MM Diagnostic Evaluation

- History and Physcial
- CBC, differential and platelet count
- Bone marrow biopsy and aspiration
  - Hematopathology
    - Presence of plasma cells (%)
    - Cellularity
    - Ploidy
  - Cytogenetics
  - Fluorescent in situ hybridization (FISH)
- Additional laboratory tests
  - Serum Immunoglobulins
    - Quantitative (IgG, IgM, IgA, IgD)
    - Protein electrophoresis with immunofixation (SPEP)
    - Serum free light chain assay (kappa, lambda)
  - 24-hour urine
    - Protein electrophoresis with immunofixation (UPEP)
    - Total protein
  - BUN, creatinine, electrolytes
  - Serum calcium (corrected)
  - Serum albumin
  - β_2 microglobulin
  - LDH
  - Additional testing based on preliminary analysis
- Radiology
  - Skeletal survey
  - MRI if vertebral compression fractures suspected
  - PET/CT

Establish diagnosis of MM
- **MGUS**
- **Smoldering**
- **Active**

Determine subtype
- **Heavy chain/light chain**
- **Nonsecretory**
- **Solitary plasmacytoma**

Determine stage
- **International Staging System (ISS)**
- **Salmon-Durie Staging System**

Estimate prognosis
- **Cytogenetics**
- **Albumin**
- **β_2 microglobulin**
- **Ploidy**

Identify need for immediate intervention
- **Severe hypercalcemia**
- **Acute renal failure**
- **Cord compression**
- **Severe pain or impending fracture**

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Adapted with permission: Kurtin, S. *JAdPrO,* 2010;1:19-29

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