

## Anemia Lab Values

Lab Value	Reference Range		Iron Deficiency		Anemia	
	Female	Male	Female	Male	Female	Male
Hemoglobin (Hb)	12-15 g/dL	14-17 g/dL			< 12 g/dL*	< 13 g/dL
Mean Corpuscular Volume (MCV)	80-100 femtoliters (fL)		< 80fL MCV > 80 fL can also be seen in patients with iron deficiency  MCV < 80 fL may be seen in thalassemia		MCV > 100 is associated with B12 or folate deficiency or myelodysplasia (MDS)  MCV < 80 is associated with iron deficiency and thalassemia	
Red Cell Distribution Width (RDW)	CV: 11.6 – 14.6 %; SD: 39-46 fl		>14 fl		> 14 in nutritional deficiency anemias	
Reticulocyte Count	25,000 – 85,000/microliter 0.5-1.5 % (must be adjusted for degree of anemia)				Reticulocyte count < 75,000 with anemia indicates RBC loss with inadequate marrow response to correct anemia  Reticulocyte count > 85,000 with anemia indicates RBC loss with an increased compensatory production of reticulocytes to replace the lost red blood cells	
Reticulocyte Hemoglobin Content (CHR)	27 -32 picograms (pg)		CHR < 28 pg			
Soluble transferrin receptor (sTfR), serum	1.8 – 4.6 mg/L		>5.0 mg/L		Usually normal in absence of iron deficiency	
Ferritin (serum)	45-340 ng/dL		< 100 ng/dL		Increased in inflammation independent of iron status	
Transferrin saturation	20-45%		<20%			
C-Reactive Protein (CRP), (serum)	≤ 0.8 mg/L		Independent of iron status		> 0.8 mg/L = inflammatory state	

\*WHO defines anemia in women as Hb < 12 g/dL but there are many women who are iron deficient, have a Hb > 12 g/dL and whose Hb increases by 1 g/dL or more when treated with iron

### References

Greer JP, Arber DA, Glader BE, List AF Means RT and Rodgers G authors. Wintrobe's Clinical Hematology. 14<sup>th</sup> edition. Wolters Kluwer. Philadelphia, Pa; 2018.

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