had chronic venous insufficiency.^{53,121,135} Lipedema and chronic venous disease often co-exist, share similar leg symptoms, and could exacerbate each other. Advancing age, female gender, and BMI compound an underlying relationship between lipedema and chronic venous disease.¹³⁶

Symptoms of chronic venous disease include: leg pain, fatigue, heaviness, swelling, pruritus, restless legs and night cramps.¹³⁷ The leg pain of chronic venous disease is generally worse with dependency and relieved by elevation. Symptoms of chronic venous disease are relieved by compression garments and walking. In people with lipedema, leg elevation does not improve swelling, and compression garments often cause pain.

The physical exam for chronic venous disease includes inspection of the arms and legs comparing each to the contralateral limb. Physical signs of chronic venous disease include telangiectasia, varicose veins, hyperpigmentation, erythema, inflammation, dryness, corona phlebectatica, lipodermatosclerosis, atrophie blanche and leg ulceration. Edema, pitting or non-pitting, should be noted.

Secondary lymphedema in people with lipedema can be difficult to evaluate. Not only does secondary lymphedema often occur in the absence of a positive Stemmer's sign,¹³⁸ it requires palpation of tissue density and heaviness. As much as 0.5 L of fluid can be present in the calf/ankle before it is noticed. Women with any stage of lipedema may manifest lymphedema although it is more likely in more advanced stages.^{4,46}

5.8. The Clinical-Etiological-Anatomical-Pathophysiological (CEAP) classification for venous

disease should be determined for people with lipedema.¹³⁹ (⊕A)

5.9. The venous evaluation of people with lipedema includes a bilateral, lower extremity duplex ultrasound evaluation of the deep and superficial venous systems assessing for valvular insufficiency (reflux),¹²¹ acute or chronic thrombosis¹³³ and patterns of obstructive flow. (⊕A)

The scan should evaluate reflux in the superficial truncal veins (great saphenous, small saphenous and accessory saphenous), measure truncal vein diameters, and map large refluxing tributaries. These scans can be difficult to perform and assess in people with severe obesity, extensive lipedema, and lower extremity edema.

Duplex ultrasound may be helpful when the clinical examination for lipedema is unclear. For example, dermal thickness was normal in people with lipedema, while dermal thickness was increased and fluid was present in the loose connective tissue in cases of lymphedema.¹⁴⁰

Knowing when to treat chronic venous disease in people with lipedema is challenging without published data. Generally, it is accepted to consider treatment of chronic venous disease when superficial truncal reflux is present, the symptoms interfere with activities of daily living, and people do not respond to conservative therapy (compression garments, manual therapy, 3.0 Conservative and other therapies section). (⊕B)

5.10. Providers should determine whether symptoms are from lipedema, chronic venous disease or both as they share many symptoms.¹²¹ (⊕B)

One goal for people with lipedema is to improve discomfort. It is important to give reasonable expectations for chronic venous disease treatment outcomes including that overall leg shape, edema, and underlying symptoms from lipedema most likely will not improve. However, by removing the chronic venous disease component, people can expect an overall net improvement of end of day symptoms.¹³⁹

5.11. Consider thermal and non-thermal treatment modalities of chronic venous disease in people with lipedema.¹⁴¹ (⊕C)

There are two modalities for treating superficial truncal reflux in chronic venous disease: non-thermal and thermal. Non-thermal methods cause less inflammation, injury to adjacent structures, damage to adjacent lymphatics or nerves, risk of anesthetic complications, noxious needle punctures, and pre- and post-treatment

discomfort. Thermal modalities are theoretically more likely to injure adjacent lymphatics; however, thermal ablation is more widely available and more effective on larger diameter veins.¹⁴²

5.12. Due to alterations in lymphatic vessels in people with lipedema,⁴⁶ when thermal ablation is used to treat chronic venous disease in the proximal saphenous vein segments, generous peri-vascular tumescent anesthesia should be infiltrated, especially at the sapheno-femoral and sapheno-popliteal junctions, to increase protection of surrounding lymphatics.¹⁴³ (⊕C)

5.13. The decision of whether to treat distal saphenous segments and/or large tributaries of chronic venous disease in people with lipedema must be individualized.¹⁴⁴ (⊕⊕C)

Monitoring treatment

Though there is no lipedema specific health-related quality of life evaluation tool, several outcome instruments have been used to differentiate lipedema from lymphedema including the SF-36¹⁴⁵ and the Patient Benefit Index.¹⁴⁶

Research

How or why lipedema occurs is poorly understood, and for affected individuals, the signs and symptoms of progression remain unexplored. Key areas of research include:

- Defining the penetrance of pain and its mechanisms,
- Pathomechanism of muscle strength loss,
- Connective tissue aspect of lipedema including hypermobile joints,
- Difference and differential diagnosis between lipohypertrophy and lipedema,
- Overall prevalence and incidence of lipedema as well as its demographic distribution.

Further research should focus on how to optimize treatment for people with lipedema, with a particular focus on patient quality of life, nutritional guidance, management of comorbid diseases, deeper tissue techniques to reduce inflammation and fibrosis, earlier diagnosis to allow for intervention and education, psychosocial support, as well as pre- and post-surgical protocols to improve care and assess medium- to long-term outcomes.

Conclusion

These findings are the consensus statements of US-based expert panelists put forth as a standard of care guideline for people with lipedema in the US. It is our goal and aspiration that that this guideline will improve the understanding of the loose connective tissue disease, lipedema, and that increased research and awareness of lipedema will advance our understanding towards increased diagnosis, improvements of treatments, and ultimately a cure for the community of affected individuals.

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Contributorship

All authors attended the original consensus meeting and contributed to the original ideas for this paper. KLH obtained grant funding, organized the original meeting for the standard of care committee, provided questions and summaries for consensus statements and collated written portions of the submitted paper from authors. All authors researched the literature, assisted in drafting of the different sections of the paper, edited multiple versions of the manuscript and approved the final version of the manuscript.

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