MAYO CLINIC
Mayo Medical Laboratories

REFERENCE VALUE CHANGE
NOTIFICATION DATE: October 19, 2011
EFFECTIVE DATE: November 18, 2011

CBC with Differential, Blood

Test ID: CBC
Secondary ID: #9109

EXPLANATION: Effective November 18, 2011, MML will implement new reference values for newborns. No other changes will occur at this time.

CURRENT REFERENCE VALUES:	**NEW REFERENCE VALUES:**
RED BLOOD CELL COUNT (RBC)	RED BLOOD CELL COUNT (RBC)
Males	Males:
0-7 days: 3.90-6.00 x 10(12)/L	Birth: 3.90-5.50 x 10(12)/L
8-14 days: 3.60-6.00 x 10(12)/L	1-7 days: 3.90-6.00 x 10(12)/L
15 days-1 month: 3.00-5.50 x 10(12)/L	8-14 days: 3.60-6.00 x 10(12)/L
2-5 months: 3.10-4.50 x 10(12)/L	15 days - 1 month: 3.00-5.50 x 10(12)/L
6-11 months: 3.70-6.00 x 10(12)/L	2-5 months: 3.10-4.50 x 10(12)/L
1-2 years: 3.70-6.00 x 10(12)/L	6-11 months: 3.70-6.00 x 10(12)/L
2 years: 4.10-5.10 x 10(12)/L	1-2 years: 3.70-6.00 x 10(12)/L
3-5 years: 4.10-5.30 x 10(12)/L	2 years: 4.10-5.10 x 10(12)/L
6-11 years: 4.20-5.10 x 10(12)/L	3-5 years: 4.10-5.30 x 10(12)/L
12-15 years: 4.40-5.50 x 10(12)/L	6-11 years: 4.20-5.10 x 10(12)/L
Adults: 4.32-5.72 x 10(12)/L	12-15 years: 4.40-5.50 x 10(12)/L
Females	Adult: 4.32-5.72 x 10(12)/L
0-7 days: 3.90-6.00 x 10(12)/L	Females:
8-14 days: 3.60-6.00 x 10(12)/L	Birth: 3.90-5.50 x 10(12)/L
15 days-1 month: 3.00-5.50 x 10(12)/L	1-7 days: 3.90-6.00 x 10(12)/L
2-5 months: 3.10-4.50 x 10(12)/L	8-14 days: 3.60-6.00 x 10(12)/L
6-11 months: 3.70-6.00x 10(12)/L	15 days - 1 month: 3.00-5.50 x 10(12)/L
1-2 years: 3.70-6.00 x 10(12)/L	2-5 months: 3.10-4.50 x 10(12)/L
2 years: 4.10-5.10 x 10(12)/L	6-11 months: 3.70-6.00x 10(12)/L
3-5 years: 4.10-5.20 x 10(12)/L	1-2 years: 3.70-6.00 x 10(12)/L
6-11 years: 4.10-5.30 x 10(12)/L	2 years: 4.10-5.10 x 10(12)/L
12-15 years: 4.10-5.20 x 10(12)/L	3-5 years: 4.10-5.20 x 10(12)/L
Adults: 3.90-5.03 x 10(12)/L	6-11 years: 4.10-5.30 x 10(12)/L
HEMOGLOBIN	12-15 years: 4.10-5.20 x 10(12)/L
Males	Adult: 3.90-5.03 x 10(12)/L
0-7 days: 13.5-22.0 g/dL	HEMOGLOBIN
8-14 days: 12.5-21.0 g/dL	Males:
15 days-1 month: 10.0-20.0 g/dL	Birth -7 days: 13.5-22.0 g/dL
2-5 months: 10.0-14.0 g/dL	8-14 days: 12.5-21.0 g/dL
6 months-2 years: 10.5-13.5 g/dL	15 days - 1 month: 10.0-20.0 g/dL
2 years: 11.0-14.0 g/dL	2-5 months: 10.0-14.0 g/dL
3-5 years:11.0-14.5 g/dL	6 months - 2 years: 10.5-13.5 g/dL
6-11 years: 12.0-14.0 g/dL	2 years: 11.0-14.0 g/dL
12-15 years: 12.8-16.0 g/dL	3-5 years: 11.0-14.5 g/dL
Adults: 13.5-17.5 g/dL	6-11 years: 12.0-14.0 g/dL

Females 0-7 days: 13.5-22.0 g/dL 8-14 days: 12.5-21.0 g/dL 15 days-1 month: 10.0-20.0 g/dL 2-5 months: 10.0-14.0 g/dL 6 months-2 years: 10.5-13.5 g/dL 2 years: 11.0-14.0 g/dL 3-5 years: 11.8-14.7 g/dL 6-11 years: 12.0-14.5 g/dL 12-15 years: 12.2-14.8 g/dL Adults: 12.0-15.5 g/dL HEMATOCRIT Males 0-7 days: 42.0-60.0% 8-14 days: 39.0-60.0% 15 days-1 month: 31.0-55.0% 2-5 months: 28.0-42.0% 6 months-1 year: 33.0-40.0% 2 years: 33.0-42.0% 3-5 years: 33.0-43.0% 6-11 years: 35.8-42.4% 12-15 years: 37.3-47.3% Adults: 38.8-50.0% Females 0-7 days: 42.0-60.0% 8-14 days: 39.0-60.0% 15 days-1 month: 31.0-55.0% 2-5 months: 28.0-42.0% 6 months-1 year: 33.0-40.0% 2 years: 33.0-42.0% 3-5 years: 35.0-44.0% 6-11 years: 35.7-43.0% 12-15 years: 36.3-43.4% Adults: 34.9-44.5% MEAN CORPUSCULAR VOLUME (MCV) Males 0-7 days: 88.0-120.0 fL 8-14 days: 86.0-120.0 fL 15 days-1 month: 85.0-110.0 fL 2-5 months: 77.0-110.0 fL 6 months-5 years: 74.0-89.0 fL 6-11 years: 76.5-90.6 fL 12-15 years: 81.4-91.9 fL Adults: 81.2-95.1 fL Females 0-7 days: 88.0-120.0 fL 8-14 days: 86.0-120.0 fL 15 days-1 month: 85.0-110.0 fL 2-5 months: 77.0-110.0 fL 6 months-5 years: 74.0-89.0 fL 6-11 years: 78.5-90.4 fL 12-15 years: 79.9-92.3 fL Adults: 81.6-98.3 fL RED CELL DISTRIBUTION WIDTH (RDW) Males <2 years: not established	12-15 years: 12.8-16.0 g/dL Adult: 13.5-17.5 g/dL Females: Birth -7 days: 13.5-22.0 g/dL 8-14 days: 12.5-21.0 g/dL 15 days - 1 month: 10.0-20.0 g/dL 2-5 months: 10.0-14.0 g/dL 6 months - 2 years: 10.5-13.5 g/dL 2 years: 11.0-14.0 g/dL 3-5 years: 11.8-14.7 g/dL 6-11 years: 12.0-14.5 g/dL 12-15 years: 12.2-14.8 g/dL Adult: 12.0-15.5 g/dL HEMATOCRIT Males: Birth -7 days: 42.0-60.0% 8-14 days: 39.0-60.0% 15 days - 1 month: 31.0-55.0% 2-5 months: 28.0-42.0% 6 months - 1 year: 33.0-40.0% 2 years: 33.0-42.0% 3-5 years: 33.0-43.0% 6-11 years: 35.8-42.4% 12-15 years: 37.3-47.3% Adult: 38.8-50.0% Females: Birth -7 days: 42.0-60.0% 8-14 days: 39.0-60.0% 15 days - 1 month: 31.0-55.0% 2-5 months: 28.0-42.0% 6 months - 1 year: 33.0-40.0% 2 years: 33.0-42.0% 3-5 years: 35.0-44.0% 6-11 years: 35.7-43.0% 12-15 years: 36.3-43.4% Adult: 34.9-44.5% MEAN CORPUSCULAR VOLUME (MCV) Males: Birth: 98.0-120.0 fL 1-7 days: 88.0-120.0 fL 8-14 days: 86.0-120.0 fL 15 days - 1 month: 85.0-110.0 fL 2-5 months: 77.0-110.0 fL 6 months - 5 years: 74.0-89.0 fL 6-11 years: 76.5-90.6 fL 12-15 years: 81.4-91.9 fL Adult: 81.2-95.1 fL Females: Birth: 98.0-120.0 fL 1-7 days: 88.0-120.0 fL 8-14 days: 86.0-120.0 fL 15 days - 1 month: 85.0-110.0 fL 2-5 months: 77.0-110.0 fL 6 months - 5 years: 74.0-89.0 fL 6-11 years: 78.5-90.4 fL 12-15 years: 79.9-92.3 fL

2 years: 12.0-14.5%
3-5 years: 12.0-14.0%
6-11 years: 12.0-14.0%
12-15 years: 11.6-13.8%
Adults: 11.8-15.6%
Females
<2 years: not established
2 years: 12.0-14.5%
3-5 years: 12.0-14.0%
6-11 years: 11.6-13.4%
12-15 years: 11.2-13.5%
Adults: 11.9-15.5%
WHITE BLOOD CELL COUNT (WBC)
Males
0-7 days: 9.4-34.0 x 10(9)/L
8-14 days: 5.0-21.0 x 10(9)/L
15 days-1 month: 5.0-20.0 x 10(9)/L
2-5 months: 5.0-15.0 x 10(9)/L
6 months-2 years: 6.0-11.0 x 10(9)/L
2 years: 5.0-12.0 x 10(9)/L
3-5 years: 4.0-12.0 x 10(9)/L
6-11 years: 3.4-9.5 x 10(9)/L
12-15 years: 3.6-9.1 x 10(9)/L
Adults: 3.5-10.5 x 10(9)/L
Females
0-7 days: 9.4-34.0 x 10(9)/L
8-14 days: 5.0-21.0 x 10(9)/L
15 days-1 month: 5.0-20.0 x 10(9)/L
2-5 months: 5.0-15.0 x 10(9)/L
6 months-2 years: 6.0-11.0 x 10(9)/L
2 years: 5.0-12.0 x 10(9)/L
3-5 years: 4.0-12.0 x 10(9)/L
6-11 years: 3.4-10.8 x 10(9)/L
12-15 years: 4.1-8.9 x 10(9)/L
Adults: 3.5-10.5 x 10(9)/L
NEUTROPHILS
0-7 days: 1.50-10.00 x 10(9)/L
8-14 days: 1.00-9.50 x 10(9)/L
15 days-1 month: 1.00-9.00 x 10(9)/L
2-5 months: 1.00-8.50 x 10(9)/L
6 months-5 years: 1.50-8.50 x 10(9)/L
6-11 years: 1.50-8.00 x 10(9)/L
12-15 years: 1.80-8.00 x 10(9)/L
Adults: 1.70-7.00 x 10(9)/L
LYMPHOCYTES
0-7 days: 2.00-11.00 x 10(9)/L
8-14 days: 2.00-17.00 x 10(9)/L
15 days-1 month: 2.50-16.50 x 10(9)/L
2-5 months: 4.00-13.50 x 10(9)/L
6 months-11 months: 4.00-10.50 x 10(9)/L
1-5 years: 1.50-7.00 x 10(9)/L
6-11 years: 1.50-6.50 x 10(9)/L
12-15 years: 1.20-5.20 x 10(9)/L
Adults: 0.90-2.90 x 10(9)/L
MONOCYTES
0-14 days: 0.40-1.80 x 10(9)/L

Adult: 81.6-98.3 fL
RED CELL DISTRIBUTION WIDTH (RDW)
Males:
<2 years: not established
2 years: 12.0-14.5%
3-5 years: 12.0-14.0%
6-11 years: 12.0-14.0%
12-15 years: 11.6-13.8%
Adult: 11.8-15.6%
Females:
<2 years: not established
2 years: 12.0-14.5%
3-5 years: 12.0-14.0%
6-11 years: 11.6-13.4%
12-15 years: 11.2-13.5%
Adult: 11.9-15.5%
WHITE BLOOD CELL COUNT (WBC)
Males:
Brith: 9.0-30.0 x 10(9)/L
1-7 days: 9.4-34.0 x 10(9)/L
8-14 days: 5.0-21.0 x 10(9)/L
15 days - 1 month: 5.0-20.0 x 10(9)/L
2-5 months: 5.0-15.0 x 10(9)/L
6 months - 2 years: 6.0-11.0 x 10(9)/L
2 years: 5.0-12.0 x 10(9)/L
3-5 years: 4.0-12.0 x 10(9)/L
6-11 years: 3.4-9.5 x 10(9)/L
12-15 years: 3.6-9.1 x 10(9)/L
Adult: 3.5-10.5 x 10(9)/L
Females:
Birth: 9.0-30.0 x 10(9)/L
1-7 days: 9.4-34.0 x 10(9)/L
8-14 days: 5.0-21.0 x 10(9)/L
15 days - 1 month: 5.0-20.0 x 10(9)/L
2-5 months: 5.0-15.0 x 10(9)/L
6 months - 2 years: 6.0-11.0 x 10(9)/L
2 years: 5.0-12.0 x 10(9)/L
3-5 years: 4.0-12.0 x 10(9)/L
6-11 years: 3.4-10.8 x 10(9)/L
12-15 years: 4.1-8.9 x 10(9)/L
Adult: 3.5-10.5 x 10(9)/L
NEUTROPHILS
Birth: 6.00-26.00 x 10(9)/L
1-7 days: 1.50-10.00 x 10(9)/L
8-14 days: 1.00-9.50 x 10(9)/L
15 days - 1 month: 1.00-9.00 x 10(9)/L
2-5 months: 1.00-8.50 x 10(9)/L
6 months - 5 years: 1.50-8.50 x 10(9)/L
6-11 years: 1.50-8.00 x 10(9)/L
12-15 years: 1.80-8.00 x 10(9)/L
Adult: 1.70-7.00 x 10(9)/L
LYMPHOCYTES
Birth: 2.00-11.00 x 10(9)/L
1-7 days: 2.00-11.00 x 10(9)/L
8-14 days: 2.00-17.00 x 10(9)/L
15 days - 1 month: 2.50-16.50 x 10(9)/L

15 days-11 months: 0.05-1.10 x 10(9)/L 1-15 years: 0.00-0.80 x 10(9)/L Adults: 0.30-0.90 x 10(9)/L EOSINOPHILS Birth-5 months: 0.02-0.85 x 10(9)/L 6 months-11 months: 0.05-0.70 x 10(9)/L 1-5 years: 0.0-0.65 x 10(9)/L 6-15 years: 0.00-0.50 x 10(9)/L Adults: 0.05-0.50 x 10(9)/L BASOPHILS Birth-5 months: 0.00-0.60 x 10(9)/L 6 months-16 years: 0.00-0.20 x 10(9)/L > or =17 years: 0.00-0.30 x 10(9)/L PLATELETS 0-5 months: 150-350 x 10(9)/L > or =6 months: 150-450 x 10(9)/L	2-5 months: 4.00-13.50 x 10(9)/L 6 months - 11 months: 4.00-10.50 x 10(9)/L 1-5 years: 1.50-7.00 x 10(9)/L 6-11 years: 1.50-6.50 x 10(9)/L 12-15 years: 1.20-5.20 x 10(9)/L Adult: 0.90-2.90 x 10(9)/L MONOCYTES Birth-14 days: 0.40-1.80 x 10(9)/L 15 days - 11 months: 0.05-1.10 x 10(9)/L 1-15 years: 0.00-0.80 x 10(9)/L Adult: 0.30-0.90 x 10(9)/L EOSINOPHILS Birth - 5 months: 0.02-0.85 x 10(9)/L 6 months - 11 months: 0.05-0.70 x 10(9)/L 1-5 years: 0.0-0.65 x 10(9)/L 6-15 years: 0.00-0.50 x 10(9)/L Adult: 0.05-0.50 x 10(9)/L BASOPHILS Birth - 5 months: 0.00-0.60 x 10(9)/L 6 months - 16 years: 0.00-0.20 x 10(9)/L > or =17 years: 0.00-0.30 x 10(9)/L PLATELETS Birth-5 months: 150-350 x 10(9)/L > or =6 months: 150-450 x 10(9)/L

NOTE: This change may impact test set-up information and could require a change to file definition. Please review the Test Set-Up information for specifics.

QUESTIONS: Contact your Mayo Medical Laboratories' Regional Manager
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