



## **Anaemia**

The haemoglobin concentration reference range is different for men, women, in pregnancy and in children (age specific ranges).

The cause of anaemia can generally be separated by the MCV – see separate sections on microcytosis or macrocytosis. However, the MCV is not completely sensitive or specific and there may be more than one cause of anaemia occurring together, so detailed investigation is often required.

### **Causes**

- Iron, B12 or folate deficiency
- Anaemia of chronic disease/inflammation
- Malignancy including myeloma
- Renal failure especially if eGFR less than 30 ml/min or associated with diabetes
- Alcohol and liver disease
- Haemolysis; including drug-induced
  - Medications especially chemotherapy, anti-androgens and immunomodulatory drugs – check British National Formulary (BNF)
- Pregnancy, Testosterone deficiency – common in elderly men
- Thyroid dysfunction
- Thalassaemia and haemoglobinopathy
  - Bone marrow failure e.g. aplastic anaemia, myelodysplasia - usually more than one cell line
- Bone marrow infiltration e.g. leukaemia, non-haematological cancer



## History and examination

- Systems review guided by above, and examination
- Please ensure haematinics checked (recent ferritin and/or iron studies and folate, B12 in past year) if considering haematology opinion
- Check inflammatory markers, renal and liver function
- Immunoglobulins
- Blood film (with clinical information)
- A haemolysis screen is indicated with elevated bilirubin, this includes reticulocytes, blood film, haptoglobulins, LDH and Coombs test (aka DAT, on transfusion form) and may be done in Primary care where possible.
- A myeloma screen, if clinically indicated, includes serum electrophoresis, immunoglobulins, calcium AND urine for Bence Jones proteins (10% of cases do not secrete a measurable paraprotein)

**Management** depends on the underlying cause. For renal anaemia please refer to nephrology. For other stable patients without obvious underlying cause, an A&G is usually the first appropriate contact with haematology. Many patients with anaemia of chronic disease, and even suspicion of early MDS, should be monitored in the community.