

CBC Test Components and Differentials: Reference Range Update

Date: July 21st, 2023

Effective Date: August 31st, 2023

UR Medicine Labs will be updating the reference ranges for many CBC test components, including peripheral blood differentials. 2023 revisions to the UR Medicine Labs ranges are the result of a process which includes extensive review of the literature, comparison to current major national reference labs, incorporation of current URM data, and reflects the consensus of internal reviewers.

The UR Medicine Labs ranges are designed to minimize the number of “out of range” values reported to providers and patients while maintaining a clear boundary between acceptable physiologic variants and those suggestive of pathology.

While statistically defined “reference ranges,” as determined by the central 95% of the presumed normally distributed results, are the basis of the literature reviewed for the new ranges, the UR Medicine Labs ranges assumes neither a normal distribution of values nor the clinical utility of defining reference ranges as the “central 95%” of values.

Test	Current (Female)	Current (Male)	New (Female)	New (Male)	Units
WBC	4.0 – 10.0	4.2 – 9.1	3.5 – 11.0	3.5 – 11.0	10 ³ uL
RBC	3.9 – 5.2	4.6 – 6.1	4.0 – 5.5	4.0 – 6.0	10 ⁶ uL
HGB	11.2 – 15.7	13.7 – 17.5	11.2 – 16.0	12.0 – 17.0	g/dL
HCT	34 – 45	40 – 51	34 – 49	37 – 52	%
MCV	79 – 95	79 – 92	75 – 100	75 – 100	fL
RDW	11.7 – 14.4	11.6 – 14.4	0.0 – 15.0	0.0 – 15.0	%
PLT	160 – 370	150 – 330	150 – 450	150 – 450	10 ³ uL
Neutrophil, Abs.	1.6 – 6.1	1.8 – 5.4	1.5 – 6.5	1.5 – 6.5	10 ³ uL
Lymphocyte, Abs.	1.2 – 3.7	1.3 – 3.6	1.0 – 5.0	1.0 – 5.0	10 ³ uL
Monocyte, Abs.	0.2 – 0.9	0.3 – 0.8	0.1 – 1.0	0.1 – 1.0	10 ³ uL
Eosinophil, Abs.	0.0 – 0.4	0.0 – 0.5	0.0 – 0.5	0.0 – 0.5	10 ³ uL
Basophile, Abs.	0.0 – 0.1	0.0 – 0.1	0.0 – 0.2	0.0 – 0.5	10 ³ uL

All values are based on adult reference ranges. See UR.818 Standard Reference Ranges and Alert Values on the UR Labs Test Directory website for a complete listing of age and gender based reference ranges.

If you have any questions please contact Geoffrey Harris, Chief Supervisor for Hematology & Chemistry Laboratories at Strong Memorial Hospital, at 275-2435 or Geoffrey.Harris@urmc.rochester.edu, or Dr. Burack at any of the below methods listed.

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