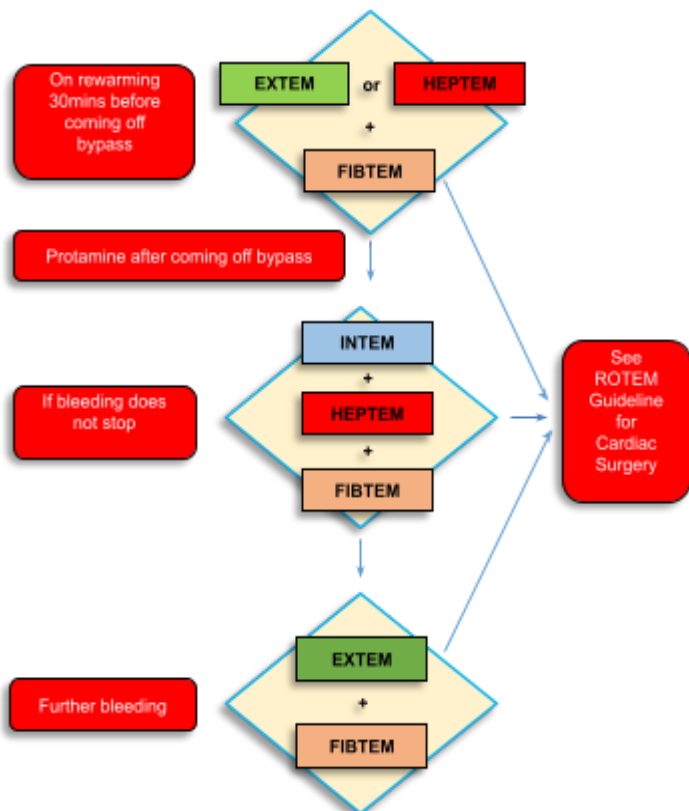


ROTEM ALGORITHM



ROTEM GUIDELINE FOR CARDIAC SURGERY

**Bold –
treat**

*Italics – treat if bleeding/high risk of
bleeding*

1. When to treat CT

CT in INTEM/HEPTEM > 300 sec	o r	CT in INTEM/APTEM > 100 sec
<i>CT in INTEM/HEPTEM 240 - 300 sec</i>	<i>or</i>	<i>CT in INTEM/APTEM 80-100 sec</i>
CT in INTEM/HEPTEM <240 - 300 sec (No treatment required)	or	CT in INTEM/APTEM < 80 sec (No treatment required)

Causes of prolonged CT

Test	Diagnosis	Management
INTEM/HEPTEM ratio >1.0	Residual heparin	Protamine
FIBTEM A10 < 5 mm	Low fibrinogen	Cryoprecipitate
All other prolonged CT	Low coagulation	FFP 10-15 ml/kg

2. Clot Firmness & Management ()

CLOT FIRMNESS		A10 in EXTEM/INTEM/HEPTEM/FIBTEM		
		<22 mm	22-38 mm	≥ 39 mm
A10 IN FIBT EM	<5 mm	Low platelet Low fibrinogen (Cryoprecipitate + Platelet)	Low fibrinogen (Cryoprecipitate)	<i>Low fibrinogen (Cryoprecipitate)</i>
	5-7 mm	Low platelet Low fibrinogen (Cryoprecipitate + Platelet)	<i>Low platelet Low fibrinogen</i>	Clot firmness appears satisfactory. If bleeding consider

			(Cryoprecipitate + Platelet)	i) Raising fibrinogen ≥ 10 mm
	≥ 8 mm	Low platelet (Platelet)	Low platelet (Platelet)	ii) If on aspirin consider platelets

3. Clot lysis

Test	Diagnosis	Management
Lysis within 20 minutes	Fulminant lysis	Tranexemic acid
<i>Lysis between 20-40 minutes</i>	<i>Early lysis</i>	<i>Tranexemic acid</i>
Lysis > 40 minutes	Clot retraction	No treatment required

1. Tanaka KA, Bolliger D, Vadlamudi R, Nimmo A. Rotational thromboelastometry (ROTEM)-based coagulation management in cardiac surgery and major trauma. J Cardiothorac Vasc Anesth. 2012 Dec;26(6):1083-93

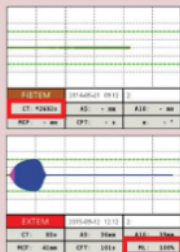
PAEDIATRIC ROTEM Transfusion Algorithm

GOLD COAST HOSPITAL AND HEALTH SERVICE

Physiological Targets: Temp >36°C pH >7.2 iCa >1 mmol/L Hb >70g/L

STEP 1: HYPERFIBRINOLYSIS

1



FIBTEM CT > 300 sec

AND

EXTEM A5 ≤ 35 mm



TXA 15 mg /kg +
50 mg/Kg FIB CONC

OR

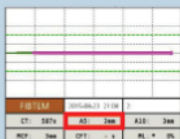
ML% ≥ 5%



TXA 15 mg/kg
(max 1g)

STEP 2: FIBRINOGEN

2



FIBTEM A5 ≤ 10 mm



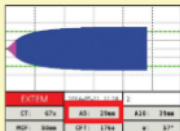
FIB CONC
50 mg/kg

OR

CRYO
5 mL/kg

STEP 3: PLATELETS

3



FIBTEM A5 > 10 mm

AND

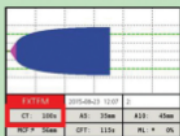
EXTEM A5 ≤ 35 mm



PLATELETS
10–15 mL/kg

STEP 4: FACTORS

4



FIBTEM A5 > 10 mm

AND

EXTEM CT ≥ 90 s



FFP
15 mL/kg

OR

PCC
10 IU/Kg

ALWAYS repeat ROTEM tests 10 min after treatment

Version PRO1547v3

A5 based algorithm

DIAGNOSIS	A5 in EXTEM			
	≤ 10 mm		11-27 mm	≥ 28 mm
A5 in FIBTEM	≤ 3 mm	Low fibrinogen Low platelets	Low fibrinogen (platelets)	Low fibrinogen
	4-6 mm	Low platelets Low fibrinogen	Low platelets Low fibrinogen	Clot firmness appears ok
	≥ 7 mm	Low platelets	Low platelets	

NEW PROTOCOL BASED ON A5 NOT A10

TREATMENT	A5 in EXTEM			
	≤ 10 mm		11-27 mm	≥ 28 mm
A5 in FIBTEM	≤ 3 mm	8 units FFP (or 4 FFP + 2 pools/10 units cryoprecipitate) + 2 bags platelets	8 units FFP (or 4 FFP + 2 pools/10 units cryoprecipitate) + 1 bag platelets	4 units FFP
	4-6 mm	4 units FFP + 2 bags platelets	4 units FFP + 1 bag platelets	Fibrinogen concentration and platelet count satisfactory*
	≥ 7 mm	2 bags platelets	1 bag platelets	

George, S., Wake, E., Sweeny, A., Campbell, D. and Winearls, J. (2022), Rotational thromboelastometry in children presenting to an Australian major trauma centre: A retrospective cohort study. *Emergency Medicine Australasia*, 34: 590-598. <https://doi.org/10.1111/1742-6723.13939>