Haemoglobin Assessment and Optimisation in Maternity

A guide for health professionals involved in antenatal care
If iron therapy is required:
• Continue iron rich diet and pregnancy multivitamins.
• Provide the woman with the following handouts: Lifeblood’s Oral Iron Choices for Maternity and Bloodsafe’s A Guide to Taking Iron Tablets.
• Document iron preparation and dose in the patient’s record.
• Assess adherence (dose and timing) and ask about side effects at every visit. Refer to Bloodsafe’s A Guide to Taking Iron Tablets to address side effects.

First antenatal visit ≤ 20 weeks (booking visit)
• Document risk factors for anaemia: Previous anaemia, inter-pregnancy interval < 1 year, multiple pregnancy, parity ≥ 3, vegetarian/vegan, teenage pregnancy, recent history of bleeding, Aboriginal and Torres Strait Islander.
• Important: Request full blood count (FBC) and ferritin on all women if recent bloods not available.
• Perform haemoglobinopathy screening if risk factors [women with a family history of anaemia, thalassaemia or other abnormal haemoglobin variant; and any woman from a high-risk ethnic background who has not previously been tested] or the booking FBC shows a MCV ≤ 80 fL and/or MCH < 27 pg.

Second antenatal visit (follow-up visit)
• If a haemoglobinopathy is detected, perform partner screening as soon as possible. Add the woman’s details to the request form and refer her to the obstetric antenatal clinic (ANC).
• Review booking blood results and use the flowchart to determine if iron is required.*

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**First trimester**

First antenatal visit ≤ 20 weeks (booking visit)
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- **Important**: Request full blood count (FBC) and ferritin on all women if recent bloods not available.
- Perform haemoglobinopathy screening if risk factors (women with a family history of anaemia, thalassaemia or other abnormal haemoglobin variant; and any woman from a high-risk ethnic background who has not previously been tested) or the booking FBC shows a MCV ≤ 80 fL and/or MCH < 27 pg.

Second antenatal visit (follow-up visit)
- If a haemoglobinopathy is detected, perform partner screening as soon as possible. Add the woman’s details to the request form and refer her to the obstetric antenatal clinic (ANC).
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**Hb 70–110 g/L**
- Ferritin > 30 mcg/L: Iron deficiency
- Ferritin ≤ 30 mcg/L: Iron deficiency anaemia

**Hb > 110 g/L**
- Ferritin > 30 mcg/L: Iron deficiency

**Hb < 70 g/L**
- Ferritin > 30 mcg/L: Iron deficiency anaemia
- MCV ≥ 100 fL: Anaemia
- MCV < 100 fL: Severe anaemia
- Ferritin > 30 mcg/L: Anaemia
- Ferritin ≤ 30 mcg/L: Anaemia

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- **Therapeutic dose oral iron**: 100–200 mg elemental iron daily
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Urgent referral to a specialist

- Refer for review in obstetric ANC with repeat FBC in four weeks
- If abnormal

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**Hb increase**
- Continue oral iron* throughout pregnancy and until at least 6 weeks postpartum

**No Hb increase**
- After the first trimester, IV iron is indicated for women who have failed to respond to oral therapy, are intolerant, or non-compliant

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Repeat FBC as part of the routine 26–28 week blood tests
Refer to Haemoglobin Assessment and Optimisation in Maternity: Second trimester
If iron therapy is required:

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- Assess adherence (dose and timing) and ask about side effects at every visit. Refer to Bloodsafe’s A Guide to Taking Iron Tablets to address side effects.

If iron therapy is required:

- Continue iron rich diet and pregnancy multivitamins.
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**Third trimester visit (32–36 weeks)**

Review repeat full blood count (FBC) and ferritin results to assess response to oral iron*.

- **Hb > 110 g/L**
  - Continue oral iron* throughout pregnancy and until at least 6 weeks postpartum.

- **Hb 70–110 g/L**
  - Refer for review in obstetric ANC with repeat FBC in 2–4 weeks.
  - **Therapeutic dose oral iron***
    - 100–200 mg elemental iron daily.

- **Hb < 70 g/L**
  - **Severe anaemia**
  - **Therapeutic dose oral iron***
    - 100–200 mg elemental iron daily.

**MCV ≥ 100 fL**

- **MCV < 100 fL**
  - Request B12 and folate.
    - **Low**
      - Supplement B12 and/or folate as required.
    - **Normal**

**Ferritin ≤ 30 mcg/L**

- **Ferritin > 30 mcg/L**
  - Iron deficiency anaemia
  - Therapeutic dose oral iron*
    - 100–200 mg elemental iron daily
  - IV iron indicated for women who have failed to respond to oral therapy, are intolerant, or non-compliant.

Provide form for 6 weeks postpartum blood tests (FBC and iron studies; B12 and folate if levels were low). Document the request in the hospital discharge summary. Tests recommended to be performed prior to the 6 week GP visit. GP to receive the result. Refer to Haemoglobin Assessment and Optimisation in Maternity: Intrapartum.

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*If iron therapy is required:
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**Admission in labour**
Review haemoglobin (Hb) result from the last available antenatal full blood count (FBC) for all women on admission.
Note: Women with anaemia at the time of delivery may require additional precautions.

- **Hb > 110 g/L**
  - Routine intrapartum management

- **Hb ≤ 110 g/L**
  - Repeat FBC and request a group and screen
    - **Hb > 110 g/L**
    - **Hb ≤ 110 g/L**
      - IV access in labour
        - Active management of third stage labour (Syntometrine® recommended unless contraindicated)
        - Accurately record blood loss at delivery
        - Manage any primary postpartum haemorrhage as per hospital guidelines
        - Refer to *Haemoglobin Assessment and Optimisation in Maternity: Postpartum*
**Haemoglobin Assessment and Optimisation in Maternity**

**Postpartum**

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**Did the woman have a primary postpartum haemorrhage (PPH)?**
Traditionally defined as blood loss within 24 hrs of birth of ≥ 500 mL after vaginal birth or ≥ 1000 mL after caesarean section.

- **No PPH**
  - Has a postpartum FBC been performed for other indications?
    - No
    - Yes
      - **Hb > 110 g/L**
        - Did the woman have iron deficiency or anaemia during the pregnancy? or Did she receive iron therapy (oral or IV) during the pregnancy?
          - No
          - Yes
            - **Hb ≤ 110 g/L**
              - **Anaemia**
                - Refer to Guidance on Red Cell Transfusion for Postnatal Patients Not Actively Bleeding
            - **Hb > 110 g/L**
              - Oral iron* Minimum 60 mg elemental iron daily

- **PPH**
  - Repeat FBC 12–24 hours following delivery unless medically indicated to be repeated sooner.
    - Note: Do not order iron studies or ferritin as they cannot be interpreted in the immediate postpartum period.
  - Has a postpartum FBC been performed for other indications?
    - No
    - Yes
      - If on oral iron,* continue until at least 6 weeks postpartum
  - Provide form on discharge for 6 week postpartum blood tests (FBC and iron studies; B12 and folate if levels were low) to be performed prior to 6 week GP visit. Document the request in the hospital discharge summary. GP to receive and action results.

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