

Transfusion of Blood Components for Neonates

This summary guidance should be used in conjunction with the 2016 BSH Guidelines (and 2020 Addendum).[†]

Red cells for top-up transfusions

- Studies support restrictive transfusion thresholds.

Suggested transfusion thresholds for preterm neonates

Postnatal age	Suggested transfusion threshold Hb (g/L)		
	Ventilated	On oxygen/ NIPPV**	Off oxygen
1st 24 hours	<120	<120	<100
≤week 1 (day 1-7)	<120	<100	<100
week 2 (day 8-14)	<100	<95	<75*
≥week 3 (day 15 onwards)	<100	<85	<75*

Table applies to very preterm babies (<32 weeks); for later preterm/term babies the values for babies off oxygen may be used.

*It is accepted that clinicians may use up to 85 g/L depending on clinical situation.

**NIPPV, non-invasive positive pressure ventilation.

- **Generally transfuse 15 mL/kg for non-bleeding neonates.**
- **Where the term or preterm neonate does not require resuscitation, undertake delayed cord clamping.**
- **Minimise phlebotomy where possible, using small volume samples.**
- **Ensure that paedipacks are available for emergency use by maternity and neonatal units.**
- **Transfuse red cells for large volume neonatal and infant transfusion before the end of Day 5.**

Transfusion rate: 5mL/kg/hr.

[†]Guidelines on transfusion for fetuses, neonates and older children. <http://www.b-s-h.org.uk/guidelines/guidelines/transfusion-for-fetuses-neonates-and-older-children>

Further information will be available on hospital intranet sites or from the blood transfusion laboratory.

Further supplies of this bookmark can be ordered by accessing <https://hospital.nhsbtleaflets.co.uk>

Platelets

- For preterm neonates with platelets $<25 \times 10^9/L$, transfuse platelets and treat the underlying cause of thrombocytopenia. For non-bleeding neonates platelet transfusions should not be routinely administered if platelet count is $\geq 25 \times 10^9/L$.

Suggested transfusion thresholds for preterm neonates

Platelet count ($\times 10^9/L$)	Indication for platelet transfusion
<25	Neonates with no bleeding (including neonates with NAIT if no bleeding and no family history of ICH).
<50	Neonates with bleeding, current coagulopathy, before surgery, or infants with NAIT if previously affected sibling with ICH.
<100	Neonates with major bleeding or requiring major surgery (e.g. neurosurgery).

Table applies to preterm babies; clinicians may also choose to use for term babies. NAIT, neonatal immune thrombocytopenia; ICH, intracranial haemorrhage.

Typical transfusion volume: 10-20 mL/kg; rate 10-20 mL/kg/hr.

Fresh frozen plasma and cryoprecipitate

Routine coagulation screening is inappropriate: results are difficult to interpret in neonates and routine testing may lead to increased FFP transfusion without benefit.

- FFP should **not** be used routinely to try to correct abnormalities of the coagulation screen alone in non-bleeding neonates.
- FFP may be of benefit in neonates with clinically significant bleeding or prior to invasive procedures with risk of significant bleeding, *and* who have abnormal coagulation (PT/APTT significantly above the gestational and postnatal age-related range).
- FFP should **not** be used for simple volume replacement or routinely for prevention of IVH.
- Cryoprecipitate should not be used routinely for non-bleeding neonates with decreased fibrinogen. It may be considered for fibrinogen $<1g/L$ for surgery at risk of significant bleeding or to critical sites.

Typical transfusion volumes: FFP 15-20 mL/kg, cryo 5-10 mL/kg; rate 10-20 mL/kg/hr.