

Title: Downtime CBC & Differential/Reticulocyte Panel Reference Ranges

**MALE REFERENCE RANGES FOR SYSMEX INSTRUMENT
COMPLETE BLOOD COUNT & DIFFERENTIAL WHITE COUNT**

AGE	0 - 2 Weeks	2 Weeks - 1 Months	1 Month - 2 Months	2 Months - 6 Months	6 Months - 2 Years	2 Years - 6 Years	6 Years - 12 Years	12 Years - 18 Years	18 Years - 150 Years	UNITS
MALE										
WBC	8.0 -15.4	7.8-15.9	7.1 - 15.0	6.0 - 13.3	6.0 - 13.5	4.9 - 13.4	4.3 - 11.4	3.8 - 9.8	3.4 - 10.4	K/uL
RBC	4.10 -5.55	3.16 - 4.63	3.02 - 4.22	3.43 - 4.80	4.03 - 5.07	3.89 - 4.97	3.96 - 5.03	4.03 - 5.29	4.20 - 5.80	M/uL
HGB	13.9 -19.1	10.0 -15.3	8.9 - 12.7	9.6 - 12.4	10.1 - 12.5	10.2 - 12.7	10.7 - 13.4	11.0 - 14.5	12.8 - 17.1	G/dL
HCT	39.8 - 53.6	30.5 - 45.0	26.8 - 37.5	28.6 - 37.2	30.8 - 37.8	31.0 - 37.7	32.2 - 39.8	33.9 - 43.5	38.6 - 52.1	%
MCV	91.3 - 106.4	89.4 - 103.0	83.4 - 96.4	74.1 - 88.3	69.5 - 82.6	71.3 - 85.0	74.4 - 87.6	76.7 - 90.6	77.7 - 93.7	fL
MCH	31.1 - 35.9	29.9 - 35.3	27.8 - 32.5	24.4 - 29.5	22.7 - 27.5	23.7 - 28.6	24.8 - 29.5	24.8 - 30.2	26.0 - 32.9	pG
MCHC	33.0 - 35.7	32.7 - 35.1	32.3 - 34.9	31.9 - 34.4	31.6 - 34.4	31.8 - 34.7	31.8 - 34.9	31.5 - 34.8	30.4 - 34.7	G/dL
RDW	14.6 - 17.3	14.3 - 16.8	13.6 - 16.1	12.2 - 15.3	12.7 - 15.6	12.4 - 14.9	12.2 - 14.4	12.3 - 14.6	11.4 - 15.8	%
MPV	10.2 - 12.0	10.0 - 12.2	9.2 - 11.1	8.9 - 10.9	8.7 - 10.6	8.7 - 11.0	9.2 - 11.4	9.6 - 11.8	8.5 - 12.4	fL
PLT	150 - 449	248 - 586	229 - 597	244 - 580	206 - 459	186 - 403	199 - 369	175 - 345	140 - 377	K/uL
NRBC%	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	%
NRBC ABS	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	K/uL
GRANS ABS	2.0 - 7.5	1.7 - 4.0	1.1 - 3.8	1.4 - 7.9	1.8 - 9.6	2.1 - 8.9	2.1 - 7.8	2.1 - 7.1	1.5 - 6.6	K/uL
GRANS %	21.1 - 55.4	17.0 - 40.9	14.6 - 49.1	17.0 - 60.0	22.7 - 69.3	31.7 - 77.5	38.7 - 76.7	43.2 - 76.7	42.0 - 72.5	%
LYMPH ABS	3.0 - 7.2	3.1 - 7.8	2.2 - 7.1	2.3 - 7.8	1.7 - 6.7	1.2 - 4.6	1.0 - 3.4	1.0 - 2.8	0.9 - 3.6	K/uL
LYMPH %	25.0 - 52.6	34.8 - 66.5	30.4 - 67.3	24.0 - 64.6	17.0 - 61.1	12.5 - 52.8	12.2 - 44.9	13.0 - 41.1	17.8 - 46.1	%
MONO ABS	0.2 - 3.0	0.2 - 5.0	0.2 - 2.7	0.5 - 1.9	0.3 - 2.0	0.3 - 1.2	0.3 - 0.9	0.4 - 0.9	0.2 - 1.3	K/uL
MONO %	7.1 - 13.9	5.5 - 13.8	5.9 - 13.9	4.4 - 11.4	3.6 - 10.2	3.3 - 7.8	3.3 - 7.9	3.5 - 8.2	3.3 - 12.2	%
EOS ABS	0.0 - 0.7	0.0 - 0.9	0.0 - 0.6	0.0 - 0.4	0.0 - 0.4	0.0 - 0.4	0.0 - 0.5	0.0 - 0.3	0.0 - 0.4	K/uL
EOS %	0.0 - 6.1	0.0 - 7.0	0.0 - 5.7	0.0 - 4.3	0.0 - 3.5	0.0 - 4.2	0.0 - 5.6	0.0 - 4.5	0.0 - 5.8	%
BASO ABS	0.0 - 2.1	0.0 - 1.1	0.0 - 1.3	0.0 - 1.1	0.0 - 1.1	0.0 - 0.9	0.0 - 0.9	0.0 - 0.8	0.0 - 0.1	K/uL
BASO %	0.0 - 2.1	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	%
IG ABS	0.0 - 0.0	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	K/uL
IG %	0. - 0.0	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	%

Performing Site: UNIVERSITY HOSPITAL, 4502 Medical Drive, San Antonio TX 78229-4493
Medical Director: Dr. Russell A. Higgins, M.D.

Refer to: [Sysmex XN-9000 Communications Downtime Handling Guideline](#)

Title: Downtime CBC & Differential/Reticulocyte Panel Reference Ranges

**FEMALE REFERENCE RANGES FOR SYSMEX INSTRUMENT
COMPLETE BLOOD COUNT & DIFFERENTIAL WHITE COUNT**

AGE	0 - 2 Weeks	2 Weeks - 1 Months	1 Month - 2 Months	2 Months - 6 Months	6 Months - 2 Years	2 Years - 6 Years	6 Years - 12 Years	12 Years - 18 Years	18 Years - 150 Years	UNITS
FEMALE										
WBC	8.0 - 15.4	7.8 - 15.9	7.1 - 15.0	6.0 - 13.3	6.0 - 13.5	4.9 - 13.4	4.3 - 11.4	3.8 - 9.8	3.4 - 10.4	K/uL
RBC	4.12 - 5.74	3.32 - 4.80	2.93 - 3.87	3.45 - 4.75	3.97 - 5.01	3.84 - 4.92	3.90 - 4.96	3.93 - 4.90	4.00 - 5.00	M/uL
HGB	13.4 - 20.0	10.8 - 14.6	9.0 - 11.4	9.9 - 12.4	10.2 - 12.7	10.2 - 12.7	10.6 - 13.2	10.8 - 13.3	11.5 - 14.9	G/dL
HCT	39.6 - 57.2	32.0 - 44.5	27.7 - 35.1	29.5 - 37.1	30.9 - 37.9	31.2 - 37.8	32.4 - 39.5	33.4 - 40.4	36.0 - 45.5	%
MCV	91.3 - 106.4	89.4 - 103.0	83.4 - 96.4	74.1 - 88.3	69.5 - 82.6	71.3 - 85.0	74.4 - 87.6	76.7 - 90.6	77.7 - 93.7	fL
MCH	31.1 - 35.9	29.9 - 35.3	27.8 - 32.5	24.4 - 29.5	22.7 - 27.5	23.7 - 28.6	24.8 - 29.5	24.8 - 30.2	26.0 - 32.9	pG
MCHC	33.0 - 35.7	32.7 - 35.1	32.3 - 34.9	31.9 - 34.4	31.6 - 34.4	31.8 - 34.7	31.8 - 34.9	31.5 - 34.8	30.4 - 34.7	G/dL
RDW	14.6 - 17.3	14.3 - 16.8	13.6 - 16.1	12.2 - 15.3	12.7 - 15.6	12.4 - 14.9	12.2 - 14.4	12.3 - 14.6	11.4 - 15.8	%
MPV	10.2 - 12.0	10.0 - 12.2	9.2 - 11.1	8.9 - 10.9	8.7 - 10.6	8.7 - 11.0	9.2 - 11.4	9.6 - 11.8	8.5 - 12.4	fL
PLT	150 - 449	248 - 586	229 - 597	244 - 580	206 - 459	186 - 403	199 - 369	175 - 345	140 - 377	K/uL
NRBC%	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	%
NRBC ABS	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	K/uL
GRANS ABS	2.0 - 7.5	1.7 - 4.0	1.1 - 3.8	1.4 - 7.9	1.8 - 9.6	2.1 - 8.9	2.1 - 7.8	2.1 - 7.1	1.5 - 6.6	K/uL
GRANS %	21.1 - 55.4	17.0 - 40.9	14.6 - 49.1	17.0 - 60.0	22.7 - 69.3	31.7 - 77.5	38.7 - 76.7	43.2 - 76.7	42.0 - 72.5	%
LYMPH ABS	3.0 - 7.2	3.1 - 7.8	2.2 - 7.1	2.3 - 7.8	1.7 - 6.7	1.2 - 4.6	1.0 - 3.4	1.0 - 2.8	0.9 - 3.6	K/uL
LYMPH %	25.0 - 52.6	34.8 - 66.5	30.4 - 67.3	24.0 - 64.6	17.0 - 61.1	12.5 - 52.8	12.2 - 44.9	13.0 - 41.1	17.8 - 46.1	%
MONO ABS	0.2 - 3.0	0.2 - 5.0	0.2 - 2.7	0.5 - 1.9	0.3 - 2.0	0.3 - 1.2	0.3 - 0.9	0.4 - 0.9	0.2 - 1.3	K/uL
MONO %	7.1 - 13.9	5.5 - 13.8	5.9 - 13.9	4.4 - 11.4	3.6 - 10.2	3.3 - 7.8	3.3 - 7.9	3.5 - 8.2	3.3 - 12.2	%
EOS ABS	0.0 - 0.7	0.0 - 0.9	0.0 - 0.6	0.0 - 0.4	0.0 - 0.4	0.0 - 0.4	0.0 - 0.5	0.0 - 0.3	0.0 - 0.4	K/uL
EOS %	0.0 - 6.1	0.0 - 7.0	0.0 - 5.7	0.0 - 4.3	0.0 - 3.5	0.0 - 4.2	0.0 - 5.6	0.0 - 4.5	0.0 - 5.8	%
BASO ABS	0.0 - 2.1	0.0 - 1.1	0.0 - 1.3	0.0 - 1.1	0.0 - 1.1	0.0 - 0.9	0.0 - 0.9	0.0 - 0.8	0.0 - 0.1	K/uL
BASO %	0.0 - 2.1	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	%
IG ABS	0.0 - 0.0	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	0.0 - 0.1	K/uL
IG %	0. - 0.0	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	0.0 - 0.6	%

Performing Site: UNIVERSITY HOSPITAL, 4502 Medical Drive, San Antonio TX 78229-4493
Medical Director: Dr. Russell A. Higgins, M.D.

Refer to: [Sysmex XN-9000 Communications Downtime Handling Guideline](#)

Title: Downtime CBC & Differential/Reticulocyte Panel Reference Ranges

RETICULOCYTE PANEL REFERENCE RANGES

TEST		REFERENCE RANGES		
RETIC % (Reticulocyte %)				
Male/Female Age:				
	0 - 3 days	2.1 - 4.8 %		
	3 Days - 1 Month	0.4 - 2.7 %		
	1 Month - 2 Months	0.9 - 3.8 %		
	2 Months - 6 Months	0.9 - 3.1 %		
	6 Months - 2 Years	0.8 - 2.0 %		
	2 Years - 6 Years	0.8 - 2.1 %		
	6 Years - 12 Years	0.7 - 2.8 %		
	12 Years - 18 Years	0.8 - 2.2 %		
	18 Years - 150 Years	0.3 - 1.9 %		
RETIC ABS (Reticulocyte Absolute)				
Age:		Male	Female	Units
	Birth - 6 Months	0.037 - 0.104	0.037 - 0.104	M/uL
	6 Months - 2 Years	0.029 - 0.086	0.029 - 0.086	M/uL
	2 Years - 6 Years	0.029 - 0.080	0.029 - 0.080	M/uL
	6 Years - 12 Years	0.037 - 0.106	0.037 - 0.106	M/uL
	12 Years - 18 Years	0.039 - 0.100	0.039 - 0.100	M/uL
	18 Years - 150 Years	0.050 - 0.100	0.050 - 0.100	M/uL
IRF (Immature Reticulocyte Fraction)				
Age:				
	Birth - 18 Years	0.0 - 0.0 %		
	18 Years - 150 Years	0.0 - 13.0 %		
		Note : Pediatric normal ranges have not been established		
RETIC HGB (Reticulocyte Hemoglobin)				
Age:				
	Birth - 2 Years	22.5 - 31.8 pg		
	2 Years - 6 Years	25.1 - 32.0		
	6 Years - 12 Years	23.6 - 33.9		
	12 Years - 18 Years	27.0 - 33.9		
	18 Years - 150 Years	28.1 - 36.2		
IPF (Immature Platelet Fraction)				
Age:				
	Birth - 18 Years	0.0 - 0.0 %		
	18 Years - 150 Years	0.9 - 9.7 %		
		Note : Pediatric normal ranges have not been established		

Performing Site: UNIVERSITY HOSPITAL, 4502 Medical Drive, San Antonio TX 78229-4493

Medical Director: Dr. Russell A. Higgins, M.D.

Refer to: [Sysmex XN-9000 Communications Downtime Handling Guideline](#)