

**Antithrombotic Therapy and Prevention of Thrombosis,
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Evidence-Based Clinical Practice Guidelines CHEST 2012; 141(2)(Suppl):7S–47S**

Reference(s) to use of Mechanical Thromboprophylaxis/Intermittent Pneumatic Compression (IPC)

ACCP Standard	Patient Category	Recommended Protocol
Standard for Acute, Critical & Chronic Patients		
9.3 Treatment of Anticoagulant-Related Bleeding	Acutely Ill - Hospitalized Medical Patients	2.7.2. For acutely ill hospitalized medical patients at increased risk of thrombosis who are bleeding or at high risk for major bleeding, we suggest the optimal use of mechanical thromboprophylaxis with graduated compression stockings (GCS) (Grade 2C) or intermittent pneumatic compression (IPC) (Grade 2C) , rather than no mechanical thromboprophylaxis. When bleeding risk decreases, and if VTE risk persists, we suggest that pharmacologic thromboprophylaxis be substituted for mechanical thromboprophylaxis (Grade 2B) .
3.0 Critically Ill Patients	Critically Ill - Hospitalized Medical Patients	3.4.4. For critically ill patients who are bleeding, or are at high risk for major bleeding, we suggest mechanical thromboprophylaxis with GCS (Grade 2C) or IPC (Grade 2C) until the bleeding risk decreases, rather than no mechanical thromboprophylaxis. When bleeding risk decreases, we suggest that pharmacologic thromboprophylaxis be substituted for mechanical thromboprophylaxis (Grade 2C).
Nursing Home Patients		
5.0 Chronically Immobilized Patients	Chronically Ill Patients in a Nursing Home	5.1. In chronically immobilized persons residing at home or at a nursing home, we suggest against the routine use of thromboprophylaxis (Grade 2C).
Travelling Patients		
6.0 Persons Traveling Long-Distance	Patients who travel	6.1.2. For long-distance travelers at increased risk of VTE (including previous VTE, recent surgery or trauma, active malignancy, pregnancy, estrogen use, advanced age, limited mobility, severe obesity, or known thrombophilic disorder), we suggest use of properly fitted, below knee GCS providing 15 to 30 mm Hg of pressure at the ankle during travel (Grade 2C) . For all other long-distance travelers, we suggest against the use of GCS (Grade 2C).
Abdominal & Pelvic Patients		
3.6 Patients Undergoing General, GI, Urological, Gynecologic, Bariatric, Vascular, Plastic, or Reconstructive Surgery	Abdominal/Pelvic Patients	3.6.2. For general and abdominal-pelvic surgery patients at low risk for VTE (< 1.5%; Rogers score, 7-10; Caprini score, 1-2), we suggest mechanical prophylaxis, preferably with intermittent pneumatic compression (IPC), over no prophylaxis (Grade 2C) .
	Abdominal/Pelvic Patients	3.6.3. For general and abdominal-pelvic surgery patients at moderate risk for VTE (3.0%; Rogers score 10; Caprini score, 3-4) who are not at high risk for major bleeding complications, we suggest LMWH (Grade 2B), LDUH (Grade 2B) , or mechanical prophylaxis, preferably with IPC (Grade 2C) , over no prophylaxis.
	Abdominal/Pelvic	3.6.4. For general and abdominal-pelvic surgery patients at moderate risk for VTE (3.0%;

	Patients	Rogers score, . 10; Caprini score, 3-4) who are at high risk for major bleeding complications or those in whom the consequences of bleeding are thought to be particularly severe, we suggest mechanical prophylaxis, preferably with IPC , over no prophylaxis (Grade 2C) .
	Abdominal/Pelvic Patients	3.6.5. For general and abdominal-pelvic surgery patients at high risk for VTE (. 6.0%; Caprini score, 5) who are not at high risk for major bleeding complications, we recommend pharmacologic prophylaxis with LMWH (Grade 1B) or LDUH (Grade 1B) over no prophylaxis. We suggest that mechanical prophylaxis with elastic stockings or IPC should be added to pharmacologic prophylaxis (Grade 2C) .
	Abdominal/Pelvic Patients	3.6.7. For high-VTE-risk general and abdominal-pelvic surgery patients who are at high risk for major bleeding complications or those in whom the consequences of bleeding are thought to be particularly severe, we suggest use of mechanical prophylaxis, preferably with IPC , over no prophylaxis until the risk of bleeding diminishes and pharmacologic prophylaxis may be initiated
	Abdominal/Pelvic Patients	3.6.8. For general and abdominal-pelvic surgery patients at high risk for VTE (6%; Caprini score 5) in whom both LMWH and unfractionated heparin are contraindicated or unavailable and who are not at high risk for major bleeding complications, we suggest low-dose aspirin (Grade 2C) , fondaparinux (Grade 2C) , or mechanical prophylaxis, preferably with IPC (Grade 2C) , over no prophylaxis.
Cardiac, Thoracic & Craniotomy Patients		
4.0 Patients Undergoing Cardiac Surgery	Cardiac Surgical Patients	4.4.1. For cardiac surgery patients with an uncomplicated postoperative course, we suggest use of mechanical prophylaxis, preferably with optimally applied IPC , over either no prophylaxis (Grade 2C) or pharmacologic prophylaxis (Grade 2C) .
5.0 Patients Undergoing Thoracic Surgery	Thoracic Surgical Patients	5.4.1. For thoracic surgery patients at moderate risk for VTE who are not at high risk for perioperative bleeding, we suggest LDUH (Grade 2B), LMWH (Grade 2B) , or mechanical prophylaxis with optimally applied IPC (Grade 2C) over no prophylaxis.
	Thoracic Surgical Patients	5.4.2. For thoracic surgery patients at high risk for VTE who are not at high risk for perioperative bleeding, we suggest LDUH (Grade 1B) or LMWH (Grade 1B) over no prophylaxis. In addition, we suggest that mechanical prophylaxis with elastic stockings or IPC should be added
	Thoracic Surgical Patients	5.4.3. For thoracic surgery patients who are at high risk for major bleeding, we suggest use of mechanical prophylaxis, preferably with optimally applied IPC , over no prophylaxis until the risk of bleeding diminishes and pharmacologic prophylaxis may be initiated (Grade 2C) .
6.0 Patients Undergoing Craniotomy	Craniotomy Patients	6.4.1. For craniotomy patients, we suggest that mechanical prophylaxis, preferably with IPC, be used over no prophylaxis (Grade 2C) or pharmacologic prophylaxis (Grade 2C) .

Orthopedic Spine Patients		
7.0 Patients Undergoing Spinal Surgery	Spinal Surgery Patients	7.4.1. For patients undergoing spinal surgery, we suggest mechanical prophylaxis, preferably with IPC , over no prophylaxis (Grade 2C) , unfractionated heparin (Grade 2C) , or LMWH (Grade 2C) .
	Spinal Surgery Patients	7.4.2. For patients undergoing spinal surgery at high risk for VTE (including those with malignant disease or those undergoing surgery with a combined anterior-posterior approach), we suggest adding pharmacologic prophylaxis to mechanical prophylaxis once adequate hemostasis is established and the risk of bleeding decreases (Grade 2C) .
Major Trauma & Spinal Cord Injury Patients		
8.0 Patients With Major Trauma: Traumatic Brain Injury, Acute Spinal Injury, and Traumatic Spine Injury	Major Trauma Patients, including TBI & Spinal Injury	8.4.1. For major trauma patients, we suggest use of LDUH (Grade 2C) , LMWH (Grade 2C) , or mechanical prophylaxis, preferably with IPC (Grade 2C) , over no prophylaxis.
	Major Trauma Patients, including TBI & Spinal Injury	8.4.2. For major trauma patients at high risk for VTE (including those with acute spinal cord injury, traumatic brain injury, and spinal surgery for trauma), we suggest adding mechanical prophylaxis to pharmacologic prophylaxis (Grade 2C) when not contraindicated by lower extremity injury.
	Major Trauma Patients, including TBI & Spinal Injury	8.4.3. For major trauma patients in whom LMWH and LDUH are contraindicated, we suggest mechanical prophylaxis, preferably with IPC , over no prophylaxis (Grade 2C) when not contraindicated by lower-extremity injury.
Total Joint Replacement Patients (Hip & Knee)		
2.0 Patients Undergoing Major Orthopedic Surgery: Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Hip Fracture Surgery (HFS)	Total Knee and/or Total Hip Replacement Surgery Patients	2.1.1. In patients undergoing THA or TKA, we recommend use of one of the following for a minimum of 10 to 14 days rather than no antithrombotic prophylaxis: low-molecular-weight heparin (LMWH), fondaparinux, apixaban, dabigatran, rivaroxaban, low-dose unfractionated heparin (LDUH), adjusted-dose VKA, aspirin (all Grade 1B) , or an intermittent pneumatic compression device (IPCD) (Grade 1C) . Remarks: We recommend the use of only portable, battery-powered IPCDs capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance.
	Total Knee and/or Total Hip Replacement	2.1.2. In patients undergoing HFS, we recommend use of one of the following rather than no antithrombotic prophylaxis for a minimum of 10 to 14 days : LMWH, fondaparinux, LDUH, adjusted-dose VKA, aspirin (all Grade 1B) , or an IPCD (Grade 1C) .

	Surgery Patients	Remarks: We recommend the use of only portable, battery-powered IPCDs capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance.
	Total Knee and/or Total Hip Replacement Surgery Patients	2.4. For patients undergoing major orthopedic surgery, we suggest extending thromboprophylaxis in the outpatient period for up to 35 days from the day of surgery rather than for only 10 to 14 days (Grade 2B) .
	Total Knee and/or Total Hip Replacement Surgery Patients	2.5. In patients undergoing major orthopedic surgery, we suggest using dual prophylaxis with an antithrombotic agent and an IPCD during the hospital stay (Grade 2C) . Remarks: We recommend the use of only portable, battery-powered IPCDs capable of recording and reporting proper wear time on a daily basis for inpatients and outpatients. Efforts should be made to achieve 18 h of daily compliance.
Orthopedic Arthroscopy Patients		
4.0 Patients Undergoing Knee Arthroscopy	Arthroscopic Surgery Patients	4.0. For patients undergoing knee arthroscopy without a history of prior VTE, we suggest no thromboprophylaxis rather than prophylaxis (Grade 2B).