Sonora Quest Laboratories™
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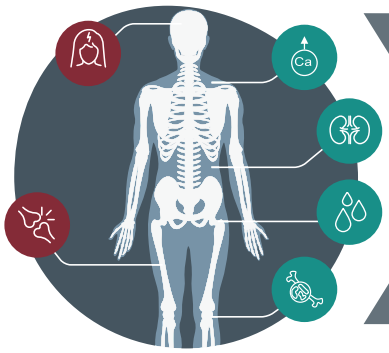
Multiple Myeloma Considerations for Primary Care

Diagnostic Testing Relevant to Multiple Myeloma:

Test	Detects	Relevance
Serum Protein Electrophoresis (SPEP)	Monoclonal (M) proteins, to include intact immunoglobulins and free light chains	Identify and quantify monoclonal protein(s)
Serum Immunofixation Electrophoresis (sIFE)	Monoclonal immunoglobulin isotype	Confirm and type SPEP results
Serum Free Light Chain (sFLC)	Concentration of kappa & lambda free light chains and the κ/λ free light chain ratio	An abnormal ratio is a sensitive marker of plasma cell clonality.[1]

Diagnostic Pathway for Multiple Myeloma:[2]



Clinical suspicion of Multiple Myeloma → **Perform SPEP, sIFE, and sFLC** → **Further evaluation, monitor, or refer to Hematology**

IMWG Diagnostic Criteria for Multiple Myeloma:[3]

Clonal bone marrow plasma cells ≥10% or bony or extramedullary plasmacytoma.

Plus, one of the following myeloma defining events (CRAB/SLiM):

C	**HyperCalcemia**	Serum Calcium: > 11 mg/dL or > 1 mg/dL above normal
R	**Renal Insufficiency**	Creatinine clearance < 40 mL / min or Creatinine > 2.0 mg/dL
A	**Anemia**	Hemoglobin: < 10 g/dL or > 2 g/dL below normal
B	**Bone Lesions**	≥ 1 Osteolytic lesion on X-ray CT or PET-CT (> 5 mm in size)
S	**Sixty Percent**	≥ 60% Clonal bone marrow plasma cells
Li	**Light Chains**	sFLC ratio ≥ 100 w/ involved sFLC ≥ 100 mg/L
M	**MRI Focal Lesions**	> 1 Focal lesion (≥ 5 mm in size on MRI)

Diagnostic Testing Can Help Diagnose Myeloma

The Role Primary Care Plays in Improving Outcomes for Patients with Multiple Myeloma

Myeloma Less Likely

- Normal SPEP
- Normal sFLC Ratio
- No CRAB/SLiM [2,3]

Slightly abnormal results

- Monitor or refer to Hematology based on patient risk

Myeloma More Likely

- Abnormal SPEP and/or sFLC ratio
- CRAB/SLiM criteria present

Management Considerations for the Primary Care Provider

Laboratory results should always be evaluated in the context of clinical symptoms. Referral/consultation with a hematologist may be valuable in the case of abnormal results.

With normal SPEP, sIFE, and sFLCs, there is a low risk of monoclonal gammopathy, consider other potential causes for symptoms.[2*]

In patients with abnormal results but no evidence of CRAB/SLiM:

- Perform 24h urine protein electrophoresis and IFE studies to rule out amyloidosis or renal involvement.
- In patients with low risk for progression, consider repeat testing at 6 months then, if stable, every 2-3 years thereafter, or an alternate frequency where clinically indicated.[5]
- In patients with moderate to high risk of progression, consider imaging (whole-body, low dose CT or whole-body MRI) and referral to Hematology.

In patients with results that indicate a high likelihood of multiple myeloma, consider immediate referral to Hematology.[2]

*A small percentage of myeloma patients are non-secretory; M-proteins may not be detected in such individuals.[2]

> **"An individual's risk of multiple myeloma is not constant and may change over time.[4]**

Talk to your Sonora Quest Account Manager to learn more about multiple myeloma panels.

REFERENCES:

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2. Mikhael J, *et al.* Multiple Myeloma for the Primary Care Provider: A Practical Review to Promote Earlier Diagnosis Among Diverse Populations. *Am J Med* 2023; 136:33-41
3. Rajkumar SV, *et al.* International Myeloma Working Group updated criteria for the diagnosis of multiple myeloma. *Lancet Oncol.* 2014; 15:e538-e548
4. Landgren O, *et al.* Association of Immune Marker Changes with Progression of Monoclonal Gammopathy of Undetermined Significance to Multiple Myeloma. *JAMA Oncol* 2019; 5:1293-1301
5. 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

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