

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
Human Research Ethics Committee (Medical)



Guideline for Acceptable Blood Volumes by Weight for Research with Minors

WELL CHILDREN							SICK CHILDREN (Severe sepsis, Requiring >40% oxygen, Hypotensive)						
Weight (kg)	Blood vol/ kg (ml)	Total blood volume (ml)	Allowable (24 hours)			Max (60 days)	Weight (kg)	Blood vol/ kg (ml)	Total blood volume (ml)	Allowable (24 hours)			Max (60 days)
			1% blood vol	2.5% blood volume	5% blood volume	10% blood volume				1% blood vol	2% blood volume	3% blood volume	10% blood volume
1	100	100	1	2.5	5	10	1	100	100	1	2	3	10
2	100	200	2	5	10	20	2	90	180	1.8	3.6	5.4	18
3	80	240	2.4	6	12	24	3	80	240	2.4	4.8	7.2	24
4	80	320	3.2	8	16	32	4	80	320	3.2	6.4	9.6	32
5	80	400	4	10	20	40	5	80	400	4	8	12	40
6	80	480	4.8	12	24	48	6	80	480	4.8	9.6	14.4	48
7	80	560	5.6	14	28	56	7	80	560	5.6	11.2	16.8	56
8	80	640	6.4	16	32	64	8	80	640	6.4	12.8	19.2	64
9	80	720	7.2	18	36	72	9	80	720	7.2	14.4	21.6	72
10	80	800	8	20	40	80	10	80	800	8	16	24	80
11	80	880	8.8	22	44	88	11	80	880	8.8	17.6	26.4	88
12	80	960	9.6	24	48	96	12	80	960	9.6	19.2	28.8	96
13	80	1040	10.4	26	52	104	13	80	1040	10.4	20.8	31.2	104
14	80	1120	11.2	28	56	112	14	80	1120	11.2	22.4	33.6	112
15	80	1200	12	30	60	120	15	80	1200	12	24	36	120
16	80	1280	12.8	32	64	128	16	80	1280	12.8	25.6	38.4	128
17	80	1360	13.6	34	68	136	17	80	1360	13.6	27.2	40.8	136
18	80	1440	14.4	36	72	144	18	80	1440	14.4	28.8	43.2	144
19	80	1520	15.2	38	76	152	19	80	1520	15.2	30.4	45.6	152

Points to Add

1. Blood is taken by an experienced person
2. Collection procedures to minimize discomfort - applying local anaesthetic cream
4. Blood drawn for both research and clinical purposes not to exceed 3% of blood volume in 24h
5. If blood drawn is done for research purposes only, therefore not to exceed 3% of blood volume within 2 weeks or if 3% of blood volume is drawn at one sampling no repeat sampling to be done within 2 weeks

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This document has been approved by the HREC (Medical) of the University of the Witwatersrand Johannesburg. It was developed by Prof Sithembiso Velaphi through the Department of Paediatrics and Child Health, Faculty of Health Sciences, University of the Witwatersrand. This document may be used but sources must be duly acknowledged.