

EVIDENCE BASED STATEMENT

DOMAIN 3, Statement 9

TOPIC: **Superficial venous disease periprocedural graduated compression indication.**

SEARCH TERMS & SOURCES

((stockings) AND (graduated compression)) AND (venous) AND (procedure)

INCLUSION CRITERIA

- Lower limb only
- Reviews
- Publication < 10 years, only ENG

SEARCH RESULT BEFORE - AFTER SELECTION

32/8

PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. De Maeseneer MG, Kakkos SK, Aherne T, et al. European Society for Vascular Surgery (ESVS) 2022 Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs. *Eur J Vasc Endovasc Surg.* 2022 Feb;63(2):184-267.
2. Khatri A, Machin M, Vijay A, et al. A Review of Current and Future Antithrombotic Strategies in Surgical Patients-Leaving the Graduated Compression Stockings Behind? *J Clin Med.* 2021 Sep 22;10(19):4294.
3. Bootun R, Belramman A, Bolton-Saghaoui L, et al. Randomized Controlled Trial of Compression After Endovenous Thermal Ablation of Varicose Veins (COMETA Trial). *Ann Surg.* 2021 Feb 1;273(2):232-239.
4. Tan MKH, Salim S, Onida S, Davies AH. Postsclerotherapy compression: A systematic review. *J Vasc Surg Venous Lymphat Disord.* 2021 Jan;9(1):264-274.
5. Shalhoub J, Lawton R, Hudson J, et al. Graduated compression stockings as adjuvant to pharmaco-thromboprophylaxis in elective surgical patients (GAPS study): randomised controlled trial. *BMJ.* 2020 May 13;369:m1309.
6. Suna K., Herrmann E., Kröger K., et al. Graduated compression stockings in the prevention of postoperative pulmonary embolism. A propensity-matched retrospective case-control study of 24,273 patients. *Ann. Med. Surg.* 2020;56:203–210.
7. Lurie F, Lal BK, Antignani PL, et al. 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. *J Vasc Surg Venous Lymphat Disord.* 2019 Jan;7(1):17-28

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IDENTIFIED REFERENCES

1. Machin M, Younan HC, Smith S, et al. Systematic review on the benefit of graduated compression stockings in the prevention of venous thromboembolism in low-risk surgical patients. *Phlebology*. 2021 Apr;36(3):184-193.
2. Sachdeva A, Dalton M, Lees T. Graduated compression stockings for prevention of deep vein thrombosis. *Cochrane Database Syst Rev*. 2018 Nov 3;11(11):CD001484.
3. Venclauskas L, Maleckas A, Arcelus JI; ESA VTE Guidelines Task Force. European guidelines on perioperative venous thromboembolism prophylaxis: Surgery in the obese patient. *Eur J Anaesthesiol*. 2018 Feb;35(2):147-153.
4. Wade R, Paton F, Woolacott N. Systematic review of patient preference and adherence to the correct use of graduated compression stockings to prevent deep vein thrombosis in surgical patients. *J Adv Nurs*. 2017 Feb;73(2):336-348.
5. de Carvalho MR, de Andrade IS, de Abreu AM, et al. All about compression: A literature review. *J Vasc Nurs*. 2016 Jun;34(2):47-53.
6. Mandavia R, Shalhoub J, Head K, Davies AH. The additional benefit of graduated compression stockings to pharmacologic thromboprophylaxis in the prevention of venous thromboembolism in surgical inpatients. *J Vasc Surg Venous Lymphat Disord*. 2015 Oct;3(4):447-455.e1.
7. Wade R, Sideris E, Paton F, et al. Graduated compression stockings for the prevention of deep-vein thrombosis in postoperative surgical patients: a systematic review and economic model with a value of information analysis. *Health Technol Assess*. 2015 Nov;19(98):1-220.
8. Sachdeva A, Dalton M, Amaragiri SV, et al. Graduated compression stockings for prevention of deep vein thrombosis. *Cochrane Database Syst Rev*. 2014 Dec 17;(12):CD001484.

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TEXT FOR INCLUSION IN THE DOCUMENT

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TOPIC: “**Superficial venous disease periprocedural graduated compression indication.**”

Graduated compression use after lower limb veins procedures is generally considered a fundamental practice. Yet, literature and related guidelines recommendations have shown a tendency toward heterogeneity and uncertainty regarding the real benefit brought by the same compression in this context. In 2019 a joint societies document focused on the use of compression as best practice, leaving to the physicians the individual case benefit evaluation. This document delivered a 2C recommendation for compression use after surgical or endothermal saphenous ablation.

[Lurie F, Lal BK, Antignani PL, Blebea J, Bush R, Caprini J, Davies A, Forrestal M, Jacobowitz G, Kalodiki E, Killewich L, Lohr J, Ma H, Mosti G, Partsch H, Rooke T, Wakefield T. 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. J Vasc Surg Venous Lymphat Disord. 2019 Jan;7(1):17-28]

Interestingly, a couple of years later, another group gave a IA indication to compression after stripping and/or extensive phlebectomies and just stated that compression “should be considered” following sclerotherapy or thermal saphenous ablation.

[De Maeseneer MG, Kakkos SK, Aherne T, et al. European Society for Vascular Surgery (ESVS) 2022 Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs. Eur J Vasc Endovasc Surg. 2022 Feb;63(2):184-267].

Up to our knowledge, the literature assessing the eventual benefit of compression after a procedure has not yet produced a significant amount of data coming from clinically and hemodynamically and demographically homogeneous populations, undergoing always comparable procedures, therefore a proper meta-analysis is not yet feasible.

***[Khatri A, Machin M, Vijay A, Salim S, Shalhoub J, Davies AH. A Review of Current and Future Antithrombotic Strategies in Surgical Patients-Leaving the Graduated Compression Stockings Behind? J Clin Med. 2021 Sep 22;10(19):4294].**

Moreover, it should be noted that compression aim is not just thromboprophylaxis, therefore also its impact on recovery time, quality of life, edema and hematoma control should be taken into consideration, together with several other aspects, among which the cost-effectiveness.

[Bootun R, Belramman A, Bolton-Saghdaoui L, et al. Randomized Controlled Trial of Compression After Endovenous Thermal Ablation of Varicose Veins (COMETA Trial). Ann Surg. 2021 Feb 1;273(2):232-239].

Expert physicians should always assess the single case benefit and the related risk/benefit ratio, knowing that compression demonstrated its high safety profile, as long as prescribed by expert professionals.

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STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

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Right after a venous procedure certified graduated compression stockings can be beneficial, as long as prescribed by an expert health professional.

SELECTED REFERENCES

1. Lurie F, Lal BK, Antignani PL, et al. 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. *J Vasc Surg Venous Lymphat Disord.* 2019 Jan;7(1):17-28.
2. De Maeseneer MG, Kakkos SK, Aherne T, et al. European Society for Vascular Surgery (ESVS) 2022 Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs. *Eur J Vasc Endovasc Surg.* 2022 Feb;63(2):184-267
3. *Khatri A, Machin M, Vijay A, Salim S, Shalhoub J, Davies AH. A Review of Current and Future Antithrombotic Strategies in Surgical Patients- Leaving the Graduated Compression Stockings Behind? *J Clin Med.* 2021 Sep 22;10(19):4294
4. Bootun R, Belramman A, Bolton-Saghdaoui L, et al. Randomized Controlled Trial of Compression After Endovenous Thermal Ablation of Varicose Veins (COMETA Trial). *Ann Surg.* 2021 Feb 1;273(2):232-239

IDENTIFIED LITERATURE BIAS

Lack of homogenous data collection in terms of outcome measures, procedure type and intensity (for example segmental vs extensive ablation)

SUGGESTED NEXT LINES OF RESEARCH

Multicenter randomized comparative trials, assessing objective clinical and patient reported outcomes after a vein procedure with/without compression