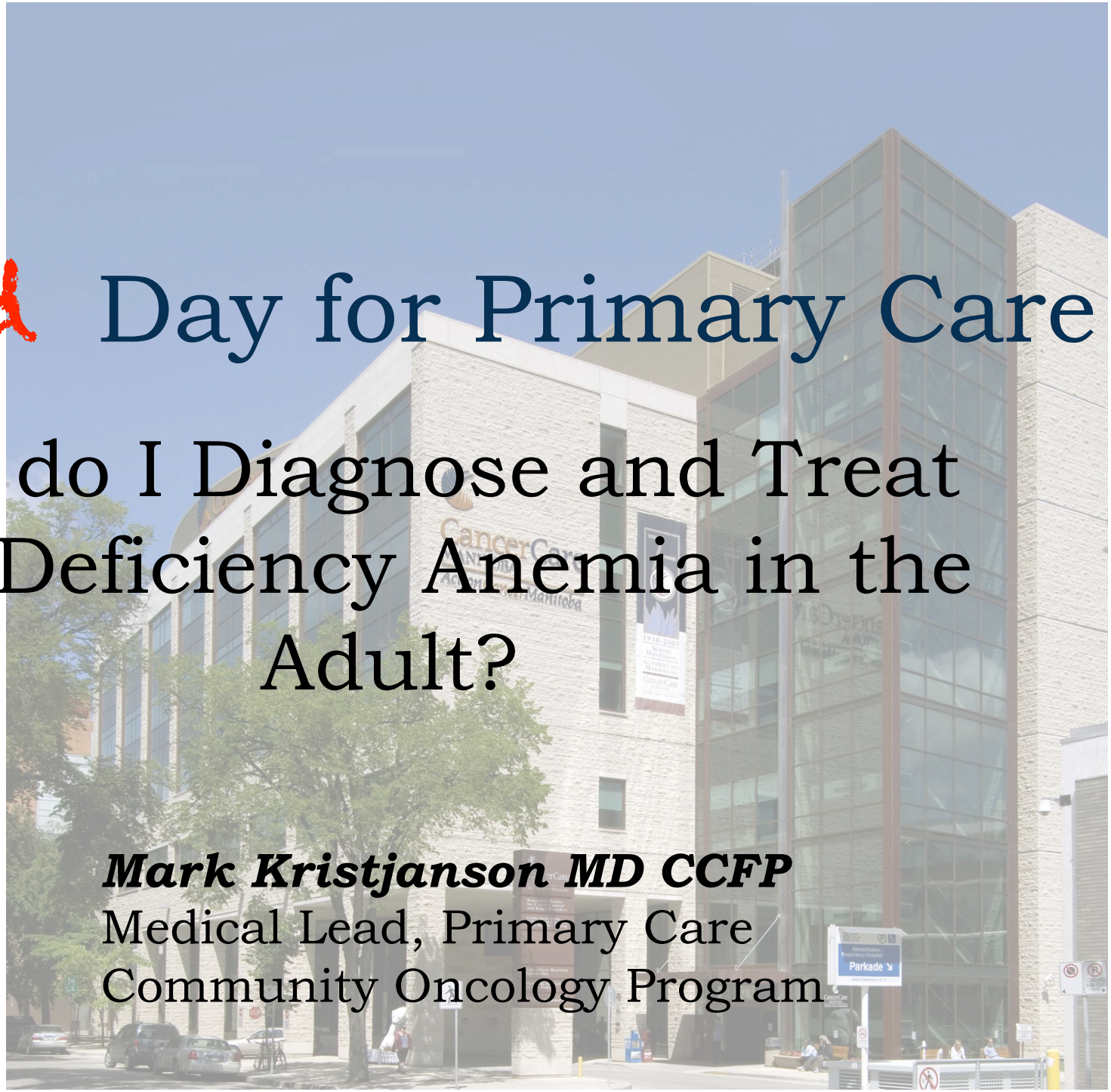
CancerCare Manitoba

Blood Day for Primary Care

How do I Diagnose and Treat Iron Deficiency Anemia in the Adult?



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UPCON
Uniting Primary Care and Oncology

University of Manitoba

Disclosures

Faculty: Mark Kristjanson, MD, CCFP

- Relationships with commercial interests:
  - Grants/Research Support: None
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  - Consulting Fees: Casey Hein & Associates (to review educational materials on topic of Oral-Systemic Health)
  - Other: Member of Cancer Patient Journey Initiative's PCWG

Objectives

By the end of this session, the learner will be able to:

1. Discriminate iron deficiency anemia from other anemias on the basis of history, physical examination and lab parameters

2. Outline a practical approach to investigation of patients with iron deficiency anemia

3. Present a pragmatic strategy to treat iron deficiency anemia

Hb 124 g/L (down from a Hb of 148 last year)

1. What do you want to know or do?

- MCV 76 fl (mild microcytosis)
- Careful ROS
- PMHx & FHx
- Physical exam

CBC

- Hb 124 g/L (down from a Hb of 148 last year)
- MCV 76 fl (mild microcytosis)
- MCHC 288 g/L (mild hypochromia)

What would you do next?

A. Iron and TIBC

B. Hemoglobin electrophoresis

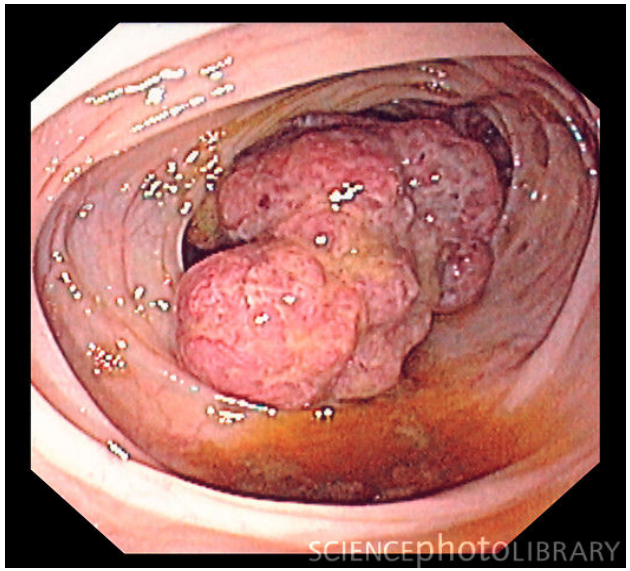
C. Reticulocyte count

D. Ferritin

E. B12

What if the ferritin is low?

- Semi-Urgent endoscopy consult
- Iron deficiency in the adult male or post-menopausal female = rule out GI pathology



Fecal Occult Blood?

- No role for a FOBT at this point (ie. if anemia or iron deficiency is present)
- This is no longer a ‘screening’ situation; you now suspect pathology
- Resist the temptation!!

Iron Deficiency Proven, & Work up initiated

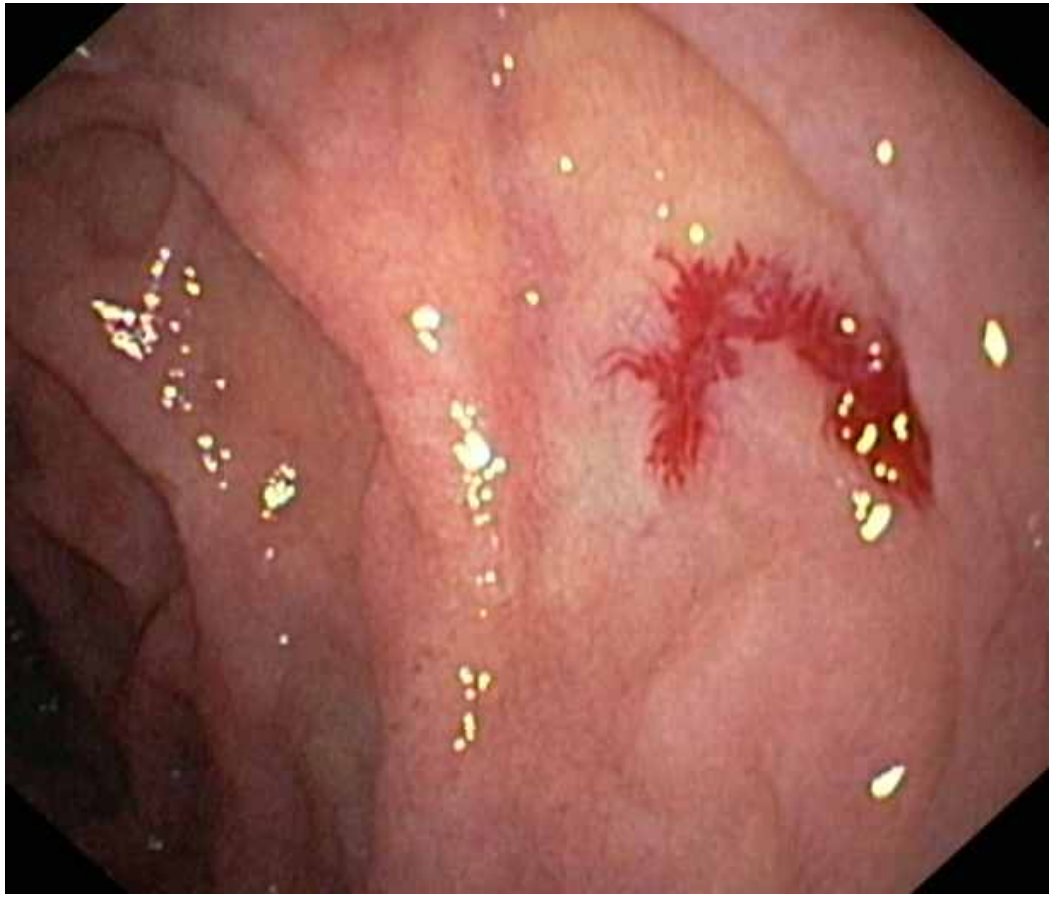
- OK to start an iron supplement
- Consider ferrous sulphate 300 mg od, and increase gradually (to minimize GI intolerance) to 300 mg TID

Iron Deficiency & Normal Endoscopy?

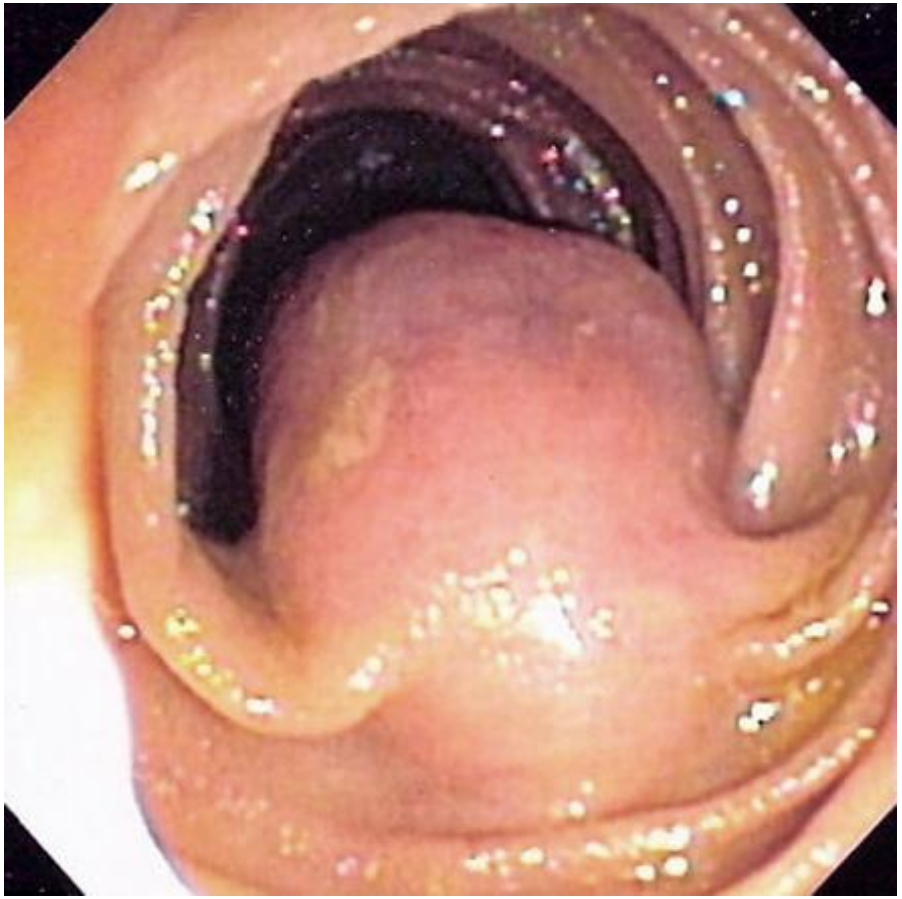
In the context of this case:

- Gluten enteropathy / Celiac disease
- Neoplasms of the small intestine
- Angiodysplasia

Angiodysplasia



GIST (jejunum)



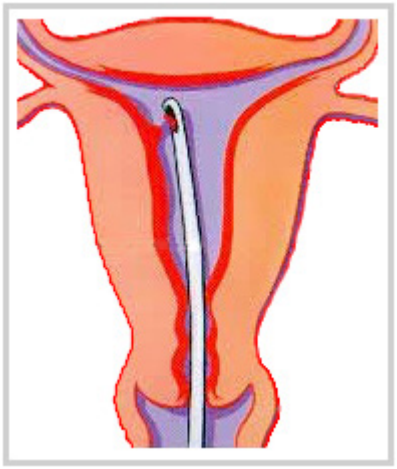
Pre-menopausal?

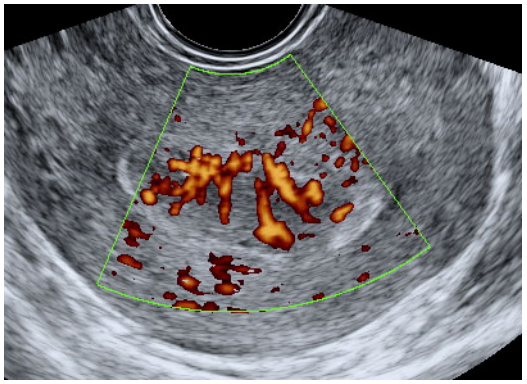
- Menstruation
- Pregnancy
- Delivery
- Lactation

Post-menopausal?

History of vaginal bleeding:

- endometrial biopsy;
- gynecologic ultrasound





Other Causes…

- Iron poor diet

Other Causes…

Iatrogenic causes:

- blood donation/blood letting
- Gastric by-pass surgery

Intravascular hemolysis:

- Cardiac valvular disease
- Paroxysmal nocturnal hemoglobinuria

Ferritin Normal?

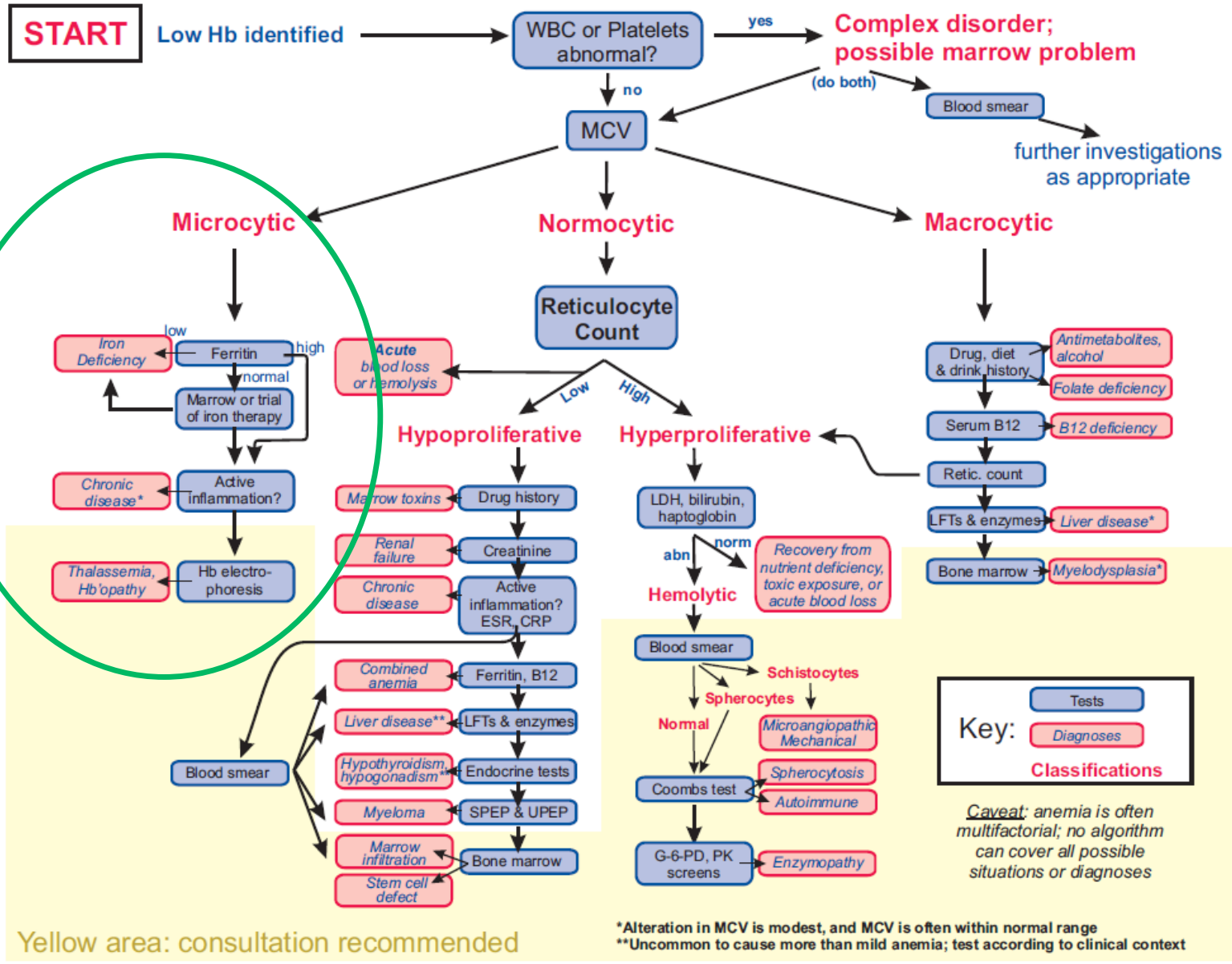
- Iron deficiency not excluded
- Ferritin elevated by inflammation or liver disease
- Thalassemia? (microcytosis/anemia)

Ferritin Normal?

- Check serum iron and TIBC

- In iron deficiency
  - Iron low; TIBC elevated
- In anemia of inflammation
  - Iron low; TIBC N/low
  - Ferritin normal or elevated

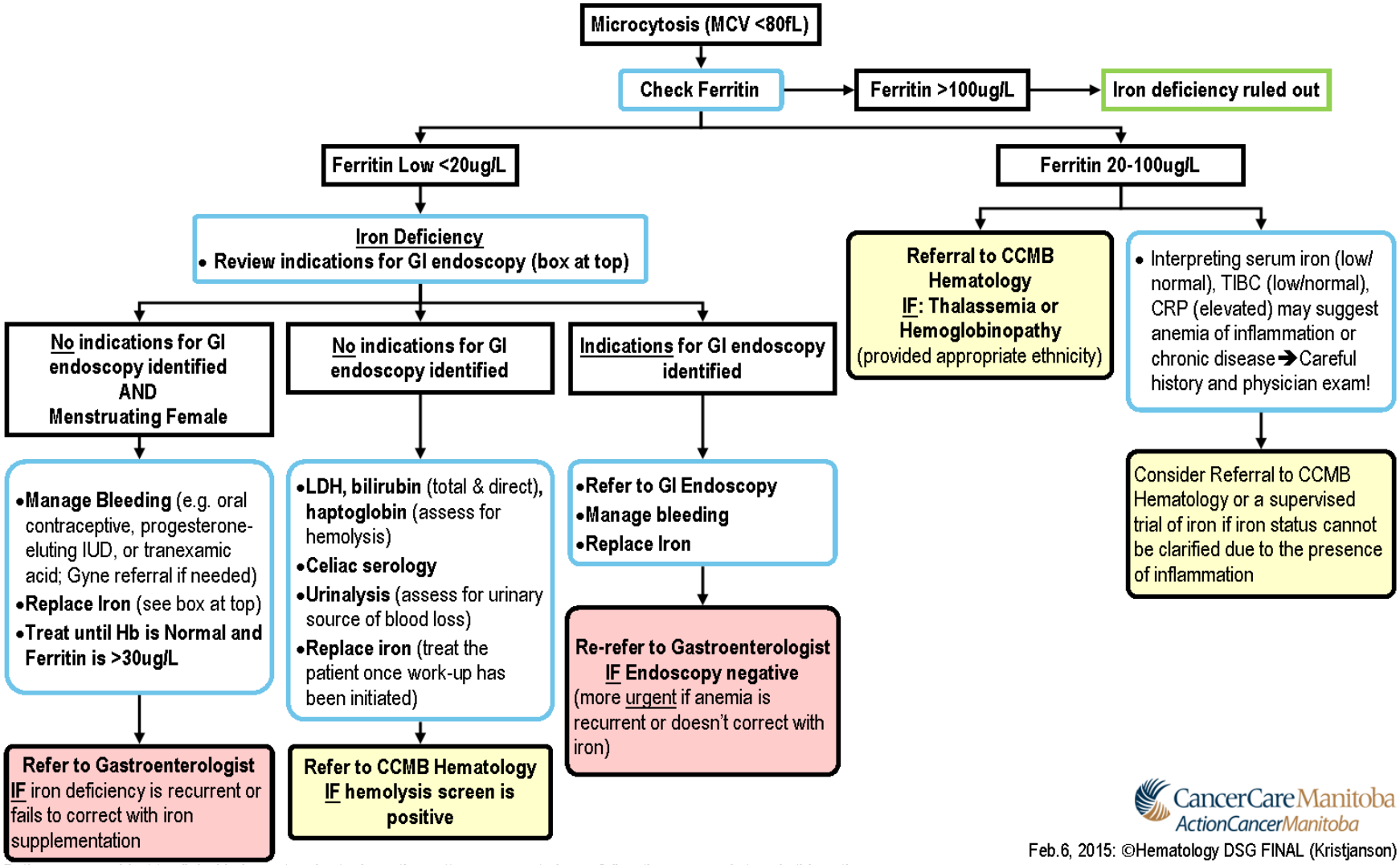
An Algorithm for the Investigation of Anemia



Work-Up of IRON DEFICIENCY ANEMIA in ADULTS

INDICATIONS FOR GI ENDOSCOPY: ●Adult males ●Post-menopausal females ●Unexplained weight loss ●Family history of GI cancer ●Any associated GI Symptoms such as: Dysphagia, Odynophagia, Dyspepsia, Abdominal pain, Melena, Hematochezia, Tenesmus, Altered bowel habit.

IRON REPLACEMENT: a) Control Blood Loss; b) Warn patients of GI side effects and start slow; c) Ferrous sulfate, gluconate, or fumarate or iron polysaccharide in doses that provide 150-200mg of elemental iron per day (e.g. ferrous sulfate 300mg TID)



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Pathways are subject to clinical judgment and actual practice patterns may not always follow the proposed steps in this pathway.

How do I replace iron?

a) Address underlying cause

b) Start low; go slow. Minimize GI side effects.
GI tolerability is related to amount of iron!!

c) Ferrous sulfate, gluconate, or fumarate or iron polysaccharide in doses that provide 150-200 mg of elemental iron per day (e.g. ferrous sulfate 300mg TID)

Oral iron preparations (Replacement doses)

Recommended first line

Unproven claims of increased GI tolerability

Ferrous gluconate	~35 mg elemental iron /300 mg tab (target dose: 6 tabs per day)
Ferrous sulphate	**~65 mg elemental iron /300 mg tab (target dose: 3 tabs per day)**
Iron Fumarate	~108 mg elemental iron /300 mg tab (target dose: 1-2 tabs per day)
Ferrous sulphate elixer	44 mg elemental iron / 5 mL (target dose: 15-20 mL)
Polysaccharide iron complex (FeraMAX)	150 mg elemental iron per capsule (dose is 1 capsule OD)
heme-iron polypeptide (Proferrin)	11 mg of elemental iron per tab (recommended dose is 1 tab TID)

Monitoring response to iron?

- Check retic count in a week to ensure marrow response
- Check CBC monthly until CBC is corrected
  - Hb should correct at about 10g/L per week
- Once CBC is corrected, check ferritin
- Continue iron replacement for 3 months after ferritin is within normal range, to replenish iron stores

Not responding to iron?

- Incorrect diagnosis (MDS, thalassemia, ACD/AI)
- Non compliance
- Non-absorption
  - Concomitant use of antacids
  - Celiac disease
- Blood/iron loss exceeds ingested iron

Take home messages

- Screening test for iron deficiency is serum ferritin
- Men and post-menopausal women require GI endoscopy if IDA is diagnosed without an obvious or cause (FOBT is not appropriate at this juncture)
- Start iron replacement low and titrate up to replacement doses. Iron sulphate is recommended as the first line oral iron preparation

When to consider a referral to hematology

- Hemolysis screen positive
- Hemoglobinopathy suspected
- Complex anemia; unable to determine iron status
- Inability to tolerate oral iron despite multiple attempts

Questions?

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