# Management of Iron Deficiency in Gastroenterology

Iron Corner
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## SUMMARY


- Gastrointestinal (GI) causes are a prevalent and significant source of iron deficiency in adults, particularly among the elderly and those with underlying GI conditions. Early detection and appropriate management are crucial to prevent complications associated with iron deficiency and anemia.
- GI bleeding, colorectal cancer, gastroesophageal reflux disease (GERD), celiac disease, Inflammatory bowel disease (IBD), diverticulitis, bariatric surgery, small intestine bacterial overgrowth (SIBO), and Glucagon-Like Peptide-1 Receptor (GLP-1) RA are common GI conditions warranting iron deficiency (ID) evaluation.
- Aspirin, antiplatelet agents, and anticoagulants can increase the risk of GI bleeding.


## How Common Is Iron Deficiency in Gastrointestinal Conditions?

- Prevalence of ID due to GI conditions varies based on age, gender, and comorbidities.
- **Adults (Men and Postmenopausal Women):** Chronic GI blood loss accounts for up to 61% of iron deficiency anemia (IDA) cases.
- **Elderly Population:** Among individuals aged 65 and older, approximately 30.5% of those with anemia have iron deficiency. 57.3% of these cases are linked to upper GI lesions, and 27.1% to colonic lesions.
- **Gastroesophageal Reflux Disease treated with Proton Pump Inhibitors (PPIs):** up to 20% of long-term PPI users develop iron deficiency
- **Colorectal Cancer Patients:** A 2018 study identified that 52% of colorectal cancer patients exhibited absolute iron deficiency, with 19% presenting with IDA. The primary cause was occult or overt lower GI bleeding.
- **Celiac Disease:** Approximately 32–69% of individuals with celiac disease experience iron deficiency anemia, often due to malabsorption and, in some cases, GI bleeding.
- **Inflammatory Bowel Disease:** Iron deficiency affects up to 90% of IBD patients, influenced by factors such as disease activity, bowel resection, and chronic blood loss.
- **Diverticular Disease:** Approximately 25% of individuals with diverticular disease experience iron deficiency, often due to lower GI bleeding.
- **Bariatric Surgery:** 10–40% of patients develop iron deficiency, attributed to malabsorption and altered GI anatomy.
- **Small intestinal bacterial overgrowth:** Bacteria may overgrow in the small intestine, and compete for iron and other nutrients, leading to malabsorption and iron deficiency. Prevalence is unknown. However, may be more common in dyspeptic patients in developing countries.
- **Glucagon-Like Peptide-1 Receptor (GLP-**1) Agonists (e.g. Semaglutide (Ozempic), Liraglutide (Victoza), Tirzepatide (Mounjaro)): Exposure to GLP-1 RAs for one year was associated with approximately 30% lower estimated ferritin levels.

## What Is the Impact of Iron Deficiency on GI Clinical Outcomes?

- Iron deficiency in gastrointestinal conditions is a significant clinical concern that affects disease outcomes, quality of life, and healthcare resource utilization.
- **Quality of Life**: Improvement in iron status through intravenous (IV) iron treatment has led to significantly better quality of life in patients with ulcerative colitis and Crohn's disease.
- **Disease Progression**: Persistent anemia correlates with more aggressive or disabling IBD.
- **Health Care Utilization**: IDA in IBD is associated with increased hospitalizations, longer stays, and greater healthcare costs.
- **Inpatient Mortality**: Higher inpatient mortality rates are observed in GI cancer patients with IDA compared to those without.
- **Healthcare Costs**: Hospital costs were significantly higher for GI cancer patients with IDA.
- **Length of Stay**: GI cancer patients with IDA have longer hospital stays.
- **Hospitalization**: ID may lead to more frequent hospitalizations and delayed discharge.

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## Who Should Receive Screening?

- All patients with known GI health conditions, history of bariatric surgery, and those taking or have recently taken GLP-1 agonist medications, should have periodic (e.g. simi-annual) iron studies, including serum ferritin, transferrin saturation, C-reactive protein (to qualify reliability of results of these acute phase reactants), and Reticulocyte Hemoglobin (RET HE)/Reticulocyte Hemoglobin Content (CHr).
- If Ferritin is less than 100 ng/mL, IV iron repletion is strongly recommended.
- If iron studies results are within reference ranges, semi-annual screening is recommended to surveil for iron deficiency.

## What About Oral Iron?

- Oral iron products should be avoided for all patients with GI health conditions, as oral iron preparations will very often exacerbate GI diseases.
- Dietary and oral iron are very often poorly absorbed in patients taking PPIs and H2 blockers, as gastric acid is important for converting **ferric ($Fe^{3+}$) iron** to the more absorbable **ferrous ($Fe^{2+}$) form**.

## What IV Iron Therapies Are Recommended for Patients with GI Health Conditions?

- Any of the current IV iron preparations are effective and can be used with relative safety.

## References


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