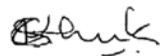
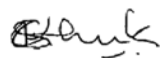


TEST	CODE	UNIT	GENDER	AGE (from-to)	RANGE	Reference	Method in Use
Erythrocytes	HRBC	/pL /x10 ¹² /L	M/F	0D - 2D	3.9 - 5.5	See Note to File on Page 5	KwaZulu Natal - Roche Sysmex 2000i or Beckman LH500/LH750 @ Johannesburg when required. Beckman LH500/LH750 reportable unit is /x10 ¹² /L. Roche Sysmex 2000i reportable unit is /pL. Both units are equivalent. Cape Town - Beckman LH500/LH750 @ Johannesburg
				3D - 7D	3.9 - 6.3		
				8D - 14D	3.6 - 6.2		
				15D - 1M	3.0 - 5.4		
				1M 1D - <7M	2.7 - 4.9		
				7M - <8M	2.8 - 5.0		
				8M - <9M	3.0 - 5.0		
				9M - <10M	3.1 - 5.1		
				10M - <11M	3.3 - 5.1		
				11M - <1Y	3.5 - 5.2		
				1Y - <5Y	3.7 - 5.3		
				5Y - <8Y	3.9 - 5.3		
			8Y - <12Y	4.0 - 5.4			
			F	12Y	3.8 - 5.8		
M	12Y	4.0 - 5.4					
Haemoglobin	HHBO	g/dL	M/F	0D - 2D	14.5 - 21.4	See Note to File on Page 5	KwaZulu Natal - Roche Sysmex 2000i or Beckman LH500/LH750 @ Johannesburg when required. Cape Town - Beckman LH500/LH750 @ Johannesburg
				3D - 7D	13.5 - 21.5		
				8D	13.2 - 21.3		
				9D - 10D	13.0 - 21.0		
				11D - 14D	12.5 - 20.5		
				15D - 21D	11.2 - 19.0		
				22D - 1M	10.0 - 18.0		
				1M 1D - 1M 12D	9.5 - 16.0		
				1M 13D - <2M	9.0 - 14.0		
				2M - <7M	9.5 - 13.5		
				7M - <9M	9.7 - 13.5		
				9M - <2Y	10.0 - 13.5		
				2Y - <5Y	11.0 - 14.0		
				5Y - <12Y	11.5 - 14.5		
				F	12Y		
			M	12Y	12.0 - 15.5		

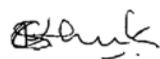
TEST	CODE	UNIT	GENDER	AGE (from-to)	RANGE	Reference	Method in Use
Haematocrit	HHCT	L/L	M/F	0D - 2D	0.46 - 0.70	See Note to File on Page 5	KwaZulu Natal - Roche Sysmex 2000i or Beckman LH500/LH750 @ Johannesburg when required.
				3D - 7D	0.42 - 0.66		
				8D	0.41 - 0.65		
				9D - 10D	0.40 - 0.64		
				11D - 14D	0.39 - 0.63		
				15D - 21D	0.35 - 0.59		
				22D - 1M	0.31 - 0.55		
				1M 1D - 1M 12D	0.30 - 0.49		
				1M 13D - <2M	0.28 - 0.42		
				2M - <7M	0.29 - 0.40		
				7M - <1Y	0.29 - 0.39		
				1Y - <2Y	0.30 - 0.36		
				2Y - <4Y	0.32 - 0.38		
				4Y - <5Y	0.34 - 0.42		
				5Y - <8Y	0.35 - 0.44		
			8Y - <12Y	0.36 - 0.44			
			F	12Y	0.36 - 0.47		
M	12Y	0.36 - 0.44					
Mean Cell Volume	HMCV	fL	M/F	0D - 1D	95.0 - 121	See Note to File on Page 5	Cape Town - Beckman LH500/LH750 @ Johannesburg
				2D - 7D	88 - 126		
				8D - 10D	87 - 125		
				11D - 14D	86 - 124		
				15D - 1M	85 - 123		
				1M 1D - 1M 12D	82 - 120		
				1M 13D - 1M 19D	79 - 117		
				1M 20D - <2M	77 - 115		
				2M - <7M	74 - 108		
				7M - <9M	73 - 100		
				9M - <1Y	72 - 96		
				1Y - <2Y	70 - 86		
				2Y - <4Y	72 - 89		
				4Y - <8Y	73 - 89		
				8Y - <12Y	76 - 90		
			F	12Y	76 - 96		
			M	12Y	76 - 95		




TEST	CODE	UNIT	GENDER	AGE (from-to)	RANGE	Reference	Method in Use
Mean Cell Haemoglobin	ZHMCH	pg	M/F	0D - 1D	31 - 38		
				2D - 1M	28 - 40		
				1M 1D - 1M 14D	27 - 37		
				1M 15D - 2M	26 - 34		
				2M 1D - <7M	25 - 34		
				7M - <1Y	24 - 33		
				1Y - <2Y	23 - 30		
				2Y - <12Y	24 - 30		
				12Y	26 - 34		
Mean Cell Haemoglobin Concentration	ZHMCHC	g/dL	M/F	0D - 12Y	30 - 37		
Platelets	HPLAT.	x10 ⁹ /L	M/F	0D - 12Y	150 - 450		
Leucocytes	HWBCO	x10 ⁹ /L	M/F	0D	9.0 - 30.0	See Note to File on Page 5	KwaZulu Natal - Roche Sysmex 2000i or Beckman LH500/LH750 @ Johannesburg when required. Cape Town - Beckman LH500/LH750 @ Johannesburg
				1D - 6D	9.0 - 34.0		
				7D - 13D	5.0 - 21.0		
				14D - <6M	5.0 - 19.5		
				6M - <2Y	6.0 - 17.5		
				2Y - <6Y	6.0 - 17.0		
				6Y - <10Y	5.0 - 15.0		
				10Y - 12Y	4.5 - 13.5		
Neutrophils	ZHNEUTPRT	x10 ⁹ /L	M/F	0D	6.0 - 26.0		
				1D - 6D	5.0 - 21.0		
				7D - 13D	1.5 - 10.0		
				14D - <1M	1.0 - 9.5		
				1M - <3M	1.0 - 9.0		
				3M - <1Y	1.0 - 8.5		
				1Y - <6Y	1.5 - 8.5		
				6Y - <10Y	1.5 - 8.0		
				10Y - 12Y	1.8 - 8.0		



TEST	CODE	UNIT	GENDER	AGE (from-to)	RANGE	Reference	Method in Use
Lymphocytes	ZHLYMPRT	x10 ⁹ /L	M/F	0D	2.0 - 11.0	See Note to File on Page 5	KwaZulu Natal - Roche Sysmex 2000i or Beckman LH500/LH750 @ Johannesburg when required. Cape Town - Beckman LH500/LH750 @ Johannesburg
				1D - 6D	2.0 - 11.5		
				7D - <1M	2.0 - 17.0		
				1M - <6M	2.5 - 16.5		
				6M - <2Y	4.0 - 13.5		
				2Y - <4Y	3.0 - 9.5		
				4Y - <6Y	2.0 - 8.0		
				6Y - <10Y	1.5 - 7.0		
10Y - 12Y	1.5 - 6.5						
Monocytes	ZHMONOPRT	x10 ⁹ /L	M/F	0D	0.2 - 1.8		
				1D - 13D	0.2 - 1.9		
				14D - <1M	0.2 - 1.8		
				1M - <6M	0.2 - 1.4		
				6M - <4Y	0.2 - 0.9		
				4Y - 12Y	0.2 - 0.8		
Eosinophils	ZHEOSPRT	x10 ⁹ /L	M/F	0D - 13D	0.0 - 0.8		
				14D - <1M	0.0 - 0.6		
				1M - 12Y	0.0 - 0.5		
Basophils	ZHBASOPRT	x10 ⁹ /L	M/F	0D - 12Y	0.0 - 0.3		



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VAT number: 4820184234 Company Registration number: 199901056807

12 October 2009

To Whom It May Concern

Haematology Reference Ranges

Please note that on investigation into the history of the origin of the haematology reference ranges at Lancet, it would appear that, historically, Lancet Adult Haematology reference ranges for Johannesburg were adopted from the South African Institute of Medical Research, (SAIMR), now known as the National Health Laboratory Services (NHLS).

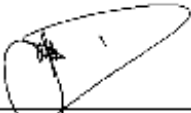
These ranges were then checked by the Lancet Haematology department in Johannesburg sometime in the late 1980s using 100 normal patients.

The Haematology reference ranges for the coastal level were determined in the 1980's by Ferguson, Roux and Partners, a local laboratory in Durban, now known as Ampath Trust. These were then adopted by all the coastal laboratories.

The Paediatric Haematology reference ranges for Johannesburg were adopted from Wintrobe in the 80's.

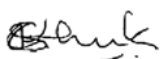
Unfortunately all this happened long before the laboratories were accredited and they did not keep the documentation in perpetuity as we do now.


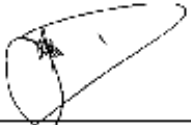
Please note that these ranges have been deemed acceptable for the local population by the pathologists' serving these practices over the last 30 years, and that we accept these as our references ranges.



Dr. Jessica Trusler
MEDICAL DIRECTOR
BARC S.A. Clinical Trials Laboratory

JOINT VENTURE OF BARC INTERNATIONAL WITH LANCET LABORATORIES
DIRECTORS: Dr Paul Magrez (Belgium), J. Albrecht (Belgium), Dr P.R. Cole (South Africa)
Dr J. Trusler (Medical Director)



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VAT number: 4820184234		Company Registration number: 199901056807		
 19 November 2009 <u>No Reference Ranges for FBC Differential Counts Reported in %</u> Please note that the reference ranges for the differential counts reported in percentage (%) have not been included in the BARC SA Haematology Reference Ranges, as these are derived from a calculation between the absolute differential counts and the total white cell count. As the differential counts reported in absolute values vary there are no set reference ranges for the differential counts expressed in percentage (%).				
 _____ Dr. Jessica Trusler Medical Director BARC SA Clinical Trials Laboratory		<u>19 November 2009</u> _____ Date		
Page 1 of 1				
JOINT VENTURE OF BARC INTERNATIONAL WITH LANCET LABORATORIES <small>PRACTICE NO: 5001000</small> DIRECTORS: Dr Paul Magrez (Belgium), J. Albrecht (Belgium), Dr P.R. Cole (South Africa) Dr J. Trusler (Medical Director)				

