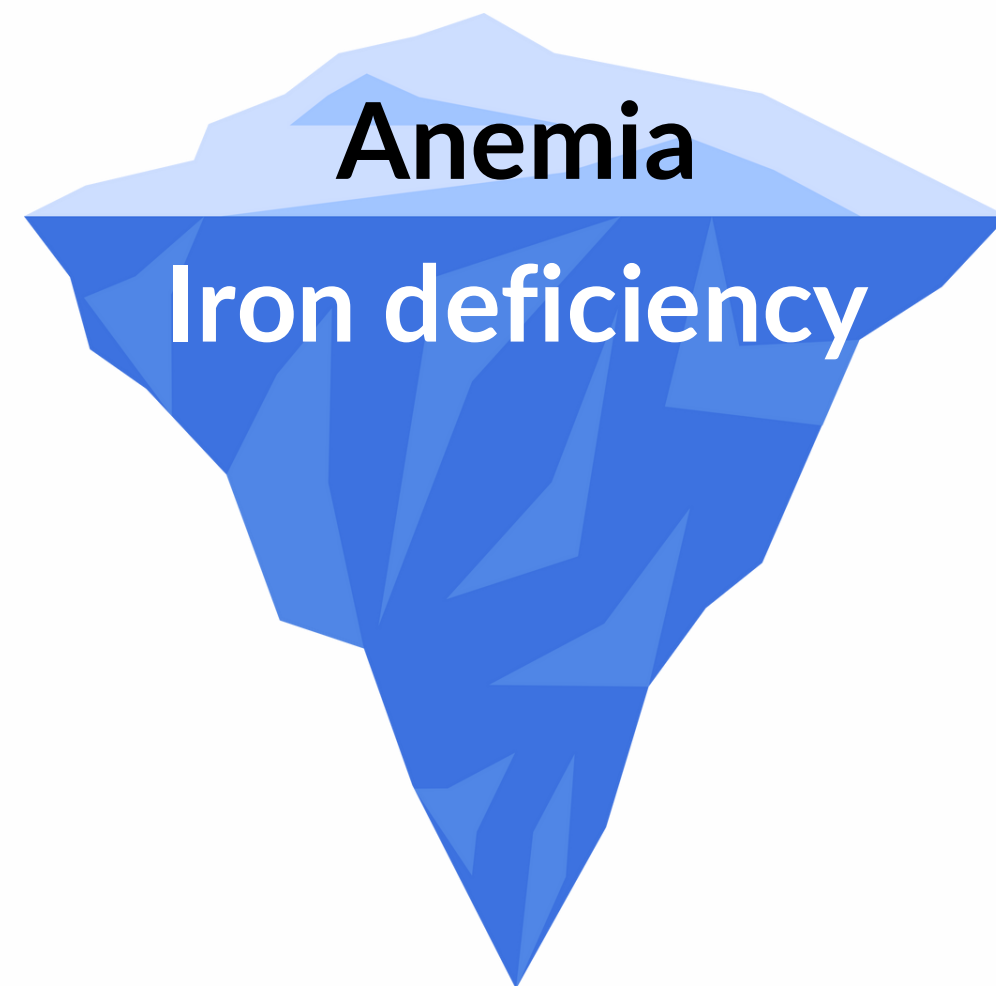


Low Iron, High Stakes: Seeing Beyond the Tip of the Iceberg

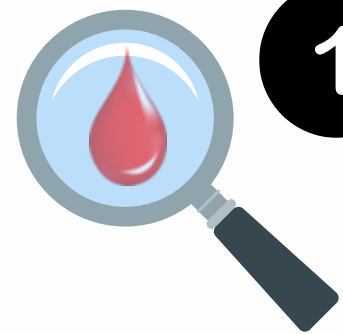


Natalie Bavli, MD

UTSouthwestern
Medical Center

Nearly 40% of reproductive age women
have iron deficiency—most without anemia

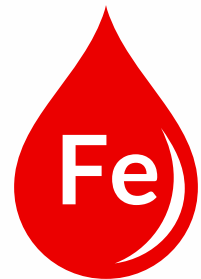
5 Practice-Changing Insights



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Normal Hb doesn't rule out deficiency.



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Ferritin <30 or TSAT <20%

Confirms iron deficiency, context matters.



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Every-other-day oral iron

Improves tolerance & may enhance absorption



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Does this patient have anemia?



An 84-year-old woman with fatigue, brain fog, and restless legs. She says, “I just don’t feel like myself.”

PMHx: Hypertension

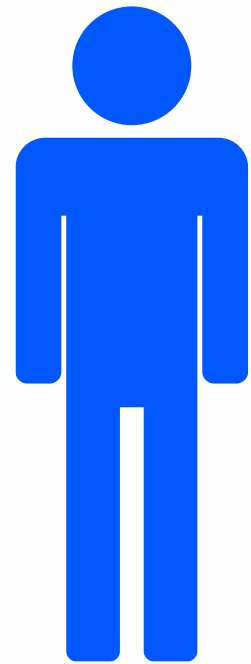
Medications: amlodipine

Exam: unremarkable

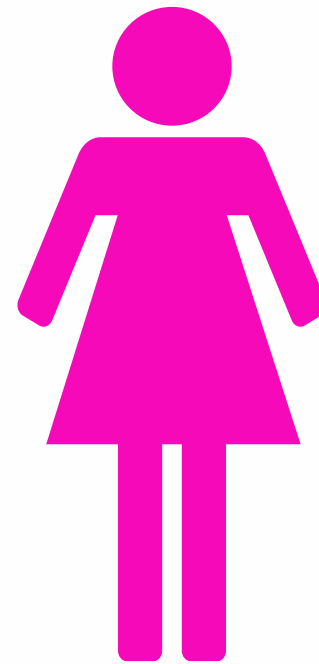
CBC	8/5/19 23:06	7/23/19 10:55
WBC	10.16	9.82
RBC	4.53	4.60
HEMOGLOBIN	12.5	12.6
HEMATOCRIT	39.5	40.4
MCV	87.2	87.8
MCHC	31.6 ▼	31.2 ▼
RDW	15.3 ▲	15.3 ▲
PLATELETS	213	261

She doesn’t meet classic definition of anemia – or does she?

WHO Hemoglobin Thresholds



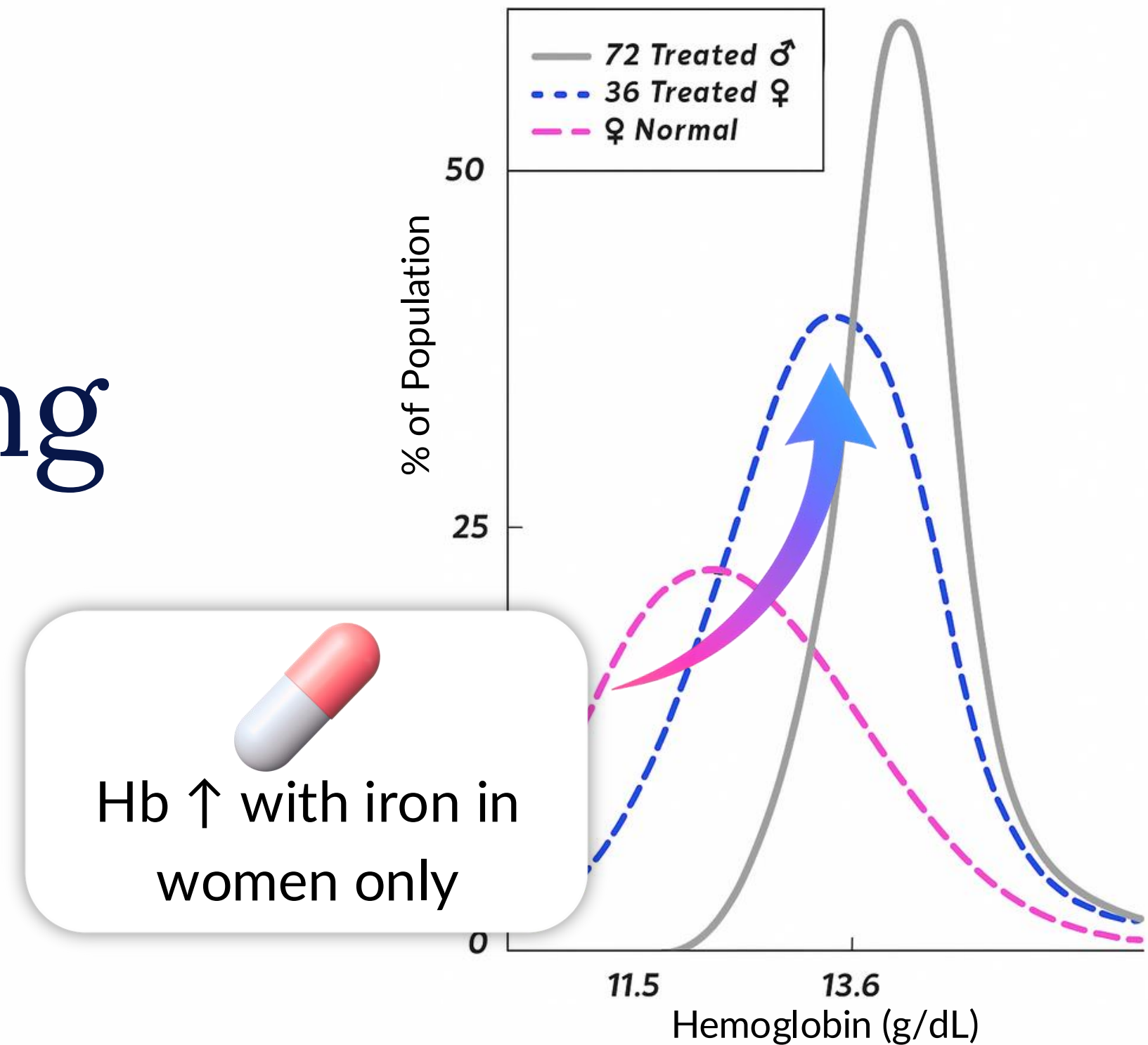
<13 g/dL



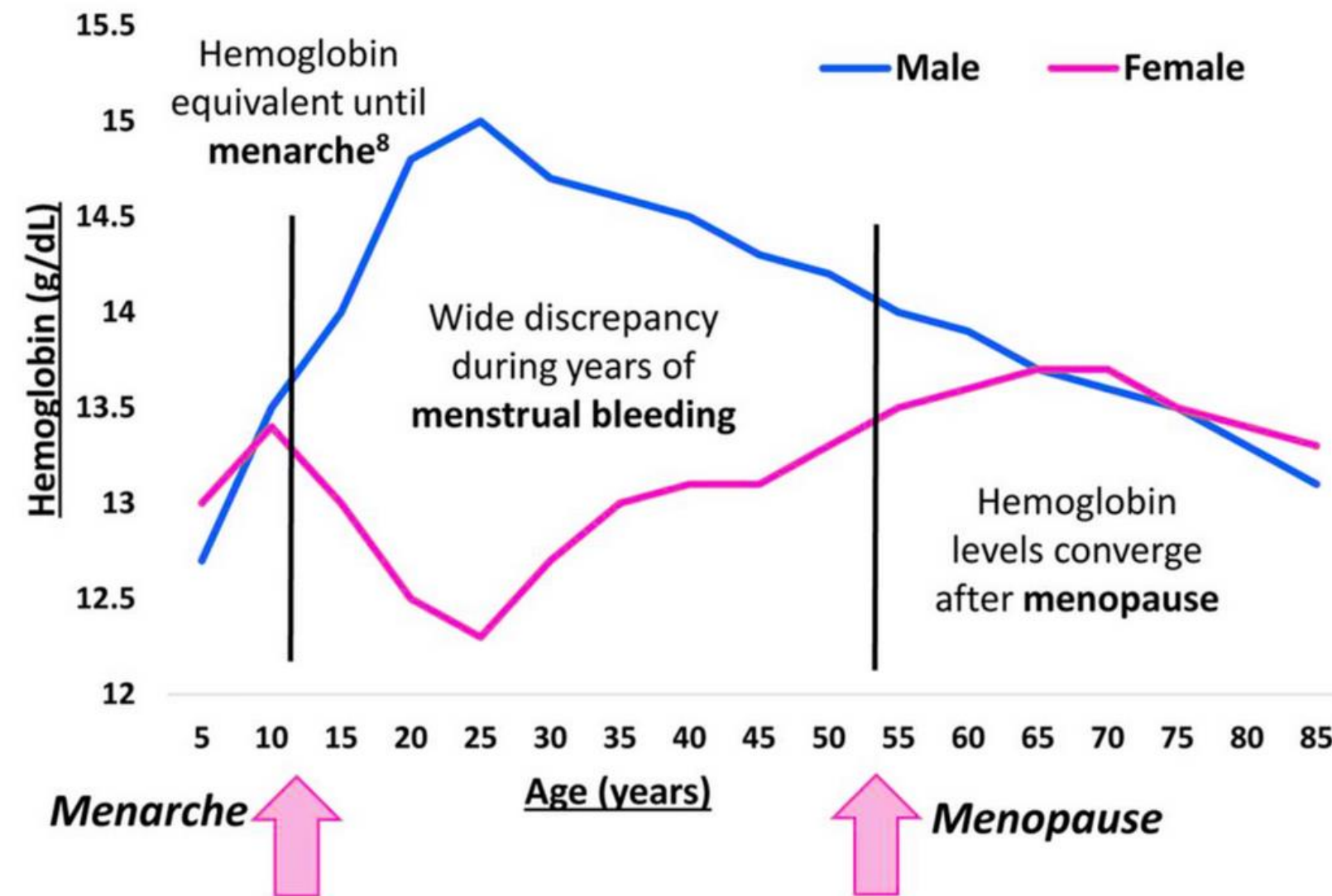
<12 g/dL*

*A trusted definition — or misclassified normal?

Iron repletion
revealed the true
normal — matching
that of men



Sex Differences in Hemoglobin: Driven by Iron?



The Iceberg of Iron Deficiency

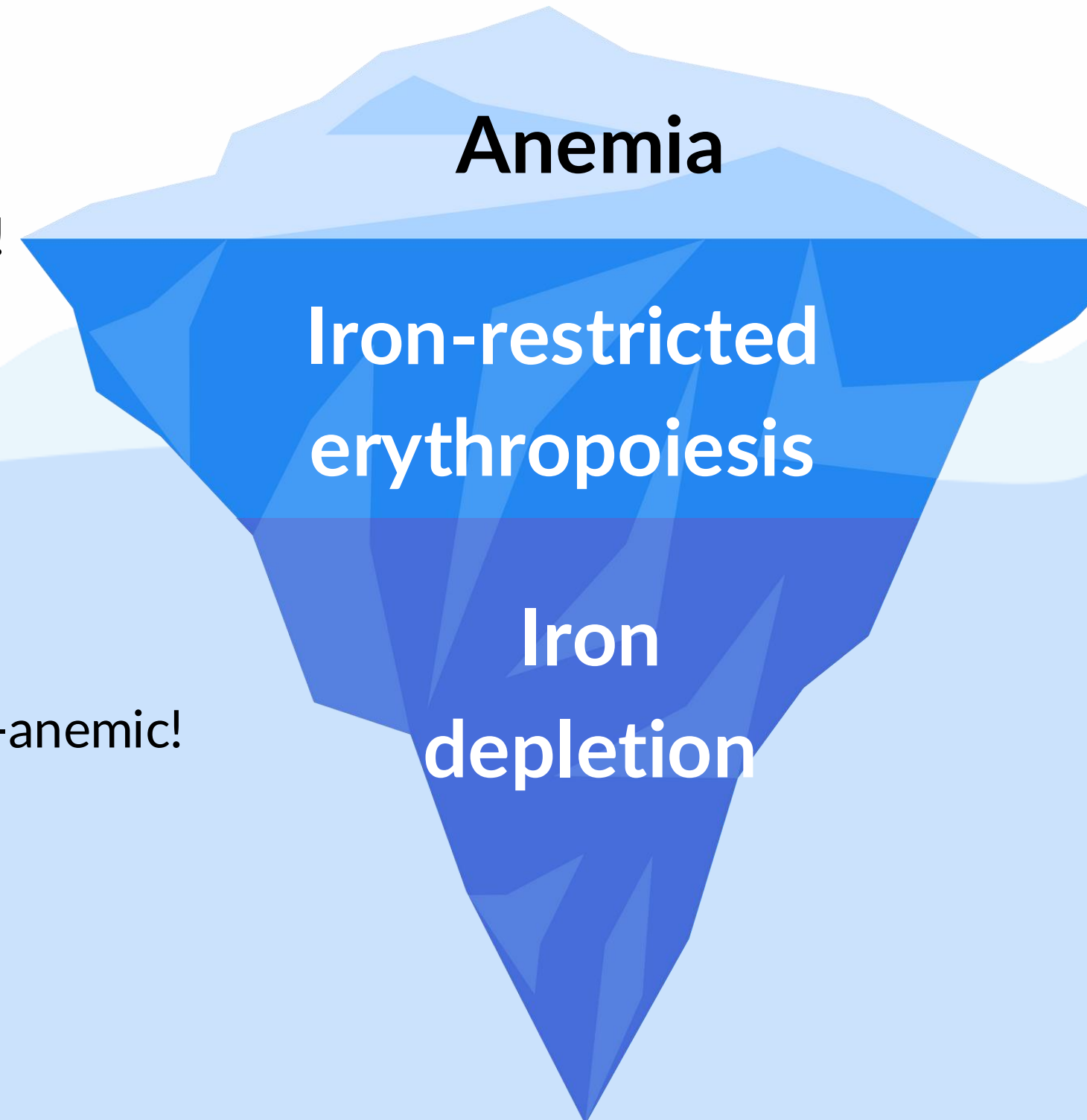
↓ Hemoglobin

Anemia is the *final* stage of iron deficiency!

↓ Ferritin, ↓ TSAT

↓ Ferritin

Majority of iron-deficient patients are non-anemic!



Ferritin thresholds



WHO cutoff:
Ferritin <15 ng/mL

IRON	37
TIBC	272
UIBC	235
% SATURATION	14 ▼
FERRITIN	21



15 ng/mL

Specificity 99%
Sensitivity 59%

21 ng/mL



30 ng/mL

Specificity 75%
Sensitivity 93%

Ferritin in Inflammation



Ferritin is an acute phase reactant, complicating its interpretation in inflammatory conditions.



Ferritin <100 ng/mL

**Ferritin <300 ng/mL
with TSAT <20%**

Returning to our case



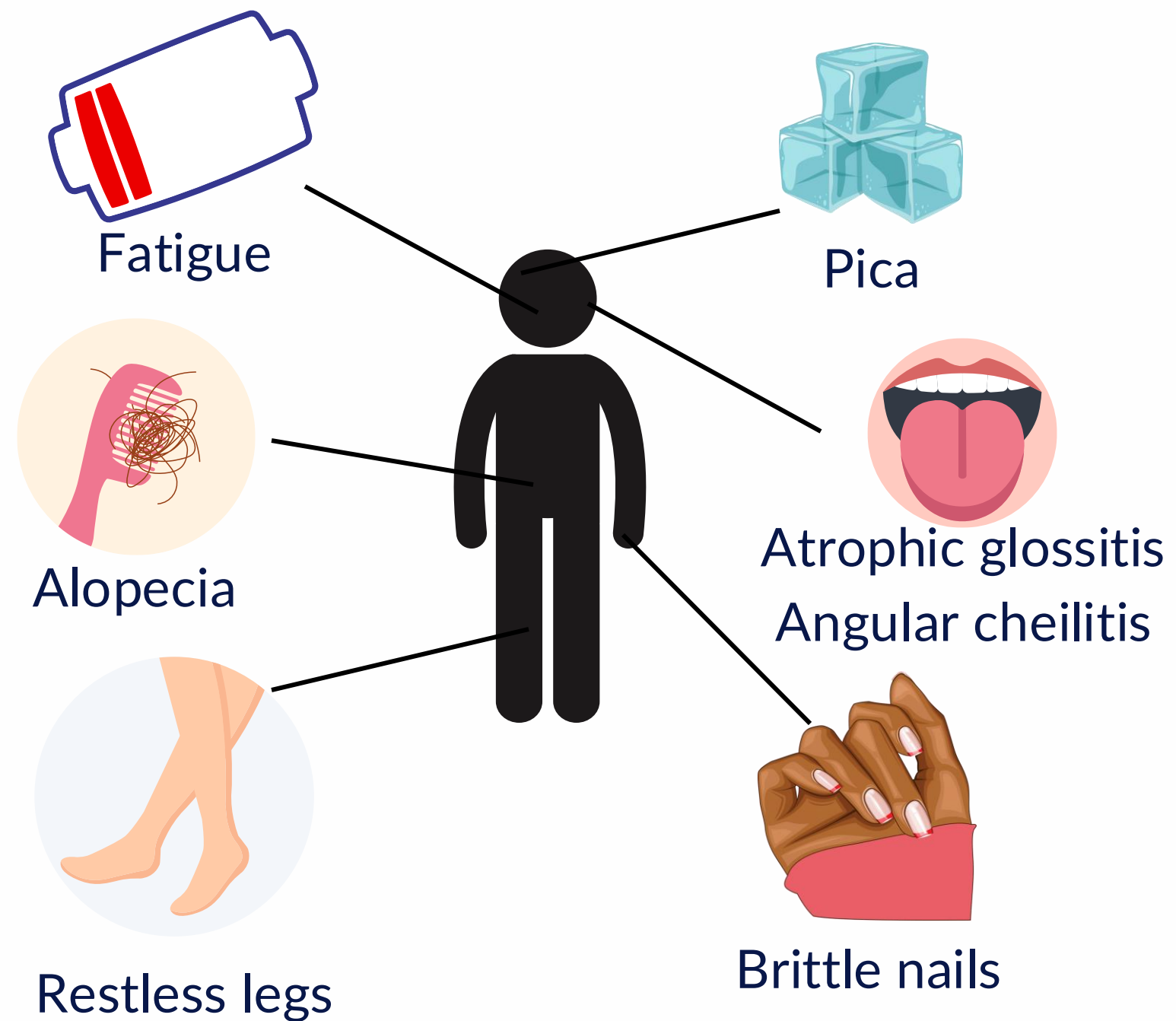
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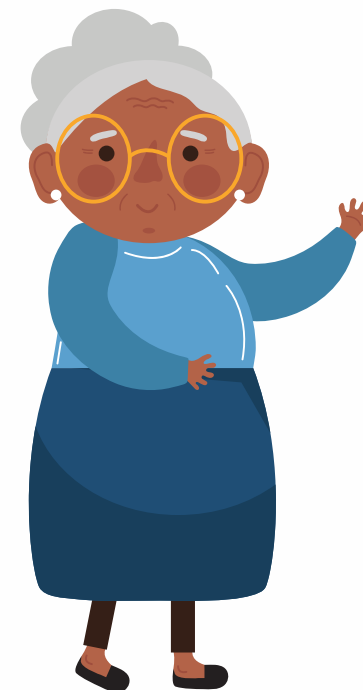
Non-anemic iron deficiency

Clinical Manifestations of Iron Deficiency

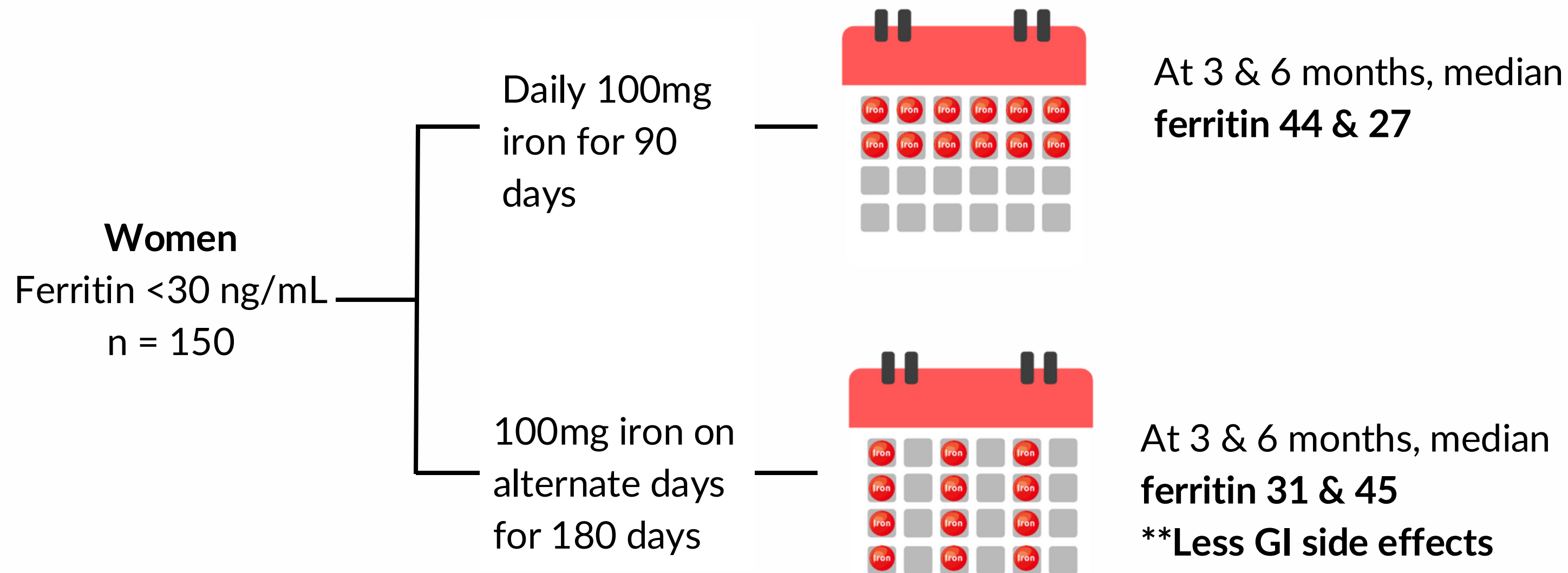


What dosing/formulation do you recommend?

1. Ferrous sulfate 325mg every other day
2. Ferrous sulfate 325mg daily
3. Slow-release iron daily
4. Slow-release iron every other day



Daily vs. Every-Other-Day Iron: Same Results, Fewer Side effects



Prescribing Oral Iron: Practical Tips

Pick the right formulation



Go with the **most affordable** iron.
Focus on **elemental iron** content.
Avoid slow-release forms.

Maximize absorption



Take in the morning, with **vitamin C**, on an **empty stomach**, away from food or coffee.

Adjust frequency for tolerance



At most **once daily** dosing.
If GI side effects, take **every other day**.

Time your recheck wisely



Wait **3-6 months** before rechecking labs. Iron stores rise **slowly**.



Consider oral iron if there is no active bleeding, no malabsorption or inflammation, the patient is not severely anemic or symptomatic, and rapid repletion is not required.

Case 2

A 24-year-old woman presents with fatigue and lightheadedness.

PMHx: none

Medications: amlodipine

Exam: appears fatigued,
normotensive, heart rate 90/min

Hemoglobin	7.9 ▼
Hematocrit	26.4 ▼
MCV	76.3 ▼
MCHC	29.9 ▼
RDW-CV	24.3 ▲
FERRITIN	6 ▼



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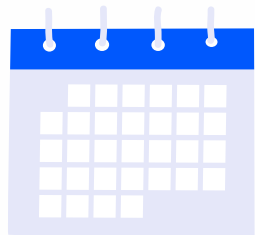
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Taking a Menstrual History



Periods lasting >7 days



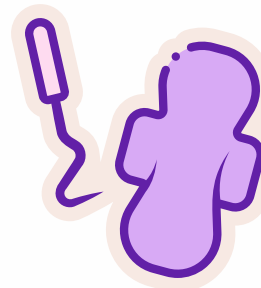
Clots larger than a quarter



Changing product at night



Changing product more than hourly



Doubling up on products



Bleeding interferes with daily life

Tip: A typical period lasts 4-6 days with ~4-6 products per day

When HMB Signals Something More

“My periods last 8–10 days. On the heavy days, I wear a super tampon and a pad — and I change them every hour. I pass big clots and sometimes feel flooding when I stand.”

A prior pelvic ultrasound was normal.

“I’ve had heavy periods since they started. When I was 18, I had bleeding after wisdom teeth removal and needed packing. I also bruise easily.”

Her mother and sister have similar bleeding symptoms.



ISTH Bleeding Score

15-20% of those with HMB have an inherited bleeding disorder

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IV Iron: Fast, Effective, and Safe



Severe reactions are rare (<1 in 200,000)



Mild infusion reactions (2-4%) due to labile iron

Typically, self-limited — pause infusion, then resume at slower rate

Agent	Approved dosing	Optimal dosing
Low-molecular-weight iron dextran (INFeD)	100 mg	1000 mg over 60 min
Ferumoxytol (Feraheme)	510 mg	1020 mg over 30 min
Ferric carboxymaltose (Injectafer)*	750 mg	750 mg in two doses (7 days apart)
Ferric derisomaltose (Monoferric)	1000 mg (20 mg/kg if <66kg)	1000 mg over 20 min

***Hypophosphatemia** may occur with ferric carboxymaltose, especially with repeated doses

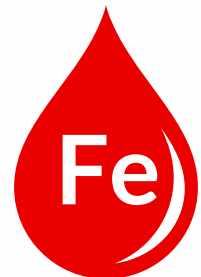
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A Stepwise Approach

- Presence of risk factors, symptoms, or CBC findings
- If no heavy menstrual bleeding, pursue GI evaluation
- Repeat iron panel: after 3-6 months of oral iron or 6 weeks after IV iron

Natalie Bavli, MD

Thank you!

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