

# NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

## Guideline

### Blood transfusion

**Draft for consultation, November 2025**

This guideline update covers the use of tranexamic acid in people having surgery where blood loss is anticipated. It will update [recommendations 1.1.5 and 1.1.6 in NICE guideline NG24](#) (published November 2015). Recommendations 1.1.7 and 1.1.8 of the 2015 guideline are not being updated but will move to section 1.2. The consultation draft includes the new recommendations and the recommendations on cell salvage and tranexamic acid that we plan to move.

#### Who is it for?

- Healthcare professionals who assess for and manage blood transfusions or treatments to minimise blood loss
- Commissioners and providers of transfusion services
- People over 1 year old who may need a blood transfusion, their families and carers

#### What does it include?

- the recommendations
- recommendations for research
- rationale and impact section that explains why the committee made the 2025 recommendations and how they might affect practice.

Information about how the guideline was developed is on the [guideline's webpage](#). This includes the evidence reviews, the scope, details of the committee and any declarations of interest.

### **New and updated recommendations**

We have reviewed the evidence on the use of tranexamic acid. You are invited to comment on the new and updated recommendations. These are marked as **[2025]**.

We have not reviewed the evidence for the 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.

Full details of the evidence and the committee's discussion on the 2025 recommendations are in the [evidence reviews](#). Evidence for 2015 recommendations is in the [full version](#) of the 2015 guideline.

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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 [NICE's information on making decisions about 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.

Healthcare professionals should follow our general guidelines for people delivering care:

- [Patient experience in adult NHS services](#)
- [Babies, children and young people's experience of healthcare](#)
- [Service user experience in adult mental health](#)
- [Shared decision making](#)
- [Medicines adherence](#)
- [Medicines optimisation](#)
- [Multimorbidity](#)
- [Transition from children's to adults' services](#)
- [Decision making and mental capacity](#)

### 2 1.1 Reducing requirements for blood transfusion for people having surgery

#### 4 Tranexamic acid

5 1.1.5 Offer tranexamic acid to adults having surgery in an operating theatre if:

6 • there is a risk of bleeding and

7 • the procedure will breach the skin or mucous membranes. **[2025]**

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- 1 1.1.6 Offer tranexamic acid to adults having surgery outside an operating theatre (for example, interventional radiology or A&E) who are expected to lose more than 500 ml of blood. **[2025]**
- 4 1.1.7 When using tranexamic acid for adults having surgery, give:
  - 5 the first dose before the start of surgery, for example, 1 g by slow intravenous injection
  - 7 additional doses during surgery, if needed, based on the duration of surgery and measured volume of blood lost. **[2025]**
- 9 1.1.8 For information about using tranexamic acid for primary hip, knee and shoulder replacement in adults, see [NICE's guideline on joint replacement \(primary\)](#). **[2015]**
- 12 1.1.9 Consider tranexamic acid for children (aged 1 to 15 years) having surgery in an operating theatre if:
  - 14 there is a risk of bleeding and
  - 15 the procedure will breach the skin or mucous membranes. **[2025]**
- 16 1.1.10 Consider tranexamic acid for children (aged 1 to 15 years) having surgery outside an operating theatre (for example, interventional radiology or A&E) who are expected to lose more than 10% of their blood volume. **[2025]**
- 20 1.1.11 When using tranexamic acid for children (aged 1 to 15 years) having surgery, consider:
  - 22 a first dose before the start of surgery, for example, 15 mg per kg (maximum 1 g) by slow intravenous injection
  - 24 additional doses during surgery, if needed, based on the duration of surgery and measured volume of blood lost. **[2025]**

For a short explanation of why the committee made the 2025 recommendations and how they might affect practice, see the [rationale and impact section on tranexamic acid](#).

Full details of the evidence and the committee's discussion are in [evidence review A: clinical effectiveness of tranexamic acid for reducing anticipated minor blood loss due to surgery](#) and [evidence review B: safety of short-term use of tranexamic acid](#).

## 1 **Cell salvage and tranexamic acid**

2 Do not routinely use cell salvage without tranexamic acid. **[2015]**

3 Consider intra-operative cell salvage with tranexamic acid for patients who are expected to lose a very high volume of blood (for example in cardiac and complex vascular surgery, major obstetric procedures, and pelvic reconstruction and scoliosis surgery). **[2015]**

## 7 **Recommendations for research**

8 The guideline committee has made the following recommendations for research.

### 9 **Key recommendations for research**

#### 10 **1 Effectiveness of tranexamic acid for children and young people**

11 What is the clinical and cost-effectiveness of tranexamic acid compared to placebo for children and young people undergoing surgery in reducing the risk of post-operative infection, length of stay and the need for a blood transfusion?

For a short explanation of why the committee made this recommendation for research, see the [rationale and impact section on tranexamic acid](#).

Full details of the evidence and the committee's discussion are in [evidence review A: clinical effectiveness of tranexamic acid for reducing anticipated minor](#)

[blood loss due to surgery](#) and [evidence review B: safety of short-term use of tranexamic acid](#).

1 **2 Effectiveness of tranexamic acid for specific vascular surgery procedures**

3 What is the clinical and cost-effectiveness of tranexamic acid compared to placebo  
4 for people having specific vascular surgery procedures in reducing limb-related  
5 thromboembolic events and infection?

For a short explanation of why the committee made this recommendation for research, see the [rationale and impact section on tranexamic acid](#).

Full details of the evidence and the committee's discussion are in [evidence review A: clinical effectiveness of tranexamic acid for reducing anticipated minor blood loss due to surgery](#) and [evidence review B: safety of short-term use of tranexamic acid](#).

6 **Rationale and impact**

7 These sections briefly explain why the committee made the recommendations and  
8 how they might affect practices.

9 **Tranexamic acid**

10 [Recommendations 1.1.5 to 1.1.11](#)

11 **Why the committee made the recommendations**

12 Evidence showed that tranexamic acid can reduce length of hospital stay, as well as  
13 the need for blood transfusion, for people having surgery where minor blood loss is  
14 anticipated. The committee agreed that the benefit of reducing length of stay may be  
15 less for some types of surgery not covered by the evidence, for example, day case  
16 surgery.

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1 Separate evidence showed that tranexamic acid was safe for most people, reducing  
2 all-cause mortality and further operations. There was an increased risk of  
3 thromboembolic events in less than 0.1% of people.

4 Based on their clinical experience, the committee identified the following additional  
5 potential clinical benefits of tranexamic acid:

- 6 • a reduction in post-operative pain, especially for surgery involving small cavities
- 7 • a reduction in haematomas and infections after surgery
- 8 • ability to restart antiplatelets and anticoagulants sooner after surgery for people  
9 already on these medications.

10 While length of stay was found not to have an impact on quality of life in the  
11 economic model, it did reduce hospital costs relating to length of stay and meant  
12 tranexamic acid was found to be cost effective. When length of stay was excluded  
13 from the economic model, tranexamic acid was only cost effective for types of  
14 surgery where the probability of a blood transfusion was 2% or more. The committee  
15 was confident that tranexamic acid was cost effective for most types of surgery in  
16 operating theatres because of other potential benefits not examined by the model.

17 These included:

- 18 • better view of the area of the body where surgery is being done because of lower  
19 levels of bleeding
- 20 • reduced need for surgical drains saving time and money
- 21 • reduction in risk of infection
- 22 • lower levels of post-operative bleeding.

23 The committee agreed that tranexamic acid should be offered to adults undergoing  
24 surgery that breaches the skin or mucous membranes provided it takes place in an  
25 operating theatre. This was to exclude quick, low-risk procedures in the community  
26 where tranexamic acid does not offer sufficient benefits. By only selecting surgery  
27 taking place in an operating theatre, the committee was reassured that staff who  
28 were trained to give medicines intravenously would be available, if needed. The  
29 requirement for the surgery to breach the skin or mucous membranes was stated  
30 since bleeding always occurs here, which is not the case for cornea surgery and

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1 some invasive diagnostic procedures such as hysteroscopy. Other types of surgery  
2 that cause bleeding were excluded because the amount of bleeding would be  
3 expected to be much lower.

4 In line with the 2015 guideline, the committee agreed that tranexamic acid should be  
5 offered to adults having surgery where more than 500 ml of blood loss (moderate  
6 blood loss) was expected. This was because evidence showed clearer benefits of  
7 giving tranexamic acid when blood loss was higher. The new recommendation about  
8 surgery for adults in operating theatres covers moderate blood loss in this setting but  
9 the committee agreed an additional recommendation was needed to cover moderate  
10 blood loss in other hospital departments to retain this element of the 2015  
11 recommendation.

12 There were only a small number of studies on the effectiveness of tranexamic acid  
13 for children having surgery where minor blood loss was anticipated, and only 1 study  
14 on its safety for this population. The committee acknowledged that blood loss can be  
15 more significant in children than adults because children have a smaller total blood  
16 volume but equally the risk of adverse events as a result of giving tranexamic acid to  
17 a child can be higher. Given this, the committee agreed that weighing up the benefits  
18 of tranexamic against the risks is especially important for children. They also agreed  
19 that tranexamic acid could be an option for some children undergoing surgery in an  
20 operating theatre that breaches the skin or mucous membranes.

21 In line with the 2015 guideline, the committee agreed that tranexamic acid should be  
22 considered for children having surgery where more than 10% of blood loss is  
23 expected. Evidence for adults showed clearer benefits of giving tranexamic acid  
24 when blood loss was higher and the committee agreed that this could be applied to  
25 children. Because children having a lower total blood volume than adults, a value of  
26 10% is used instead of an absolute volume.

27 There were no studies that only looked at young people. Three studies had a small  
28 number of young people. These only reported total blood loss and adverse events,  
29 rather than length of hospital stay and the need for blood transfusion. Because of the  
30 lack of evidence on young people and in line with the 2015 guideline, the committee  
31 decided not to make recommendations for young people and agreed that the

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1 recommendations for adults would generally apply to them with healthcare  
2 professionals expected to use their clinical judgement about this.

3 The committee made recommendations about doses of tranexamic acid using  
4 information from the trials, the summary of product characteristics and  
5 recommendations made by other groups.

6 To inform future recommendations, the committee agreed a [recommendation for](#)  
7 [research on the effectiveness of tranexamic acid in children and young people](#),  
8 acknowledging the current study into its safety for under 18s.

9 There was no evidence on using tranexamic acid in vascular surgery and uptake of  
10 the previous recommendation was lower in this speciality. The committee agreed  
11 that the reviewed evidence could be applied to this population. However, they  
12 recognised that further research was required and so made a [recommendation for](#)  
13 [research on the effectiveness of tranexamic acid for specific vascular surgery](#)  
14 [procedures](#).

### 15 **How the recommendations might affect practice**

16 In 2015 NICE recommended offering tranexamic acid to adults having surgery where  
17 expected blood loss was more than 500 ml. The new recommendations extend use  
18 of tranexamic acid to any level of expected blood loss but only for adults having  
19 surgery in operating theatres. This is likely to increase the use of tranexamic acid but  
20 should not have an impact on staffing requirements since operating theatres should  
21 already have staff available to administer the medicine.

22 For children, the recommendations also extend the use of tranexamic acid from only  
23 where expected blood loss is more than 10% to cover any level of expected blood  
24 loss in operating theatres. Again, although this is likely to increase the use of  
25 tranexamic acid, it should not have staffing implications.

26 Overall, it is expected that the recommendations will reduce costs because fewer  
27 people will have blood transfusions and the average length of stay in hospital after  
28 surgery will be reduced.

29 [Return to recommendations](#)

**1 Finding more information and committee details**

2 To find NICE guidance on related topics, including guidance in development, see the  
3 [NICE topic page on injuries, accidents and wounds.](#)

4 For details of the guideline committee see the [committee member list](#).

**5 Update information**

**6 November 2025**

7 We have reviewed the evidence on tranexamic acid.

8 Recommendations are marked **[2025]** if the evidence has been reviewed.

9 For recommendations shaded in grey and ending **[2015]**, we have not reviewed the  
10 evidence.

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