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[Press Releases](#)

[About MSK Cancer & Treatment](#)

[Refer a Patient](#)

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[Our mission, vision & core values](#)

[Leadership](#)

[History](#)

[Equality, diversity & inclusion](#)

[Annual report](#)

[Give to MSK](#)

frequently occur in patients with myeloproliferative neoplasms, in which several types of blood cells are excessively produced in the bone marrow. They found that an inherited alteration in the gene for *JAK2* - a protein with enzymatic activity that is linked to the abnormal production of blood cells - is more common in patients with these disorders. Importantly, patients who inherited this *JAK2* alteration were predisposed to acquiring another *JAK2* mutation on the same DNA strand. According to the research, these mutations do not arise randomly, but are specifically determined by the DNA sequence.

More than half of patients afflicted with myeloproliferative neoplasms - which affect an estimated 140,000 people in the US - carry the *JAK2* mutation and suffer from the overproduction of red blood cells, platelets, or fibrous connective tissue. According to the authors, understanding the underlying inherited sequence partly explains the predisposition for acquiring mutations in certain disease-specific genes and may help explain why some individuals are at higher risk in developing the disease.

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