

What is lipedema?

Dr. Stefan Emmes

MD, specialist in plastic surgery

Plastikkirurgisk institutt, Bergen

**Treating lipoedema patients with
liposuction since 2016**

What is lipedema?

- Chronic, progressive disease of subcutaneous fat that only affects women
- Development of abnormal amounts of therapy resistant subcutaneous fat on the extremities (Lower leg/thighs/buttocks/upper arms/forearms)
- Tendency to develop edema and pain
- Tendency to bruise easily

Prevalence of lipedema ?

- Prevalence still unclear
- Estimated 8-11% of all women most of the world are effected
- approximately 200.000 -250.000 women in Norway have lipedema

Scientific research of lipedema

- First described in 1940
- 1. Allen EV, Hines EAJ, Lipedema of the legs: a syndrome characterised by fat legs and orthostatic edema. Proc Staff Meet Mayo Clin; 1940; 15: 184-187.
- And then....?

Scientific research of lipedema

- Until the end of 2000, 37 articles on lipedema were listed in PubMed
- That means during the first 60 years since the first description, on average less than 1 article was published per year
- After 2000, scientific research grows exponentially. Until August 2022, there were published 335 new articles about lipedema .

How quickly is lipedema diagnosed?

- **Online request with lipedema patients in Germany (n=624 women, in 2016)**
- 21.8% received the diagnosis on first contact with a doctor, usually via a specialist (plastic surgeon, vascular surgeon, dermatologist)
- 47.8% needed 2-5 different medical consultations
- 19,2% needed 5-10 different medical consultations
- 11,2% needed more than 10 different medical consultations
- Lack of knowledge among physicians

Cardinal symptoms of lipedema

1. Symmetrical increase in the amount of subcutaneous fat, limited to the lower limbs/buttock region and upper limb. Not on the upper body. Hands/feet not affected (cuff phenomenon)
2. Disproportion from the legs (and arms) in relation to the upper body
3. Tendency of hematomas (bruising) after minor trauma
4. Tendency to develop orthostatic edema and heaviness, worsening during the day/after physical activity
5. Feeling of tension and pain (pressure/touch pain, tension pain) together with the development of oedema

Other symptoms of lipedema

6. Cold sensation in the skin, regardless of weather conditions or the actual temperature

7. Typical extra fat pads: medial knee joint, outside of tights (directly over the trochanter), medially right below the patella

Longterm problems with untreated lipoedema

Ortopedic problems

Reduced mobility, due to increased weight load and restricted mobility of the joints

Misalignment of the lower extremities => early arthrosis of the ankle, knee and hip joints. Lipedema patients have a more frequent and earlier indication for joint prostheses

Dematological problems

Chronic recurrent skin infections and chronic wounds

Longterm problems with untreated lipedema

Psychiatric problems

Chronic pain syndrom, depression, reduced self-esteem

Internal medicine problems

Secondary obesity

Secondary lymphedema

diabetes mellitus type 2

Possible co-morbidities of lipedema

Hormonal disorders (hypothyroidism, reduced production of sex hormones)

Ulcerative colitis

Polycystic ovary syndrom (PCOS)

Staging of lipedema

Stadie 1



Stadie 2



Stadie 3



Stadie 4



Stage 1

The skin is still
smooth

Subcutaneous fat
“thickened”

Fat structure normal

Stage 2

Skin with cellulite

Skin may become
uneven

fat structure with
small subcutaneous
knots

Stage 3

In addition, skin
fibrosis

deforming skin/fat
folds on the inside
of the knees and the
outside of the thighs

Bigger
subcutaneous knots

Stage 4

Progression of
symptoms stage 3
Hyperpigmentation
Dermatitis
Skin ulceration
Secondary
lymphedema

Lipedema: what do we know?

Etiology is still unclear!

Lipedema is a genetic disease

Probably autosomal dominant

Men are carriers, but do not get sick themselves

Lipedema: what do we know?

Lipedema is induced of hormones

Female sex hormones (estrogen og progesteron) triggers the disease (lipedema **never** starts **before** puberty)

Lipedema affects only women

Changes in hormonal composition can trigger/exacerbate the condition (e.g. pregnancy, hormonal contraception, menopause, operation on the uterus/ovaries)

Lipedema: what do we know?

Lipedema is an inflammatory condition of fatty tissue

Histology:

- signs of microangiopathy
- hypertrophy and hyperplasia of adipocytes
- fibrosis of the arterioles
- fibrosis and ectasia of the venules
- ectasia of subdermal capillaries
- increased number of macrophages

Lipedema: what do we know?

Mikroangiopathy leads to-

=> increased permeability of the capillaries

=> increased lymphatic transport and increased amount of proteins into the interstitium

=> increased insufficiency of lymphatic vessels

=> edema and pain

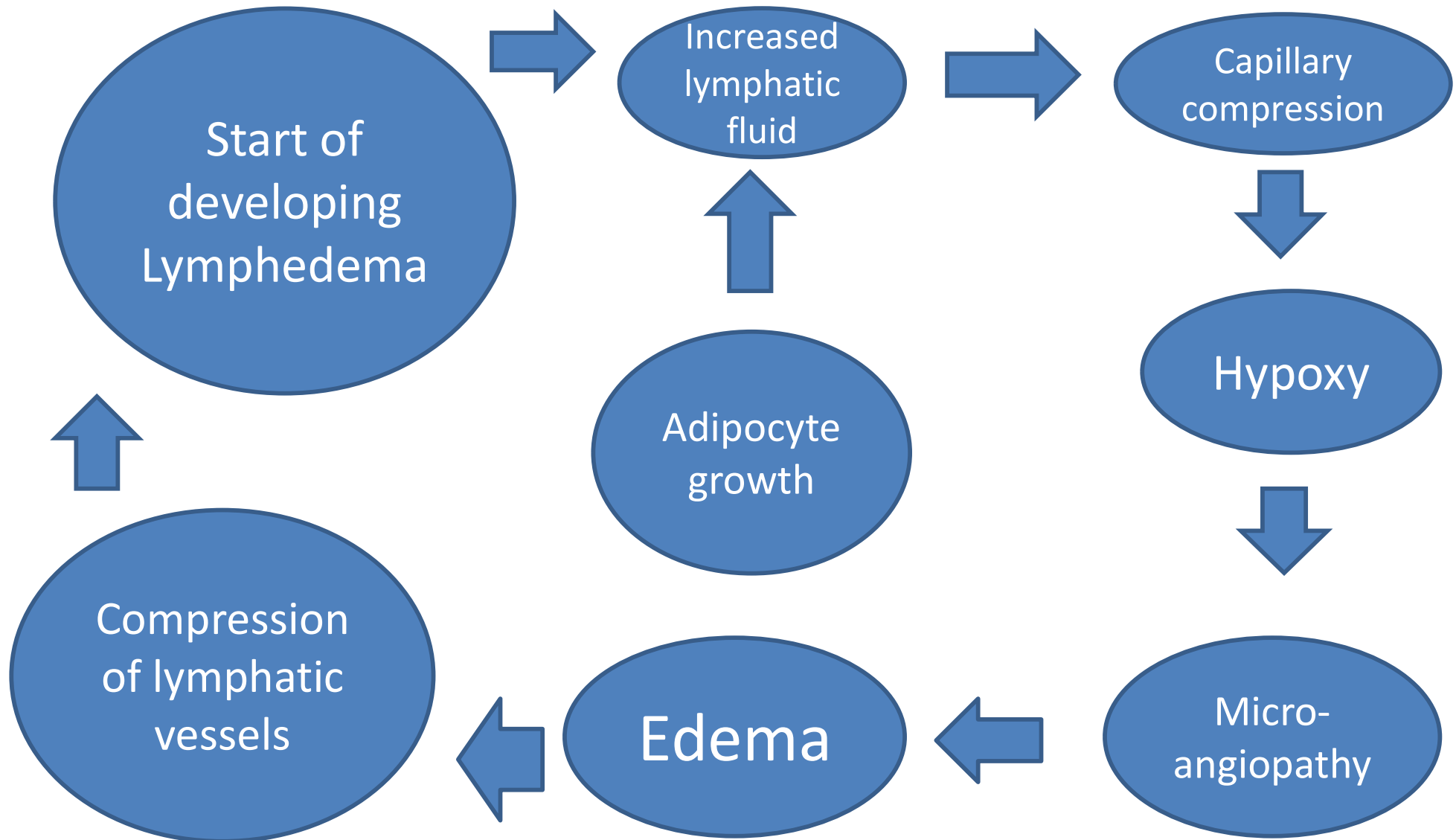
Lipedema: what do we know?

Mikroangiopathy leads to-

Increased fragility of the capillaries

=> Hematomas (bruising) after minor trauma

Lipedema: what do we know?



Lipedema: what do we know?

Nerves are affected by:

Inflammation

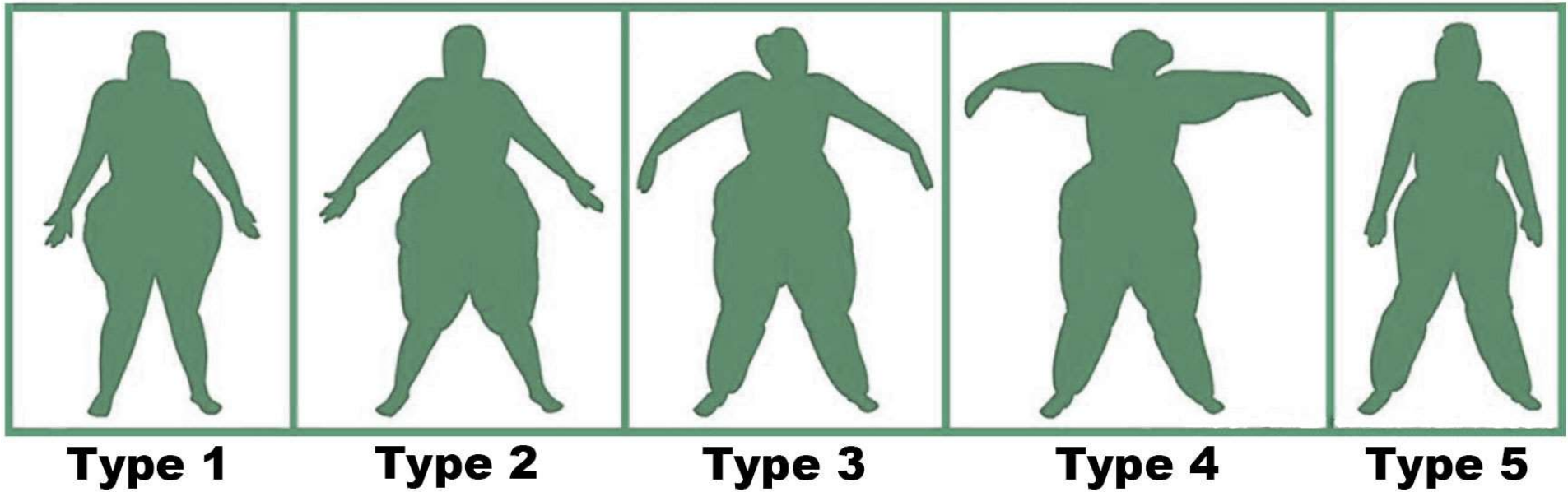
Edema (mechanical compression)

=> Developing a peripheral neuropathy (pain)

Lipedema: classification

- Type 1: buttocks and hips
- Type 2: in addition thighs and inside of knees
- Type 3: down to the ankle, no affection of feet
- Type 4: in addition the arms, not the hands
- Type 5: Mostly lower leg down to the ankle

How does it look like?



Other things which are not lipedema

	Lipødem	Lipohypertrofi	Godartet lipomatosis	Lipomatosis dolorosa	Lymfødem
Symmetrisk	+	+	+	+	-
Terapieresistent	+	+	+	+	+
Smerter	+	-	-	+	+
Væskeansamling	+	-	-	-	+
Blåmerker	+	+	-	-	-

Treatment of lipedema

Treatments who don't work

- No diuretics
- No diet
- Changes in patients diet can affect the development of lipedema fat, both positively and negatively, but cannot reduce fat that is already present.
- No training
- Weight loss surgery will just have an effect on overweight in the upper body (back, shoulders, breast, stomach, neck, face). Minor effect on edema of the exstremities; better lymphatic drainage on the upper body
- Nowadays we have no causal therapy, because the cause of the lipedema is still unclear. Today's therapy concepts try to reduce symptoms, and reduce/stop the further development of lipedema fatty tissue, as soon as the patient has got his diagnosis.

Treatment of lipedema

Non-surgical treatments

- Manual lymphatic drainage and Pulsator treatment combined with compression garment
- Lifelong treatment required
- Only treatment of secondary symptoms (reduction/elimination of pain and edema)
- No causal therapy, no reduction of lipedema fatty tissue

Treatment of lipedema

Non-surgical treatments

- Low carb/cetogenic diet; reduction of inflammatory effects of carbohydrates
- Lifelong treatment required
- Only treatment of secondary symptoms (reduction/elimination of pain and edema)
- No causal therapy, no reduction of lipedema fatty tissue

Treatment of lipedema

Surgery of lipedema: liposuction

The aim of liposuction of lipedema is to remove as much lipedema fat as possible, while sparing the lymphatic and blood vessels.

Goal is to slow down the further development of lipedema, together with reduction of pain and tension.

And now it's time for coffee break...

