

Iron Deficiency Anemia Cascade evaluates patients for iron deficiency

Introduction

Iron deficiency anemia is associated with significant morbidity and mortality, especially in women and during pregnancy.¹ It is recognized as the most common nutritional deficiency in the world.² Recent studies also show that iron deficiency is common in patients with renal insufficiency but is underdiagnosed.³

Ferritin is the first line indicator of iron deficiency; however, because it is also an acute phase protein and can rise in inflammatory states, iron deficiency can be challenging to diagnose in some cases.⁴ A second line of tests (serum iron, total iron-binding capacity and transferrin saturation) can then be used to differentiate iron deficiency from anemia of chronic disease.⁵ In some instances, in patients with inflammatory states, iron studies still may be equivocal. In these cases, soluble transferrin receptor⁶ can differentiate iron deficiency from chronic disease.

If in the unlikely event all testing is equivocal, the gold standard for iron deficiency evaluation is a bone marrow aspirate.⁴

Labcorp's solution

Based upon this literature, Labcorp is pleased to offer the **Iron Deficiency Anemia Cascade With Complete Blood Count (CBC) With Differential [004800]** to evaluate iron deficiency anemia in patients older than three months. The algorithm on the next page explains the process pictorially.

Key highlights:

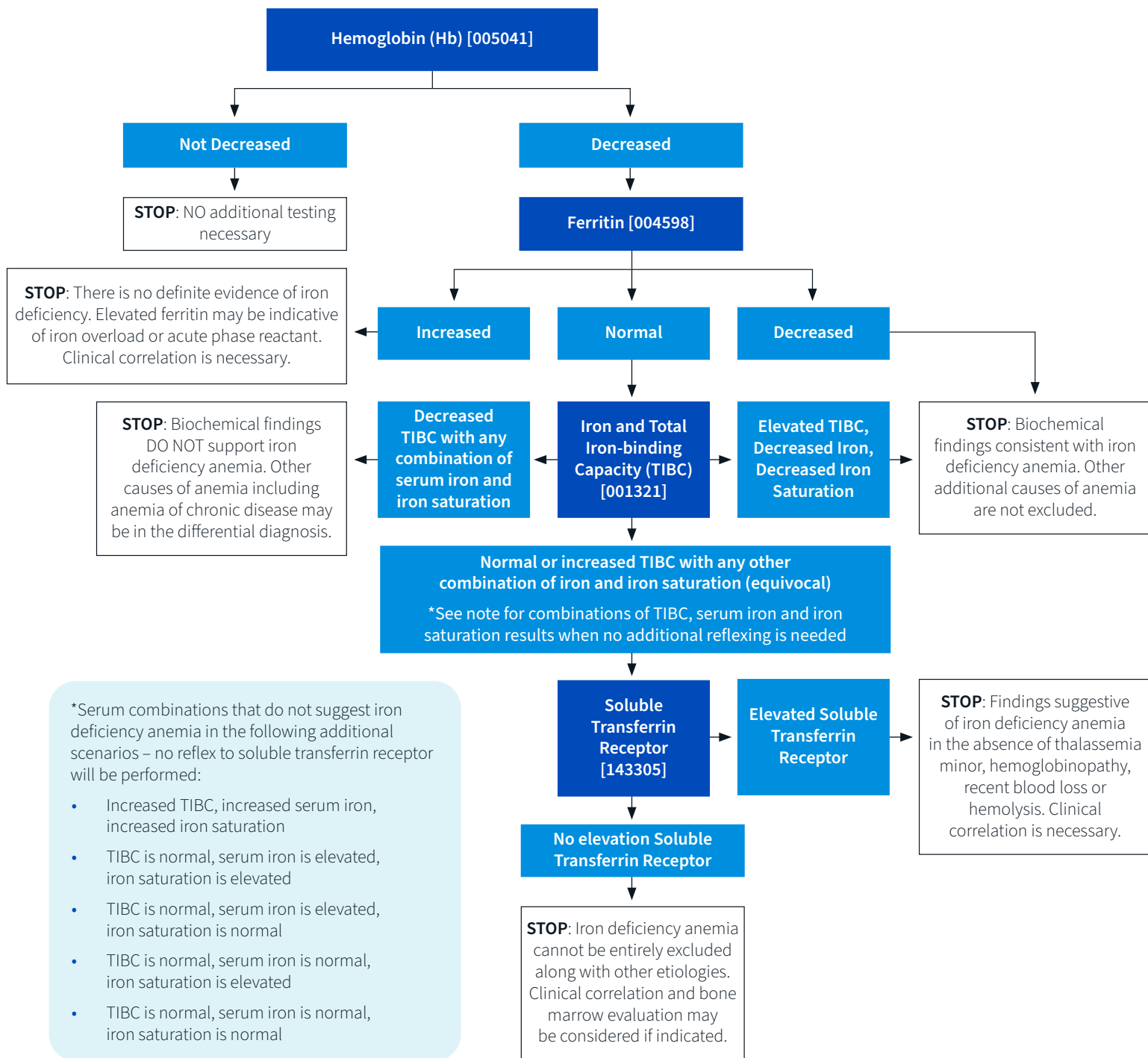
- Iron deficiency anemia is recognized as the most common nutritional deficiency in the world¹
- Iron deficiency anemia is common in patients with renal insufficiency but is underdiagnosed¹
- Ferritin is the first line indicator of iron deficiency;⁴ a second line of tests can then be used to differentiate iron deficiency from anemia of chronic disease⁵
- In some instances, in patients with inflammatory states, iron studies still may be equivocal; in these cases, soluble transferrin receptor⁶ can differentiate iron deficiency from chronic disease

Test Name	Test No.
Iron Deficiency Anemia Cascade With Complete Blood Count (CBC) With Differential	004800



See Page 2
for the cascade chart
for Test No. 004800

Iron Deficiency Anemia Cascade With Complete Blood Count (CBC) With Differential [004800]



*Serum combinations that do not suggest iron deficiency anemia in the following additional scenarios – no reflex to soluble transferrin receptor will be performed:

- Increased TIBC, increased serum iron, increased iron saturation
- TIBC is normal, serum iron is elevated, iron saturation is elevated
- TIBC is normal, serum iron is elevated, iron saturation is normal
- TIBC is normal, serum iron is normal, iron saturation is elevated
- TIBC is normal, serum iron is normal, iron saturation is normal

Test Name	Test Results	Actions
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References

1. Cappellini MD, Musallam KM, Taher AT. Iron deficiency anaemia revisited. *J Intern Med.* 2020 Feb;287(2):153-170.
2. Kumar A, Sharma E, Marley A, Samaan MA, Brookes MJ. Iron deficiency anaemia: pathophysiology, assessment, practical management. *BMJ Open Gastroenterol.* 2022 Jan;9(1):e000759.
3. Farrington DK, Sang Y, Grams ME, et al. Anemia Prevalence, Type, and Associated Risks in a Cohort of 5.0 Million Insured Patients in the United States by Level of Kidney Function. *Am J Kidney Dis.* 2022 Sep 28;S0272-6386(22)00914-3.
4. Daru J, Allotey J, Peña-Rosas JP, Khan KS. Serum ferritin thresholds for the diagnosis of iron deficiency in pregnancy: a systematic review. *Transfusion Med.* 2017 Jun;27(3):167-174.
5. Camaschella C. Iron deficiency: new insights into diagnosis and treatment. *Hematology Am Soc Hematol Educ Program.* 2015;2015:8-13.
6. Baillie FJ, Morrison AE, Fergus I. Soluble transferrin receptor: a discriminating assay for iron deficiency. *Clin Lab Haematol.* 2003 Dec;25(6):353-357.

