


**Compression: Is there any evidence?
Superficial disease**



Bill Marston MD
George Johnson Jr Distinguished
Professor, Div of Vascular Surgery
University of N. Carolina

Disclosures

- Sonovascular Consultant
- Intervene Consultant and Research support


- Policy Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity
- SAPHENOUS VEINS Great or Small Saphenous Veins Treatment of the great or small saphenous veins by surgery, endovenous thermal ablation (radiofrequency or laser), microfoam sclerotherapy or cyanoacrylate adhesive may be considered **MEDICALLY NECESSARY** for symptomatic varicose veins/venous insufficiency when the following criteria have been met:

• A failure after the use of medical grade compression stockings (medical grade at least 20- 30mmHg pressure).¹

(1 – Expert opinion)

What is purpose of compression hose for CVI?

- Supports calf muscle pump
- Can reverse venous hypertension
- Effects reduce venous symptoms of aching, heaviness and edema worsening



1. Motykie GD, Caprini JA, Arceus J, et al. Evaluation of therapeutic compression stockings in the treatment of CVI. *Dermatol Surg*. 1999;25:116-20

2. Moffatt C. Variability of pressure provided by sustained compression. *Int Wound J*. 2008;5:259-65

Do compression hose provide relief for symptoms of CVI?

Cochrane review: Graduated compression stockings for the initial treatment of varicose veins in people without venous ulceration

- 13 studies identified with 1021 participants
 - The risk of bias of many included trials was unclear
 - Unable to pool studies as they did not report the same outcomes
 - Differences in the populations studied
 - The certainty of the evidence was therefore low to very low.

CONCLUSION

- Insufficient high-certainty evidence to determine whether or not compression stockings are effective as the sole and initial treatment of varicose veins

Cochrane Database Syst Rev
2021 Jul 16;7(7):CD008819

Study challenges in compression Rx

- Need for long-term treatment and evaluation
- Low rate of routine utilization
- Side effects are as bad as symptoms for those with less severe symptoms

Role of compression hose as treatment in comparison to VI based on type of CVI

- CEAP class 1 no role
- CEAP class 2 with pain resolution of pain
 - Try compression, if symptom improvement continue
- CEAP class 3 control of edema
 - Try compression, if edema control, continue

- If side effects, no improvement, consider other therapy
- NO EVIDENCE on time needed to assess benefit

Compression after saphenous ablation

PAPERS PRESENTED TO THE VASCULAR AND ENDOVASCULAR SURGERY SOCIETY – 26TH ANNUAL WINTER MEETING, JANUARY 2016 | VOLUME 38, P72-77, JANUARY 2017

Compression versus No Compression after Endovenous Ablation of the Great Saphenous Vein: A Randomized Controlled Trial

Diego Ayo • Sheila N. Blumberg • Caron R. Rockman • ... Lowell Kabnick • Thomas Maldonado • Todd Berland • Show all authors

- 85 limbs treated with GSV EVA
- Randomized to compression vs no compression for 7 days
 - 30-40 mm Hg thigh high
- Measured pain, QOL scores out to 3 months
- Identified closure rates and incidence of thrombotic events

Compression vs no compression after EVA: Results

- No difference between groups in pain or QOL scores
- 100% closure rate in both groups
- No thrombotic events

**Compression did not affect patient QOL or outcomes
Probably unnecessary after GSV ablation**

RESEARCH ARTICLE | VOLUME 46, ISSUE 5, P588-592, NOVEMBER 2013

[Download Full Issue](#)

Compression Stockings after Endovenous Laser Ablation of the Great Saphenous Vein: A Prospective Randomized Controlled Trial

N.A. Bakker • L.W. Schieven • R.M.G. Bruins • M. van den Berg • R.J. Hissink

Open Archive • Published: September 09, 2013 • DOI: <https://doi.org/10.1016/j.ejvs.2013.08.001>

- 69 patients with laser ablation of GSV
- Randomized to thigh high compression with 35 mm hg strength for 2 days vs 7 days

Eur J Vasc Endovasc Surg: 2013;46:588-92

- Outcomes measured at 7 days

	2 days compr	7 days compr
Pain score	3.7	2.0
QOL score	75	83

**Compression for > 2 days after EVLA leads to reduced pain and improved physical function at 1 week
No difference at 6 weeks**

Compression after sclerotherapy

Compression after sclerotherapy for telangiectasias and reticular leg veins: A randomized controlled study

Philippe Kern, MD,* Albert-Adrien Randozi, MD,* Robert Winschot, MD,* and Daniel Hayes, MD,* *Venous, Laser, and Sclerotic Intervention*

J Vasc Surg 2007;45:1212-16

- 100 patients randomized to compression vs no compression
- Thigh high 23-32 mm Hg
- **Increased vessel disappearance in compression group**
- **Micro thrombi less prevalent in compression group**

Compression after sclerotherapy for 1 day vs 7 days

CLINICAL RESEARCH STUDY | COMPRESSION THERAPY | VOLUME 9, ISSUE 2, P435-443, MARCH 2021 [Download Full Issue](#)

Clinical outcome of short-term compression after sclerotherapy for telangiectatic varicose veins

Andreas Bayer, MD • Nadine Kuznik, MD • Ewan Andrew Langan, MD • ... Mark Kaschwich, MD • Markus Kleemann • Birgit Kahle • [Show all authors](#)

Published: June 02, 2020 • DOI: <https://doi.org/10.1016/j.jvsv.2020.05.015> • [Check for updates](#)

No difference in pain, bruising or other clinical outcomes identified

From the American Venous Forum [Check for updates](#)

Compression following endovenous Treatment of Incompetent varicose veins by sclerotherapy (CONFETTI)

Amjad Belramman, MBBS, MSc,^{1,2} Roshan Bootun, BSc, MBBS, MRCS, PhD,^{3,4} Tristan R. A. Lane, MBBS, BSc, FRCS, PhD,^{4,5} and Alun H. Davies, MA, DM, FRCS,^{6,7} *London, United Kingdom; and Dermatology, Libya*

- 139 patients treated with UGFS for truncal tributaries, GSV, SSV
- Randomize to compression for 1 day or daily for up to 2 weeks
- 45% in comp group wore compression for >7 days
- Pain scores measured daily for 10 days significantly lower in CG
- **No difference in other outcome measures**

J Vasc Surg Venous Lymphat Disord 2024 Mar;12(2):101729.

SOCIETY FOR VASCULAR SURGERY® DOCUMENT

Compression therapy after invasive treatment of superficial veins of the lower extremities: Clinical practice guidelines of the American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology

[Check for updates](#)

Fedor Lurie, MD, PhD,^{1,2} Brajesh K. Lal, MD,³ Pier Luigi Antignani, MD,⁴ John Blebea, MD, MBA,⁵ Ruth Bush, MD, JD, MPH,⁶ Joseph Caprini, MD,⁷ Alun Davies, MD,⁸ Mark Forrestal, MD,⁹ Glenn Jacobowitz, MD,¹⁰ Evi Kalodiki, MD,¹¹ Lois Killewich, MD,¹² Joann Lohr, MD,¹³ Harry Ma, MD,¹⁴ Giovanni Mosti, MD,¹⁵ Hugo Partsch, MD,¹⁶ Thom Rooke, MD,¹⁷ and Thomas Wakefield, MD,¹⁸ *Toledo and Cincinnati, Ohio; Ann Arbor and Saginaw, Mich; Baltimore, Md; Rome and Lucca, Italy; Houston and Galveston, Tex; Chicago and Arlington Heights, Ill; London, United Kingdom; New York, NY; New London, Conn; Vienna, Austria; and Rochester, Minn*

SUMMARY

Guideline 1.1: Compression after thermal ablation or stripping of the saphenous veins.
When possible, we suggest compression (elastic stockings or wraps) should be used after surgical or thermal procedures to eliminate varicose veins. [GRADE - 2; LEVEL OF EVIDENCE - C]

Guideline 1.2: Dose of compression after thermal ablation or stripping of the varicose veins.
If compression dressings are to be used postprocedurally in patients undergoing ablation or surgical procedures on the saphenous veins, those providing pressures >20 mm Hg together with eccentric pads placed directly over the vein ablated or operated on provide the greatest reduction in postoperative pain. [GRADE - 2; LEVEL OF EVIDENCE - B]

Guideline 2.1: Duration of compression therapy after thermal ablation or stripping of the saphenous veins.
In the absence of convincing evidence, we recommend best clinical judgment to determine the duration of compression therapy after treatment. [BEST PRACTICE]

Guideline 3.1: Compression therapy after sclerotherapy.
We suggest compression therapy immediately after treatment of superficial veins with sclerotherapy to improve outcomes of sclerotherapy. [GRADE - 2; LEVEL OF EVIDENCE - C]

Guideline 3.2: Duration of compression therapy after sclerotherapy.
In the absence of convincing evidence, we recommend best clinical judgment to determine the duration of compression therapy after sclerotherapy. [BEST PRACTICE]