

Complete Blood Count

XN-1000 Instrument Linearity Ranges	Parameter	Linearity	Report (LSV.37720)		
	WBC	0 - 400 x 10 ³ /ul	> 400 x 10 ³ /ul		
	RBC	0 - 8.0 x 10 ⁶ /ul	> 8.0 x 10 ⁶ /ul		
	HCT	0 - 60 %	> 60		
	HGB	0 - 25 g/dl	> 25g/dl		
	PLT	0 - 5000 x 10 ³ /ul	> 5000 x 10 ³ /ul		
XN-450 Instrument Linearity Ranges	Parameter	Linearity (LSV.37720)	Report HIGH as		
	WBC	0 - 100 x 10 ³ /ul	> 400 x 10 ³ /ul		
	RBC	0 - 8.0 x 10 ⁶ /ul	> 8.0 x 10 ⁶ /ul		
	HCT	0 - 75.0 %	> 75		
	HGB	0 - 26 g/dl	> 26g/dl		
	PLT	0 - 5000 x 10 ³ /ul	> 5000 x 10 ³ /ul		
Delta Checking	The following Delta Check criteria is set up in the LIS:				
	Test	Range Checked	% Diff Allowed	Delta Diff Allowed	Days Checked
	Leukocyte Count	0-400 10 ³ /ul	100%		3
	MCV	50-150 fl		5	7
	Platelet Count	0-19 10 ³ /ul		5	7
	Platelet Count	20-49 10 ³ /ul	50%		3
	Platelet Count	50-5000 10 ³ /ul	200%		3

Complete Blood Count

Reference Range

Parameter	18+ Years (Adult)	
	Male	Female
WBC x 10 ³ /uL	4.0-10.5	4.0-10.5
RBC x 10 ⁶ /uL	4.7-6.0	4.2-5.4
HGB g/dL	13.5-18	12.5-16
HCT %	42-52	37-47
MCV fL	78-100	78-100
MCH pg	27-31	27-31
MCHC g/dL	32-37	32-37
RDW -SD	<50.4	<46.0
MPV	9.2-11.9	9.2-11.9
Platelets x10 ³ /uL	150-450	150-450
Total Neutrophils*	1.5-6.6	1.5-6.6
SEGS x 10 ³ /uL	1.3-6.0	1.3-6.0
BANDS x 10 ³ /uL	<1.0	<1.0
LYMPHS x10 ³ /uL	1.0-3.5	1.0-3.5
MONOS x 10 ³ /uL	<1.0	<1.0
EOS x 10 ³ /uL	<0.7	<0.7
BASOS x 10 ³ /uL	<0.1	<0.1

Manual Differential	
Neutrophils	43 – 65
Lymphocytes	20.5 – 45
Monocytes	5.5 – 10
Eosinophils	0.9 – 2.9
Basophils	0.2 – 1.0

NOTE: Patient results are reported with accompanying reference intervals or interpretive ranges as appropriate.
(COM.29950) (LSV.37199)

*Total Neutrophils = SEGS + BANDS.

Differential Shown as Absolute Numbers - to Convert % to Absolute Number = WBC X %/100.

Reference: The Children's Hospital of Buffalo Clinical Laboratories

Complete Blood Count

For Pediatric Ranges, refer to chart below

These updates took place 11/6/21 with the update to our LIS and a shared system with UVMHN. These updated reference ranges are based on a Boston Children's Hospital study that was published in Pediatric Reference Intervals, Eighth Edition, copyright 2021, pages 209-253 by Wong, Bruignara, Straseski, Kellogg and Adeli. These were derived using the Sysmex XN testing platform on which our assays are also performed. The testing platform, test names, and ordering processes remain the same.

Age	Pediatric WBC				Pediatric RBC				Pediatric HGB			
	Male		Female		Male		Female		Male		Female	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
1-3 days	7.56	21.26	7.97	23.17	3.57	5.50	3.58	5.42	12.8	19.7	12.8	19.2
4-7 days	7.54	14.91	7.93	17.11	3.89	5.64	3.80	5.76	13.3	19.3	13.0	19.4
8-14 days	7.80	17.07	8.00	16.82	3.30	5.30	3.47	5.37	11.0	17.5	12.0	18.3
15-30 days	6.54	15.44	6.59	15.58	3.00	4.70	3.22	4.76	9.8	15.4	10.2	15.8
31-60 days	5.85	14.49	6.52	14.75	2.87	4.09	2.95	4.17	9.0	12.9	8.9	12.7
61-180 days	4.40	14.77	5.51	14.63	3.21	5.48	2.98	4.68	10.1	13.2	10.0	14.1
0.5 to <2 years	3.74	14.67	4.76	14.43	3.65	5.51	3.54	5.31	10.1	13.6	10.1	13.7
2 to <6 years	3.97	13.45	4.19	13.63	3.34	5.41	3.65	5.34	10.2	13.7	10.3	13.7
6 to <12 years	3.44	12.71	3.75	13.09	3.11	5.34	3.41	5.40	10.3	14.3	10.6	14.7
12 to <18 years	3.13	12.43	3.78	12.06	3.97	5.88	3.38	5.29	11.2	16.4	10.4	14.6

Age	Pediatric HCT and MHCT				Pediatric MCV				Pediatric MCH			
	Male		Female		Male		Female		Male		Female	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
1-3 days	37.6	56.6	37.4	55.7	96	111	96	112	33.2	37.9	33.3	38.7
4-7 days	37.9	55.7	36.1	54.7	93	105	92	104	32.6	36.4	31.9	36.4
8-14 days	32.8	50.5	35.4	53.0	92	104	94	106	31.7	36.2	32.1	36.9
15-30 days	29.2	45.2	30.0	45.9	90	101	90	102	30.7	35.0	30.6	34.9
31-60 days	26.3	36.9	27.3	38.6	86	97	87	97	29.3	33.3	29.4	33.4
61-180 days	25.8	43.8	27.8	40.8	68	92	74	97	21.2	31.4	23.8	32.0
0.5 to <2 years	28.4	41.2	25.4	40.2	68	88	71	88	19.4	29.1	20.1	29.6
2 to <6 years	27.4	40.3	28.3	40.9	68	88	68	89	20.3	29.8	19.5	29.9
6 to <12 years	25.6	42.6	28.4	44.4	70	90	71	93	22.8	30.7	21.6	31.1
12 to <18 years	33.7	48.7	27.8	43.8	74	94	71	96	23.1	31.7	21.0	32.1

Complete Blood Count

Age	Pediatric MCHC				Pediatric RDW-CV				Pediatric PLT			
	Male		Female		Male		Female		Male		Female	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
1-3 days	33.0	36.0	33.1	35.8	15.4	19.9	15.2	19.8	114	295	120	327
4-7 days	33.8	36.0	33.8	36.0	14.7	18.9	14.6	18.4	142	400	127	391
8-14 days	33.4	35.8	33.4	35.5	14.1	17.6	14.1	16.8	184	530	206	555
15-30 days	33.2	35.8	33.0	35.6	13.8	17.2	13.7	16.8	200	480	202	544
31-60 days	33.0	35.5	32.8	35.5	13.3	16.2	13.1	16.5	252	535	267	564
61-180 days	29.8	35.8	31.6	36.0	11.8	19.7	11.6	17.3	204	576	196	591
0.5 to <2 years	30.2	35.0	30.1	35.0	11.9	20.6	11.4	20.7	169	543	175	562
2 to <6 years	30.3	35.6	29.6	35.4	11.8	18.5	11.7	17.6	168	492	171	504
6 to <12 years	31.0	35.2	30.2	35.2	11.6	21.1	11.6	17.0	167	462	176	500
12 to <18 years	30.6	35.3	29.7	35.1	11.5	16.5	11.5	19.3	152	426	159	424

Age	Pediatric MPV				Pediatric RDW-SD				Pediatric RET			
	Male		Female		Male		Female		Male		Female	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
1-3 days	9.1	11.1	9.1	11.2	This parameter will not report a ref range, but will be reported with the following statement, "No reference range currently available for patients under 18."	2.7	10.2	3.4	21.0			
4-7 days	9.5	11.9	9.5	11.9		1.0	3.6	0.5	4.7			
8-14 days	9.8	12.1	10.1	12.2		0.5	5.8	0.8	9.9			
15-30 days	9.9	12.4	9.6	12.0		0.7	4.7	0.4	5.5			
31-60 days	9.2	11.3	9.3	11.4		1.1	6.4	1.0	4.6			
61-180 days	8.4	12.1	8.4	12.3								
0.5 to <2 years	8.4	11.7	8.5	11.9								
2 to <6 years	8.4	12.0	8.5	12.1								
6 to <12 years	8.8	12.3	8.8	12.6								
12 to <18 years	8.9	12.8	9.0	12.6								