



## **Determination of serum Iron**

Iron is an essential nutrient that, is required for the production of healthy red blood cells (RBCs). It is a critical part of hemoglobin, the protein in RBCs that binds oxygen in the lungs and releases it as blood circulates to other parts of the body.

A serum iron test measures how much iron is in your serum. The serum iron test can reveal abnormally low or high blood iron levels.

Having too much iron — or not enough — can cause serious health problems.

### **Symptoms of abnormal iron levels**

**Early symptoms of iron deficiency (anemia) include:**

- ❖ chronic fatigue
- ❖ dizziness
- ❖ headaches
- ❖ muscle weakness

**You may develop other symptoms as your condition worsens. These may include:**

- ☒ Difficulty concentrating
- ☒ Grumpiness
- ☒ Tongue and mouth sores
- ☒ Misshapen nails



**Symptoms of iron overload (when your body produces too much iron) include:**

- ♣ Pain in your abdomen and joints
- ♣ Bronzing or darkening of skin
- ♣ Fatigue
- ♣ Heart problems
- ♣ Lack of energy
- ♣ Lack of sex drive
- ♣ Weight loss
- ♣ Muscle weakness

### **Normal serum iron test results**

Serum iron is measured in micrograms of iron per deciliter of blood (mcg/dL). The following are considered normal ranges for a serum iron test:

Iron: 60 to 170 mcg/dL

Transferrin saturation: 25 percent to 35 percent

Total iron binding capacity (TIBC): 240 to 450 mcg/dL

**Transferrin** is a protein in the blood that transports iron throughout your body.

**TIBC** measures how well the transferrin proteins are transporting iron around your body.

### **Abnormal serum iron test results**

Abnormally high iron serum levels may mean you've consumed too much iron, vitamin B-6, or vitamin B-12



### **High levels of iron may indicate:**

- ✚ hemolytic anemia or hemolysis: your body doesn't have enough healthy red blood cells
- ✚ liver conditions: such as hepatic necrosis (liver failure) and hepatitis
- ✚ iron poisoning: you've taken more than the recommended dose of iron supplements
- ✚ iron overload: your body naturally retains too much iron

Abnormally low iron levels may mean you haven't consumed enough iron or your body isn't absorbing the iron properly. Regularly having heavy menstrual periods can also lead to low iron levels.

### **Low iron levels may also indicate:**

- ✚ anemia
- ✚ pregnancy
- ✚ gastrointestinal blood loss

### **Impact of medication on SIT**

Medication can affect the results of a serum iron test by increasing or decreasing patient iron level Ex:birth control pills.

### **Risk of serum iron test**

In rare cases :-

- √ Infection
- √ Excessive bleeding
- √ Fainting