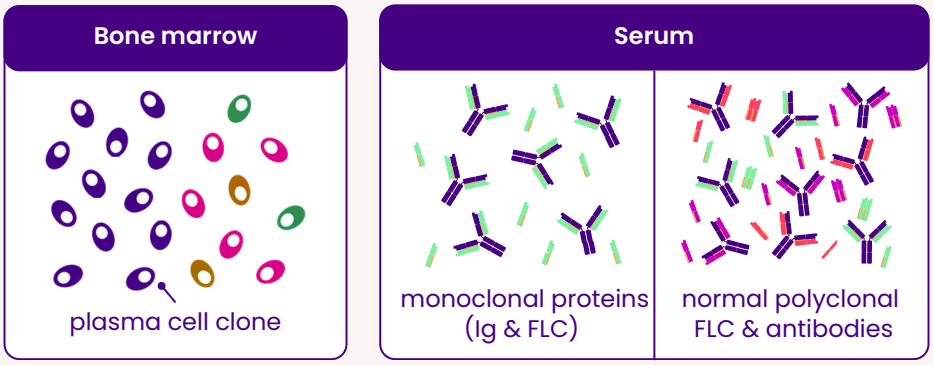
Monoclonal gammopathy of undetermined significance (MGUS)

What is MGUS?

Monoclonal gammopathy of undetermined significance (MGUS), is a premalignant condition where an abnormal protein called monoclonal protein or M-protein is found in the blood. This protein is produced by a clone of plasma cells in the bone marrow.



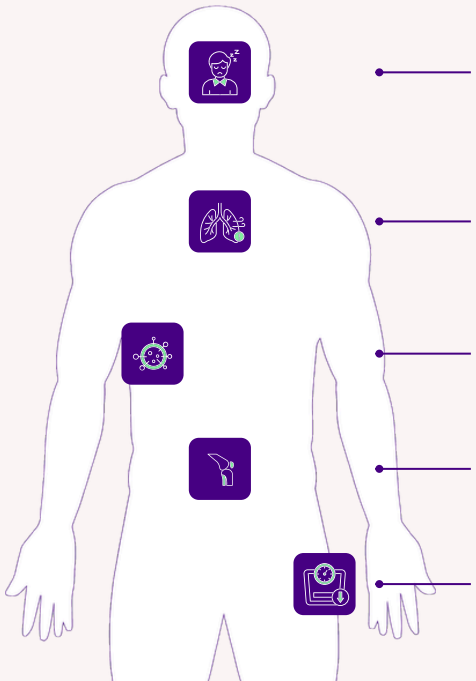
A clinically significant condition

While MGUS is not a malignant condition, it carries significant clinical implications. Patients with MGUS have an increased risk of progression to haematological malignancies[1], such as myeloma, as well as being more susceptible to infections[2], renal impairment[3], osteoporosis and fractures[4], neurological disorders[5] and thrombosis[6].

- progression to malignancy
- infections
- renal impairment
- osteoporosis and fractures
- neurological disorders
- thrombosis

Symptoms and blood test results that may indicate MGUS progression

Patients should be informed of common symptoms that could indicate MGUS progression and the importance of reporting these symptoms to their general practice provider.



Fatigue
- anaemia
- raised ESR with no other explanation
- renal insufficiency

Breathlessness
- anaemia
- renal insufficiency

Recurring infections
- leukopenia
- antibody deficiency

Unexplained bone/back pain
- raised calcium

Unintentional weight loss
- increased protein–albumin gap

Management and follow-up

Once diagnosed, managing MGUS involves regular evaluation for potential progression to frank malignancy or the emergence of new symptoms. This allows for early detection and treatment of any more serious diseases that may develop.

How general practice specialists can monitor patients with low-risk MGUS and when to contact your haematologist

Complete blood count

To check for anaemia and other abnormal cell counts[7]

Chemistry

To check for raised calcium, raised creatinine and low albumin[7]

Protein studies

To check for a monoclonal protein using serum free light chain (sFLC) and serum protein electrophoresis (SPEP) tests[7]

Following an MGUS diagnosis, patients should be retested after 3-6 months. If stable, testing should be repeated every 6-12 months thereafter[1]. Consult your haematologist if:

- patient presents with new symptoms consistent with myeloma
- M-protein by SPEP shows a rising trend
- serum FLC ratio becomes abnormal (less than 0.125 or greater than 8)

myeloma.org.au

Support line: 1800 693 566

1. Kyle RA, et al. Monoclonal gammopathy of undetermined significance (MGUS) and smoldering (asymptomatic) multiple myeloma: IMWG consensus perspectives risk factors for progression and guidelines for monitoring and management. Leukemia 2010; 24:1121-1127
2. Kristinsson SY, et al. Monoclonal gammopathy of undetermined significance and risk of infections: a population-based study. Haematologica 2012; 97:854-858
3. Leung N, et al. Monoclonal gammopathy of renal significance (MGRS): when MGUS is no longer undetermined or insignificant. Blood 2012; 120:4292-4295
4. Kristinsson SY, et al. Monoclonal gammopathy of undetermined significance and risk of skeletal fractures: a population-based study. Blood 2010; 116:2651-2655
5. Nobile-Orazio E. Neuropathy and monoclonal gammopathy. Vol. 115. 2013, Elsevier. p443-459
6. Kristinsson SY, et al. Deep vein thrombosis after monoclonal gammopathy of undetermined significance and multiple myeloma. Blood 2008; 112:3582-3586
7. Mikhael, J et al. The American Journal of Medicine, Volume 136, Issue 1, 33 – 41

This resource was originally developed by the Binding Site and redesigned with permission by Myeloma Australia.