# IV Iron Administration

## Purpose

To assure the safe and appropriate administration of intravenous iron

## Population Covered

Infant, pediatric, adolescent, adult, and geriatric patients receiving intravenous iron

## Definitions

*Iron studies.* Iron studies include ferritin, TIBC, serum iron, and percent transferrin saturation

## Supplemental Information

**Indications**

- Iron is critical for normal hemoglobin synthesis to maintain oxygen transport. Additionally, iron is necessary for metabolism and synthesis of DNA and various enzymatic processes.
- The total body iron content of an adult ranges from 2 to 4 grams. Approximately 2/3 is in hemoglobin and 1/3 in reticuloendothelial storage and ferritin.
- The administration of exogenous erythropoietin increases red blood cell production and iron utilization. The increased iron utilization and possible blood loss may lead to absolute or functional iron deficiency.
- Iron deficiency is absolute when the hematologic indication of iron stores are low which is determined by lab values such as ferritin, serum iron or transferrin saturation percent.
- Patients with functional iron deficiency do not meet laboratory criteria for absolute iron deficiency. However, when IV iron is administered, these patients will demonstrate an increase in hemoglobin/hematocrit or a dose reduction in erythropoietin with stable hemoglobin/hematocrit.

In order to determine iron deficiency, it is recommended to obtain baseline labs before beginning iron therapy. Labs should be drawn using micro-sampling for CBC, reticulocyte, and iron studies with serum ferritin.

Iron supplements are necessary when the following lab values are abnormal:

- Ferritin less than 150 mcg/ml
- Transferrin saturation less than 20%

*Note: If the patient's ferritin is greater than 100 mcg/ml but less than 600 mcg/ml, iron studies need to be evaluated every four weeks if erythropoietin is initiated. The pre-existing iron levels may be reduced by 50% within one week of erythropoietin therapy.*

Intravenous iron is indicated as a source of iron replacement in iron deficiency anemia if the patient:

- Cannot tolerate oral iron
- Is considered unreliable to continue oral iron for an extended period of time
- Has a malabsorption syndrome
- Is experiencing prolonged erythropoietin therapy
- Has a need to rapidly replete iron stores to protect against future bleeding (bloodless patients)

## References


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5. Center for Bloodless Care, Meridian Health System. Jersey Shore Medical Center, Neptune, New Jersey.
6. Torres, S., Sorensen, E.R., Bliss-Holtz, J., & Neibart, R. (2001) Implication of iron in a transfusion alternative program (bloodless) in the cardiac surgery patient. Jersey Shore Medical Center, Neptune, New Jersey.


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