Author Year Country Research Design PEDro Score Sample Size	Methods	Outcomes
Spinal Cord Injury Thromboprophylaxis Investigators (2003a) USA RCT PEDro=9 N=107	**Population:** Mean age=40.6 yr (unfractionated heparin (UFH)-intermittent pneumatic compression (IPC) group), mean age=38.5 yr (Enoxaparin group); Gender: males=79.6% (UFH-IPC group), males=89.7% (Enoxaparin group); Level of injury: not specified; Severity of injury: American Spinal Injury Association Impairment Scale (AIS) A-D. **Chronicity**: All individuals were studied beginning within 72 hr of sustaining injury and monitored for approximately 2 weeks during acute treatment (mean=13.4 days for UFH-IPC group, mean=14 days for Enoxaparin group). **Intervention:** Individuals were assigned to receive either low-dose UFH (5000 IU subcutaneously every 8 hr) plus IPC (used at least 22hr/day), or only Enoxaparin (30 mg subcutaneously every 12 hr). **Outcome Measures:** Incidence of deep vein thrombosis (DVT), pulmonary embolism (PE), and major bleeding. **Method of Diagnosis:** Doppler ultrasonography, venography, ventilation-perfusion lung scanning, spiral computed tomographic scanning, and pulmonary angiography.	**Timing of DVT onset**: DVT/PE screening/data collection was performed at the end of the 2-week acute treatment phase or within 2 days of the last dose of acute-phase medication. **Incidence of DVT:** 1. Incidence of DVT was 44.9% for UFH-IPC group versus 60.3% for Enoxaparin group; nonsignificant difference (p=0.11). 2. Incidence of PE was 18.4% for UFH-IPC group, significantly higher than 5.2% of individuals in the Enoxaparin group (p=0.03). 3. Among all randomized individuals, the incidence of major bleeding was 5.3% for low dose unfractionated heparin IPC group versus 2.6% for Enoxaparin group (p=0.14).
Green et al., (1990) USA RCT PEDro=8 $N_{Initial}$=41; N_{Final}=32	**Population:** Mean age=31 yr (LDUH group), mean age=28 yr (LMWH group); Gender: males=4, females=17 (LDUH group), males=3, females=17 (LMWH group); Level of injury: cervical-lumbar; Severity of injury: not specified. **Chronicity:** All individuals were studied beginning within 72 hr of sustaining injury and monitored for 8 weeks. **Intervention:** Individuals were randomly assigned to receive either low dose unfractionated heparin (LDUH) (5000 IU) subcutaneously every 8 hr or low molecular unfractionated heparin (LMWH) (Logiparin, 3500 anti-Xa units) subcutaneously once daily.	**Timing of DVT onset**: DVT events occurred on days 4, 7, and 32 after admission; PE events occurred on days 21 and 38 after admission. **Incidence of DVT:** 1. 33% of the LDUH group had thrombosis or hemorrhage; 24% (5/21) of individuals in this group had DVT/PE. 2. No individuals treated with LMWH had a documented thrombotic event. 3. The difference between the two groups in terms of frequency of developing

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	Outcome Measures: Incidence of deep vein thrombosis (DVT), pulmonary embolism (PE), and major bleeding. **Method of Diagnosis:** Impedance plethysmography, Doppler flow measurements and duplex ultrasonography.	thrombosis was significant (p=0.02).
Arnold et al., (2010) USA Case Control N=476	**Population:** Acute SCI individuals were a subset of the study population (n=24); no further information was provided. **Chronicity:** Individuals studied were admitted after>72 hr post injury. **Intervention:** Retrospective review of individuals who received either 5000 U low dose unfractionated heparin (LDUH) three times a day or low molecular unfractionated heparin (LMWH) (Enoxaparin, 30 mg twice daily or 40 mg once daily). **Outcome Measures:** Incidence of deep vein thrombosis (DVT) or pulmonary embolism (PE). **Method of Diagnosis:** Duplex ultrasonography.	**Timing of DVT onset**: Not indicated. **Incidence of DVT:** 1. 15.4% of the LDUH and 36.4% of the LMWH groups developed DVT (NS, p=0.357).
Worley et al., (2008) Canada Case Control N=90	**Population:** Mean age=46yr (LDUH group), mean age=38 yr (LMWH group); Gender: males=40, females=7 (LDUH group), males=39, females=4 (LMWH group); Level of injury: cervical-sacral; Severity of injury: tetraplegia=35, paraplegia=12, American Spinal Injury Association Impairment Scale (AIS) A-D. **Chronicity**: Individuals studied were under acute care following acute SCI. No other information was provided. **Intervention:** Individuals reviewed received either 5000 U low molecular unfractionated heparin (LMWH) (Dalteparin) subcutaneously daily or 5000 U low dose unfractionated heparin (LDUH) subcutaneously twice daily. **Outcome Measures:** Incidence of deep vein thrombosis (DVT) or pulmonary embolism (PE). **Method of Diagnosis:** Compression ultrasonography, ventilation-perfusion	**Timing of DVT onset**: Not indicated. **Incidence of DVT:** 1. 7.8% of all individuals developed DVT/PE: 3 in LDUH group, and 4 in LMWH group. 2. No significant difference was found in terms of incidence of DVT and type of prophylaxis received (p=0.7054). 3. No association was found between type of prophylaxis used and localization of DVT.

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	lung scanning, computed tomography, and pulmonary angiography.	
Spinal Cord Injury Thromboprophylaxis Investigators (2003b) USA Prospective Controlled Trial N=119	**Population:** Mean age=34 yr (unfractionated heparin (UFH) group), mean age=30.5 yr (Enoxaparin group); Gender: males=78.3% (UFH group), males=89.8% (Enoxaparin group); Level of injury: not specified; Severity of injury: American Spinal Injury Association Impairment Scale (AIS) A-D. **Chronicity:** All individuals were studied from 2-8 weeks following injury (in continuation of study 2003a, above). **Intervention:** Continuation of study 2003a (above): Individuals previously receiving unfractionated heparin (UFH) continued on this regimen (5000 IU subcutaneously every 8 hr), but intermittent pneumatic compression (IPC) was discontinued. Those previously receiving Enoxaparin continued this regimen, but at a dose of 40mg once daily (instead of 30 mg twice daily). **Outcome Measures:** Incidence of deep vein thrombosis (DVT) or pulmonary embolism (PE). **Method of Diagnosis:** Doppler ultrasonography, venography, ventilation-perfusion lung scanning, spiral computed tomographic scanning, and pulmonary angiography.	**Timing of DVT onset**: DVT/PE screening/data collection was performed at the end of the 6-week rehabilitation treatment phase (8 weeks following injury). **Incidence of DVT:** 1. Incidence of DVT was 18.3% in the UFH group versus 6.8% in the Enoxaparin group; (p=0.067). 2. Incidence of PE was 3.3% in the UFH group versus 1.7% of individuals in the Enoxaparin group (p=0.576).
Thumbikat et al., (2002) UK Case Control N=173	**Population:** Age range=10-60 yr (27 individuals were over 60); Gender: males=129, females=44; Level of injury: cervical-lumbar; Severity of injury: not specified. **Chronicity**: Individuals in the heparin group commenced treatment "soon after admission," and individuals in the Enoxaparin group received treatment on the day of admission. Individuals were studied beginning within an average of 12 days following injury (range 0-80). Average period of anticoagulation was 57 days for individuals in the heparin group	**Timing of DVT onset**: Peak incidences of VTE occurred at 20-30 and 90-100 days following injury for both groups studied. **Incidence of DVT:** 1. 13% of individuals in the heparin group and 18% of individuals in the Enoxaparin group developed VTE episodes, respectively. 2. 25% of individuals receiving 20 mg Enoxaparin and 9.4% of individuals receiving 40 mg

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	and 52 days for individuals in the Enoxaparin group. **Intervention:** Individuals received either a combination of heparin 5000 IU twice daily followed by warfarin, or only Enoxaparin 20 mg (n=40) or 40 mg (n=32). **Outcome Measures:** Incidence of deep vein thrombosis (DVT) or pulmonary embolism (PE) and other complications. **Method of Diagnosis:** Doppler ultrasonography and ventilation-perfusion scanning.	Enoxaparin developed DVT/PE, respectively. 3. 6 of the 13 thrombotic events in the Enoxaparin group occurred after the individuals had been mobilized and anticoagulation stopped.
Green et al., (1994) USA Pre-post N=48	**Population:** No demographical information was provided. **Chronicity:** Individuals were studied beginning within 72 hr post injury and monitored for 8 weeks. **Intervention:** All individuals received low molecular unfractionated heparin (LMWH) (Logiparin) at a dose of 3500 anti-Xa U subcutaneously once daily, beginning within 72 hr of injury for 8 weeks. **Outcome Measures**: Incidence of deep vein thrombosis (DVT), pulmonary embolism (PE), and bleeding in these 48 individuals combined with 20 individuals receiving LMWH in the study by Green et al., 1990 (above) were compared to previously studied individuals treated with standard heparin. **Method of Diagnosis:** Impedance plethysmography Doppler flow measurements and duplex ultrasonography.	**Timing of DVT onset**: DVT screening was done at the conclusion of the 8 week timeframe post injury. **Incidence of DVT:** 1. A trend toward less thrombotic events was reported for LMWH (p=0.15). 2. LMWH and standard heparin were significantly different in terms of bleeding, favouring LMWH (p=0.04). 3. LMWH compares favourably with low dose unfractionated heparin as VTE prophylaxis.