



Multiple Myeloma Precursor Clinic

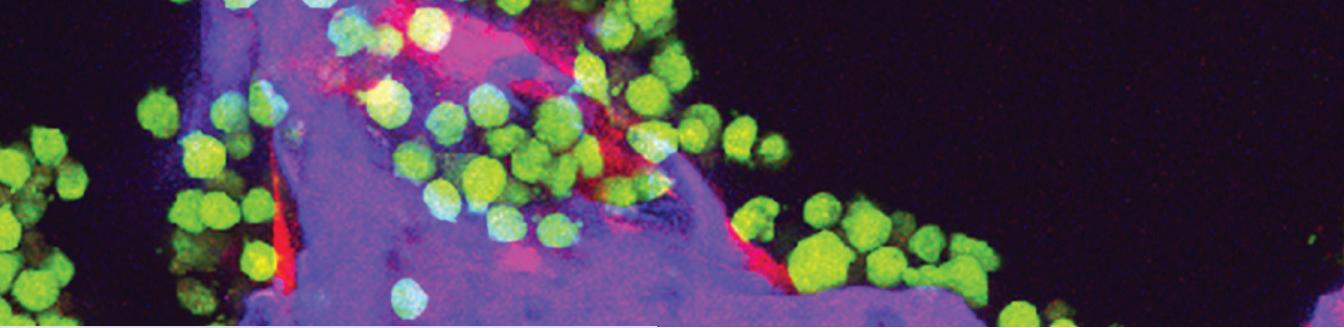
Customized Care for Patients with MGUS
and Smoldering Myeloma



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The safety of our community is our highest priority;
some images herein were taken prior to February 2020.



The Multiple Myeloma Precursor Clinic

at the Center of Excellence for Multiple Myeloma is designed to care for patients with Monoclonal Gammopathy of Undetermined Significance (MGUS) and Asymptomatic Myeloma, also known as Smoldering Myeloma (SMM). Both MGUS and SMM are considered precursor conditions, as they can develop over time into active multiple myeloma.

Patients with MGUS and SMM should be monitored carefully so that treatment or other intervention can begin as soon as needed. The Precursor Clinic features a dedicated team that is always available to answer questions and provide support. We ensure that labs are done at regular intervals and promptly reviewed, order additional diagnostic tests as needed, and maintain close connection with patients.

At the Multiple Myeloma Precursor Clinic, our focus is on patients with MGUS and SMM. Their special needs can be best met in a dedicated clinic, rather than a busy clinic treating patients with active multiple myeloma and urgent conditions.

We understand the anxiety that comes with uncertainty and wondering about disease progression.

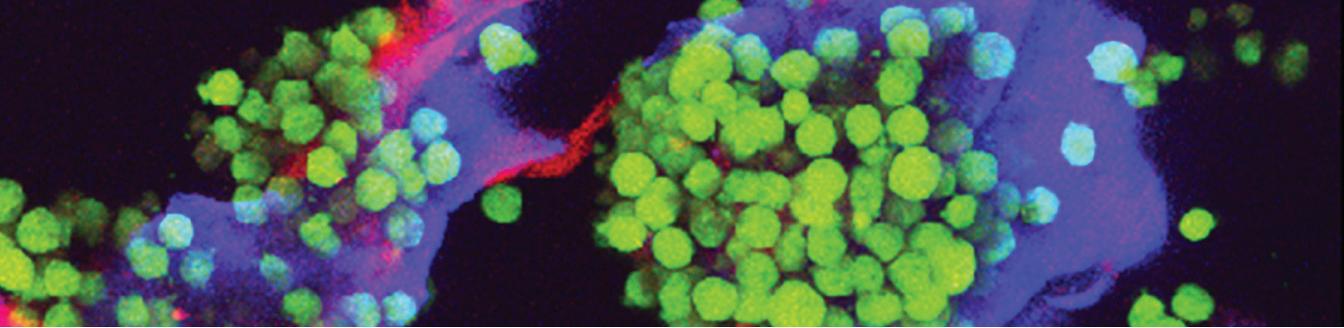
About Monoclonal Gammopathy of Undetermined Significance (MGUS)

MGUS is characterized by the presence of an aberrant monoclonal protein, typically detected from blood work during a routine checkup, and less than 10 percent clonal plasma cells in the bone marrow. There are usually no obvious symptoms associated with MGUS.

Monoclonal protein is produced by a single clone of plasma cells. These clonal plasma cells remain stable in most people and never cause any problems. However, regular checkups are critical since one percent of MGUS patients develop multiple myeloma each year. Some patients with MGUS may develop AL-amyloidosis or Monoclonal Gammopathy of Renal Significance (MGRS); others may be at increased risk of progression, based on findings from genomic testing and magnetic resonance imaging.

About Smoldering Myeloma (SMM)

SMM is characterized by the presence of monoclonal protein in blood or urine and clonal plasma cells at 10 percent or greater in the bone marrow. The amounts of monoclonal protein and plasma cells need to be monitored at regular intervals, as they are indicators of progression to active multiple myeloma. Patients with SMM at a higher risk for progression to symptomatic myeloma may benefit from earlier treatment to slow the progression or eliminate the myeloma clone.



How the Precursor Clinic Works

Patients with a confirmed diagnosis of MGUS or SMM are followed in the Precursor Clinic by a specialized advanced practice nurse or physician assistant in collaboration with myeloma physicians.

The director of the Center of Excellence for Multiple Myeloma, Dr. Sundar Jagannath, oversees the program.

- **New patients** suspected of having MGUS or SMM first go to the general Multiple Myeloma Clinic for a complete workup to confirm a diagnosis. The workup includes blood work, imaging, bone marrow biopsy and aspirate, 24-hour urine collection, and other diagnostic tests as needed. The multiple myeloma physician reviews results with the patient and determines whether referral to the Precursor Clinic is appropriate.
- **Established patients** with stable MGUS or SMM are encouraged to transition to the Precursor Clinic, if deemed appropriate by their multiple myeloma physician.
- Patients retain their relationship and continuity of care with their primary myeloma physician.

Patients who need escalation of care beyond the scope of the Precursor Clinic will transfer back to the Multiple Myeloma Clinic. Patients are transferred to the Multiple Myeloma Clinic when

- There is suspected progression to active disease based on labs or symptoms
- There is confirmed progression to active disease
- They are enrolled in a clinical trial

Schedule of Visits and Testing at the Precursor Clinic

For non-IgM and light chain MGUS

- Return visit in six months with labs only, then yearly
- Bone marrow biopsy and imaging if rising numbers or every two years otherwise

For IgM MGUS

- Return visit in six months with labs only, then yearly

For SMM

- Return visit every three months for the first year with labs only. After the first year, the frequency is every three to six months, depending on the risk for progression.
- Bone marrow biopsy and imaging are performed yearly or as determined by the risk for progression.

The Precursor Clinic provides:

- Uniform workup that includes genomics, serologic markers, and immune parameters in peripheral blood (PB) and the bone marrow (BM)
- Systematic monitoring with pertinent laboratory and imaging studies
- Serial tissue banking of PB and BM samples for research studies
- Holistic care with preventive screening, nutritional advice, counseling, and recommendations for exercise programs

Overall Patient Wellness

While our primary focus is on MGUS and SMM, we also pay attention to each patient's overall health and collaborate with primary care physicians for management of comorbidities.

Research—the Key to Progress

We understand that development of multiple myeloma is a multistep process and that multiple myeloma plasma cells undergo genetic changes. However, we do not fully understand why the disease is quiescent in precursor conditions. We have patients in our program who have been smoldering for more than 20 years—we need to understand why some patients remain in a stable plateau phase and others experience disease progression.

Working collaboratively with experts in Genomics and Immunology at The Tisch Cancer Institute, we are examining how immune cells in the bone marrow microenvironment may help keep the disease under control. We are deciphering

how multiple myeloma and related conditions behave at the molecular level and the biologic mechanisms of response to treatments.

The goal is to unravel the mystery of disease progression and identify who may be at risk of disease progression.

Understanding the myeloma tumor cells and the bone marrow microenvironment (imagine the cells as seeds and the microenvironment as soil) enables us to better harness advanced treatment strategies — for example, T-cell redirecting therapy—that may slow disease progression and stop it entirely. We may periodically ask patients to give blood or bone marrow samples; serial banking of tissue samples is critical for current and future research studies.

We keep our patients informed about the latest progress in fighting MGUS and SMM and clinical trial opportunities. Optimizing the well-being of our patients is always our priority.



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The clinical data collected from our patients with MGUS and SMM is integral to fighting multiple myeloma and precursor conditions at every stage. We are grateful to all of our patients who help us ensure a brighter future for patients everywhere.