

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Compression Therapy for Extremity Wounds: Guidelines

Service Line:	Rapid Response Service
Version:	1.0
Publication Date:	April 22, 2020
Report Length:	11 Pages

Authors: Diksha Kumar, Alison Adams

Cite As: *Compression Therapy for Extremity Wounds: Guidelines*. Ottawa: CADTH; 2020 Apr. (CADTH rapid response report: summary of abstracts).

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Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

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Research Questions

1. What are the evidence-based guidelines regarding the use of compression therapy for patients with or at risk of extremity wounds?
2. What are the evidence-based guidelines for the management or assessment of compression therapy for patients with or at risk of extremity wounds?

Key Findings

Sixteen evidence-based guidelines were identified regarding the use, management, and assessment of compression therapy for patients with or at risk of extremity wounds.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were compression therapy and people with or at risk of extremity wounds. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2015 and March 31, 2020. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Patients with or at risk of upper or lower body extremity wounds (e.g., venous leg ulcers, arterial leg ulcers, diabetic foot ulcers) Exclude: pressure injuries or ulcers
Intervention	Compression therapy (e.g., intermittent pneumatic, stockings, multi-layer bandages, two-layer short stretch bandages, Unna boots, etc.)
Comparator	Not applicable

Outcomes	Q1: Recommendations regarding the use of compression therapy for those with or at risk of lower body extremity wounds Q2: Recommendations regarding assessment of compression therapy (e.g., prior to use of compression therapy) for patients
Study Designs	Health technology assessments, systematic reviews, and evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports with recommendations and systematic reviews of guidelines are presented first. These are followed by evidence-based guidelines.

Sixteen evidence-based guidelines¹⁻¹⁶ were identified regarding the use, management, and assessment of compression therapy for patients with or at risk of extremity wounds. No relevant health technology assessments or systematic reviews were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

Sixteen evidence-based guidelines¹⁻¹⁶ were identified regarding the use, management, and assessment of compression therapy for patients with or at risk of extremity wounds. A summary of the relevant recommendations is presented in Table 2.

Table 2: Summary of Relevant Recommendations

Summary of Recommendations
National Institute for Health and Care Excellence, 2020 ¹
<ul style="list-style-type: none"> Elastic graduated compression stockings are not recommended for the prevention of post-thrombotic syndrome or VTE recurrence following deep vein thrombosis
Rabe, 2020 ²
<ul style="list-style-type: none"> Medical compression stockings are not recommended for patients with severe peripheral arterial occlusive disease
Anderson, 2019 ³
<ul style="list-style-type: none"> Patients undergoing major surgery are recommended to undergo mechanical prophylaxis, with pneumatic compression prophylaxis preferred over graduated compression stockings
Lurie, 2019 ⁴
<ul style="list-style-type: none"> Compression therapy is recommended for patients with a venous leg ulcer For patients with a venous leg ulcer and underlying arterial disease, compression therapy should be limited to patients with an ankle-brachial index greater than 0.5 or an absolute ankle pressure greater than or equal to 60 mm Hg
National Institute for Health and Care Excellence. 2018 ⁵
<ul style="list-style-type: none"> Anti-embolism stockings are not recommended for various patient groups for the prevention of VTE (<i>see Section 1.3.1</i>)

Summary of Recommendations
Rabe, 2018 ⁶
<ul style="list-style-type: none"> Medical compression stockings are recommended to reduce the recurrence of venous leg ulcers and for the treatment of symptomatic post-thrombotic syndrome
Schunemann, 2018 ⁷
<ul style="list-style-type: none"> Pneumatic compression devices or graduated compression stockings are suggested for VTE prophylaxis in acutely or critically ill medical patients
Mahajerin, 2017 ⁸
<ul style="list-style-type: none"> In pediatric patients hospitalized for trauma, mechanical prophylaxis is recommended for children older than 15 years and in younger post-pubertal children with an Injury Severity Score greater than 25
Dennis, 2016 ⁹
<ul style="list-style-type: none"> IPC is recommended for VTE prophylaxis in immobile patients with acute ischemic stroke Graduated compression stockings are not recommended for VTE prophylaxis in immobile patients with acute ischemic stroke
Ito, 2016 ¹⁰
<ul style="list-style-type: none"> Compression therapy is recommended for the treatment of lower leg ulcers due to primary or secondary varices
Kearon, 2016 ¹¹
<ul style="list-style-type: none"> Compression stockings are not recommended for the prevention of post-thrombotic syndrome in patients with acute deep vein thrombosis of the leg
Pannucci, 2016 ¹²
Specific recommendations not available in abstract.
Stucker, 2016 ¹³
<ul style="list-style-type: none"> Compression therapy is recommended for the prevention and treatment of ulcers in patients with chronic venous insufficiency
Association for the Advancement of Wound Care, 2015 ¹⁴
<ul style="list-style-type: none"> Compression bandages or stockings should not be used for the treatment of venous leg ulcers in patients with underlying arterial disease and an ankle-brachial index greater than 0.5 Multilayer compression bandages are recommended over single layer compression for the treatment of venous ulcers Elastic compression bandages are recommended over inelastic compression for the treatment of venous ulcers Two-layer stocking compression may be considered in lieu of four-layer compression bandages or two-layer short stretch
Liu, 2015 ¹⁵
<ul style="list-style-type: none"> In patients with iliofemoral deep vein thrombosis, below-knee elastic compression stockings are recommended for a minimum of two years alongside anticoagulant therapy Class II compression stockings may be considered for patients with prior iliofemoral deep vein thrombosis and symptomatic post-thrombotic syndrome IPC devices may be considered for patients with prior iliofemoral deep vein thrombosis and symptomatic post-thrombotic syndrome

Summary of Recommendations

Wittens, 2015¹⁶

- Elastic stockings are recommended for the treatment of chronic venous disease, especially for patients who are not managed by invasive methods
- Temporary use of elastic stockings may be considered for patients with chronic venous disease awaiting further investigation
- Compression bandages are recommended for the treatment of venous leg ulcers, with compression pressures of at least 40 mmHg at the ankle level
- IPC is recommended for the treatment of chronic venous disease if standard methods, such as compression stockings, are not indicated or have failed

IPC = intermittent pneumatic compression; VTE = venous thromboembolism

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-Analyses

No literature identified.

Guidelines and Recommendations

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Appendix — Further Information

Previous CADTH Reports

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