

# Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism

## NICE guideline: short version

### Draft for consultation, October 2017

**This guideline covers** assessing and reducing the risk of venous thromboembolism (VTE or blood clots) and deep vein thrombosis (DVT) in over 16s in hospital. It aims to help healthcare professionals identify people most at risk of VTE. It describes treatments and interventions that can be used to prevent VTE.

#### Who is it for?

- Healthcare professionals
- People going into hospital who are at risk of VTE and their families and carers

This guideline will update and replace NICE guideline CG92 (published January 2010).

We have updated or added new recommendations on the risk assessment and prophylaxis of people at risk of VTE.

You are invited to comment on the new and updated recommendations in this guideline. These are marked as **[2018]** if the evidence has been reviewed.

We have not updated recommendations shaded in grey, and cannot accept comments on them. In some cases, we have made minor wording changes for clarification.

See [Update information](#) for a full explanation of what is being updated.

This version of the guideline contains the draft recommendations, context and recommendations for research. Information about how the guideline was developed is on the [guideline's page](#) on the NICE website. This includes the guideline committee's discussion and the evidence reviews (in the [full guideline](#)), the scope, and details of the committee and any declarations of interest.

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## 1 Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

### 2 **1.1 Risk assessment**

#### 3 **People admitted to hospital**

#### 4 **Medical patients**

5 1.1.1 Assess all medical patients on admission to hospital to identify the risk of  
6 venous thromboembolism (VTE) and bleeding. **[2018]**

7 1.1.2 Balance the person's risk of VTE against their risk of bleeding when  
8 deciding whether to offer thromboprophylaxis to medical patients. **[2018]**

9 1.1.3 Assess medical patients for their risk of VTE using a published tool or  
10 checklist. **[2018]**

11 1.1.4 Assess all medical patients for their risk of bleeding before offering  
12 pharmacological VTE prophylaxis. **[2018]**

13 1.1.5 If using pharmacological VTE prophylaxis to treat medical patients, start it  
14 within 14 hours after the risk assessment, unless otherwise stated in the  
15 population-specific recommendations (see section 1.3). **[2018]**

#### 16 **Surgical and trauma patients**

17 1.1.6 Assess all surgical and trauma patients on admission to hospital to  
18 identify the risk of VTE and bleeding. **[2018]**

- 1 1.1.7 Balance the person's risk of VTE against their risk of bleeding when  
2 deciding whether to offer thromboprophylaxis to surgical and trauma  
3 patients. **[2018]**
- 4 1.1.8 Assess surgical and trauma patients for their risk of VTE using a  
5 published tool or checklist. **[2018]**
- 6 1.1.9 Assess all surgical and trauma patients for their risk of bleeding before  
7 offering pharmacological VTE prophylaxis. **[2018]**
- 8 1.1.10 If using pharmacological VTE prophylaxis to treat surgical and trauma  
9 patients, start it within 14 hours after the risk assessment, unless  
10 otherwise stated in the population-specific recommendations (see section  
11 1.3). **[2018]**

## 12 **Reassessment of risk of VTE and bleeding**

- 13 1.1.11 Reassess the person's risk of VTE and bleeding at the point of senior  
14 review or if their clinical condition changes. **[2018]**

## 15 ***Pregnant women and women who gave birth or had a miscarriage*** 16 ***or termination of pregnancy in the past 6 weeks***

- 17 1.1.12 Assess all pregnant women and women who gave birth or had a  
18 miscarriage or termination of pregnancy in the past 6 weeks on admission  
19 to hospital or midwife-led unit to identify their risk of VTE and bleeding.  
20 **[2018]**
- 21 1.1.13 Assess all pregnant women and women who gave birth or had a  
22 miscarriage or termination of pregnancy in the past 6 weeks for their risk  
23 of VTE using a published tool or checklist. **[2018]**
- 24 1.1.14 Reassess risk of VTE and bleeding, and assess the need for  
25 thromboprophylaxis for all women:
- 26 • within 6 hours of giving birth, having a miscarriage or having a  
27 termination of pregnancy **or**
  - 28 • if their clinical condition changes **and** they:

- 1                   – are pregnant **or**  
2                   – have given birth or had a miscarriage or termination of pregnancy  
3                   within the past 6 weeks. **[2018]**

## 4 **1.2       *Giving information and planning for discharge***

5 1.2.1       On admission ensure that people understand the reason for having a risk  
6                   assessment for VTE and bleeding. **[2018]**

7 1.2.2       For people admitted to hospital who are at increased risk of VTE, give  
8                   them and their family members or carers (as appropriate) verbal and  
9                   written information on the following before offering VTE prophylaxis:

- 10                   • the person's risks and possible consequences of VTE
- 11                   • the importance of VTE prophylaxis and its possible side effects, for  
12                    example, pharmacological prophylaxis can increase bleeding risk
- 13                   • the correct use of VTE prophylaxis, for example, anti-embolism  
14                    stockings, intermittent pneumatic compression
- 15                   • how people can reduce their risk of VTE (such as keeping well  
16                    hydrated and, if possible, exercising and becoming more mobile).

17                   **[2018]**

18 1.2.3       Be aware that heparins are of animal origin and this may be of concern to  
19                   some people<sup>1</sup>. Discuss the alternatives with people who have concerns  
20                   about using animal products, after discussing their suitability, advantages  
21                   and disadvantages with the person. **[2018]**

22 1.2.4       As part of the discharge plan, give patients and their family members or  
23                   carers (as appropriate) verbal and written information on:

- 24                   • the signs and symptoms of deep vein thrombosis (DVT) and pulmonary  
25                    embolism (PE)
- 26                   • how people can reduce their risk of VTE (such as keeping well  
27                    hydrated and, if possible, exercising and becoming more mobile)

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<sup>1</sup> See [Religion or belief: a practical guide for the NHS](#).

- 1           • the importance of seeking help if DVT, PE or other adverse events are  
2           suspected. **[2018]**
- 3 1.2.5     Give people discharged with VTE prophylaxis and their family members or  
4           carers (as appropriate) verbal and written information on:
- 5           • the importance of using VTE prophylaxis correctly (including the correct  
6           administration and disposal of pharmacological prophylaxis)
- 7           • the importance of continuing treatment for the recommended duration
- 8           • the signs and symptoms of adverse events related to VTE prophylaxis
- 9           • the importance of seeking help and who to contact if people have  
10          problems using VTE prophylaxis. **[2018]**
- 11 1.2.6     Ensure that people who are discharged with anti-embolism stockings:
- 12          • understand the benefits of wearing them
- 13          • understand the importance of wearing them correctly
- 14          • understand the need to remove them daily for hygiene purposes
- 15          • are able to remove and replace them, or have someone available who  
16          will be able to do this for them
- 17          • know what to look for if there is a problem – for example, skin marking,  
18          blistering or discolouration, particularly over the heels and bony  
19          prominences
- 20          • know who to contact if there is a problem
- 21          • know when to stop wearing them. **[2018]**
- 22 1.2.7     Ensure that people who are discharged with pharmacological and/or  
23           mechanical VTE prophylaxis are able to use it correctly, or have  
24           arrangements made for someone to be available who will be able to help  
25           them. **[2018]**
- 26 1.2.8     Notify the person's GP if the person has been discharged with  
27           pharmacological and/or mechanical VTE prophylaxis to be used at home.  
28           **[2018]**

## 1 **1.3 Preventing VTE**

### 2 **Preventing VTE in everyone in hospital**

#### 3 **Mechanical prophylaxis**

4 **1.3.1 Do not offer anti-embolism stockings to people who have:**

- 5 • suspected or proven peripheral arterial disease
- 6 • peripheral arterial bypass grafting
- 7 • peripheral neuropathy or other causes of sensory impairment
- 8 • any local conditions in which anti-embolism stockings may cause
- 9 damage for example, fragile 'tissue paper' skin, dermatitis, gangrene or
- 10 recent skin graft
- 11 • known allergy to material of manufacture
- 12 • severe leg oedema
- 13 • major limb deformity or unusual leg size or shape preventing correct fit.

14  
15 Use caution and clinical judgement when applying anti-embolism  
16 stockings over venous ulcers or wounds. **[2010, amended 2018]**

17 **1.3.2 Ensure that people who need anti-embolism stockings have their legs**  
18 **measured and that they are provided with the correct size of stocking.**  
19 **Anti-embolism stockings should be fitted and patients shown how to use**  
20 **them by staff trained in their use. [2010]**

21 **1.3.3 Ensure that people who develop oedema or postoperative swelling have**  
22 **their legs re-measured and anti-embolism stockings refitted. [2010]**

23 **1.3.4 If arterial disease is suspected, seek expert opinion before fitting anti-**  
24 **embolism stockings. [2010]**

25 **1.3.5 Use anti-embolism stockings that provide graduated compression and**  
26 **produce a calf pressure of 14–15mmHg. (This relates to a pressure of 14–**  
27 **18 mmHg at the ankle and is in line with British [Standards 6612:1985](#)**  
28 **[Specification for graduated compression hosiery](#) and [7672:1993](#)**



- 1 [Specification for compression, stiffness and labelling of anti-embolism](#)  
2 [hosiery.](#)) [2010]
- 3 1.3.6 Encourage people to wear their anti-embolism stockings day and night  
4 until they no longer have significantly reduced mobility. [2010]
- 5 1.3.7 Remove anti-embolism stockings daily for hygiene purposes and to  
6 inspect skin condition. In people with a significant reduction in mobility,  
7 poor skin integrity or any sensory loss, inspect the skin 2 or 3 times a day,  
8 particularly over the heels and bony prominences. [2010]
- 9 1.3.8 Monitor the use of anti-embolism stockings and offer assistance if they are  
10 not being worn correctly. [2010]
- 11 1.3.9 Stop the use of anti-embolism stockings if there is marking, blistering or  
12 discolouration of the skin, particularly over the heels and bony  
13 prominences, or if the person experiences pain or discomfort. If suitable,  
14 offer **intermittent pneumatic compression** as an alternative. [2010,  
15 **amended 2018]**
- 16 1.3.10 Do not offer **intermittent pneumatic compression** to people with a known  
17 allergy to the material of manufacture. [2010, **amended 2018]**
- 18 1.3.11 **Advise the person to wear their device for as much time as possible.**  
19 **[2010, amended 2018]**

## 20 **All surgery**

- 21 1.3.12 Advise people to consider stopping oestrogen-containing oral  
22 contraceptives or hormone replacement therapy 4 weeks before elective  
23 surgery. If stopped, provide advice on alternative contraceptive methods.  
24 [2010]

## 25 **Nursing care: early mobilisation and hydration**

- 26 1.3.13 Encourage people to mobilise as soon as possible. [2010]
- 27 1.3.14 Do not allow people to become dehydrated unless clinically indicated.  
28 [2010]

1 **People using antiplatelets**

2 1.3.15 Consider VTE prophylaxis for people who are having antiplatelet agents  
3 for other conditions and whose risk of VTE outweighs their risk of  
4 bleeding. Take into account the risk of bleeding and of comorbidities such  
5 as arterial thrombosis.

- 6 • If the risk of VTE outweighs the risk of bleeding, consider  
7 pharmacological VTE prophylaxis based on their condition or  
8 procedure.
- 9 • If the risk of bleeding outweighs the risk of VTE, consider mechanical  
10 VTE prophylaxis. **[2018]**

11 **People using anticoagulation therapy**

12 1.3.16 Consider VTE prophylaxis for people at increased risk of VTE who are  
13 interrupting anticoagulant therapy or are not fully anticoagulated. **[2018]**

14 1.3.17 Do not offer VTE prophylaxis to people who are fully anticoagulated, or  
15 are taking vitamin K antagonists and who are within their therapeutic  
16 international normalised ratio (INR) range, providing anticoagulant therapy  
17 is continued. **[2018]**

18 **Acute coronary syndromes**

19 1.3.18 For people with acute coronary syndromes, see recommendations 1.3.16  
20 and 1.3.17. **[2018]**

21 **Acute stroke patients**

22 1.3.19 Do not offer foot impulse or neuromuscular electrical stimulation devices  
23 for VTE prophylaxis to people who are admitted with acute stroke, except  
24 in the context of research. **[2018]**

25 1.3.20 Do not offer anti-embolism stockings for VTE prophylaxis to people who  
26 are admitted for acute stroke. **[2010, amended 2018]**

27 1.3.21 Consider intermittent pneumatic compression for VTE prophylaxis for  
28 people who are immobile and admitted with acute stroke. If using, start it  
29 within 3 days of admission. **[2018]**

1 1.3.22 Explain to the person admitted with acute stroke and their family members  
2 or carers (as appropriate) that intermittent pneumatic compression:

- 3 • reduces the risk of deep vein thrombosis and may increase their  
4 chances of survival
- 5 • will not help them recover from stroke, and there may be an associated  
6 increased risk of surviving with severe disability. **[2018]**

7 1.3.23 When using intermittent pneumatic compression for people who are  
8 admitted with acute stroke, provide it for 30 days or until the person is  
9 mobile or discharged, whichever is sooner. **[2018]**

### 10 **Acutely ill medical patients**

11 1.3.24 Offer pharmacological VTE prophylaxis for a minimum of 7 days to acutely  
12 ill medical patients whose risk of VTE outweighs their risk of bleeding:

- 13 • Use low-molecular-weight heparin (LMWH)<sup>2</sup> as first-line treatment
- 14 • If LMWH<sup>3</sup> is contraindicated use fondaparinux sodium<sup>4</sup>. **[2018]**

### 15 **People with renal impairment**

16 1.3.25 If using pharmacological VTE prophylaxis for people with renal impairment  
17 choose either LMWH<sup>5</sup> or unfractionated heparin (UFH). **[2018]**

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<sup>2</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>3</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>4</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>5</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 1.3.26 If needed, reduce the dose of LMWH<sup>6</sup> and UFH for people with renal  
2 impairment. Base the decision on multidisciplinary or senior opinion, or  
3 locally agreed protocols. **[2018]**

#### 4 **People with cancer**

5 1.3.27 Do not offer VTE prophylaxis to people with cancer who are having  
6 oncological treatment and who are mobile except as outlined in 1.3.29  
7 and 1.3.30, unless they are at increased risk of VTE over and above the  
8 risk associated with their cancer. **[2018]**

9 1.3.28 Consider pharmacological VTE prophylaxis for people with myeloma  
10 receiving chemotherapy with thalidomide, or lenalidamide with steroids.  
11 Choose either:

- 12 • aspirin **or**
- 13 • LMWH<sup>7</sup>. **[2018]**

14 1.3.29 Consider pharmacological VTE prophylaxis with LMWH<sup>8</sup> for people with  
15 pancreatic cancer receiving chemotherapy. **[2018]**

16 1.3.30 Continue VTE prophylaxis for as long as the person is receiving  
17 chemotherapy. **[2018]**

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<sup>6</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>7</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>8</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 **Patients with central venous catheters**

- 2 1.3.31 Consider pharmacological VTE prophylaxis with LMWH<sup>9</sup> for people with  
3 central venous catheters who are having chemotherapy for cancer.  
4 Continue until the catheter is removed. **[2018]**

5 **Palliative care**

- 6 1.3.32 Consider pharmacological VTE prophylaxis for people who are having  
7 palliative care. Take into account temporary increases in thrombotic risk  
8 factors, risk of bleeding, likely life expectancy and the views of the person  
9 and their family members or carers (as appropriate):

- 10 • Use LMWH<sup>10</sup> as first-line treatment  
11 • If LMWH<sup>11</sup> is contraindicated use fondaparinux sodium<sup>12</sup>. **[2018]**

12

- 13 1.3.33 Do not offer VTE prophylaxis to people in the last days of life. **[2018]**

- 14 1.3.34 Review VTE prophylaxis daily for people who are having palliative care,  
15 taking into account the views of the person, their family members or  
16 carers (as appropriate) and the multidisciplinary team. **[2018]**

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<sup>9</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>10</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>11</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>12</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 **People admitted to critical care**

2 1.3.35 Assess all people admitted to the critical care unit for risk of VTE and  
3 bleeding. **[2018]**

4 1.3.36 Provide LMWH<sup>13</sup> to people admitted to the critical care unit if  
5 pharmacological VTE prophylaxis is not contraindicated. **[2018]**

6 1.3.37 Consider mechanical VTE prophylaxis for people admitted to the critical  
7 care unit if pharmacological prophylaxis is contraindicated based on their  
8 condition or procedure. **[2018]**

9 1.3.38 If using mechanical VTE prophylaxis for people admitted to the critical  
10 care unit, start it on admission and continue until the person no longer has  
11 reduced mobility relative to their normal or anticipated mobility. **[2018]**

12 1.3.39 Reassess VTE and bleeding risk daily for people in critical care units.  
13 **[2018]**

14 1.3.40 Assess VTE and bleeding risk more than once a day in people admitted to  
15 the critical care unit if the person's condition is changing rapidly. **[2018]**

16 **Pregnant women and women who gave birth or had a miscarriage or**  
17 **termination of pregnancy in the past 6 weeks**

18 1.3.41 Consider LMWH<sup>14</sup> for all pregnant women and women who gave birth or  
19 had a miscarriage or termination of pregnancy in the past 6 weeks who  
20 are admitted to hospital or midwife-led unit and whose risk of VTE  
21 outweighs their risk of bleeding. **[2018]**

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<sup>13</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>14</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

- 1 1.3.42 Do not offer VTE prophylaxis to women admitted to hospital or midwife-led  
2 unit who are in active labour. **[2018]**
- 3 1.3.43 Stop VTE prophylaxis when women are in labour. **[2018]**
- 4 1.3.44 If using LMWH<sup>15</sup> in pregnant women, start within 14 hours of the risk  
5 assessment being completed and continue until the woman is no longer at  
6 increased risk of VTE or until discharge from hospital or midwife-led unit.  
7 **[2018]**
- 8 1.3.45 If using LMWH<sup>16</sup> in women who gave birth or had a miscarriage or  
9 termination of pregnancy, start 6–8 hours after the event unless  
10 contraindicated and continue for a minimum of 7 days. **[2018]**
- 11 1.3.46 Do not offer combined prophylaxis (LMWH<sup>17</sup> plus mechanical prophylaxis)  
12 to pregnant women or women who gave birth or had a miscarriage or  
13 termination of pregnancy in the past 6 weeks who are admitted to  
14 hospital, unless they are likely to be immobilised for 3 or more days after  
15 surgery, including caesarean section. **[2018]**
- 16 1.3.47 Consider combined prophylaxis with LMWH<sup>18</sup> plus mechanical prophylaxis  
17 for pregnant women or women who gave birth or had a miscarriage or  
18 termination of pregnancy in the past 6 weeks and who have significantly

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<sup>15</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>16</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>17</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>18</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 reduced mobility relative to their normal or anticipated mobility for 3 or  
2 more days after surgery, including caesarean section:

- 3 • Use intermittent pneumatic compression as first-line treatment.
- 4 • If intermittent pneumatic compression is contraindicated use  
5 antiembolism stockings.

6  
7 Continue until the woman no longer has significantly reduced mobility  
8 relative to her normal or anticipated mobility or until discharge from  
9 hospital. **[2018]**

## 10 **People with psychiatric illness**

11 1.3.48 Assess all people on admission to a community mental health unit or  
12 hospital to identify their risk of VTE and bleeding. **[2018]**

13 1.3.49 Assess all people admitted to a community mental health unit or hospital  
14 for their risk of VTE using a published tool or checklist. (See  
15 recommendations 1.1.1–1.1.5).

16 1.3.50 Consider pharmacological VTE prophylaxis with LMWH<sup>19</sup> for people  
17 admitted to a community mental health unit or hospital whose risk of VTE  
18 outweighs their risk of bleeding. **[2018]**

19 1.3.51 Consider pharmacological VTE prophylaxis with fondaparinux sodium<sup>20</sup> if  
20 LMWH<sup>21</sup> is contraindicated for people admitted to a community mental

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<sup>19</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>20</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>21</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.



1 health unit or hospital whose risk of VTE outweighs their risk of bleeding.  
2 **[2018]**

3 1.3.52 Continue pharmacological VTE prophylaxis for people admitted to a  
4 community mental health unit or hospital until the person is no longer at  
5 increased risk of VTE. **[2018]**

## 6 ***Preventing VTE in surgical and trauma patients***

### 7 **Anaesthesia**

8 1.3.53 Consider regional anaesthesia for individual patients, in addition to other  
9 methods of VTE prophylaxis, as it carries a lower risk of VTE than general  
10 anaesthesia. Take into account the person's preferences, their suitability  
11 for regional anaesthesia and any other planned method of VTE  
12 prophylaxis. **[2010]**

13 1.3.54 If regional anaesthesia is used, plan the timing of pharmacological VTE  
14 prophylaxis to minimise the risk of epidural haematoma. If antiplatelet or  
15 anticoagulant agents are being used, or their use is planned, refer to the  
16 summary of product characteristics for guidance about the safety and  
17 timing of these in relation to the use of regional anaesthesia. **[2010]**

18 1.3.55 Do not routinely offer pharmacological or mechanical VTE prophylaxis to  
19 people undergoing a surgical procedure with local anaesthesia by local  
20 infiltration with no limitation of mobility. **[2010]**

### 21 **Lower limb immobilisation**

22 1.3.56 Consider pharmacological VTE prophylaxis with LMWH<sup>22</sup> or fondaparinux  
23 sodium<sup>23</sup> for people with lower limb immobilisation whose risk of VTE

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<sup>22</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>23</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be

1            outweighs their risk of bleeding. Continue until lower limb immobilisation is  
2            stopped. **[2018]**

3 **Fragility fractures of the pelvis, hip and proximal femur**

4 1.3.57    Offer VTE prophylaxis for 28–35 days to people with fragility fractures of  
5            the pelvis, hip or proximal femur. Choose either:

- 6            • LMWH<sup>24</sup>, starting 6–12 hours after surgery **or**
- 7            • fondaparinux sodium<sup>25</sup>, starting 6 hours after surgery, providing there is  
8            low risk of bleeding. **[2018]**

9 1.3.58    Consider pre-operative VTE prophylaxis for people with fragility fractures  
10            of the pelvis, hip or proximal femur if surgery is delayed beyond the day  
11            after admission, stopping 12 hours before surgery. **[2018]**

12 1.3.59    Consider intermittent pneumatic compression for people with fragility  
13            fractures of the pelvis, hip or proximal femur at the time of admission if  
14            pharmacological prophylaxis is contraindicated. Continue until the person  
15            no longer has significantly reduced mobility relative to their normal or  
16            anticipated mobility. **[2018]**

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obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>24</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>25</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 **Elective hip replacement**

2 1.3.60 Offer VTE prophylaxis to people undergoing elective hip replacement  
3 surgery. Choose any one of<sup>26</sup>:

- 4 • LMWH<sup>27</sup> (for 10 days) followed by aspirin (for 28 days).
- 5 • LMWH<sup>28</sup> (for 28 days) combined with anti-embolism stockings (until  
6 discharge).
- 7 • Rivaroxaban, within its marketing authorisation, is recommended as an  
8 option for the prevention of venous thromboembolism in adults having  
9 elective total hip replacement surgery. [This bullet text is from  
10 [Rivaroxaban for the prevention of venous thromboembolism after total  
11 hip or total knee replacement in adults](#) (NICE technology appraisal  
12 guidance 170).]<sup>29</sup> **[2018]**

13 1.3.61 Consider anti-embolism stockings until discharge from hospital if  
14 pharmacological interventions are contraindicated in people undergoing  
15 elective hip replacement surgery. **[2018]**

16 **Elective knee replacement**

17 1.3.62 Offer VTE prophylaxis to people undergoing elective knee replacement  
18 surgery. Choose any one of<sup>30</sup>:

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<sup>26</sup> See also the NICE technology appraisal guidance on [apixaban for the prevention of venous thromboembolism after total hip or knee replacement in adults](#) and [dabigatran etexilate for the prevention of venous thromboembolism after hip or knee replacement surgery in adults](#).

<sup>27</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>28</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>29</sup> <sup>29</sup> At the time of consultation (October 2017), rivaroxaban did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>30</sup> See also the NICE technology appraisal guidance on [apixaban for the prevention of venous thromboembolism after total hip or knee replacement in adults](#) and [dabigatran etexilate for the prevention of venous thromboembolism after hip or knee replacement surgery in adults](#).

- 1           • Aspirin (for 14 days).
- 2           • LMWH<sup>31</sup> (for 14 days) combined with anti-embolism stockings (until
- 3           discharge).
- 4           • Rivaroxaban, within its marketing authorisation, is recommended as an
- 5           option for the prevention of venous thromboembolism in adults having
- 6           elective total knee replacement surgery. [This bullet text is from
- 7           [Rivaroxaban for the prevention of venous thromboembolism after total](#)
- 8           [hip or total knee replacement in adults](#) (NICE technology appraisal
- 9           guidance 170).]<sup>32</sup> **[2018]**
- 10 1.3.63    Consider intermittent pneumatic compression if pharmacological
- 11           prophylaxis is contraindicated in people undergoing elective knee
- 12           replacement surgery. Continue until the person is mobile. **[2018]**
- 13 **Non-arthroplasty orthopaedic knee surgery**
- 14 1.3.64    Be aware that VTE prophylaxis is generally not needed for people
- 15           undergoing arthroscopic knee surgery where:
- 16           • total anaesthesia time is less than 1 hour **and**
- 17           • the person is at low risk of VTE. **[2018]**
- 18 1.3.65    Consider LMWH<sup>33</sup> 6–12 hours after surgery for 14 days for people
- 19           undergoing arthroscopic knee surgery if:
- 20           • total anaesthesia time is more than 1 hour **or**
- 21           • the person’s risk of VTE outweighs their risk of bleeding. **[2018]**

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<sup>31</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council’s [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>32</sup> At the time of consultation (October 2017), rivaroxaban did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council’s [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>33</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council’s [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 1.3.66 Consider VTE prophylaxis for people undergoing other knee surgery (for  
2 example, osteotomy or fracture surgery) whose risk of VTE outweighs  
3 their risk of bleeding. **[2018]**

#### 4 **Foot and ankle orthopaedic surgery**

5 1.3.67 Consider pharmacological VTE prophylaxis for people undergoing foot or  
6 ankle surgery:

- 7 • that requires immobilisation (for example, arthrodesis or arthroplasty)
- 8 (see recommendation 1.3.59) **or**
- 9 • when total anaesthesia time is greater than 1 hour **or**
- 10 • the person's risk of VTE outweighs their risk of bleeding. **[2018]**

#### 11 **Upper limb orthopaedic surgery**

12 1.3.68 Be aware that VTE prophylaxis is generally not needed if giving local or  
13 regional anaesthetic for upper limb surgery. **[2018]**

14 1.3.69 Consider VTE prophylaxis for people undergoing upper limb surgery if the  
15 person's total time under general anaesthetic is over 90 minutes or where  
16 their operation is likely to make it difficult for them to mobilise. **[2018]**

#### 17 **Elective spinal surgery**

18 1.3.70 Offer mechanical VTE prophylaxis on admission to people undergoing  
19 elective spinal surgery. Choose either:

- 20 • anti-embolism stockings **or**
- 21 • intermittent pneumatic compression.

22 Continue until the person no longer has significantly reduced mobility  
23 relative to their normal or anticipated mobility. **[2018]**

24 1.3.71 Consider adding pharmacological VTE prophylaxis with LMWH<sup>34</sup> for  
25 people undergoing elective spinal surgery whose risk of VTE outweighs

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<sup>34</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and

1 their risk of bleeding, taking into account individual patient and surgical  
2 factors (major or complex surgery) and according to clinical judgement.

3 **[2018]**

4 1.3.72 If using LMWH<sup>35</sup> for people undergoing elective spinal surgery, start giving  
5 it 24–48 hours postoperatively according to clinical judgement, taking into  
6 account patient characteristics and surgical procedure. Continue until the  
7 person no longer has significantly reduced mobility. **[2018]**

8 1.3.73 If needed, start LMWH<sup>36</sup> earlier than 24 hours after the operation for  
9 people undergoing elective spinal surgery. Base the decision on  
10 multidisciplinary or senior opinion, or a locally agreed protocol. **[2018]**

### 11 **Cranial surgery**

12 1.3.74 Consider mechanical VTE prophylaxis for people undergoing cranial  
13 surgery. **[2018]**

14 1.3.75 If using mechanical VTE prophylaxis for people undergoing cranial  
15 surgery, start it on admission. Choose either:

- 16 • anti-embolism stockings **or**
- 17 • intermittent pneumatic compression .

18 Continue until the person no longer has significantly reduced mobility  
19 relative to their normal or anticipated mobility. **[2018]**

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documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>35</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>36</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

- 1 1.3.76 Consider adding pharmacological VTE prophylaxis with LMWH<sup>37</sup> up to 24  
2 hours before surgery for people undergoing cranial surgery whose risk of  
3 VTE outweighs their risk of bleeding. **[2018]**
- 4 1.3.77 Consider adding pharmacological VTE prophylaxis with LMWH<sup>38</sup> after  
5 surgery for people undergoing cranial surgery whose risk of VTE  
6 outweighs their risk of bleeding. Continue for a minimum of 7 days. **[2018]**
- 7 1.3.78 Be aware that cerebrospinal fluid drains and intracranial pressure  
8 monitors may increase the risk of intracranial bleeding. **[2018]**
- 9 1.3.79 Do not offer pharmacological VTE prophylaxis to people with ruptured  
10 cranial vascular malformations (for example, brain aneurysms) or people  
11 with intracranial haemorrhage (spontaneous or traumatic) until the lesion  
12 has been secured or the condition has stabilised. **[2018]**

### 13 **Spinal injury**

- 14 1.3.80 Consider mechanical VTE prophylaxis on admission for people with spinal  
15 injury. Choose either:
- 16 • anti-embolism stockings **or**  
17 • intermittent pneumatic compression. **[2018]**
- 18 1.3.81 Reassess risk of bleeding 24 hours after initial admission in people with  
19 spinal injury. **[2018]**
- 20 1.3.82 Consider adding pharmacological VTE prophylaxis with LMWH<sup>39</sup> 24 hours  
21 after initial admission for people with spinal injury who are not having

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<sup>37</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>38</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>39</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and

1 surgery in the next 24–48 hours, if the benefit of reducing the risk of VTE  
2 outweighs the risk of bleeding. **[2018]**

3 1.3.83 Continue VTE prophylaxis in people with spinal injury until the increased  
4 risk of VTE is reduced (for example, when the person no longer has  
5 significantly reduced mobility relative to their normal or anticipated  
6 mobility). **[2018]**

### 7 **Major trauma**

8 1.3.84 Offer mechanical VTE prophylaxis with intermittent pneumatic  
9 compression on admission to people with serious or major trauma.  
10 Continue until the person no longer has significantly reduced mobility  
11 relative to their normal or anticipated mobility. **[2018]**

12 1.3.85 Reassess risk of VTE and bleeding at least daily in people with serious or  
13 major trauma. **[2018]**

14 1.3.86 Consider pharmacological VTE prophylaxis for people with serious or  
15 major trauma as soon as possible after the risk assessment when the risk  
16 of VTE outweighs the risk of bleeding. Continue for a minimum of 7 days.  
17 **[2018]**

### 18 **Abdominal surgery**

19 1.3.87 Offer VTE prophylaxis to people undergoing abdominal (gastrointestinal,  
20 gynaecological, urological) surgery who are at increased risk of VTE. For  
21 people undergoing bariatric surgery, follow recommendations 1.3.91–  
22 1.3.93. **[2018]**

23 1.3.88 Start mechanical VTE prophylaxis on admission for people undergoing  
24 abdominal surgery. Choose either:

- 25 • anti-embolism stockings **or**
- 26 • intermittent pneumatic compression.

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documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.



1 Continue until the person no longer has significantly reduced mobility  
2 relative to their normal or anticipated mobility. **[2018]**

3 1.3.89 Add pharmacological VTE prophylaxis for a minimum of 7 days for people  
4 undergoing abdominal surgery whose risk of VTE outweighs their risk of  
5 bleeding, taking into account individual patient factors and according to  
6 clinical judgement. Choose either:

- 7 • LMWH<sup>40</sup> **or**
- 8 • fondaparinux sodium<sup>41</sup>. **[2018]**

9 1.3.90 Consider extending pharmacological VTE prophylaxis to 28 days  
10 postoperatively for people who have had major cancer surgery in the  
11 abdomen. **[2018]**

## 12 **Bariatric surgery**

13 1.3.91 Offer VTE prophylaxis to people undergoing bariatric surgery. **[2018]**

14 1.3.92 Start mechanical VTE prophylaxis on admission for people undergoing  
15 bariatric surgery. Choose either:

- 16 • anti-embolism stockings **or**
- 17 • intermittent pneumatic compression.

18 Continue until the person no longer has significantly reduced mobility  
19 relative to their normal or anticipated mobility. **[2018]**

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<sup>40</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>41</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 1.3.93 Add pharmacological VTE prophylaxis for people undergoing bariatric  
2 surgery for a minimum of 7 days for people whose risk of VTE outweighs  
3 their risk of bleeding. Choose either:

- 4 • LMWH<sup>42</sup> **or**
- 5 • fondaparinux sodium<sup>43</sup>. **[2018]**

## 6 **Cardiac surgery**

7 1.3.94 Consider mechanical VTE prophylaxis on admission for people who are  
8 undergoing cardiac surgery who are at increased risk of VTE. Choose  
9 either:

- 10 • anti-embolism stockings **or**
- 11 • intermittent pneumatic compression.

12 Continue until the person no longer has significantly reduced mobility  
13 relative to their normal or anticipated mobility. **[2018]**

14 1.3.95 Consider adding pharmacological VTE prophylaxis for a minimum of  
15 7 days for people who are undergoing cardiac surgery and are not having  
16 other anticoagulation therapy:

- 17 • Use LMWH<sup>44</sup> as first-line treatment

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<sup>42</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>43</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>44</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

- 1           • If LMWH<sup>45</sup> is contraindicated use fondaparinux sodium<sup>46</sup>. **[2018]**

2   **Thoracic surgery**

3   1.3.96    Consider VTE prophylaxis for people undergoing thoracic surgery who are  
4           at increased risk of VTE. **[2018]**

5   1.3.97    Start mechanical VTE prophylaxis on admission for people undergoing  
6           thoracic surgery. Choose either:

- 7           • anti-embolism stockings **or**  
8           • intermittent pneumatic compression.

9           Continue until the person no longer has significantly reduced mobility  
10          relative to their normal or anticipated mobility. **[2018]**

11   1.3.98    Consider adding pharmacological VTE prophylaxis for people undergoing  
12          thoracic surgery for a minimum of 7 days to people whose risk of VTE  
13          outweighs their risk of bleeding:

- 14          • Use LMWH<sup>47</sup> as first-line treatment  
15          • If LMWH<sup>48</sup> is contraindicated use fondaparinux sodium<sup>Error! Bookmark not  
16          efined.</sup> **[2018]**

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<sup>45</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>46</sup> At the time of consultation (October 2017), fondaparinux sodium did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>47</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>48</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 **Vascular surgery**

2 ***Open vascular surgery or endovascular aneurysm repair***

3 1.3.99 Consider pharmacological VTE prophylaxis with LMWH<sup>49</sup> for a minimum  
4 of 7 days for people who are undergoing open vascular surgery or major  
5 endovascular procedures, including endovascular aneurysm repair whose  
6 risk of VTE outweighs their risk of bleeding. **[2018]**

7 1.3.100 Consider mechanical VTE prophylaxis on admission for people who are  
8 undergoing open vascular surgery or major endovascular procedures,  
9 including endovascular aneurysm repair if pharmacological prophylaxis is  
10 contraindicated. Choose either:

- 11
- anti-embolism stockings) **or**
  - intermittent pneumatic compression.
- 12

13 Continue until the person no longer has significantly reduced mobility  
14 relative to their normal or anticipated mobility. **[2018]**

15 ***Lower limb amputation***

16 1.3.101 Consider pharmacological VTE prophylaxis with LMWH<sup>50</sup> for a minimum  
17 of 7 days for people who are undergoing lower limb amputation whose  
18 risk of VTE outweighs their risk of bleeding. **[2018]**

19 1.3.102 Consider mechanical VTE prophylaxis with intermittent pneumatic  
20 compression on the contralateral leg, on admission, for people who are  
21 undergoing lower limb amputation and if pharmacological prophylaxis is  
22 contraindicated. **[2018]**

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<sup>49</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>50</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 1.3.103 For people undergoing lower limb amputation continue mechanical VTE  
2 prophylaxis until the person no longer has significantly reduced mobility  
3 relative to their anticipated mobility. **[2018]**

#### 4 ***Varicose vein surgery***

5 1.3.104 Consider pharmacological VTE prophylaxis with LMWH<sup>51</sup> for a minimum  
6 of 7 days for people undergoing varicose vein surgery whose risk of VTE  
7 outweighs their risk of bleeding. **[2018]**

8 1.3.105 Consider mechanical VTE prophylaxis with anti-embolism stockings, on  
9 admission, for people undergoing varicose vein surgery:

- 10 • who are at increased risk of VTE **and**
- 11 • if pharmacological prophylaxis is contraindicated. **[2018]**

12 1.3.106 If using anti-embolism stockings for people undergoing varicose veins  
13 surgery, continue until the person no longer has significantly reduced  
14 mobility relative to their normal or anticipated mobility. **[2018]**

#### 15 **Head and neck surgery**

##### 16 ***Oral and maxillofacial surgery***

17 1.3.107 Consider pharmacological VTE prophylaxis with LMWH<sup>52</sup> for a minimum  
18 of 7 days for people undergoing oral or maxillofacial surgery whose risk of  
19 VTE outweighs their risk of bleeding. **[2018]**

20 1.3.108 Consider mechanical VTE prophylaxis on admission for people  
21 undergoing oral or maxillofacial surgery who are at increased risk of VTE  
22 and high risk of bleeding. Choose either:

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<sup>51</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

<sup>52</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

- 1           • anti-embolism stockings **or**
- 2           • intermittent pneumatic compression.

3           Continue until the person no longer has significantly reduced mobility  
4           relative to their normal or anticipated mobility. **[2018]**

### 5    ***ENT surgery***

6    1.3.109   Consider pharmacological VTE prophylaxis with LMWH<sup>53</sup> for a minimum  
7           of 7 days for people undergoing ENT surgery whose risk of VTE  
8           outweighs their risk of bleeding. **[2018]**

9    1.3.110   Consider mechanical VTE prophylaxis on admission for people  
10           undergoing ENT surgery who are at increased risk of VTE and high risk of  
11           bleeding. Choose either:

- 12           • anti-embolism stockings **or**
- 13           • intermittent pneumatic compression.

14           Continue until the person no longer has significantly reduced mobility  
15           relative to their normal or anticipated mobility. **[2018]**

### 16   ***Terms used in this guideline***

#### 17   **Intermittent pneumatic compression**

18    A method of prophylaxis that includes an air pump and inflatable garments in a  
19    system designed to improve venous circulation in the lower limbs of people at risk of  
20    deep vein thrombosis or pulmonary embolism. The inflation–deflation cycle of IPC  
21    therapy simulates the thigh, calf and foot's normal ambulatory pump action  
22    increasing both the volume and rate of blood flow, eliminating venous stasis and  
23    replicating the effects of the natural muscle pump. Intermittent pneumatic  
24    compression devices can be thigh or knee length sleeves that are wrapped around

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<sup>53</sup> At the time of consultation (October 2017), LMWH did not have a UK marketing authorisation for use in young people under 18 for this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#) for further information.

1 the leg, or a garment that can be wrapped around or worn on the foot that is  
2 designed to mimic the actions of walking.

### 3 **Renal impairment**

4 Patients with an estimated glomerular filtration rate (eGFR) of less than 30.

## 5 **Putting this guideline into practice**

6 **[This section will be completed after consultation]**

7 NICE has produced [tools and resources](#) **[link to tools and resources tab]** to help you  
8 put this guideline into practice.

9 **[Optional paragraph if issues raised]** Some issues were highlighted that might need  
10 specific thought when implementing the recommendations. These were raised during  
11 the development of this guideline. They are:

- 12 • [add any issues specific to guideline here]
- 13 • [Use 'Bullet left 1 last' style for the final item in this list.]

14 Putting recommendations into practice can take time. How long may vary from  
15 guideline to guideline, and depends on how much change in practice or services is  
16 needed. Implementing change is most effective when aligned with local priorities.

17 Changes recommended for clinical practice that can be done quickly – like changes  
18 in prescribing practice – should be shared quickly. This is because healthcare  
19 professionals should use guidelines to guide their work – as is required by  
20 professional regulating bodies such as the General Medical and Nursing and  
21 Midwifery Councils.

22 Changes should be implemented as soon as possible, unless there is a good reason  
23 for not doing so (for example, if it would be better value for money if a package of  
24 recommendations were all implemented at once).

25 Different organisations may need different approaches to implementation, depending  
26 on their size and function. Sometimes individual practitioners may be able to respond  
27 to recommendations to improve their practice more quickly than large organisations.

1 Here are some pointers to help organisations put NICE guidelines into practice:

2 1. **Raise awareness** through routine communication channels, such as email or  
3 newsletters, regular meetings, internal staff briefings and other communications with  
4 all relevant partner organisations. Identify things staff can include in their own  
5 practice straight away.

6 2. **Identify a lead** with an interest in the topic to champion the guideline and motivate  
7 others to support its use and make service changes, and to find out any significant  
8 issues locally.

9 3. **Carry out a baseline assessment** against the recommendations to find out  
10 whether there are gaps in current service provision.

11 4. **Think about what data you need to measure improvement** and plan how you  
12 will collect it. You may want to work with other health and social care organisations  
13 and specialist groups to compare current practice with the recommendations. This  
14 may also help identify local issues that will slow or prevent implementation.

15 5. **Develop an action plan**, with the steps needed to put the guideline into practice,  
16 and make sure it is ready as soon as possible. Big, complex changes may take  
17 longer to implement, but some may be quick and easy to do. An action plan will help  
18 in both cases.

19 6. **For very big changes** include milestones and a business case, which will set out  
20 additional costs, savings and possible areas for disinvestment. A small project group  
21 could develop the action plan. The group might include the guideline champion, a  
22 senior organisational sponsor, staff involved in the associated services, finance and  
23 information professionals.

24 7. **Implement the action plan** with oversight from the lead and the project group.  
25 Big projects may also need project management support.

26 8. **Review and monitor** how well the guideline is being implemented through the  
27 project group. Share progress with those involved in making improvements, as well  
28 as relevant boards and local partners.



1 NICE provides a comprehensive programme of support and resources to maximise  
2 uptake and use of evidence and guidance. See our [into practice](#) pages for more  
3 information.

4 Also see Leng G, Moore V, Abraham S, editors (2014) Achieving high quality care –  
5 practical experience from NICE. Chichester: Wiley.

## 6 **Context**

7 Hospital-acquired venous thromboembolism (VTE), also known as hospital-acquired  
8 thrombosis (HAT), covers all VTE that occurs in hospital and for 90 days after a  
9 hospital admission. It is a common and potentially preventable problem. VTE most  
10 frequently occurs in the deep veins of the legs or pelvis (a deep vein thrombosis). If it  
11 dislodges and travels to the lungs it is called a pulmonary embolism, which in some  
12 cases can be fatal.

13 Hospital-acquired VTE accounts for thousands of deaths annually in the NHS, and  
14 fatal pulmonary embolism remains the most common cause of preventable in-  
15 hospital mortality. HAT accounts for 50–60% of all VTE seen. In 2013–14 there were  
16 around 24,700 admissions for pulmonary embolism and 19,400 for DVT in England.  
17 In 2013, in England and Wales there were 2,191 deaths recorded as due to  
18 pulmonary embolism and 2,816 due to deep vein thrombosis. Treatment of non-fatal  
19 symptomatic VTE and related long-term morbidities is associated with a  
20 considerable cost to the health service.

21 People admitted to hospital or mental health units have varying risk factors for VTE.  
22 The spectrum of VTE risk is broad, and understanding the scale of the problem has  
23 led to a paradigm shift in preventing and managing VTE in the NHS. In particular,  
24 patients now undergo VTE risk assessment as a routine event in all NHS care  
25 pathways. By July 2013, 96% of adult admissions to NHS-funded acute care  
26 hospitals were risk assessed for VTE compared with less than 50% of patients in  
27 July 2010.

28 VTE prophylaxis has been shown to reduce the incidence of DVT. It includes  
29 mechanical methods (such as anti-embolism stockings and intermittent pneumatic

1 compression devices) and pharmacological treatments (such as heparin and other  
2 anticoagulant drugs).

3 This guideline is about preventing VTE in over 16s admitted to hospitals or mental  
4 health units. It provides recommendations on the most clinically and cost effective  
5 measures to reduce the risk of VTE, while considering the potential risks of the  
6 various VTE prophylaxis options and patient preferences. It highlights the importance  
7 of risk assessment for VTE and for bleeding for all people being admitted and of  
8 clinical judgement in deciding on a prophylaxis strategy for each person at risk.

9 The 2017 update takes into account newer evidence and newer therapies and has  
10 been made more relevant for specific groups such as surgical sub-specialities,  
11 people with mental health conditions and pregnant women.

## 12 **More information**

[The following sentence is for post-consultation versions only – editor to  
update hyperlink with guideline number] You can also see this guideline in the  
NICE pathway on [\[pathway title\]](#).

To find out what NICE has said on topics related to this guideline, see our web  
page on [developer to add and link topic page title or titles; editors can advise  
if needed].

[The following sentence is for post-consultation versions only – editor to  
update hyperlink with guideline number] See also the guideline committee's  
discussion and the evidence reviews (in the [full guideline](#)), and information  
about [how the guideline was developed](#), including details of the committee.

13

## 14 **Recommendations for research**

15 The guideline committee has made the following recommendations for research. The  
16 committee's full set of research recommendations is detailed in the [full guideline](#).

1 **1 Risk assessment**

2 What is the accuracy of individual risk assessment tools in predicting the risk of VTE  
3 and risk of bleeding in people admitted to hospital?

4 **Why this is important**

5 Risk assessment is a mandatory for all people admitted or having day procedures in  
6 hospital. Since 2010 the National VTE Risk Assessment Tool has been widely used  
7 in the NHS to assess a person's risk of VTE. This tool has not been validated or  
8 tested against other tools to evaluate its diagnostic accuracy or effectiveness at  
9 correctly identifying people at risk of VTE. There is concern that the tool may not  
10 accurately identify those who are most likely to get VTE. According to national  
11 figures, over 70% of medical patients in the UK have prophylaxis when the national  
12 too has been used, with some trusts offering prophylaxis to over 90% of medical  
13 patients. Around 40% of medical patients have prophylaxis in largely US-based  
14 populations when other tools are used (although this may partially relate to different  
15 indications for hospital admission). It is not known if this means that the national tool  
16 identifies too many people or the other tools do not identify enough. The potential  
17 impact of giving unnecessary prophylaxis is that people may be at increased risk of  
18 bleeding and discomfort through repeated injections. There is also the potential for  
19 reducing the cost of thromboprophylaxis by better defining "at risk" populations, so  
20 that the number of those given thromboprophylaxis is reduced.

21 **2 Dose strategies for people who are obese**

22 What is the clinical and cost effectiveness of weight-based dose-adjustment  
23 strategies of LMWH compared with fixed dose strategies of LMWH for preventing  
24 VTE in people who are very obese (BMI over 35) who are admitted to hospital or  
25 having day procedures (including surgery and chemotherapy)?

26 **Why this is important**

27 Obesity is on the rise in England. The prevalence of obesity increased by 11%  
28 between 1993 and 2014 (15% in 1993 and 26% in 2014), which has resulted in  
29 more obese people being admitted to hospital. Obesity may as much as double a  
30 person's risk of developing hospital-acquired VTE, therefore most obese people will  
31 need prophylaxis. There is much uncertainty about what dose to use and the clinical

1 and cost-effectiveness of using weight-based dose-adjustment versus fixed-dose  
2 strategies. In current practice a higher than usual dose is given but this may not be  
3 necessary, especially if the person has obesity-related liver disease. Several studies  
4 have reported effectiveness in terms of biological measures rather than clinical  
5 outcomes such as DVT and bleeding events. It is important that there is a clearer  
6 understanding of the effects that different dose strategies can have in terms of  
7 clinical outcomes. This is because they can directly influence the quality of life of  
8 obese people admitted to hospital and help inform clinical decisions on patient care..

### 9 ***3 Direct oral anticoagulants for people with lower limb*** 10 ***immobilisation***

11 What is the clinical and cost effectiveness of direct oral anticoagulants for preventing  
12 VTE in people with lower limb immobilisation?

#### 13 **Why this is important**

14 The Computerized Registry of Patients with Venous Thromboembolism (RIETE)  
15 Study, a multicentre prospective cohort study of 30,886 patients with acute VTE,  
16 estimated that 5.7% of VTE events were associated with lower limb immobilisation  
17 for non-major orthopaedic surgery. Estimates of DVT risk in people with lower limb  
18 immobilisation, based upon meta-analyses of trials comparing  
19 chemothromboprophylaxis with placebo, range between approximately 4% and 40%.  
20 Given that lower limb immobilisation following trauma or non-major orthopaedic  
21 surgery is so common the consequent burden of disease from VTE from this cause  
22 in the whole population is very considerable. For example, the annual incidence of  
23 ankle fracture is 187 per 100,000, translating to over 120,000 incident fractures per  
24 year in the UK. If 10% of these fractures are complicated by VTE then we might  
25 expect approximately 12,000 events per year only related to immobilisation following  
26 ankle trauma.

27 Despite this burden of ill-health no randomised studies comparing modern  
28 anticoagulants which are available in oral preparations, perhaps more suitable for  
29 outpatient treatments, with established treatments such as LMWH or fondaparinux  
30 were identified in the evidence review. The committee were unable to make a

1 recommendation to consider oral anticoagulants for this patient group given this lack  
2 of evidence.

3 ***4 Aspirin prophylaxis for people with fragility fractures of the***  
4 ***pelvis, hip or proximal femur***

5 What is the clinical and cost effectiveness of aspirin alone versus other  
6 pharmacological and/or mechanical prophylaxis strategies (alone or in combination)  
7 for people with fragility fractures of the pelvis, hip or proximal femur?

8 **Why this is important**

9 Fragility fractures are the greatest burden of musculoskeletal disease in hospitals in  
10 the UK. There are approximately 70,000 fragility hip fractures per year in England  
11 alone leading to 1.5 million bed days being used each year, which equates with the  
12 continuous occupation of over 4,000 NHS beds.

13 Current evidence supports a recommendation for prophylaxis with LMWH or  
14 fondaparinux. Both involve a subcutaneous injection for 28 days requiring either  
15 self-injection at home or a community nurse attending to deliver the injection. Patient  
16 adherence to treatment may be improved with an oral rather than injectable  
17 treatment.

18 A large but controversially reported trial suggests that aspirin may be at least as  
19 effective as currently recommended treatments. However, because of  
20 methodological and reporting limitations the evidence for the effectiveness of aspirin  
21 alone is not clear. There is potentially a large cost saving if aspirin is clinically  
22 effective because it is very inexpensive.

23 ***5 Duration of prophylaxis for elective total hip replacement surgery***

24 What is the clinical and cost effectiveness of standard versus extended duration  
25 pharmacological prophylaxis for preventing VTE in people undergoing elective total  
26 hip replacement surgery?

27 **Why this is important**

28 In 2015, there were 84,462 hip replacements in England, Wales and Northern  
29 Ireland. The current recommended duration of prophylaxis is 28 days in the elective

1 total hip replacement population. This extended duration of prophylaxis is based on  
2 few, small and older trials. The quality of the evidence supporting extended duration  
3 prophylaxis is very low. Modern pharmaceutical trials of newer interventions use  
4 extended duration prophylaxis based on these historical data, with the added  
5 incentive of more expensive prophylaxis strategies. There is a large potential cost  
6 saving if a shorter duration of prophylaxis is as clinically effective, given the  
7 considerable cost of prophylaxis and the number of people for whom it is prescribed.

## 8 **Update information**

### 9 **March 2018**

10 This guideline is a partial update of NICE guideline CG92 (published January 2010  
11 and updated 2015) and will replace it.

12 New recommendations have been added on the risk assessment and prevention of  
13 VTE. The recommendations are labelled **[2018]**. This means that the  
14 recommendation is new or the evidence has been reviewed.

### 15 **Areas from the original guideline not being updated**

16 A small number of recommendations from the original guideline did not have an  
17 evidence review because these areas were not thought to be clinical priorities. They  
18 cover mechanical VTE prophylaxis – anti-embolism stockings, nursing care – early  
19 mobilisation and hydration, and anaesthesia. These recommendations are shaded in  
20 grey and are labelled **[2010]**. In some cases we have made minor wording changes  
21 that change the meaning; they are labelled **[2010, amended 2018]**. These changes  
22 are marked with yellow shading, and explanations of the reasons for the changes are  
23 given in [Recommendations that have been deleted or changed](#) for information.

24 See also the [original NICE guideline and supporting documents](#).

## 25 ***Recommendations that have been deleted or changed***

### 26 **Recommendations to be deleted**

Recommendation in 2010 guideline	Comment
Base the choice of mechanical VTE prophylaxis on individual patient factors	This recommendation has been deleted because the type of mechanical

<p>including clinical condition, surgical procedure and patient preference. Choose any one of:</p> <ul style="list-style-type: none"> <li>• anti-embolism stockings (thigh or knee length)</li> <li>• foot impulse devices</li> <li>• intermittent pneumatic compression devices (thigh or knee length).</li> </ul> <p>For patients who are admitted for stroke see recommendations 1.4.2, 1.4.4 and 1.4.5. (1.3.1)</p>	<p>prophylaxis has been specified in each population recommendation.</p>
<p>Show patients how to use anti-embolism stockings correctly and ensure they understand that this will reduce their risk of developing VTE. (1.3.10)</p>	<p>This recommendation has been deleted because it is a duplication of information in recommendations 1.3.2 and 1.2.2.</p>
<p>Base the choice of pharmacological VTE agents on local policies and individual patient factors, including clinical condition (such as severe renal impairment or established renal failure) and patient preferences. (1.3.14)</p>	<p>This recommendation has been deleted as it is now covered in population specific recommendations, a generic recommendation about balance risk, and a renal impairment recommendation.</p>
<p>Assess the risks and benefits of stopping pre-existing established antiplatelet therapy 1 week before surgery. Consider involving the multidisciplinary team in the assessment. (1.5.2)</p>	<p>This recommendation has been deleted because the committee noted that now an advanced decision can be made about whether to stop antiplatelet therapy. It does not need to be made 1 week before surgery.</p>
<p>Consider offering temporary inferior vena caval filters to patients who are at very high risk of VTE (such as patients with a previous VTE event or an active malignancy) and for whom mechanical and pharmacological VTE prophylaxis are contraindicated (1.2.4)</p>	<p>This recommendation has been deleted partly for two reasons: 1. vena caval filters are considered as a method of prophylaxis in individual population reviews. No evidence was identified to support a recommendation for their use. 2. Evidence used in CG92 related to secondary prevention of VTE which is excluded from this update.</p>

1

2 **Amended recommendation wording (change to meaning)**

Recommendation in 2010 guideline	Recommendation in current guideline	Reason for change
<p>1.3.2 Do not offer anti-embolism stockings to patients who have:</p> <ul style="list-style-type: none"> <li>• suspected or proven peripheral arterial disease</li> <li>• peripheral arterial bypass grafting</li> <li>• peripheral neuropathy or other causes of sensory impairment</li> <li>• any local conditions in which stockings may cause damage, for example fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft</li> <li>• known allergy to material of manufacture</li> <li>• cardiac failure</li> <li>• severe leg oedema or pulmonary oedema from congestive heart failure</li> <li>• unusual leg size or shape</li> <li>• major limb deformity preventing correct fit.</li> </ul> <p>Use caution and clinical judgement when applying anti-embolism stockings over venous ulcers or wounds. [2010]</p>	<p>1.3.1 Do not offer anti-embolism stockings to people who have:</p> <ul style="list-style-type: none"> <li>• suspected or proven peripheral arterial disease</li> <li>• peripheral arterial bypass grafting</li> <li>• peripheral neuropathy or other causes of sensory impairment</li> <li>• any local conditions in which <b>anti-embolism</b> stockings may cause damage for example, fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft</li> <li>• known allergy to material of manufacture</li> <li>• <b>severe leg oedema</b></li> <li>• major limb deformity or unusual leg size or shape preventing correct fit.</li> </ul> <p>Use caution and clinical judgement when applying anti-embolism stockings over venous ulcers or wounds. <b>[2010, amended 2018]</b></p>	<p>Minor edits to clarify meaning.</p>



<p>1.3.9 Discontinue the use of anti-embolism stockings if there is marking, blistering or discolouration of the skin, particularly over the heels and bony prominences, or if the patient experiences pain or discomfort. If suitable, offer a foot impulse or intermittent pneumatic compression device as an alternative. [2010]</p>	<p>1.3.9 Stop the use of anti-embolism stockings if there is marking, blistering or discolouration of the skin, particularly over the heels and bony prominences, or if the person experiences pain or discomfort. If suitable, offer intermittent pneumatic compression as an alternative. <b>[2010, amended 2018]</b></p>	<p>'Discontinue' changed to 'stop' for plain English purposes, and 'patient' change to 'person'. The words 'Foot impulse' and 'devices' deleted from recommendations because the guideline committee noted that the term intermittent pneumatic compression covers both sleeves applied to the legs and garments wrapped around the foot. The options are considered equal in the recommendations the guideline committee left it to clinicians to decide which were most suitable.</p>
<p>1.3.12 Do not offer foot impulse or intermittent pneumatic compression devices to patients with a known allergy to the material of manufacture. [2010]</p>	<p>1.3.10 Do not offer intermittent pneumatic compression to people with a known allergy to the material of manufacture. <b>[2010, amended 2018]</b></p>	<p>The words 'Foot impulse' and 'devices' deleted from recommendations because the guideline committee noted that the term intermittent pneumatic compression covers both sleeves applied to the legs and garments wrapped around the foot. The options are considered equal in the recommendations the guideline committee left it to clinicians to decide which were most suitable.</p>

<p>1.3.13 Encourage patients on the ward who have foot impulse or intermittent pneumatic compression devices to use them for as much of the time as is possible and practical, both when in bed and when sitting in a chair. <b>[2010]</b></p>	<p>1.3.11 Advise the person to wear their device for as much time as possible. <b>[2010, amended 2018]</b></p>	<p>Edited to simplify wording.</p>
<p>1.4.2 Do not offer anti-embolism stockings for VTE prophylaxis to patients who are admitted for stroke. <b>[2010]</b></p>	<p>1.3.20 Do not offer anti-embolism stockings for VTE prophylaxis to people who are admitted for acute stroke. <b>[2010, amended 2018]</b></p>	<p>Changed 'stroke' to 'acute stroke' to make it clear the recommendation is about someone currently experiencing a stroke or being treated for stroke, not people receiving rehabilitation treatments for stroke. Changed 'patients' to 'people'.</p>

1

2 **Changes to recommendation wording for clarification only (no change to**  
 3 **meaning)**

Recommendation numbers in current guideline	Comment
1.3.2	Change made from passive to active text.
1.3.2, 1.3.3, 1.3.6, 1.3.7, 1.3.12, 1.3.14, 1.3.55	Changes made from 'patients' to 'people'.

4

5 **ISBN:**