

Iron: When to Give



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GENERAL
HEMATOLOGY

DISCLOSURE

Current Relevant Financial Relationship(s)

Editor – UpToDate (iron)

Who Needs Iron?

- **Iron deficiency**
 - **Absolute**
 - **Functional**

Iron Deficiency

- **Common!**
- **Even without anemia detrimental**
 - **Fatigue**
 - **2 RCT shows benefit with ferritin < 50 ng/dl**
 - **Restless legs**
 - **Alopecia**
 - **Exercise performance**
 - **Pulmonary hypertension**

Most Women have Low Iron Stores



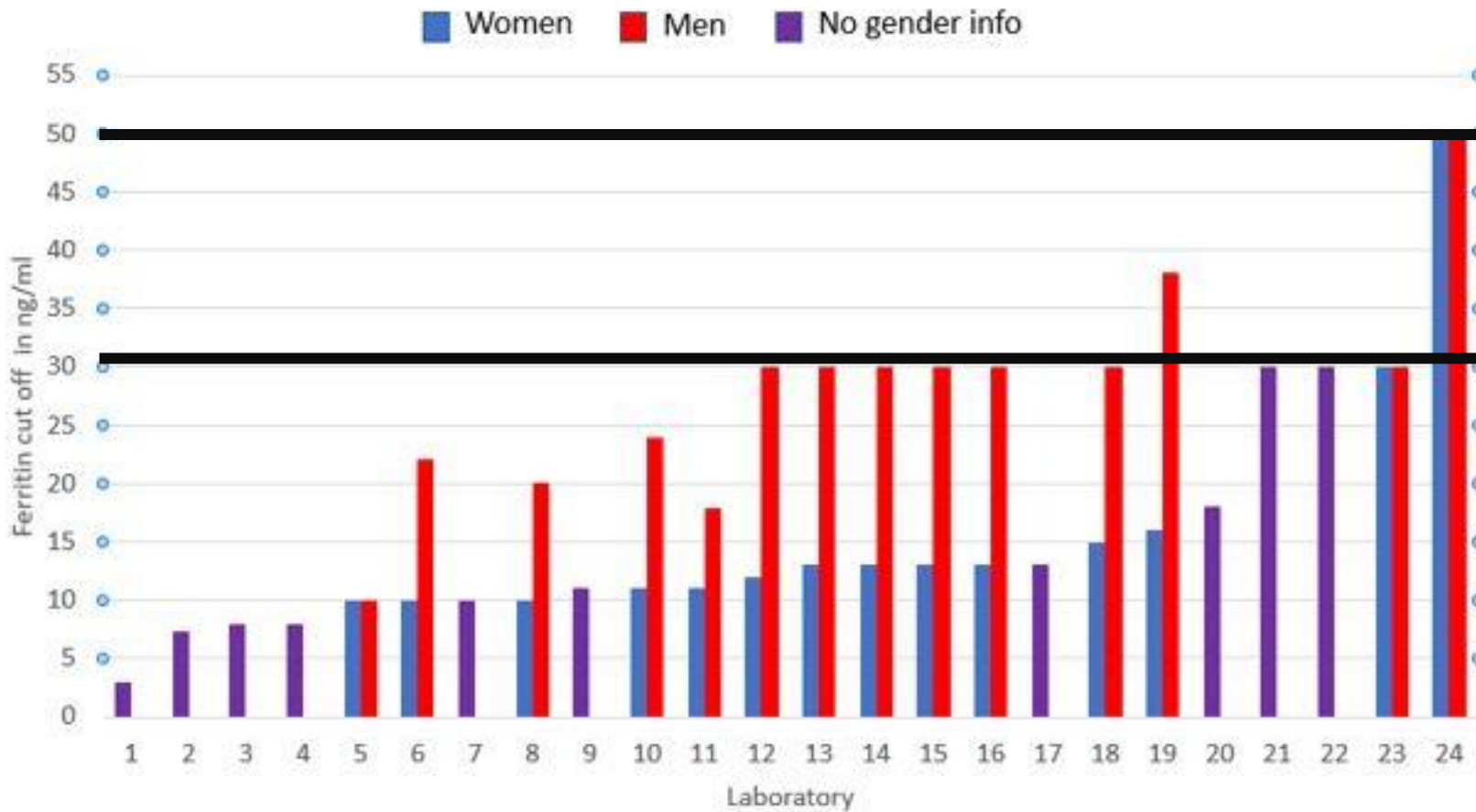
JAMA, Mar 1967; 199: 897 - 900

Iron Deficiency – Common!

- Prevalence of iron deficiency
- 15 $\mu\text{g/L}$: 17% (15.4%-19.2%)
- 30 $\mu\text{g/L}$: 38.6% (35.8%-40.9%)
- 50 $\mu\text{g/L}$: 77.5% (75.7%-79.3%)

- JAMA. 2023;329(24):2191-2193.

Ferritin lower limit reference range in 24 Laboratories in Oregon and Washington



Dr Merav Sendowski, Alaska Rosenfeld

Disease States

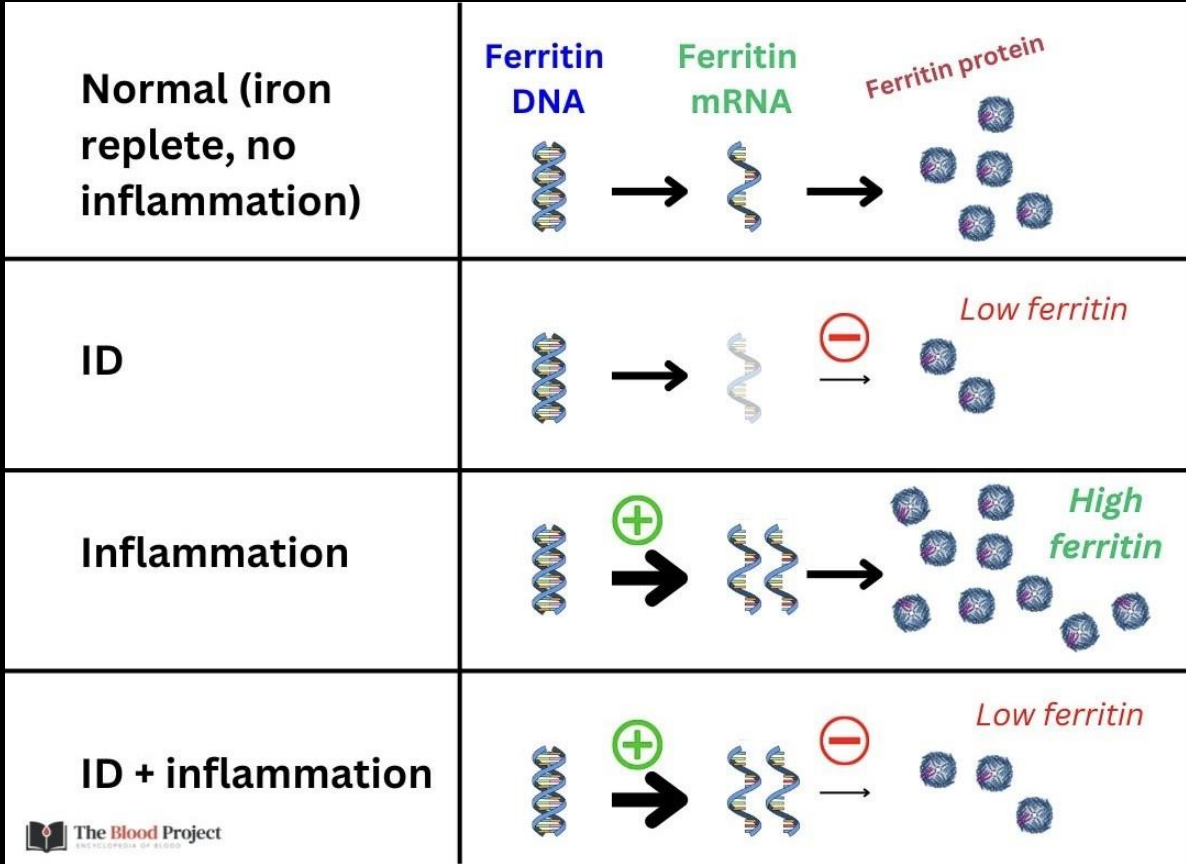
- Inflammatory bowel disease
- Pregnancy
- Liver disease
 - GAVE
- HHT

Dx Iron Deficiency

- **Lab ranges of normal often too low**
- **Ferritins 30-50 ng/dl cut-off**
- **Ferritins < 50 ng/dl**
 - **Associated with fatigue**
 - **Increase GI iron absorption**
- **Ferritin > 100**
 - **Iron replete**

Ferritin > 100

- **Not absolute iron deficiency!**
- **Even if saturation is 1%**
- **Why?**
- **Need cellular iron to make ferritin protein**
- **No iron -> no ferritin**



Functional Iron Deficiency

- **Good iron stores but can't deliver to red cells**
- **Diseases**
 - **Dialysis**
 - **EPO therapy**
 - **Heart failure**
- **RCT show benefit of iron**

Ali Phenomenon

- **No marrow iron**
- **High Ferritin**
- **Abundant liver iron present**
- **Inflammation diverts iron to liver**

- **JAMA 1980 Jul 25;244(4):343-5**

Iron Deficiency

- **Common in**
 - **Women**
 - **Many medical conditions**
 - **Functional**
 - **CHF**
 - **Dialysis**
 - **EPO patients**

