

 250 Hospital Place Soldotna, AK 99669	POLICY TITLE: Normal Ranges and Critical Values	DEPARTMENT: Laboratory CATEGORY: Laboratory Services SECTION: Hematology
	POLICY NUMBER: LAB.704.522	EFFECTIVE DATE: JULY 2025 Original Date of Policy: 6/01
	AUTHORIZED BY: Laboratory Medical Director	Revised: 6/03; 9/06; 2/10; 2/17,10/19, 7/25 Reviewed: 8/05; 9/06; 7/07; 7/08; 11/09; 11/22, 10/23, 7/25

APPLIES TO: Laboratory Technical Staff

RESPONSIBILITY: Laboratory Technical Staff

DEFINITIONS:

POLICY:

PRINCIPLE: This procedure lists the Normal Ranges and Critical Values of hematology tests. For instruction in reporting critical values please refer to the General Laboratory Procedure "Critical Values"

MATERIALS:

SPECIMEN:

PROCEDURE: Use the following table to identify the appropriate Normal Range and/or Critical Value for any hematology test.

TEST (Units)	AGE	NORMAL VALUES	SEX	CRITICAL VALUES
WBC (K/ μ L)	0D-1D	9.0-30.0	BOTH	≤ 8.0 ; ≥ 30.0
	1D-7D	5.0-21.0	BOTH	≤ 5.0 ; ≥ 25.0
	7D-1MO	5.0-19.5	BOTH	≤ 5.0 ; ≥ 25.0
	1MO-1YR	6.0-17.5	BOTH	≤ 6.0 ; ≥ 25.0
	1YR-2YR	5.0-15.5	BOTH	≤ 3.0 ; ≥ 25.0
	2YR-4YR	6.0-15.5	BOTH	≤ 3.0 ; ≥ 25.0
	4YR-6YR	5.0-13.5	BOTH	≤ 3.0 ; ≥ 25.0
	6YR-10YR	4.5-13.5	BOTH	≤ 3.0 ; ≥ 25.0
	10YR-14YR	5.0-11.0	BOTH	≤ 1.0 ; ≥ 25.0
	14YR-18YR	4.5-11.0	BOTH	≤ 1.0 ; ≥ 25.0
	18YR-110YR	4.0-11.0	BOTH	≤ 1.0 ; ≥ 25.0
RBC (M/ μ L)	0D-3D	4.00-6.60	BOTH	
	3D-7D	3.90-6.30	BOTH	

TEST (Units)	AGE	NORMAL VALUES	SEX	CRITICAL VALUES
RBC (M/ μ L)	14D-30D	3.00-5.40	BOTH	
	30D-6MO	3.10-4.50	BOTH	
	6MO-2YR	3.10-5.30	BOTH	
	2YR-6YR	3.90-5.30	BOTH	
	6YR-12YR	4.00-5.20	BOTH	
	12YR-18YR	4.50-5.30	MALE	
	12YR-18YR	4.10-4.50	FEMALE	
	18YR-110YR	4.30-5.40	MALE	
	18YR-110YR	3.90-4.90	FEMALE	
HEMOGLOBIN (g/dL)	0D-1D	13.5-19.5	BOTH	≤ 12.6 ; ≥ 21
	1D-3D	14.5-22.5	BOTH	≤ 13.6 ; ≥ 22.6
	3D-7D	13.5-21.5	BOTH	≤ 12.6 ; ≥ 21.6
	7D-14D	12.5-20.5	BOTH	≤ 11.6 ; ≥ 21.6
	14D-1MO	10.0-18.0	BOTH	≤ 9.1 ; ≥ 18
	1MO-2MO	9.0-14.0	BOTH	≤ 7 ; ≥ 18
	2MO-6MO	9.5-13.5	BOTH	≤ 7 ; ≥ 18
	6MO-2YR	11.5-13.5	BOTH	≤ 7 ; ≥ 18
	2YR-12YR	11.5-15.5	BOTH	≤ 7 ; ≥ 18
	12YR-18YR	13.0-16.0	BOTH	≤ 7 ; ≥ 18
	18YR-110YR	14.0-17.7	MALE	≤ 7 ; ≥ 18
	18YR-110YR	12.0-15.7	FEMALE	≤ 7 ; ≥ 18
HEMATOCRIT (Percent%)	0D-1D	40.5-58.5	BOTH	≥ 67.6
	1D-3D	43.5-67.5	BOTH	≥ 67.6
	3D-7D	40.5-64.5	BOTH	< 24 ; ≥ 65
	7D-14D	37.5-61.5	BOTH	< 24 ; ≥ 65
	14D-30D	30.0-54.0	BOTH	≤ 24 ; ≥ 60
	30D-2MO	27.0-42.0	BOTH	≤ 21 ; ≥ 60
	2MO-6MO	28.5-40.5	BOTH	≤ 21 ; ≥ 60
	6MO-6YR	34.5-40.5	BOTH	≤ 21 ; ≥ 60
	6YR-12YR	34.5-46.5	BOTH	≤ 21 ; ≥ 60
	12YR-18YR	39.0-48.0	BOTH	≤ 21 ; ≥ 60
	18YR-110YR	42.0-54.0	MALE	≤ 21 ; ≥ 60
	18YR-110YR	36.0-48.0	FEMALE	≤ 21 ; ≥ 60
MCV (fL)	0D-3D	95-121	BOTH	

TEST (Units)	AGE	NORMAL VALUES	SEX	CRITICAL VALUES
MCV (fL)	7D-14D	86-124	BOTH	
	14D-1MO	85-123	BOTH	
	1MO-2MO	77-115	BOTH	
	2MO-6MO	74-108	BOTH	
	6MO-2YR	70-86	BOTH	
	2YR-6YR	75-87	BOTH	
	6YR-12YR	77-95	BOTH	
	12YR-18YR	78-98	BOTH	
	18YR-110YR	82-96	BOTH	
MCH (pg)	0D-3D	31.0-37.0	BOTH	
	3D-1MO	28.0-37.0	BOTH	
	1MO-2MO	26.0-34.0	BOTH	
	2MO-6MO	25.0-35.0	BOTH	
	6MO-2YR	23.0-31.0	BOTH	
	2YR-6YR	24.0-30.0	BOTH	
	6YR-12YR	25.0-33.0	BOTH	
	12YR-18YR	25.0-35.0	BOTH	
	18YR-110YR	26.0-33.0	BOTH	
MCHC (g/dl)	0D-3D	29-37	BOTH	
	3D-14D	28-37	BOTH	
	14D-2MO	29-37	BOTH	
	2MO-2YR	30-36	BOTH	
	2YR-18YR	31-37	BOTH	
	18YR-110YR	31-36	BOTH	
RDW (%)	0D-7D	11.0-18.0	BOTH	
	7D-2MO	11.0-17.0	BOTH	
	2MO-6MO	11.0-16.5	BOTH	
	6MO-2YR	11.0-16.0	BOTH	
	2YR-6YR	11.0-15.0	BOTH	
	6YR-18YR	11.0-14.5	BOTH	
	18YR-110YR	11.5-14.5	BOTH	
MPV (fl)	0D-110YR	6.5-11.7	BOTH	
PLATELETS (K/mm ³)	0D-3D	250-450	BOTH	≤ 50; ≥1000
	3D-9D	200-400	BOTH	≤ 50; ≥1000

TEST (Units)	AGE	NORMAL VALUES	SEX	CRITICAL VALUES
PLATELETS (K/mm ³)	9D-1MO	250-450	BOTH	≤ 50; ≥1000
	1MO-6MO	300-750	BOTH	≤ 50; ≥1000
	6MO-2YR	250-600	BOTH	≤ 50; ≥1000
	2YR-8YR	250-550	BOTH	≤ 50; ≥1000
	8YR-12YR	200-450	BOTH	≤ 50; ≥1000
	12YR-18YR	150-450	BOTH	≤ 10; ≥1000
	18YR-110YR	140-450	BOTH	≤ 10; ≥1000
NEUT %	0D-1D	33-70	BOTH	
	1D-7D	15-50	BOTH	
	7D-30D	15-45	BOTH	
	1MO-12MO	15-70	BOTH	
	1YR-4YR	25-70	BOTH	
	4YR-10YR	30-70	BOTH	
	10YR-14YR	25-70	BOTH	
	14YR-18YR	30-70	BOTH	
	18YR-110YR	39-73	BOTH	
NEUT ABS#	0D-1D	3.0-12.0	BOTH	≤ 0.5
	1D-7D	2.0-6.0	BOTH	≤ 0.5
	7D-1YR	1.5-5.0	BOTH	≤ 0.5
	1YR-4YR	1.5-7.5	BOTH	≤ 0.5
	4YR-10YR	1.8-7.0	BOTH	≤ 0.5
	10YR AND UP	1.5-7.0	BOTH	≤ 0.5
LYMPH %	0D-1D	10-35	BOTH	
	1D-7D	15-70	BOTH	
	7D-4YR	30-70	BOTH	
	4YR-6YR	20-70	BOTH	
	6YR-10YR	20-50	BOTH	
	10YR-18YR	20-40	BOTH	
	18YR-110YR	19-45	BOTH	
MONO %	0D-18YR	0-10	BOTH	
	18YR-110YR	3-11	BOTH	
EOS %	0D AND UP	0-4	BOTH	

TEST (Units)	AGE	NORMAL VALUES	SEX	CRITICAL VALUES
BASO %	0D-18YR	0-1	BOTH	
	18YR-110YR	0-1	BOTH	
BANDS %	0D-110YR	0-5	BOTH	
IG#	0D-15D	0-0.3	BOTH	
	15D-1MO	0-0.2	BOTH	
	1MO AND UP	0-0.1	BOTH	
IG%	0D-2D	0-1.7	BOTH	
	2D-14D	0-1.9	BOTH	
	14D-1MO	0-1.3	BOTH	
	1MO-3MO	0-0.9	BOTH	
	3MO-6MO	0-0.5	BOTH	
	6MO-110YR	0-1.0	BOTH	
RETICULOCYTES		MALE	FEMALE	
	0D-3D	2.2-4.8	2.1-3.7	
	3D-1MO	0.4-2.7	0.4-2.0	
	1MO-2MO	0.9-3.8	1.5-3.2	
	2MO-6MO	0.9-3.1	1.1-2.9	
	6MO-2YR	0.8-2.0	0.9-2.0	
	2YR-6YR	0.8-2.0	0.8-2.1	
	6YR-12YR	0.7-2.2	0.8-2.8	
	12YR-18YR	0.8-2.2	0.8-2.2	
	18YR-110YR	0.5-1.5	0.5-1.5	
IRF%		MALE	FEMALE	
(IMMATURE RETIC FRACTION)	0D-110YR	1.5-13.7	1.1-15.9	
ESR (mm/hr)		MALE	FEMALE	
	0 up to 50 years	0-15 mm/hr	0-20 mm/hr	
	50 years up to unspecified	0-20 mm/hr	0-30 mm/hr	

TEST (Units)	AGE	NORMAL VALUES	SEX	CRITICAL VALUES
SYNOVIAL AND SEROUS FLUID				
WBC (/mm ³)	ALL	Reference Range Not Established	BOTH	
PMN'S (%)	ALL	Reference Range Not Established	BOTH	
MONONUC (%)	ALL	Reference Range Not Established	BOTH	
CEREBRAL SPINAL FLUID				
WBC (/mm ³)	ALL	0-4	BOTH	≥ 5
RBC's (/mm ³)	ALL	0-2	BOTH	

REPORTING RESULTS:

LIMITATIONS:

REVISION

RESPONSIBILITY: Hematology Supervisor and/or designee(s)

REFERENCES:

Nathan/Oski, Hematology of Infancy and Childhood, 3rd Ed., 1987
PAML, Test Update, Pediatric Reference Ranges for Chemistry and Hematology, Jan 12, 2001
Bick, Hematology Clinical and Laboratory Practice 1993 Mosby
Central Peninsula Hospital Policy GL 506-C

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Date

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