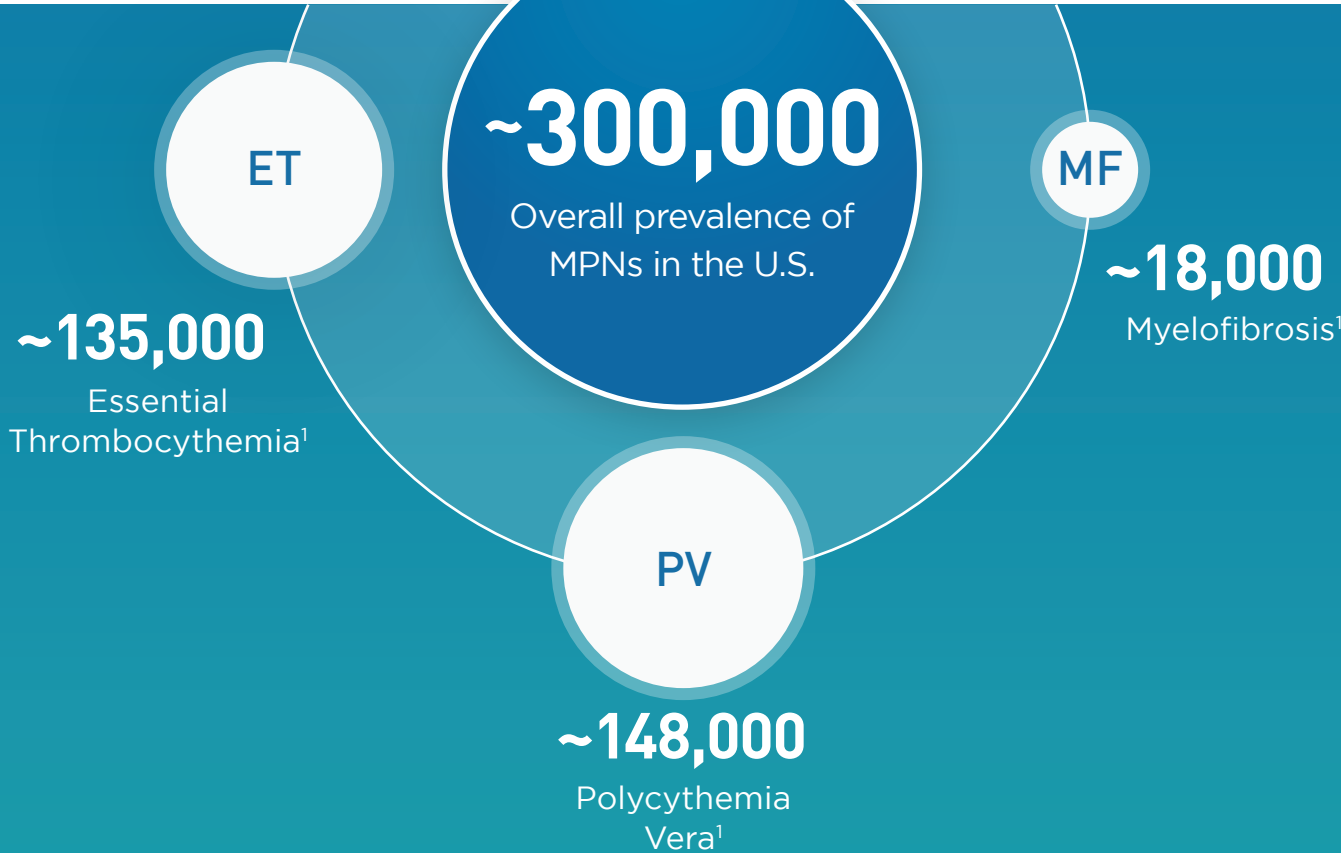


MYELOFIBROSIS:

A RARE BLOOD CANCER

Myelofibrosis (MF) is a rare and serious chronic blood cancer that disrupts normal production of blood cells – causing extensive scarring in the bone marrow – and is associated with reduced survival and quality of life.

Myelofibrosis is a type of myeloproliferative neoplasm (MPN) – although the least common MPN, it is the most debilitating.



MYELOFIBROSIS IS COMPLEX

and there are many contributing factors.

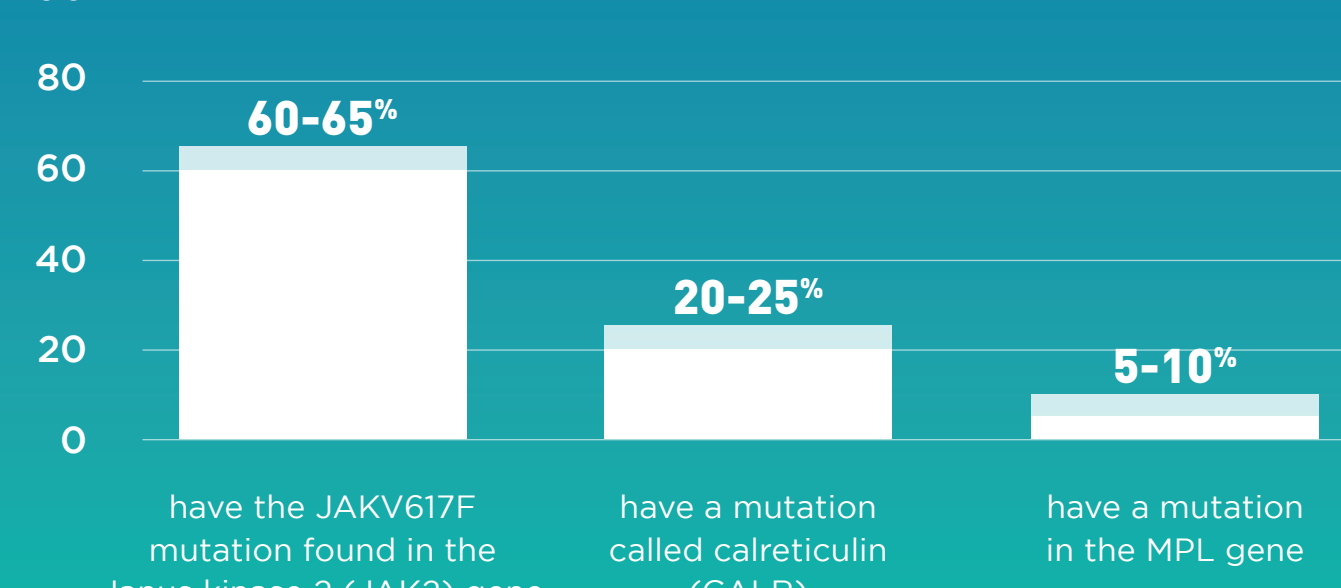
15% of patients with PV may develop MF.²

Progression from ET to MF is less common.³

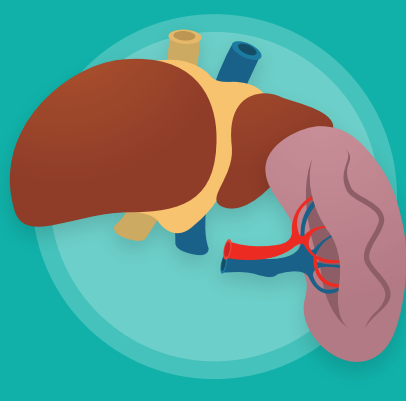
BY THE NUMBERS: U.S. STATS



GENETIC MUTATIONS⁶



WHAT HAPPENS?



When the bone marrow isn't producing enough blood cells, such as red blood cells and platelets, the spleen and liver work harder to compensate –

AND GET REALLY BIG!



As the disease progresses and the body slows production of important blood cells, the incidence of disease-related thrombocytopenia, anemia, and red blood cell transfusion requirements

INCREASE SIGNIFICANTLY.

37%

of patients experience thrombocytopenia, a drop of platelets to unhealthy levels (<150,000 per microliter)⁷

58%

of patients become anemic, low red blood cell production (<10 grams per deciliter)^{*8}

46%

of patients require weekly red blood cell transfusions^{*8}

^{*}within 1 year of diagnosis

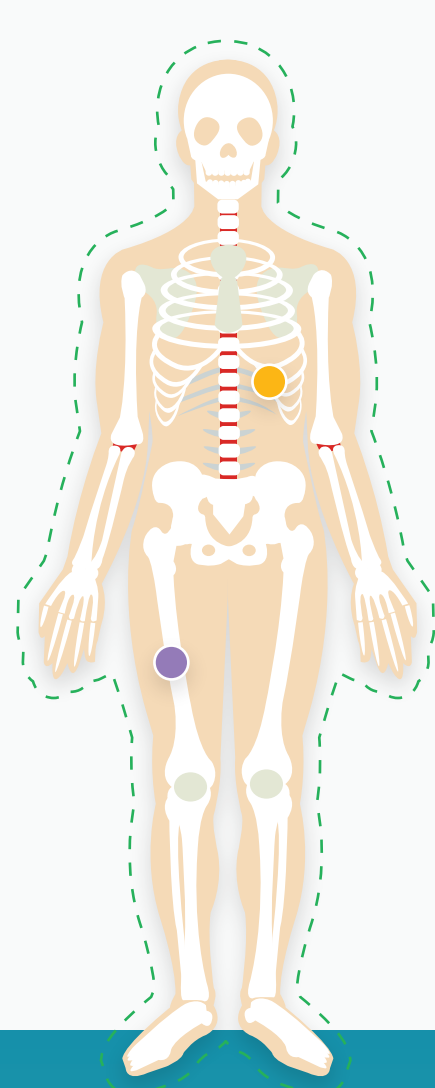
3 PRIMARY WAYS MF AFFECTS PEOPLE

From the outside, many people with myelofibrosis look the same as their healthy friends and family. But inside, patients are often experiencing:

1 ENLARGED SPLEEN (SPLENOMEGALY): abdominal pain, a feeling of early fullness, bloating and high pressure in the liver vasculature⁹

2 IMPAIRED BLOOD CELL PRODUCTION: reduced platelets (thrombocytopenia), red blood cells (anemia), and white blood cells (leukopenia)⁹

3 CONSTITUTIONAL SYMPTOMS: fatigue/tiredness, night sweats, itching, bone pain, inactivity, concentration problems, fever, and weight loss⁹



FIND OUT MORE

If you or someone you know has or may have myelofibrosis, you are not alone. Talk to your doctor or find out about support services or treatment and clinical trial information through the MPN Research Foundation:

<http://www.mpnresearchfoundation.org>

MPN RESEARCH FOUNDATION
advancing blood cancer research

cti
BIOPHARMA

Produced by MPN Research Foundation with support from CTI BioPharma Corp.

1. Based on Mehta J, Wang H, Iqbal SU, Mesa R. Epidemiology of myeloproliferative neoplasms in the United States. *Leukemia & Lymphoma*. 2014;55(3):595-600.
2. Alvarez-Larran A, Bellosillo B, Martinez-Aviles L, et al. Postpolycythemic myelofibrosis: frequency and risk factors for this complication in 116 patients. *Br J Haematol*. 2009;146(5):504-509.
3. Leukemia & Lymphoma Society. Myelofibrosis Facts. Available at http://www.lls.org/sites/default/files/file_assets/FS14_Myelofibrosis_Fact%20Sheet_Final9.12.pdf. Accessed May 7, 2015.
4. Gangat N, Caramazza D, Vaidya R et al. DIPSS-plus: A refined Dynamic International Prognostic Scoring System (DIPSS) for primary myelofibrosis that incorporates prognostic information from karyotype, platelet count and transfusion status. *J Clin Oncol*. 2011;29:392-397.
5. Mesa RA, et al. Leukemic transformation in myelofibrosis with myeloid metaplasia: a single-institution experience with 91 cases. *Blood*. 2005;105:973-977.
6. Cazzola M, Kralovics R. From Janus Kinase 2 to Calreticulin: The Clinically Relevant Genomic Landscape of Myeloproliferative Neoplasms. *Blood*. 2014 Jun12;123(24):3714-9.
7. Visani et al. *Br J Haematol*. 1990; Caramazza et al. *Leukemia*. 2011; Tam et al. *JCO*. 2009.
8. Tefferi A et al. *Mayo Clin Proc*. 2012;87(1):25-33.
9. Based on <http://www.mayoclinic.org/diseases-conditions/myelofibrosis/basics/definition/con-20027210>. Accessed May 11, 2015.