

## **10 Steps to Understanding the Black Swan Research Initiative®**

The goal of the IMF's [Black Swan Research Initiative](#) is to identify and implement multiple curative strategies for multiple myeloma. Today, more than 30 Black Swan-supported investigative teams around the world are actively engaged in myeloma research. In just a few short years since its launch in 2012, the IMF's signature research project is already yielding results. This page will be updated regularly as we move research forward. Click **HERE** to receive update alerts.

### **Step 1. Diagnose early**

- [New Diagnostic Criteria published](#)
- [iStopMM](#) program launched in October 2016 to better identify criteria for progression
- Additional projects in development

### **Step 2. Monitor disease at low levels**

- Next Generation Flow (NGF) method developed and [published](#)
- Blood DNA mutational analysis method developed and [published](#)
- Additional projects in development

### **Step 3. Create a consensus**

- Response criteria incorporating minimal residual disease (MRD) [published](#)
- Myeloma MRD consortium [launched](#) in October 2016
- Review meeting set with FDA for March 14, 2017

### **Step 4. Develop a blood test**

- [NGF bone marrow method found to readily detect myeloma cells in the blood](#)
- Serial testing to evaluate NGF blood test underway in multiple trials, including the iStopMM program
- DNA mutational analysis blood screening also being evaluated in trial setting

### **Step 5. Confirm value of MRD-negative status**

- Large databases with patient-level data gathered for submission to the FDA

### **Step 6. Start to cure early disease**

- 3 "CURE trials" in progress
  - [CESAR](#) (Spain): started in 2006
  - ASCENT (US): starting 2017, 1<sup>st</sup> quarter
  - iStopMM (Iceland): starting 2017, 2<sup>nd</sup> quarter

### **Step 7. Study and treat MRD-positive patients**

- Many studies underway
- Many trials for MRD positive patients in progress

### **Step 8. Study long-term survivors and MRD status**

- Large [study](#) ongoing using Next Generation Sequencing (NGS) to test archived samples of patients at 5, 10, 20 years and beyond
- Clinical Predictors of Long-Term Survival in Newly Diagnosed Transplant Eligible Multiple Myeloma – an IMWG Research Project (pending publication, 2017)

**Step 9. Develop guidelines to cure all myeloma patients**

- Trials in high-risk smoldering multiple myeloma (HRSMM) have started this process

**Step 10. Develop guidelines to prevent MGUS/SMM/MM**

- Epidemiology studies in iStopMM and elsewhere are establishing the datasets for this initiative