

EVIDENCE BASED STATEMENT

DOMAIN **09**, Statement **04**
TOPIC: “Compression in healthy subjects”

SEARCH TERMS & SOURCES

(graduated compression) AND (healthy)

INCLUSION CRITERIA

- Lower limb only
- Systematic Reviews, Meta-Analysis, Reviews, RCI
- Publication < 10 years, only ENG

SEARCH RESULT BEFORE - AFTER SELECTION

7/2

PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. Saliba-Júnior OA, Rollo HA, Saliba O, Sobreira ML. Positive perception and efficacy of compression stockings for prevention of lower limb edema in pregnant women. *J Vasc Bras*. 2022;21:e20210101. Published 2022 Jan 31. doi:10.1590/1677-5449.210101
2. Ganesini S, Raffetto JD, Mosti G, et al. Volume control of the lower limb with graduated compression during different muscle pump activation conditions and the relation to limb circumference variation. *J Vasc Surg Venous Lymphat Disord*. 2020 Sep;8(5):814-820
3. Olsen JHH, Öberg S, Rosenberg J. The effect of compression stocking on leg edema and discomfort during a 3-hour flight: A randomized controlled trial. *Eur J Intern Med*. 2019 Apr;62:54
4. Rabe E, Partsch H, Hafner J, et al. Indications for medical compression stockings in venous and lymphatic disorders: An evidence-based consensus statement. *Phlebology*. 2018 Apr;33(3):163-184.
5. Horiuchi M, Takiguchi C, Kirihara Y, Horiuchi Y. Impact of Wearing Graduated Compression Stockings on Psychological and Physiological Responses during Prolonged Sitting. *Int J Environ Res Public Health*. 2018;15(8):1710.
6. Ganesini S, Tessari M, Menegatti E, Spath P, Vannini ME, Occhionorelli S, Zamboni P. Comparison between the effects of 18- and 23-mmHg elastic stockings on leg volume and fatigue in golfers. *Int Angiol*. 2017 Apr;36(2):129-135.
7. Flore R, Gerardino L, Santoliquido A, et al. Reduction of oxidative stress by compression stockings in standing workers. *Occup Med (Lond)*. 2007 Aug;57(5):337-41.

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Domain 9; Statement 4

IDENTIFIED REFERENCES

1. Négyesi J, Hortobágyi T, Hill J, et al. Can Compression Garments Reduce the Deleterious Effects of Physical Exercise on Muscle Strength? A Systematic Review and Meta-Analyses. *Sports Med.* 2022 Apr 27.
2. Mota GR, Simim MAM, Dos Santos IA, et al. Effects of Wearing Compression Stockings on Exercise Performance and Associated Indicators: A Systematic Review. *Open Access J Sports Med.* 2020 Jan 22;11:29-42.

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TEXT FOR INCLUSION IN THE DOCUMENT

DOMAIN 09, Statement 04, TOPIC: “Compression in healthy subjects”

Healthy subjects at risk of developing swelling are candidate to graduated compression stockings use. Long standing up workers, pregnant women, long haul travelers are examples of this category.

[Rabe E, Partsch H, Hafner J, et al. Indications for medical compression stockings in venous and lymphatic disorders: An evidence-based consensus statement. *Phlebology*. 2018 Apr;33(3):163-184].

An investigation on healthy subjects during 3 hours sitting time demonstrated graduated compression stockings benefit for subjective comfort and increased parasympathetic nerve activity.

[Horiuchi M, Takiguchi C, Kirihaara Y, et al. Impact of Wearing Graduated Compression Stockings on Psychological and Physiological Responses during Prolonged Sitting. *Int J Environ Res Public Health*. 2018;15(8):1710].

Healthy healthcare workers were assessed while standing, sitting and walking in a standardized way for 30 minutes, reporting a benefit in graduated compression use for edema control.

[Gianesini S, Raffetto JD, Mosti G, et al. Volume control of the lower limb with graduated compression during different muscle pump activation conditions and the relation to limb circumference variation. *J Vasc Surg Venous Lymphat Disord*. 2020 Sep;8(5):814-820]

This finding is in line with the reported oxidative stress reduction in standing up workers wearing compression.

[Flore R, Gerardino L, Santoliquido A, et al. Reduction of oxidative stress by compression stockings in standing workers. *Occup Med (Lond)*. 2007 Aug;57(5):337-41].

Moreover, intermittent walking wearing compression demonstrated to be associated with edema control and perceived exertion reduction in case of graduated compression stocking use.

[Gianesini S, Tessari M, Menegatti E, et al. Comparison between the effects of 18- and 23-mmHg elastic stockings on leg volume and fatigue in golfers. *Int Angiol*. 2017 Apr;36(2):129-135].

Healthy travelers wearing graduated compression showed edema control, without significant differences in pain and discomfort.

[Olsen JHH, Öberg S, Rosenberg J. The effect of compression stocking on leg edema and discomfort during a 3-hour flight: A randomized controlled trial. *Eur J Intern Med*. 2019 Apr;62:54]

A recent randomized comparative trial demonstrated how appropriate compression can be beneficial in edema control and subjective perception during pregnancy.

[Saliba-Júnior OA, Rollo HA, Saliba O, Sobreira ML. Positive perception and efficacy of compression stockings for prevention of lower limb edema in pregnant women. *J Vasc Bras*. 2022;21:e20210101].

[More homogeneous data collections are needed on the topic, particularly regarding the standardization of the physical activity in which the stocking use is measured, always reporting the real interface pressure measurement].

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STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

DOMAIN 09, Statement 04

“Specific certified compression stockings demonstrated to be useful for swelling and subjective comfort control also in healthy subjects subjected to more than 30 minutes standing up or sitting conditions and to pregnancy”

SELECTED REFERENCES

1. Rabe E, Partsch H, Hafner J, et al. Indications for medical compression stockings in venous and lymphatic disorders: An evidence-based consensus statement. *Phlebology*. 2018 Apr;33(3):163-184
2. Horiuchi M, Takiguchi C, Kirihaara Y, et al. Impact of Wearing Graduated Compression Stockings on Psychological and Physiological Responses during Prolonged Sitting. *Int J Environ Res Public Health*. 2018;15(8):1710
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5. Giancesini S, Tessari M, Menegatti E, et al. Comparison between the effects of 18- and 23-mmHg elastic stockings on leg volume and fatigue in golfers. *Int Angiol*. 2017 Apr;36(2):129-135
6. Olsen JHH, Öberg S, Rosenberg J. The effect of compression stocking on leg edema and discomfort during a 3-hour flight: A randomized controlled trial. *Eur J Intern Med*. 2019 Apr;62:54
7. Saliba-Júnior OA, Rollo HA, Saliba O, Sobreira ML. Positive perception and efficacy of compression stockings for prevention of lower limb edema in pregnant women. *J Vasc Bras*. 2022;21:e20210101
8. More homogeneous data collections are needed on the topic, particularly regarding the standardization of the physical activity in which the stocking use is measured, always reporting the real interface pressure measurement

identified LITERATURE BIAS

Heterogeneous data collection in standardized muscle mass activation

SUGGESTED NEXT LINES OF RESEARCH

Different compression regimens effect on homogeneous healthy subjects study populations