




DVT prophylaxis

- ## Two main guidelines
- AAOS 2007 
 - ACCP 2008 



American Academy of Orthopaedic Surgeons
Clinical Guideline
on
Prevention of Pulmonary Embolism in Patients Undergoing Total Hip or Knee Arthroplasty

Adopted by the American Academy of Orthopaedic Surgeons
 Board of Directors
 May 2007

- ## AAOS guidelines
- Strictly for symptomatic PE
 - Do not address DVT
 - 4 個有evidence based的建議
 - 10個專家意見

AAOS Guideline

Elevated Risk of PE	Elevated Risk of Major Bleeding
previous history of cancer	recent hemorrhagic stroke
thromboembolism	known coagulation factor deficiency
hypercoagulable status	recent history of gastrointestinal bleeding
spinal cord injury	history of uncontrolled bleeding
multi-trauma	
previous documented PE	

- ## AAOS recommendations 3.3.1
- **Standard risk PE/DVT + Standard risk Major bleeding**
 - Aspirin
 - LMWH
 - Synthetic pentasaccharide
 - Warfarin
 - Level IIIB

AAOS recommendations 3.3.2

- Elevated risk PE/DVT + Standard risk Major bleeding
 - LMWH
 - Synthetic pentasaccharide
 - Warfarin
- Level IIIB

AAOS recommendations 3.3.3

- Standard risk PE/DVT + Elevated risk Major bleeding
 - Aspirin
 - Warfarin
 - None
- Level IIIC

AAOS recommendations 3.3.4

- Elevated risk PE/DVT + Elevated risk Major bleeding
 - Aspirin
 - Warfarin
 - None
- Level IIIC

10 recommendations 專家意見

- **Recommendation 1.1:** All patients should be assessed pre-operatively for elevated risk (greater than standard risk) of pulmonary embolism. (Level III, Grade B)
- **Recommendation 1.2:** All patients should be assessed pre-operatively for elevated risk (greater than standard risk) of major bleeding. (Level III, Grade C)
- **Recommendation 1.3:** Patients with known contraindications to anticoagulation should be considered for vena cava filter replacement. (Level V, Grade C)
- **Recommendation 2.1:** Patients should be considered for intra-operative and/or immediate postoperative mechanical prophylaxis. (Level III, Grade B)
- **Recommendation 2.2:** In consultation with the anesthesiologist, patients should be considered for regional anesthesia. (Level IV, Grade C)

10 recommendations 專家意見

- **Recommendation 3.1:** Post-operatively, patients should be considered for continued mechanical prophylaxis until discharge to home. (Level IV, Grade C)
- **Recommendation 3.2:** Post-operatively, patients should be mobilized as soon as feasible to the full extent of medical safety and comfort. (Level V, Grade C)
- **Recommendation 3.4:** Routine screening for DVT or PE post-operatively in asymptomatic patients is not recommended. (Level III, Grade B)
- **Recommendation 4.1:** Patients should be encouraged to progressively increase mobility after discharge to home. (Level V, Grade C)
- **Recommendation 4.2:** Patients should be educated about the common symptoms of deep venous thrombosis and pulmonary embolism. (Level V, Grade B)

8th ACCP guidelines: no mention of bleeding issue or bleeding related complications

- LMWH, Warfarin (INR 2-3), fondaparinux
- Prevention **Up to 35 days** for THR, hip fx
- Against usage of LDUH, aspirin, dextran, venous foot pumps as prophylaxis

ACCP prophylaxis guidelines for Hip or Knee replacement

	Guidelines	Duration
Hip	<p>Recommended: (all grade 1A) LMWH, Xa inhibitor (fondaparinux), Vitamin K antagonist (at INR 2-3)</p> <p>Not Recommended: aspirin, dextran, LDUH,</p>	<p>At least 10 days As long as 35 days for THR</p>
Knee	<p>Recommended: LMWH (at high-risk dose), Vitamin K antagonist (at INR 2-3), fondaparinux (grade 1A), Optimal use of IPC may be used as an alternative to anticoagulation (grade 1B)</p> <p>Not Recommended: low-dose UFH, venous foot pump only</p>	<p>At least 10 days</p>

Differences



- Minor role for LMWH
 - Major role for aspirin and mechanical methods
 - **Warfarin: low INR goal: < or = 2.0**
 - Evidence: level III, IV, V, Grade B-C
- Major role for LMWH
 - Minor role for aspirin
 - **Warfarin: high INR goal: 2.5-3.0 (1A)**
 - Against low-intensity warfarin
 - Evidence: level I, Grades A, B, C