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ISLAMIC UNIVERSITY

College of Medical Technology

Department of Medical laboratories Techniques

*Dr. Abbas Almulla*

# Total Iron

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# Total Iron

Iron is just like a trace element present in the body. Normally there is a very small amount in the cells, plasma, and other body fluids all of it about 3-4 gm.

Iron is distributed as

1- Hemoglobin (60 %)==➔ Oxygen transport .

2- Myoglobin (10% )=➔ Oxygen storage.

3- Other Tissues (30%)=➔ Liver (storage, Co-enzymes for catalase and peroxidase).

The iron is taken as ferric form and it changes to the ferrous form in the stomach by the Hydrochloric acid. It is then absorbed mainly in the small intestine. The leftover is excreted in the feces.

Iron is come in the diet as ferric $Fe^{+++}$ transformed in the aid of stomach PH and ascorbic acid to ferrous $Fe^{++}$ .

Through the enterocytes there is a channel called **divalent metal transport (DMT)** to take the ferrous from the intestine and convert it again to the ferric. In the enterocytes few of it will stored as

hemosiderin (iron-storage complex), and most of it will be as a ferritin. Another channel will transport the iron from enterocytes to the circulation called **( ferroportin)**.

*In the circulation the carrier of the iron is **Transferrin.**

The first site of utilization of iron is the **bone marrow** for **erythropoiesis**, if not the transferrin will carry iron to the liver for storage.

The recycling of the iron is occurring in the spleen and macrophages, the remaining will be stored in **the liver**.

**An increase in the iron level in plasma due to rapid destruction of erythrocytes or excessive uptake of iron may also lead to iron overload. The latter causes iron deposition disorders in tissue known as **hemosiderosis** or **hemochromatosis.**

** Conversely, a decrease in the iron level in plasma due to malnutrition or malabsorption may lead to excessive depletion in iron storage, resulting in **anemia such as iron-deficiency anemia.**