

Case study

A 42-year-old woman attended the Central Health Laboratory because of weight loss, tiredness and change in bowel habit (the recent development of stools), with a history of increasing lethargy, dizziness and breathlessness.

Biochemical investigation revealed the following results:

Ferritin 2343 $\mu\text{g/L}$ (15–300)

Iron 40 $\mu\text{mol/L}$ (11–30)

Total iron-binding capacity (TIBC) 42 $\mu\text{mol/L}$ (54–80)

Transferrin saturation ?

1. Comment on these results?
2. What does increased Ferritin mean?
3. Which the best indicator of Ferritin?
4. Ferritin and transferrin are two types of iron-binding proteins in the body. Both of them play a vital role in maintaining the iron levels in the body.
what are the difference between the ferritin & Transferrin?
5. If Transferrin saturation = (plasma iron/ TIBC * 100%)
Calculate Transferrin saturation for this patient?
6. Are the test results consistent with iron deficiency or toxicity?

Further testing for the iron showed the following:

Serum iron	170 $\mu\text{g/dL}$ (45–150)
Transferrin	210 mg/dL (200–380)
Ferritin	300 $\mu\text{g/L}$ (10–250)
% Transferrin saturation	80 (20–50)

1. If Serum transferrin (g/L) = 0.008 TIBC ($\mu\text{g/dL}$)

Calculate TIBC for this patient?

2. What does increased transferrin mean?
3. what is mean TIBC level is high?
4. Which the best indicator of transferrin?
5. If the lab results are as follows. How do you expect some results that we put a question mark on?

<u>Condition</u>	<u>serum Iron</u>	<u>transferrin</u>	<u>Ferritin</u>	<u>TIBC</u>
Iron deficiency	?	↑	?	↑
Iron overload	?	?	?	↓