Perioperative Use of Compression or Pneumatic Stockings: Clinical Evidence and Guidelines
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**Acknowledgments:**

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**About CADTH:** CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the clinical evidence regarding length of surgery and compression device usage for the application of compression or pneumatic stockings in the prevention of post-operative deep vein thrombosis?

2. What is the clinical evidence on perioperative use of compression or pneumatic stockings to prevent deep vein thrombosis following surgery?

3. What are the evidence-based guidelines regarding the perioperative use of compression or pneumatic stockings?

Key Findings

Eleven systematic reviews, five randomized controlled trials, and six non-randomized studies were identified regarding the perioperative use of compression or pneumatic stockings. Additionally, five evidence-based guidelines were identified.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 and September 5, 2017. 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

<table>
<thead>
<tr>
<th>Population</th>
<th>Intervention</th>
<th>Comparator</th>
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<tr>
<td>Patients undergoing surgery</td>
<td>Perioperative (pre-operative, intra-operative, and post-operative) use of compression or pneumatic stockings</td>
<td>Q1-2: Other types of compression, no prophylaxis</td>
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</tbody>
</table>
### Outcomes

| Q1 | Length of surgery and compression device usage |
| Q2 | Impact on the incidence of postoperative deep vein thrombosis |
| Q3 | Guidelines regarding perioperative compression device usage for the prevention of deep vein thrombosis; guidelines on the length of surgery and compression device usage |

### Study Designs

Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines

### Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Eleven systematic reviews, five randomized controlled trials, and six non-randomized studies were identified regarding the perioperative use of compression or pneumatic stockings. Additionally, five evidence-based guidelines were identified. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.

### Health Technology Assessments

No literature identified.

### Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies


PubMed: PM25837574

PubMed: PM25224874

PubMed: PM26992760

Guidelines and Recommendations

PubMed: PM27155443


Appendix — Further Information

Previous CADTH Reports


Systematic Reviews

No Outcome Information in Abstract


Unclear Population


Non Randomized Studies – Unclear Population


Clinical Practice Guidelines – Uncertain Methodology


Review Articles


