



**OBSTETRICS AND GYNAECOLOGY  
 CLINICAL PRACTICE GUIDELINE**

# Anaemia and iron deficiency: Management in pregnancy and postpartum

<b>Scope (Staff):</b>	WNHS Obstetrics and Gynaecology Directorate staff
<b>Scope (Area):</b>	Obstetrics and Gynaecology Directorate clinical areas at KEMH, OPH and home visiting (Community Midwifery Program)
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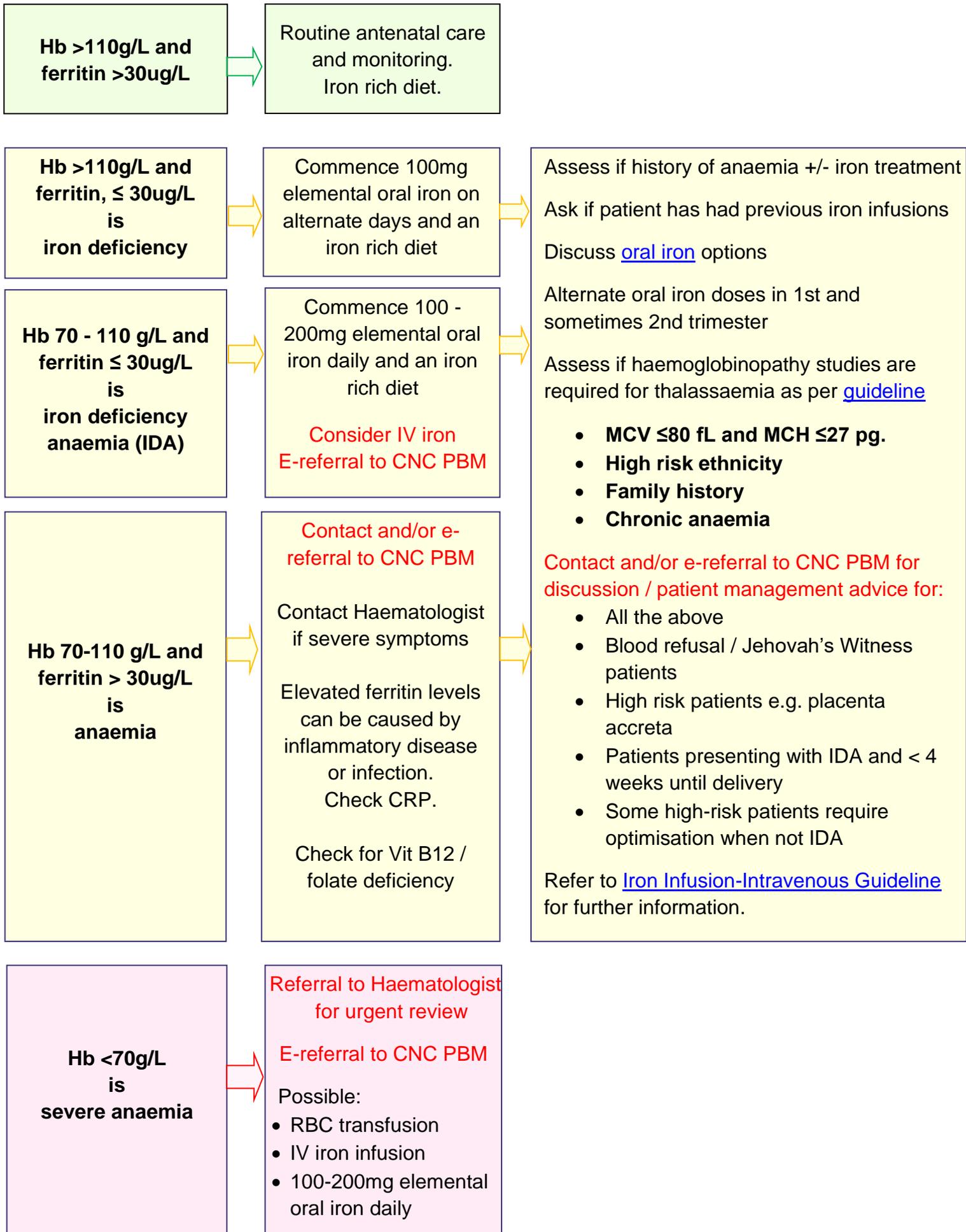
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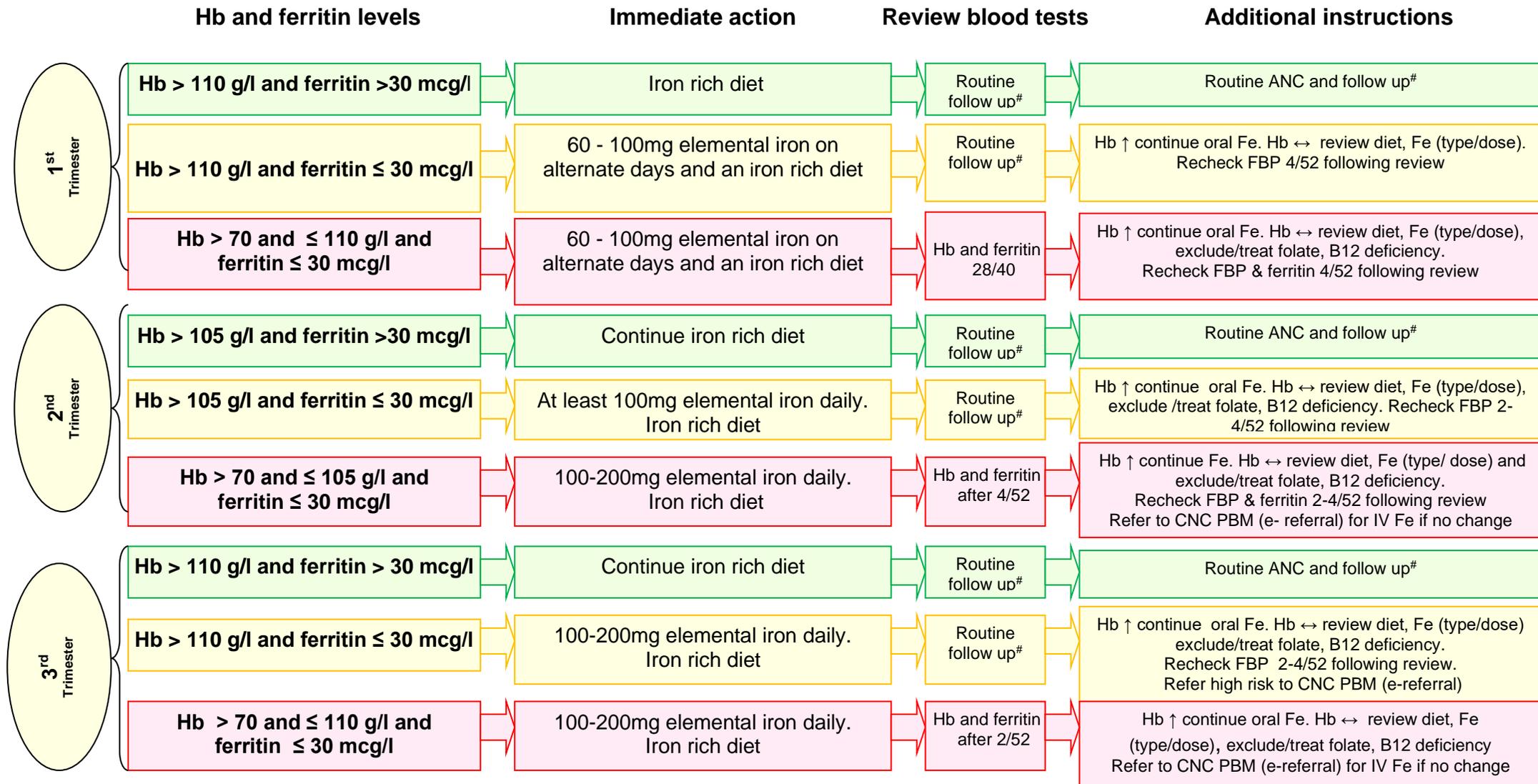
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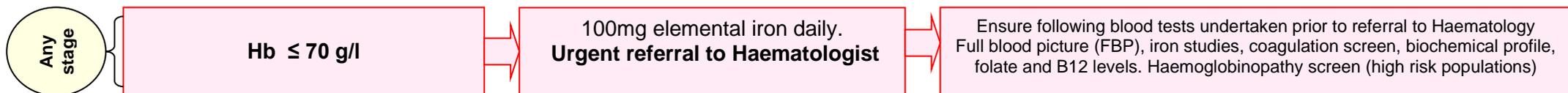
## Quick reference guide: Anaemia management overview





# Routine follow up requires FBP repeated at 28 and 36 weeks gestation.

Patients who may require more regular testing include: patients with known haemoglobin disease, adolescents, refusal of blood/components, history of anaemia, presence of co-morbidities, bleeding disorders, planned home birth, malabsorption, thrombocytopaenia, multiple births, vegan/vegetarian, hyperemesis.



## Background information

**Table 1: Classification of iron deficiency anaemia in adult obstetric patients**

Hb (g/L)	Time period
<110	1 <sup>st</sup> and 3 <sup>rd</sup> trimester
<105	2 <sup>nd</sup> trimester
<100	Postpartum period
A serum ferritin of <30mcg/L for an adult is diagnostic of iron deficiency	

Approximately 1.95-2.36 billion people worldwide have anaemia, with 30% of women in high-resourced countries and 50% of women in low-resourced countries having iron deficiency or iron deficiency anaemia (IDA).

### **Women with anaemia and/or iron deficiency may experience:**

- fatigue
- dizziness/fainting
- headaches
- shortness of breath
- tachycardia
- heart palpitations
- a decreased physical working capacity
- reduced energy levels
- reduced cognitive ability
- emotional instability
- depression
- restless legs
- insomnia

Severe anaemia is associated with preterm birth, low birth weight, a small for gestational age foetus, low Apgars, neonatal infection, possible cognitive development and childhood anaemia.

In the postpartum period both anaemia and IDA have been found to be linked to depression, emotional instability, stress and lower cognitive ability.

## The most common causes of anaemia in pregnancy

- inadequate iron intake (dietary +/- oral supplementation)
- iron deficiency
- folate deficiency +/- vitamin B12 deficiency
- haemoglobinopathies
- gastrointestinal absorption reasons e.g. gastric/bariatric surgery, Crohn's disease or diverticulitis
- hyperemesis
- blood loss, chronic or acute
- haemolytic diseases
- bleeding disorders e.g. Von Willebrand's disease
- underlying malignancies

## Pregnancy requirements

- 27mg of iron is required daily in pregnancy which is 1.5 x greater than when not pregnant.
- An iron rich diet should be encouraged.
- Oral iron is the recommended initial treatment for all but the most severely anaemic iron deficient patients.
- The haemoglobin should increase within 2 weeks if oral iron supplements are taken correctly and consistently, otherwise further tests are required.
- Intravenous iron should only be used in severe cases of IDA, if the patient is unresponsive to oral iron treatment, or when rapid repletion of iron is required. For treatment guideline refer to: [Iron Therapy: Intravenous](#)

## Key points

1. All patients should be offered screening for anaemia:
  - in first trimester (or at booking): FBP and iron studies
  - with the next screening bloods: FBP and ferritin (usually performed between 24-28 weeks). See Anaemia [Treatment algorithm](#).
  - and at 36 weeks gestation: FBP and ferritin. See Anaemia [Treatment algorithm](#)
2. A FBP / ferritin should be ordered within 2 - 4 weeks (dependent on gestation) following initiation of treatment, and at any time when there is a change of dosage or treatment type in order to assess response and compliance with oral iron treatments.
3. Iron deficiency +/- anaemia in most circumstances is diagnosed by a FBP and serum ferritin levels. Do not use serum iron, or serum ferritin alone to diagnose iron deficiency. NB: Ferritin levels are elevated in active infection or inflammation

and in these cases measurement of C-reactive protein (CRP) will support interpretation of ferritin levels.

4. Identify and document risk factors for anaemia which include: multiple pregnancy, refusal of blood components, teenage pregnancy, presence of co-morbidities, history of anaemia, bleeding disorders, poor /non-compliance to oral iron supplementation, malabsorption, coeliac disease, inflammatory bowel disease, bariatric surgery, diabetes, grand multiparity, thrombocytopenia, vegan/vegetarian, haemoglobinopathies.
5. Consult with CNC PBM and/or the Haematologist in diagnosing and treating IDA in patients with known haemoglobinopathies. Serum ferritin should be checked prior to starting iron with known haemoglobinopathy, to avoid iron overload.
6. Oral iron if taken at the appropriate dose and correctly, and for a sufficient time, is an effective first-line treatment for most patients in pregnancy. The type, dosage, and frequency of iron supplements for treatment of IDA should be documented in the patient notes, iron supplements increased if required, side effects noted, discussed and advice given as required at each antenatal clinic visit.
7. If a patient fails to respond to oral iron therapy, investigate further to assess for malabsorption problems. Consider non-compliance with medications or co-existing disease.
8. Intravenous iron therapy is an effective alternative to oral treatment during the second or third trimester only for treatment of IDA. Intravenous iron is restricted to patients failing to respond to oral iron treatment with known IDA or in those whom a rapid repletion of ferritin is required.
9. If not IDA or high risk, discuss with CNC PBM regarding anaemia management, as treatment with IV iron may need to be accessed through the patient's General Practitioner (G) or other external provider.

## Prescribing iron supplements

All patients with known haematinic deficiencies (includes B12 or iron deficiency) should be advised:

- the type, frequency, and duration of the treatment or medication.
- alternate day oral iron dosing may increase absorption and have less side effects, and may be adequate in 1<sup>st</sup> and 2<sup>nd</sup> trimester
- [side-effects](#) of the medication (see section below)
- management strategies for side effects e.g. pregnancy safe laxatives
- how and when to take the medications correctly
- of medications or food that may inhibit / decrease iron absorption
- dietary information to increase oral iron intake / refer to dieticians if required

Provide written instructions to the patient about iron supplementation - WNHS brochure – [Iron Supplements](#)- supplied by pharmacy.

## Side-effects of oral iron medications and management

When oral liquid iron is used, it should be diluted with water (or juice with Maltofer®) and drink through a straw in order to prevent discolouration of the teeth. Follow each dose with a drink of plain water. However, liquid iron supplements should be checked for the content of elemental iron to ensure it is adequate.

Side-effects of oral iron supplements include heartburn, nausea, vomiting, constipation and black discolouration of the faeces.

### Management for side effects include:

- **Nausea and epigastric discomfort**
  - take iron tablets on an empty stomach 1 hour prior to or 2 hours after a meal. If it causes stomach upset, take with or shortly after food.
  - take iron tablets at night
  - take iron tablets on alternate days
  - do not take iron tablets with other medications or supplements
  - NB follow Pharmacy advice as some iron preparations can be taken with food
  - See also WNHS [Obstetrics and Gynaecology](#) (OG): Antenatal Care: [Discomforts in Pregnancy: Common](#) (guideline) and [Iron Supplements](#) (patient brochure)
- **Constipation** – see Clinical Guideline, OG: [Bowel Care](#) (constipation)

### Medications that interact with iron

- medications used to treat gastric reflux (antacids and proton pump inhibitors e.g. Mylanta®, Gaviscon®)
- Calcium supplements
- Vitamin D supplements
- Multi vitamin supplements containing calcium and magnesium
- Thyroid hormones
- Some antibiotics (quinolones and tetracyclines)
- Methyldopa

### Dietary information

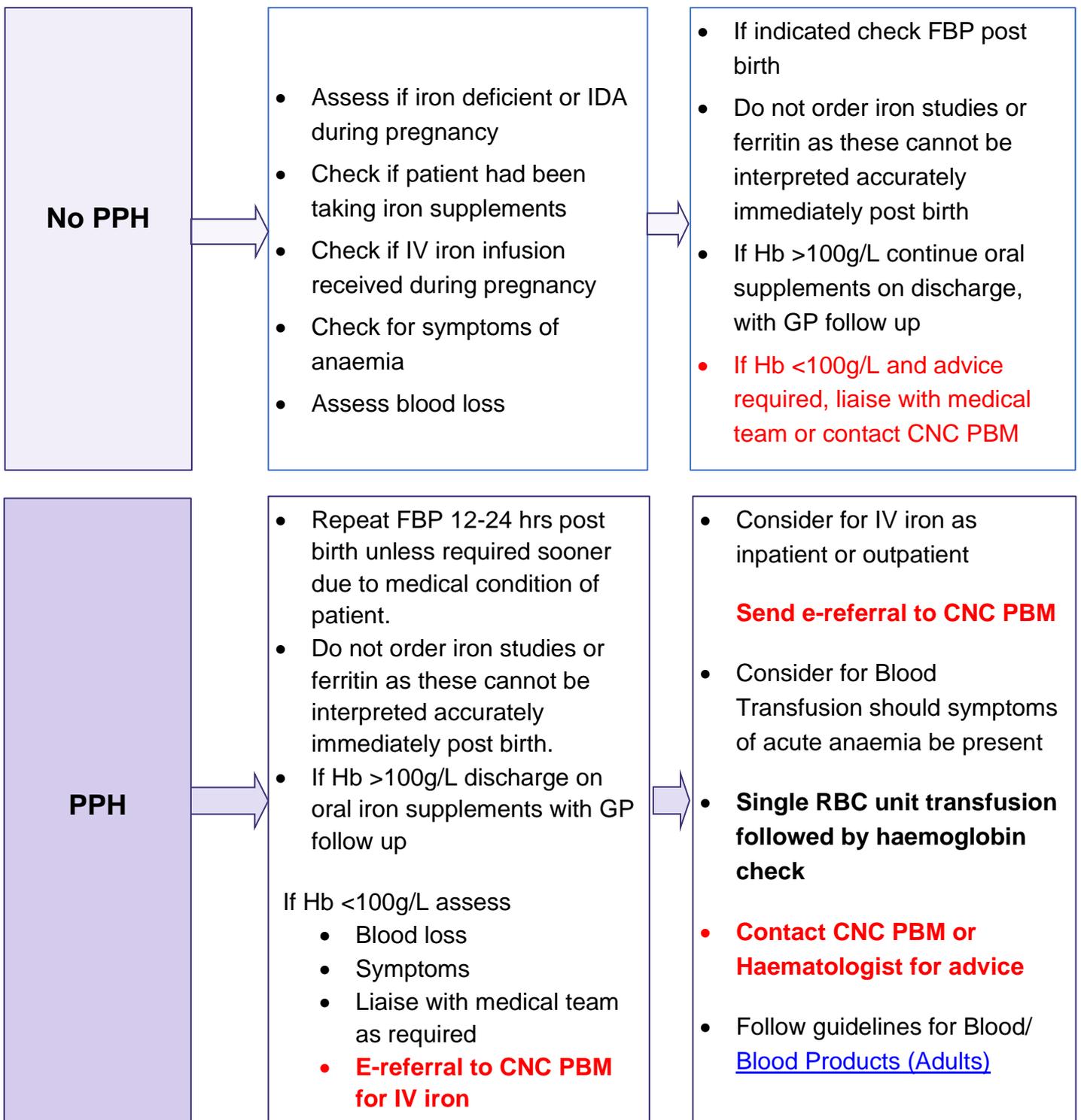
- Sources of dietary iron include haem iron from meat, poultry and fish, which are more absorbable than non-haem iron plant-based foods and iron-fortified foods.
- Ascorbic acid (vitamin C) enhances absorption.
- Various factors including gut health and function affect iron absorption.
- Foods that may interact / inhibit / decrease iron supplement absorption include:
  - calcium in dairy products
  - tea, coffee/cola/caffeine products
  - unprocessed bran
- See WNHS patient information brochure 'Iron and Pregnancy' and WNHS medical library [Nutrition Resources](#) 'Nutrients in Pregnancy' tab e.g. [High Iron Foods](#)'

## Anaemia and haemoglobinopathies or B12 deficiency

- **Anaemia and haemoglobinopathies:** See WNHS Clinical Guideline, Obstetrics and Gynaecology: [Haemoglobinopathy Screening in Pregnancy](#)
- **Anaemia and B12 deficiency:** See WNHS Clinical Guideline, Obstetrics and Gynaecology: [Vitamin B12 Deficiency: Management During Pregnancy](#)

## Postpartum anaemia management

Post-partum haemorrhage has been defined as blood loss in the 24hrs after giving birth vaginally (>500mls) or caesarean section (>1000mLs).



## References and resources

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### Related WNHS policies, procedures and guidelines

WNHS Clinical Guidelines: Obstetrics and Gynaecology:

- Antenatal Care: [Discomforts in Pregnancy: Common](#) - constipation
- [Haemoglobinopathy Screening in Pregnancy](#)
- [Iron Therapy: Intravenous](#)
- [Vitamin B12 Management during Pregnancy](#)

## Useful resources and related forms

WNHS patient information:

- Pharmacy: [Iron Supplements](#) brochure
- Pharmacy: Obstetrics Medicine Information Service (6458 2723)
- Dietetics: Iron and Pregnancy brochure
- Medical Library [Nutrition Resources](#): 'Nutrients in Pregnancy': '[High Iron Foods](#)'

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### Version history

Version number	Date	Summary
1	Mar 2013	First version. Archived- contact OGD Guideline Coordinator for previous versions. Original titled 'B2.23: Anaemia in Pregnancy'.
2	June 2015	Full routine review

3	Dec 2017	Amendment. QRG- Wording changed to “at least 65mg” iron (if normal Hb and ferritin <30ug/L)
4	Sept 2018	<ul style="list-style-type: none"> <li>• Streamlined and removed some repetitive elements</li> <li>• Details added to flowcharts- see treatment algorithm for tests required</li> <li>• Vit B deficiency section removed &amp; now refers directly to Vitamin B deficiency guideline</li> <li>• Other causes of anaemia: Haematologist referral is recommended for investigation and treatment of other causes of anaemia</li> </ul>
5	Jun 2023	<ul style="list-style-type: none"> <li>• Anaemia management overview QRG updated. Details added for contacting CNC PBM, Haematology and e-referrals. Includes option of increased oral iron supplement dose- read flowcharts for relevant categories. Time frame for rechecking FBP amended.</li> <li>• Background details added; includes table for classification of anaemia in adult obstetric patients</li> <li>• Following initiation of treatment, order a FBP / ferritin within 2 - 4 weeks (dependent on gestation), and at any time when there is a change of dosage or treatment type in order</li> <li>• Identify and document risk factors for anaemia</li> <li>• Document the type, dosage, and frequency of iron supplements for treatment of IDA, iron supplements increased if required, side effects noted, discussed and advice given as required at each antenatal clinic visit.</li> <li>• Added details for side effect management, medication interactions and dietary information</li> <li>• Postpartum anaemia management flowchart added</li> </ul>

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