**Prevention of Venous thromboembolism in patients admitted to Australian hospitals – NHMRC Guideline summary**


<table>
<thead>
<tr>
<th>Type of surgery</th>
<th>Thromboprophylaxis for admitted surgical patients</th>
<th>Thromboprophylaxis for admitted medical patients</th>
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<tr>
<td><strong>Anaesthesia</strong></td>
<td>Consider neuraxial block as an alternative to general anaesthesia if feasible. If neuraxial block is used, there is a risk of developing epidural haematomas (A). To minimise the risk of epidural haematomas associated with neuraxial block, timing of pharmacological thromboprophylaxis should be carefully planned and discussed in advance with the anaesthetist (GPP).</td>
<td>Consider LMWH based on degree of immobility and risk of bleeding (B). If LMWH is contraindicated or not available, use UFH (B).</td>
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</table>
| **Toscal Hip replacement** | Use either: 
- LMWH (A) or 
- Fondaparinux (B) or 
- Rivaroxaban (B) or 
- Dalteparin etexilate (B) For up to 35 days. Use GCS or IPC or foot pump (B); whether or not pharmacological prophylaxis is used. 
- Pharmacological prophylaxis is contraindicated, use GCS and foot pump (B); use until fully mobile. | Do not use any pharmacological prophylaxis due to the risk of intranarial bleeding (GPP). |
| **Hip fracture surgery** | Use either: 
- Fondaparinux (B) or 
- LMWH (B); if using LMWH, consider adding low dose aspirin (B) For up to 35 days. Use foot pump or IPC (C); whether or not pharmacological prophylaxis is used. 
- Pharmacological prophylaxis is contraindicated, use foot pump or IPC (C); use until fully mobile. | No recommendation. |
| **Total knee replacement** | Use either: 
- LMWH (A) or 
- Fondaparinux (B) or 
- Rivaroxaban (B) or 
- Dalteparin etexilate (B) For up to 14 days. Use foot pump or IPC (C); whether or not pharmacological prophylaxis is used. 
- Use GCS or IPC if pharmacological prophylaxis is used (B); use until fully mobile. | Consider using LMWH or UFH, based on assessment of patient's risk of VTE and bleeding (B). |
| **Knee arthroscopy** | Thromboprophylaxis is not recommended unless the patient has additional VTE risk factors (see step 2, page 1. C). Use either: 
- LMWH (A) or 
- Fondaparinux (B) or 
- Rivaroxaban (B) or 
- Dalteparin etexilate (B) For the entire period of immobilisation. Use GCS or UFH if pharmacological prophylaxis is used (C); use until fully mobile. | No recommendation. |
| **Lower leg fractures/injuries with immobilization in a brace or plaster cast** | Use either: 
- LMWH (A) or 
- Fondaparinux (B) or 
- Rivaroxaban (B) or 
- Dalteparin etexilate (B) For up to one week or until fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Consider using LMWH or UFH if pharmacological prophylaxis is contraindicated (GPP). |
| **General surgery** | Use either: 
- LMWH (B) or 
- UFH (B) For up to one week or fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Use UFH (C); only when full anticoagulation is not in use. |
| **Urological surgery** | Consider thromboprophylaxis based on assessment of the patient's risk of VTE and of bleeding (GPP). Use either: 
- LMWH (B) or 
- UFH (B) For up to one week or fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Consider using UFH, LMWH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Gynaecological surgery** | Use either: 
- LMWH (A) or 
- Fondaparinux (B) or 
- UFH (B) For up to one week or fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Abdominal surgery** | Use LMWH (B) For 3–5 days. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Cardiac, thoracic and vascular surgery** | Use either: 
- LMWH (B) or 
- UFH (B) For up to one week or fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Neurosurgery** | Due to high risk of bleeding, use thromboprophylaxis with extreme caution (GPP). Use either: 
- LMWH (B) or 
- UFH (B) For up to one week or fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Trauma and spinal surgery** | Use LMWH, starting 5 days after admission (C). Do not start thromboprophylaxis until primary haemostasis has been established (GPP). Use LMWH or UFH, in particular, consider risk of bleeding (GPP). Use either: 
- LMWH (B) or 
- UFH (B) For up to one week or fully mobile. Use GCS, whether or not pharmacological prophylaxis is used (B); use until fully mobile. | For patients with in-patient spinal surgery or for patients with a VTE after major abdominal or pelvic surgery for cancer, use LMWH (A). Use UFH if LMWH is contraindicated (GPP). |
| **Cancer patients having general, abdominal, pelvic or neurosurgery** | In addition to pharmacological prophylaxis, use foot pump for trauma surgery patients, from admission (C). Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Head and neck cancer patients having head and neck surgery** | In addition to pharmacological prophylaxis, use foot pump for trauma surgery patients, from admission (C). Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |
| **Caesarean section** | In addition to pharmacological prophylaxis, use foot pump for trauma surgery patients, from admission (C). Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). | Use UFH, LMWH or UFH with additional VTE risk factors (see step 2, page 1), or LMWH or adjusted dose warfarin for six weeks post spinal catheter delivery (GPP). |

**NHMRC grading of recommendations**

A Body of evidence can be trusted to guide practice
B Body of evidence can be trusted to guide practice in most situations
C Body of evidence provides some support for recommendation(s) but care should be taken in its application
D Body of evidence is weak and recommendation must be applied with caution
GPP Good practice point – consensus-based recommendations

**Key**

LMWH Low molecular weight heparin
UFH Unfractionated heparin
GCS Graduated compression stockings
IPC Intermittent pneumatic compression

This summary is based on the National Health and Medical Research Council’s Clinical Practice Guideline for the Prevention of Venous Thromboembolism in Patients Admitted to Australian Hospitals. This summary and the guideline on which it is based are available for download from www.nhmrc.gov.au

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