

Myeloma is a cancer of bone marrow plasma cells that secrete abnormal antibodies (paraprotein and free light chains (FLC)). This may result in multiple signs and symptoms, including anaemia, non-specific pain originating in the bones, fatigue, infections, and kidney damage. Although these signs and symptoms may seem unconnected, it is important to remember that myeloma usually presents with vague symptoms that are progressive. Early diagnosis is key to preventing end organ damage and improving survival.

### When to test for myeloma

#### Any of the following blood test abnormalities:

- Raised **C**alcium
- **R**enal impairment
- **A**naemia
- Raised ESR

#### Symptom or finding:

- **B**one pain – usually presents as unexplained pain, generalised or localised
- Back pain – persistent or severe/atypical
- Generally unwell – fatigue, weight loss, suspicion of underlying cancer
- Recurrent infections
- Spontaneous fractures including osteoporotic vertebral fractures
- Breathlessness – unexplained

#### Important factors to consider:

Symptoms and findings persist without explanation or despite initial interventions.

Red flags for myeloma investigation include **unexplained** symptoms and **more than one** symptom.

The **CRAB** criteria for myeloma.

### What tests to request

- Serum protein electrophoresis for paraprotein
- Serum free light chain (sFLC) assay
  - If unavailable, urine Bence Jones protein (BJP)
- Serum immunoglobulins (IgG, IgA and IgM)
- Full blood count
- Corrected serum calcium
- Serum creatinine

Response to results

- Any paraprotein/abnormal sFLC ratio **with** significant symptoms indicative of an urgent problem (e.g. spinal cord compression, acute kidney injury)

Recommend **urgent referral** to Clinical Haematology

- Moderate concentration of paraprotein (IgG >15 g/L, IgA or IgM >10g/L)
- Identification of an IgD or IgE paraprotein (regardless of concentration)
- Significant abnormal sFLC ratio (<0.1 or >7)
  - Identification of BJP

Recommend **2-week rule referral** to Clinical Haematology

- Minor concentration of paraprotein (IgG <15 g/L, IgA or IgM <10g/L) **without** relevant symptoms
- Abnormal sFLC ratio (0.1–7)

This pattern is common in elderly patients

Recommend **recheck** serum and urine in 2–3 months to confirm pattern and assess any progression.

Patients whose paraprotein concentration increases (25% and >5g/L) or develop symptoms will need a **2-week rule referral**.

**Discuss** with your Clinical Haematology Department if results not clear or concerns.

- No serum paraprotein
- Normal sFLC ratio
  - No BJP
- Normal immunoglobulin levels

Myeloma very **unlikely** but symptoms may still need to be investigated with other clinical specialties

NICE guideline [NG12] Suspected cancer: recognition and referral (2017) <https://www.nice.org.uk/guidance/ng12>

NICE guideline [NG35] Myeloma: diagnosis and management (2018) <https://www.nice.org.uk/guidance/ng35>