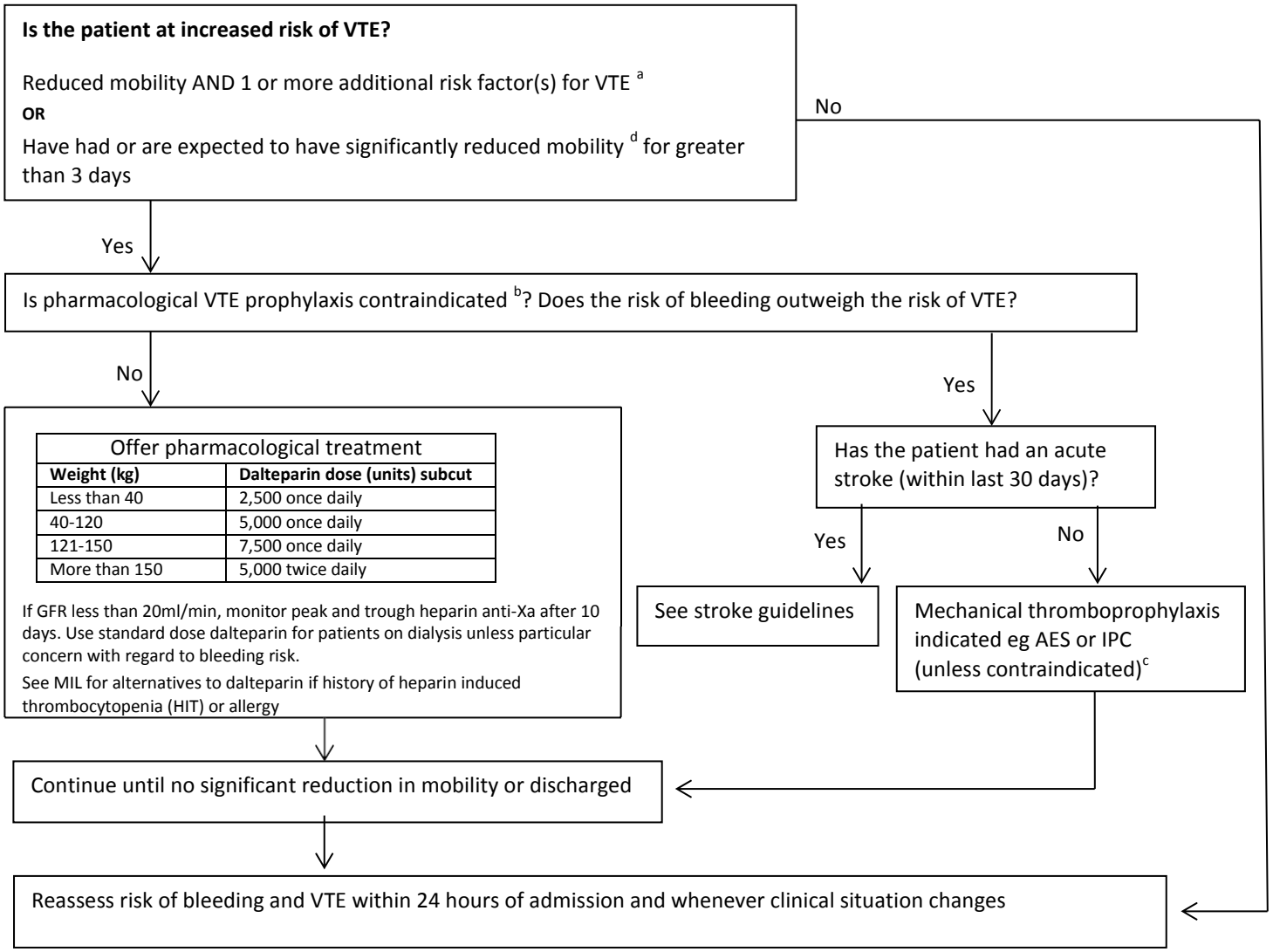
# May 2016 - VTE Prevention in Adult Medical Inpatients

(See separate maternity guidance for pregnancy and the puerperium, and main NHSLA document for palliative care patients)




**Key:**

AES- anti-embolic stockings; IPC-intermittent pneumatic compression; GFR – glomerular filtration rate (eGFR is a reasonable guide to GFR in most patients, but in patients at extremes of body weight GFR should be calculated using Cockcroft-Gault and ideal body weight); VTE- venous thromboembolism

d-significantly reduced mobility is defined in NICE CG92 as 'patients who are bed bound, unable to walk unaided or likely to spend a substantial proportion of their day in bed or chair'

e - Consider offering pharmacological VTE prophylaxis to patients in palliative care who have potentially reversible acute pathology. Do not routinely offer pharmacological or mechanical VTE prophylaxis to patients admitted for terminal care or those commenced on an end of life care pathway.

### **a** Additional risk factors for VTE

- Age over 60 years
- Active cancer or cancer treatment
- Critical care admission
- Dehydration
- Known thrombophilia
- Obesity (BMI over 30kg/m$^2$)
- One or more significant medical comorbidities (for example): heart disease, metabolic endocrine or respiratory pathologies, acute infectious diseases, inflammatory conditions
- Personal history of VTE or first-degree relative with a history of VTE
- Use of hormone replacement therapy
- Use of oestrogen-containing contraceptive therapy
- Varicose veins with phlebitis
- Pregnancy or less than 6 weeks postpartum

### **b** Risk factors for bleeding

- Active bleeding
- Acquired bleeding disorder (such as acute liver failure)
- Concurrent use of anticoagulants known to increase the risk of bleeding (such as warfarin with an INR 2 or more; direct/novel oral anticoagulants such as apixaban, rivaroxaban, edoxaban, dabigatran; or fondaparinux )
- Acute stroke
- Thrombocytopenia (platelets less than 75x10$^9$/l)
- Uncontrolled systolic hypertension (230/120mmHg or higher)
- Untreated inherited bleeding disorder (such as haemophilia and von Willebrands disease)
- Lumbar puncture/epidural/spinal anaesthesia within the next 12 hours
- Lumbar puncture/epidural/spinal anaesthesia within the previous 4 hours
- Other high risk bleeding procedure such as neurosurgery, spinal surgery or eye surgery

### **c** Contraindications to AES

Do not offer AES to patients who have:

- Suspected or proven arterial disease
- Peripheral arterial bypass grafting
- Peripheral neuropathy or other causes of sensory impairment
- Any local conditions in which AES may cause damage, for example fragile 'tissue paper skin' dermatitis, gangrene or recent skin graft
- Known allergy to material of manufacture
- Cardiac failure
- Severe leg oedema or pulmonary oedema from congestive heart failure
- Unusual leg size or shape
- Major limb deformity preventing correct fit
- Acute stroke

Use caution and clinical judgement when applying AES over venous ulcers or wounds

# May 2016 - VTE Prevention in Adult Surgical Inpatients

(See separate maternity guidance for pregnancy and the puerperium)

**The patient is at increased risk of VTE if any of the following statements apply:**

Surgical procedure with a total anaesthetic and surgical time greater than 90 minutes

Surgical procedure involving pelvis or lower limb with total anaesthetic and surgical time greater than 60 minutes

Acute surgical admission with inflammatory or intra-abdominal condition

Expected significant reduction in mobility

1 or more patient related VTE risk factor(s) [a]

Yes

Start mechanical thromboprophylaxis. Choose any of AES, IPC or foot impulse devices (unless contraindicated)[c].
Continue until the patient no longer has

No

No thromboprophylaxis required.

Is pharmacological VTE prophylaxis contraindicated? Does the risk of bleeding outweigh the risk of VTE?[b]

No

Offer pharmacological treatment and continue until no significant reduction in mobility or discharged. Reassess VTE and bleeding risk daily.

| High risk surgical patient[e] | |
|---|---|
| **Weight** | **Dalteparin dose (units) subcut** |
| Less than 40 | 2,500 once daily |
| 40-120 | 5,000 once daily |
| 121-150 | 7,500 once daily |
| More than 150 | 5,000 twice daily |

| Moderate risk surgical patient[f] | |
|---|---|
| **Weight (kg)** | **Dalteparin dose (units) subcut** |
| Less than 121 | 2,500 once daily |
| 121-150 | 5,000 once daily |
| More than 150 | 7,500 once daily |

If GFR less than 20ml/min, monitor peak and trough heparin anti-Xa after 10 days.
See MIL for alternatives to dalteparin if history of heparin induced thrombocytopenia (HIT) or allergy.

Yes

Continue mechanical thromboprophylaxis alone. Reassess bleeding and VTE risk daily.

**Extended (post discharge) thromboprophylaxis.**

This is indicated for certain high risk procedures. For dalteparin, the total duration of extended thromboprophylaxis as per SPC is:
Hip replacement/fracture – 35 days.
Knee replacement – 14 days.
Major abdominal cancer surgery – 28 days.

It may be indicated for certain high risk patients (eg previous history of VTE) after a lower risk procedure. Advise contact haematology.

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d– significantly reduced mobility = defined in NICE guidelines as 'patients who are bed bound, unable to walk unaided or likely to spend a substantial proportion of their day in bed or in a chair'

**e - High VTE risk surgical patient**- hip or knee arthroplasty, hip fracture surgery, major trauma and spinal cord injury, and surgery in patients with other significant (e.g. cancer, previous VTE) or multiple VTE risk factors

**f - Moderate VTE risk surgical patient** - those requiring thromboprophylaxis but not in the high risk group

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## c Contraindications to AES

Do not offer AES to patients who have:

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