CONTROVERSES ET ACTUALITES EN CHIRURGIE VASCULAIRE

CONTROVERSIES & UPDATES IN VASCULAR SURGERY

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Treatment of lipedema: is it also the field of action of phlebologists?

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Disclosure

Speaker name: Thomas M. Proebstle

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I have the following potential conflicts of interest to report:

No disclosures with this presentation

Background
Lipedema - “painful leg swelling” with congestion symptoms

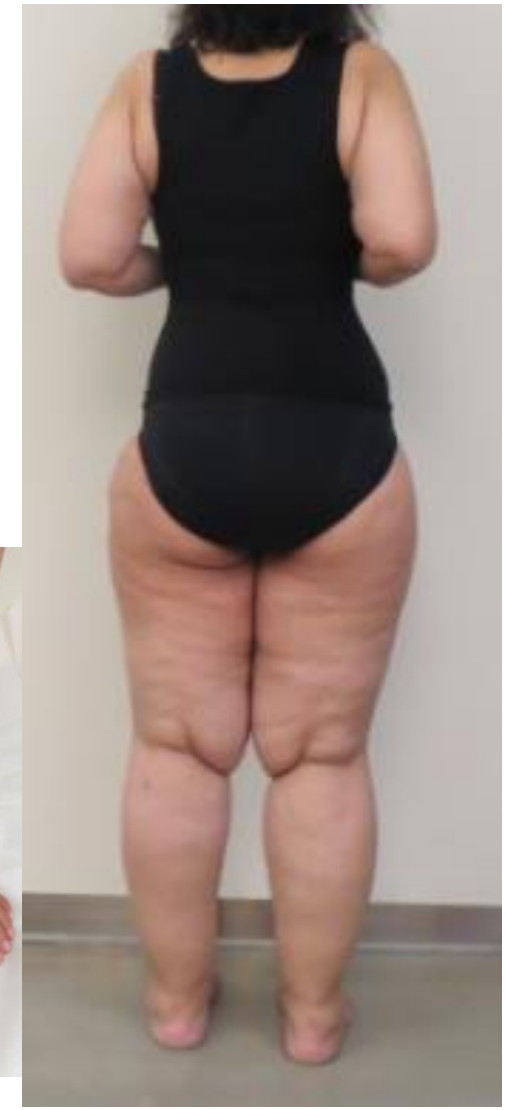
- Almost exclusively women affected
- still not overwhelmingly defined
- first described 1940 by Allen and Hines
- disease unknown to many physicians
- no proprietary ICD-10 code
- scientific studies limited

- **Clinically most important: substantial overlap of symptoms between lipoedema and chronic venous disease !!!**

- may advance towards Lipo-Lymphedema

Clinical presentation of Lipedema

- almost only females affected,
  always positive family history
- symmetrical and characteristic anatomical distribution pattern of subcutaneous fat hypertrophy “skinny trunk – strong legs”
- bruising upon minimal trauma
- tenderness with painful sensation upon touching calf skin
- “swollen leg”
  “edema” without pitting
- …….



Pathophysiology of Lipedema
High volume overload of the lymphatic system?

- massively increased prelymphatic spaces were shown by direct, indirect and fluorescent micro-lymphangiography (Kinmonth, Tiedjen, Partsch)

- Increased filtration rate in early stages (Wienert).
  At least partially due to increased fat tissue volume which causes increased lymphatic fluid production with a functional overload of a normal lymphatic system

- Later sclerosis of lymphatic vessels due to volume overload with subsequent additional lymphedema

Time Course of Lipedema

- Frequently onset with puberty, almost only women affected
- Frequently progression with gravidity,
  massive general weight gain and postmenopausal
- weight loss causes only minimal reduction of leg fat tissue –
  maximum loss is observed at trunk and face.
  Weight gain prefers limbs at preexisting lipoedema fat pads
- Chronic course of the disease with stage progression, nodular changes of the subcutaneous tissue, generation of excess skin and subcutaneous tissue, progression to lipo-lymphedema possible

Clinical stages of Lipedema

- stage I:

  skin surface smooth,
  hypertrophic subcutaneous layer,
  fat tissue shows small nodules

Clinical stages of Lipedema

- stage II:
  skin surface dimpled,
  fat tissue shows big nodules

Clinical stages of Lipedema

- stage III:

  stage II plus additional hardening of subcutaneous tissue with skin sagging

Types of Lipedema

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Type 1:	buttocks
Type 2:	buttocks down to knees – knees included
Type 3:	buttocks to ankles
Type 4:	exclusively arms
Type 5:	isolated lower leg

Brit J Dermatol 2012; 166: 161–168.

Treatment of Lipedema

THERAPEUTICS

BJD
British Journal of Dermatology

Tumescent liposuction in lipoedema yields good long-term results

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Summary

Background Lipoedema is a painful disease in women with circumscribed increased subcutaneous fatty tissue, oedema, pain and bruising. Whereas conservative methods with combined decongestive therapy (manual lymphatic drainage, compression garments) have been well established over the past 50 years, surgical therapy with tumescent liposuction has only been used for about 10 years and long-term results are unknown.

Treatment of Lipoedema

Table 1 Changes of complaints

	Preoperative		Postoperative			
	Mean	SD	Mean	SD	P-value (t-test)	Effect-size
Complaint[a]						
Spontaneous pain	1·88	1·33	0·37	0·60	< 0·001*	1·36
Pain because of pressure	2·91	1·06	0·91	0·92	< 0·001*	2·01
Oedema	3·06	1·02	1·27	0·88	< 0·001*	1·88
Bruising	3·01	1·03	1·26	1·11	< 0·001*	1·63
Restriction of movement	2·03	1·36	0·28	0·68	< 0·001*	1·58
Cosmetic impairment	3·33	0·88	1·08	0·91	< 0·001*	2·52
Reduction in quality of life	3·36	0·86	0·76	0·91	< 0·001*	2·95
General impairment[b]	2·81	0·70	0·86	0·63	< 0·001*	2·93

[a]Scale: 0, none; 1, minor; 2, medium; 3, strong; 4, very strong. *$P < 0·001$. [b]Reliability (internal consistency) of the total score 'general impairment' is 0·77 (preoperative) and 0·76 (postoperative) (= good reliability).

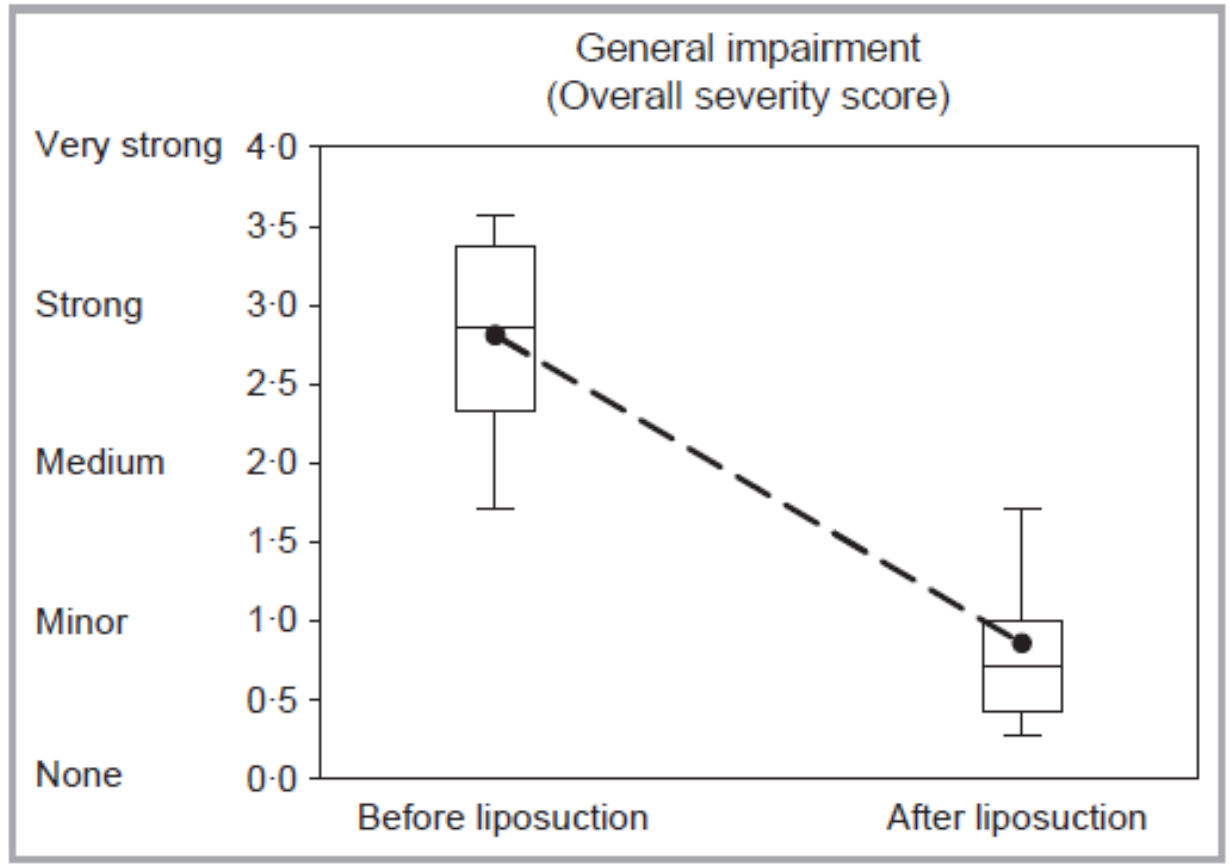


Fig 1. Improvement of general impairment in lipoedema after liposuction (mean values).

Surgical Therapy of Lipedema

Brit J Dermatol 2012; 166: 161–168

Liposuction
frequently causes permanent improvement of clinical symptoms

Schmeller Liposuction study N=75, max follow-up 4.5 years

After liposuction:

25 %	of patients did not need any additional treatment any more
41 %	needed further conservative treatment with reduced intensity
23 %	needed same intensity conservative treatment but reported improved QoL

pre

3 months

12 months

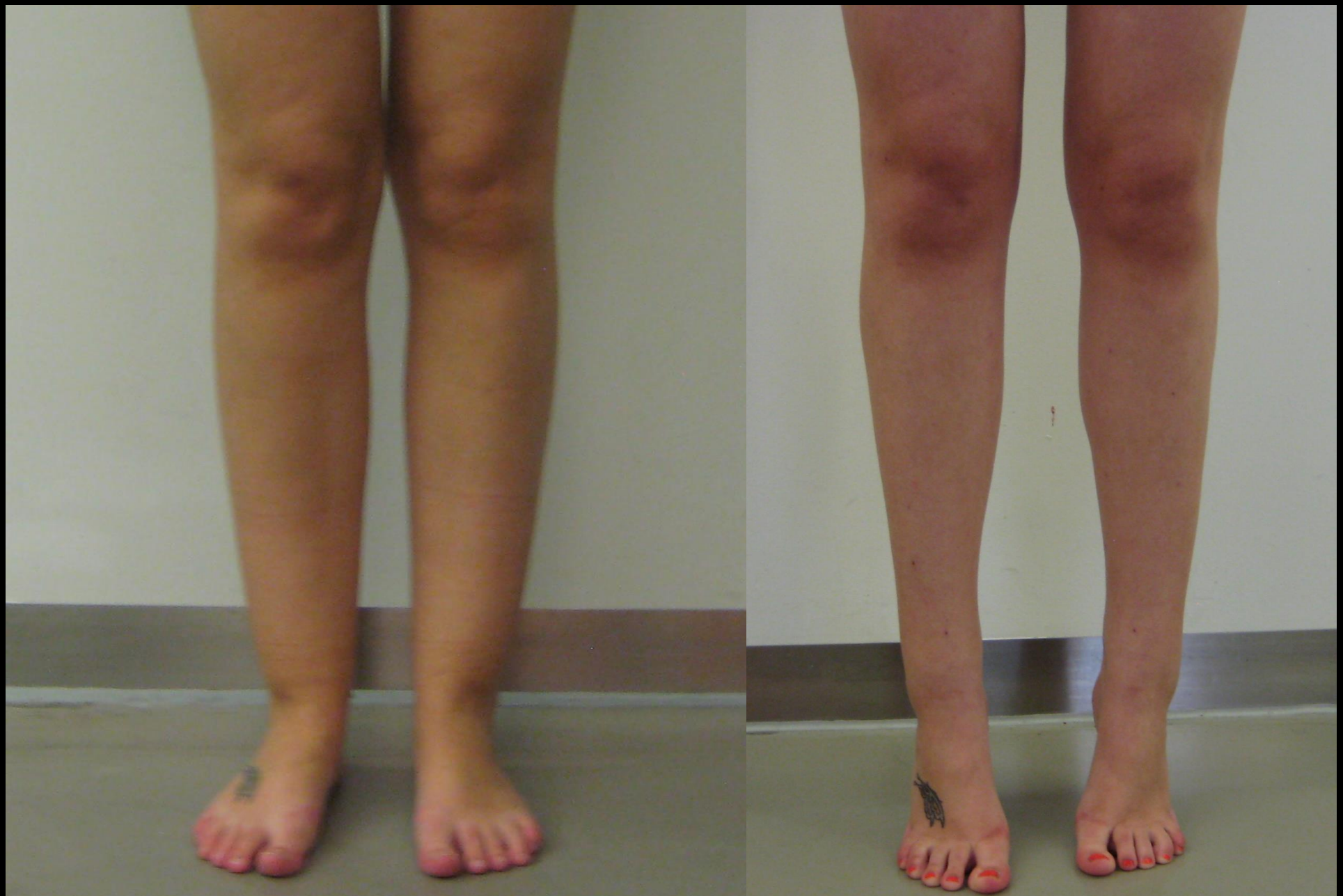
pre

3 months

12 months

pre

9 months (3 mo after 2nd lipo)



pre

6 months post
waist reduction 6 inch

Laser assisted liposuction (1320 nm)
25 Watt 15 kJoule per region inner/outer thigh

pre

3 weeks post

Mannheim Single Center Lipedema Study
Methods - patient characteristics

- consecutive cases of lipoedema
- N = 258 women presented with lipoedema presented at our clinic already considering liposuction as a specific treatment.
- N = 134 of them were able to complete study follow-up
- N = 107 received liposuction
  median follow-up after liposuction 37.5[3 – 94] months
- median age 44 [18 - 76]
- median BMI 26.0 [17.4 – 49.6] kg/m²
  According to current definition of adipositas
  9.7% adipositas grade I (BMI 30 -34,9 kg/m²),
  4.5% adipositas grade II (BMI 35 -39,9 kg/m²)
  2.2% adipositas grade III (BMI > 40 kg/m²)

Mannheim Single Center Lipedema Study
Methods - patient characteristics

- N = 107 of 134 (79.9%) patients underwent at least one liposuction
- Prior to liposuction, out of these 62 patients
  65.4% received compression therapy and
  43.0% had physiotherapy containing lymphatic drainage
- All patients were dissatisfied with the lack of improvement of specific complaints or were concerned about progression of peripheral fat volume at their legs and arms.

Mannheim Single Center Lipedema Study
Results – Schmeller´s Score (0..4) before/after

paired sample test baseline to 3-6 months after treatment by two-sided t-test, $p<0.001$ for all parameters.

	Baseline +/-SE	3- 6 months+/-SE	improvement [95% CI]
Spontanous pain	1.9 +/-0.2	0.7 +/- 0.1	-1.2 [-1.6 - -0.8]
Pain upon pressure	2.3 +/-0.2	0.8 +/-0.1	-1.5 [-1.9 - -1.0]
Edema	2.8 +/- 0.1	1.1 +/-0.1	-1.7 [-2.0 - -1.3]
Bruising	2.4 +/-0.2	1.3 +/-0.2	-1.1 [-1.4 - -0.7]
Restr. of movement	1.6 +/-0.2	0.6 +/-0.1	-1.0 [-1.4 - -0.5]
Cosm. impairment	3.3 +/-0.1	1.0 +/-0.1	-2.3 [-2.7 - -1.9]
Red. in qual. of life	2.8 +/-0.2	0.8 +/-0.1	-1.9 [-2.3 - -1.5]

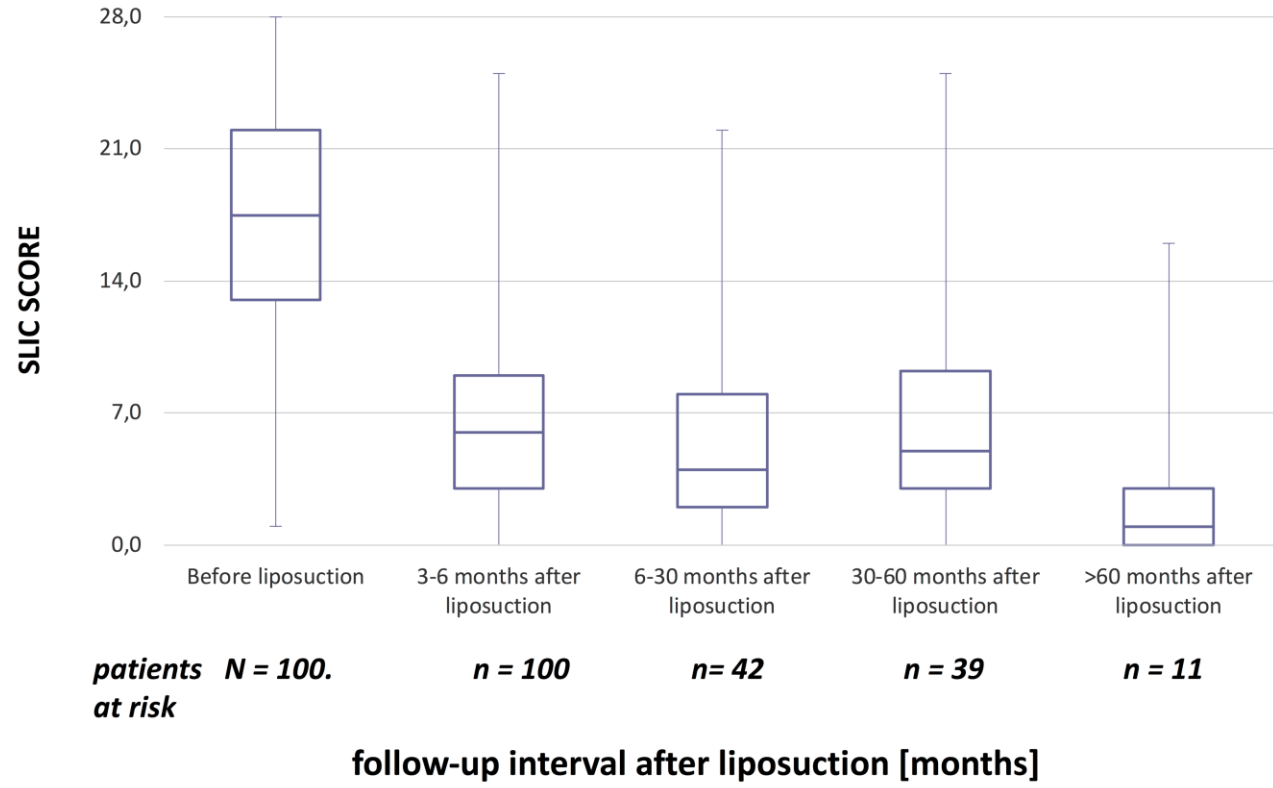
Mannheim Single Center Lipedema Study Results – SQOR-V Score before/after

Table 3: Clinical symptoms obtained from the SQOR_V questionnaire. Statistical analysis of improvement of symptoms by double sided t-test showed p<0.001 in all cases.

	baseline	3-6 months post OP	p-value
General impairment[1)]	3.9 +-0.1	1.9 +-0.1	<0.001[1]
Pain[1)]	3.4 +-0.1	1.8 +-0.1	<0.001[1]
Heavy feeling[1)]	3.8 +-0.1	1.9 +-0.1	<0.001[1]
Itching[2)]	1.7 +-0.1	1.2 +-0.1	<0.001[2]
Leg cramps[1)]	2.2 +-0.1	1.4 +-0.1	<0.001[1]
Swelling[1)]	3.9 +-0.1	2.1 +-0.1	<0.001[1]
Burning[1)]	2.2 +-0.1	1.3 +-0.1	<0.001[1]
Tingling[1)]	2.1 +-0.1	1.4 +-0.1	<0.001[1]
Twitch[1)]	2.0 +-0.1	1.3 +-0.1	<0.001[1]
Restless legs[1)]	2.4 +-0.1	1.6 +-0.1	<0.001[1]
Impairment by heat[1)]	3.8 +-0.1	2.1 +-0.1	<0.001[1]

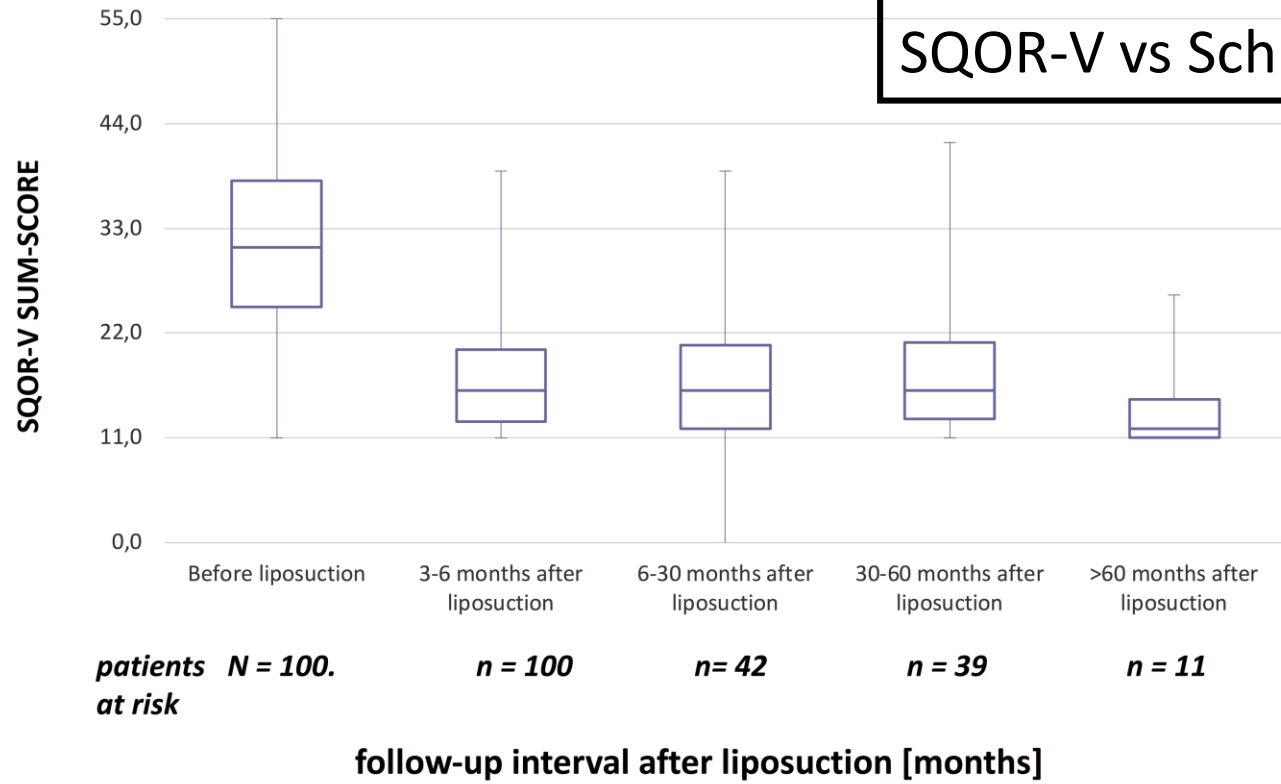
1) Double-sided t-test
2) Wilcoxon signed rank test

Mannheim Single Center Lipedema Study
Results Improvement of Schmeller´s Score



Mannheim Single Center Lipedema Study
Results Improvement of SQOR-V Score

R = 0.99 correlation
SQOR-V vs Schmeller´s Score



Mannheim Results - reduced demand for conservative “decongestion” treatment after liposuction

	before	after	
General use of Physiotherapy	48.3%	33.3%	p<0.05
Physiotherapy sessions per week	1.9	1.0	p<0.05
compression therapy	66.1%	48.4%	n.s.

Conclusion

SQOR-V is a suitable tool to follow-up success of conservative and surgical treatment
in lipedema patients

Phlebology and Lymphology are the specialities to diagnose Lipedema and to provide conservative or surgical treatment.