ANAEMIA[a]

Hb below reference range for age, sex and gestation

Ferritin <20 mcg/L Iron deficiency anaemia	Ferritin 20–50 mcg/L Possible iron deficiency anaemia	Ferritin >50 mcg/L Unlikely iron deficiency anaemia
Review clinical history and identify cause (*see Table H.1 in Appendix H of Module 6*) Start treatment: • oral iron 3–6 mg/kg/day Address causes of dietary iron deficiency: • increase dietary iron • if <1 year of age, cease cow's milk and use an infant formula • if 1–2 years of age, reduce cow's milk to <500 mL daily Assess haematological response within 2-4 weeks Continue treatment for 3 months after Hb recovery If oral iron is ineffective or is not tolerated, consider other causes of anaemia (*see Column 3 of this template*) and use of IV iron	Review and address any causes of iron deficiency (*see Column 1 of this template and Table H.1 in this document*) Correlate with MCV/MCH and CRP Consider therapeutic trial of iron: • oral iron 3 mg/kg/day Assess haematological response within 2–4 weeks If anaemia persists, consider other causes (*see Column 3 of this template*)	Correlate with MCH/MCV and CRP Ferritin may be elevated in the setting of inflammation. However, iron deficiency may still be present, particularly where TSAT <20%. Consider alternative causes of anaemia: • Thalassaemia and other haemoglobinpathies • anaemia of chronic disease • haemolytic anaemia • B12 deficiency • folate deficiency • other

[a] This algorithm applies to all patients, including those undergoing procedures in which substantial blood loss is anticipated.

The reference ranges are based on criteria from the Royal College of Pathologists of Australasia, and they may require local adaptation.

CRP, C reactive protein; Hb, haemoglobin; IV, intravascular; MCH, mean corpuscular haemoglobin; MCV, mean corpuscular volume; TSAT, transferrin saturation

Table H.1 Age-specific differential diagnoses in children with iron deficiency

INFANTS	CHILDREN	ADOLESCENT
Inadequate dietary iron • Late introduction of iron-rich solids • Early introduction (i.e. <12 months) of cow's milk • Vegetarian or vegan diet	Inadequate dietary iron • Vegetarian or vegan diet	Inadequate dietary iron • Vegetarian or vegan diet
Increased iron requirements • Catch-up growth if premature or low birth weight[a] • Rapid growth period	Increased iron requirements • Rapid growth period	Increased iron requirements • Rapid growth period • Pregnancy • Extreme athletes
Intestinal blood loss • Cow's milk protein intolerance • Meckel's diverticulum • Inflammatory bowel disease • Parasitic infection Other chronic blood loss such as epistaxis, or renal or pulmonary blood loss	Intestinal blood loss • Meckel's diverticulum • Inflammatory bowel disease • Parasitic infection[b] Other chronic blood loss such as epistaxis, or renal or pulmonary blood loss	Intestinal blood loss • Inflammatory bowel disease • Parasitic infection • Menorrhagia Other chronic blood loss such as epistaxis, or renal or pulmonary blood loss
Reduced absorption • Coeliac disease • Inflammatory bowel disease • Gastric or intestinal surgeries • *Helicobacter pylori* infection	Reduced absorption • Coeliac disease • Inflammatory bowel disease • Gastric or intestinal surgeries • *Helicobacter pylori* infection	Reduced absorption • Coeliac disease • Inflammatory bowel disease • Gastric or intestinal surgeries • *Helicobacter pylori* infection • Dietary factor (tannins)

[a] Antenatal risk factors that predispose an infant to iron deficiency include maternal iron deficiency, maternal diabetes mellitus, smoking and multiple pregnancies. Perinatal factors that predispose an infant to iron deficiency include low birth weight, prematurity, feto-maternal haemorrhage, twin-to-twin transfusion or other blood loss including placental abruption, subgaleal haemorrhage or iatrogenic blood loss.

[b] Giardia and hookworm infection