

# Prescribing Platelets

## Always remember that platelet transfusion:

- should be dictated by clinical status and not by platelet count alone
- may not be required in well-compensated patients or where other specific therapy is available, and
- is not without risk, consider patient blood management principles.

Single unit transfusion followed by clinical reassessment to determine the need for further transfusion is current best practice in adults.

## Prophylactic platelet transfusion threshold table for prevention of bleeding

Platelet count (x 10 <sup>9</sup> /L)	0	10	20	30	50	100
<b>Neurosurgery (intracranial, intraocular and neuraxial)</b>	Transfuse 1 adult dose. Calculate paediatric dose.					Transfusion is usually inappropriate.
<b>Invasive procedures</b>	Transfuse 1 adult dose. Calculate paediatric dose.				Transfusion is usually inappropriate.	
<b>Childbirth</b>	Transfuse 1 adult dose.				Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.
<b>Central venous catheter (CVC)</b>	Transfuse 1 adult dose. Calculate paediatric dose.		Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.		
<b>Critically ill patients<sup>2</sup></b>	Transfuse 1 adult dose. Calculate paediatric dose.		Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.		
<b>Chemotherapy with risk factors</b>	Transfuse 1 adult dose. Calculate paediatric dose.		Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.		
<b>Chemotherapy without risk factors</b>	Transfuse 1 adult dose. Calculate paediatric dose.	Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>		Transfusion is usually inappropriate.		
<b>Post-cardiac surgery</b>	Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>		Transfusion is usually inappropriate.			
<b>Preterm and low birthweight babies</b>	Calculate paediatric dose.		Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.		
<b>Preterm neonate with fetal and neonatal alloimmune thrombocytopenia (FNAIT)</b>	Calculate paediatric dose.				Transfusion is usually inappropriate.	
<b>Term neonate with FNAIT</b>	Calculate paediatric dose.			Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.	

1. Consider comorbidities e.g. anticoagulant and antiplatelet agents; significant renal, liver, cardiac or haematological disease; fever and/or infection; predicted platelet count and previous response to platelet transfusion; proximity to care, inpatient vs outpatient care.

2. Critically ill refers to patients who are physiologically unstable and at risk of significant morbidity and/or mortality. They require treatment in an intensive care unit.

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## Therapeutic platelet transfusion threshold table

The use of a massive transfusion protocol (MTP) which includes platelet transfusions may reduce the risk of mortality in critically bleeding patients.

Platelet count ( $\times 10^9/L$ )	0	10	20	30	50	100
<b>Thrombocytopenia with clinically significant bleeding</b> (e.g. prolonged epistaxis, extensive skin bleeding, haematemesis, melaena, WHO grade 2)	Transfuse 1 adult dose. Calculate paediatric dose.			Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>		Transfusion is usually inappropriate.
<b>Thrombocytopenia with severe bleeding</b> (e.g. bleeding that requires a red cell transfusion, WHO grade 3–4)	Transfuse 1 adult dose. Calculate paediatric dose. Second dose may be appropriate.				Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.
<b>Thrombocytopenia with bleeding at critical sites</b> (e.g. CNS, eyes)	Transfuse 1 adult dose. Calculate paediatric dose. Second dose may be appropriate.					Transfusion is usually inappropriate.
<b>Disseminated intravascular coagulopathy (DIC)</b> Some institutions use viscohaemostatic assay (e.g. ROTEM or TEG) to guide transfusion	Transfuse 1 adult dose, aim for $> 50 \times 10^9/L$ . Calculate paediatric dose.				Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.
<b>Fetal and neonatal alloimmune thrombocytopenia (FNAIT) with non-intracranial bleeding</b>	Calculate paediatric dose.				Transfusion usually unnecessary, consider comorbidities. <sup>1</sup>	Transfusion is usually inappropriate.
<b>Fetal and neonatal alloimmune thrombocytopenia (FNAIT) with intracranial bleeding</b>	Calculate paediatric dose.					Transfusion is usually inappropriate.
<b>Functional platelet defects</b>	Platelet counts are not a reliable indicator. Transfuse only if bleeding or to meet individual clinical needs.					Transfusion is usually inappropriate.
<b>Immune thrombocytopenia (ITP), thrombotic thrombocytopenia purpura (TTP), heparin-induced thrombocytopenia (HIT)</b>	Transfuse only if severe bleeding.			Transfusion is usually inappropriate.		

1. Consider comorbidities e.g. anticoagulant and antiplatelet agents; significant renal, liver, cardiac or haematological disease; fever and/or infection; predicted platelet count and previous response to platelet transfusion; proximity to care, inpatient vs outpatient care.

## Neonate and paediatric dose calculation

Neonates and infants < 5 kg	10 mL/kg (volume based on apheresis platelet products)
5–9 kg	1 paediatric unit (approx 50 mL)
10–19 kg	2 paediatric units (approx 100 mL)
20–29 kg	3 paediatric units (approx 150 mL)
$\geq 30$ kg	1 adult dose (apheresis or pooled)

## My patient is unresponsive to platelets

Platelet transfusion refractoriness is the repeated failure to achieve satisfactory increments to platelet transfusions from random donors. Learn more at [transfusion.com.au/transfusion\\_practice/platelet\\_refractoriness](https://transfusion.com.au/transfusion_practice/platelet_refractoriness).

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