

MYELOMA DIAGNOSIS PATHWAY

Myeloma, also known as multiple myeloma, is a rare bone marrow cancer arising from the plasma cells. In Europe, there are around **50,000** new cases diagnosed each year.

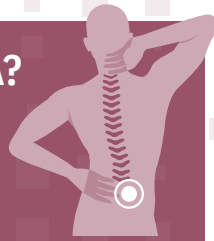


SUSPECT MYELOMA?

Myeloma signs and symptoms

If a patient presents with one or more of the following unexplained symptoms, consider testing for myeloma.

- **Bone pain / back pain**, usually presents as unexplained pain, generalised or localised
- **Urine changes**, such as foaming urine or passing excessive or very little urine
- **Unintentional weight loss**
- **Breathlessness**
- **Spontaneous fractures**, including osteoporotic vertebral fractures
- **Spinal cord compression**: pain, pins and needles, numbness and weakness in legs and feet, problems controlling bladder and bowels
- **Recurrent infections**
- **Fatigue and weakness**



There are four defining features of myeloma, known as **CRAB** criteria:

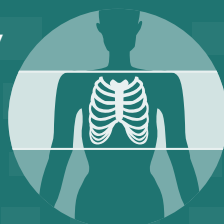
C Elevated Calcium	R Renal impairment / failure	A Anaemia	B Bone disease
------------------------------	--	---------------------	--------------------------



REFERRAL AND FURTHER INVESTIGATIONS

If initial tests and investigations suggest myeloma, or a patient has unresolved presenting symptoms, they should be referred to a haematology clinic and further investigations are required to confirm diagnosis:

- Bone marrow aspirate / biopsy
- X-Ray, skeletal survey
- Low dose whole-body CT
- Whole body MRI
- PET/CT



THINK MYELOMA!

Myeloma tests and investigations

If you suspect a patient has myeloma, you should conduct the following tests and investigations:

1 Full blood count and blood chemistry

- **Full blood count**: look for unexplained anaemia
- **Erythrocyte sedimentation rate (ESR)**: usually elevated
- **Urea and electrolytes (U&Es)**: to check for renal impairment
- **Serum creatinine**



2 Serum protein measurement

- **Urine and serum protein electrophoresis**: to check the presence of paraprotein
- **Serum free light chain assay (sFLC)**, if unavailable, urine
- **Urine tests** (spot urine tests, 24-hour urine collection and Bence Jones protein test)
- **Serum immunoglobulins (IgG, IgA and IgM)**

3 Additional tests to consider

- Serum albumin
- Beta-2 microglobulin
- C-reactive protein
- Calcium: to test for hypercalcaemia
- Lactate dehydrogenase test (LDH)
- Estimated Glomerular Filtration Rate (eGFR)



RELATED DIAGNOSIS

Monoclonal gammopathy of undetermined significance (MGUS)

No treatment – monitor

Progression to AL amyloidosis, myeloma or solitary plasmacytoma: 1% per year

Smouldering myeloma

No treatment – monitor

Progression to myeloma: 10% per year

Adapted from the Myeloma UK *Myeloma Diagnosis Pathway*, with permission.

ADDITIONAL RESOURCES

1. European Myeloma Network recommendations on tools for the diagnosis and monitoring of multiple myeloma: what to use and when. *Haematologica*. 2018; 103 (11): 1772-1784.
2. Multiple myeloma: EHA-ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. *Annals of Oncology*. 2021; 32 (3): 309-322.