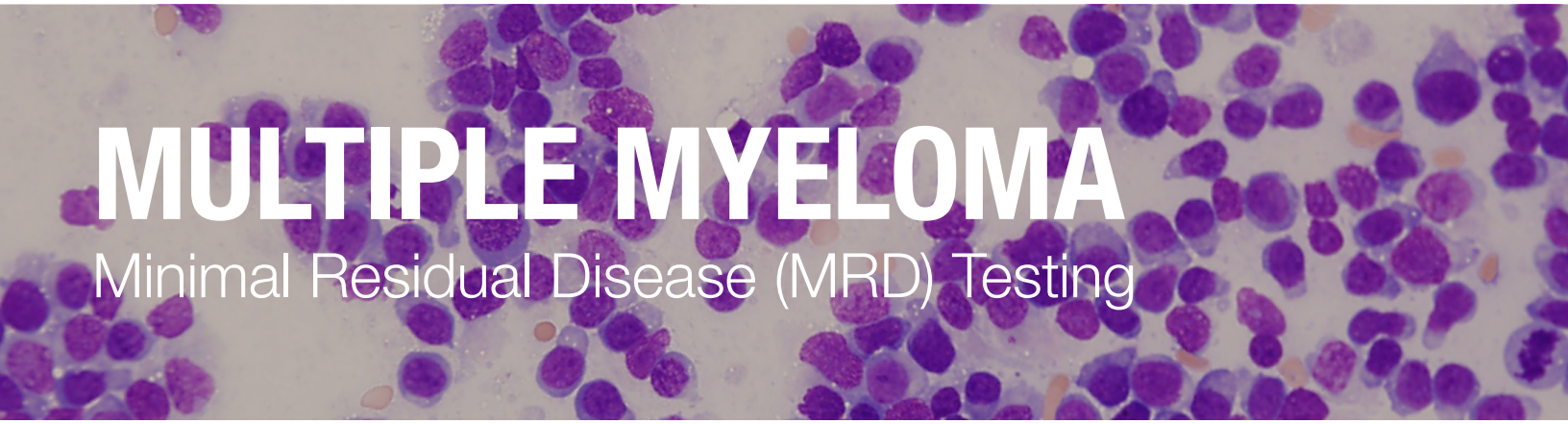
MAYO CLINIC LABORATORIES



MULTIPLE MYELOMA

Minimal Residual Disease (MRD) Testing

As more effective therapies have become available, the average overall survival length for newly diagnosed multiple myeloma patients has more than tripled since the early 2000s. In fact, the median overall survival is now greater than 10 years.[1] As a necessary step forward, strategies to detect minimal residual disease after completion of therapy have become increasingly important.

WHY SHOULD I ORDER MRD TESTING?

Patients who do not achieve an MRD negative status will relapse faster and will have a shorter overall survival length.[2] Assessing the level of MRD after completion of therapy provides health care providers with valuable prognostic information and can help guide decisions for their continued treatment of these patients.

FEATURED TEST

- **Multiple Myeloma Minimal Residual Disease by Flow, Bone Marrow (Mayo ID: MRDMM)**

  TAT: 2–4 days **Specimen Volume:** 4 mL
  Specimen Required: Redirected bone marrow
  Preferred: Yellow top (ACD) **Acceptable:** EDTA

WHEN SHOULD I ORDER THIS TEST?

CONSIDER ORDERING	DO NOT ORDER
Once a patient is immunofixation negative on both serum and urine samples, the most frequent ordering scenarios for MRD testing include: • Assessing response to therapy in the setting of a clinical trial. • As a prognostic indicator of future disease progression and overall survival time, post chemotherapy or autologous stem cell transplantation. • Follow-up testing for complete remission patients who are not MRD negative, but remain immunofixation negative. • Ongoing testing, at a minimum of 1 year, apart to see if a patient reaches classification of “sustained MRD negativity.”	This test should not be ordered in situations of known relapse or diagnosis. For these situations, please see the following tests in our test catalog: • **Plasma Cell DNA Content and Proliferation, Bone Marrow (Mayo ID: PCPRO)** • **Mayo Algorithmic Approach for Stratification of Myeloma and Risk-Adapted Therapy Report (Mayo ID: MSMRT)**

CAN THIS TEST BE USED TO MAKE SPECIFIC THERAPY DECISIONS?

Currently, there isn’t prospective data to support therapy decisions like decreasing or stopping therapy in the setting of MRD negativity, or initiating treatment in the setting of MRD positivity. For high-risk patients who become MRD positive after being MRD negative, some physicians may choose to resume therapy. However, prospective data to prove the effectiveness has not yet been analyzed.

HIGH-SENSITIVITY EUROFLOW TESTING TO MEET RECOMMENDED GUIDELINES

With a sensitivity of 10^{-5}, our EuroFlow MRD test meets the guidelines recommended by the International Myeloma Working Group (IMWG), National Comprehensive Cancer Network (NCCN), and the International Clinical Cytometry Society. [3]

Additionally, because most clinical trials require the use of MRD testing with at least a 10^{-5} sensitivity, approaches that overcome the current limitations of conventional flow cytometry must be used.

EUROFLOW VS. NGS FOR MULTIPLE MYELOMA MRD ASSESSMENT

	EUROFLOW	NGS
Sensitivity	10^{-5} ~ 10^{-6}	10^{-6}
IMWG/NCCN Guideline-Compliant	Yes	Yes
Commonly Used in Clinical Setting	Yes	No
Baseline Sample Required	No	Yes

CLINICAL REFERENCES

1. Landgren O, Devlin S, Boulad M, et al. Role of MRD status in relation to clinical outcomes in newly diagnosed multiple myeloma patients: a meta-analysis. *Bone Marrow Transplant.* 2016;51(12):1565-1568.
2. OncLive. The role of MRD testing in myeloma. March 2, 2018. Accessed June 25, 2018. 2016;51(12):1565-1568.
3. Kumar, S, Paiva B, Anderson, KC, et al. International Myeloma Working Group consensus criteria for response and minimal residual disease assessment in multiple myeloma. *Lancet Oncology*. 2016;17(8):e328-e346

FOR MORE INFORMATION, VISIT:

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