

What are the causes of MDS?

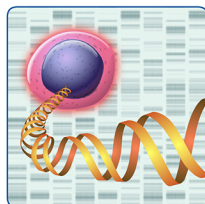
With a few exceptions, the exact **causes** of **myelodysplastic syndromes (MDS)** are unknown. Potential triggers include:



DNA damage from exposure to toxic chemicals



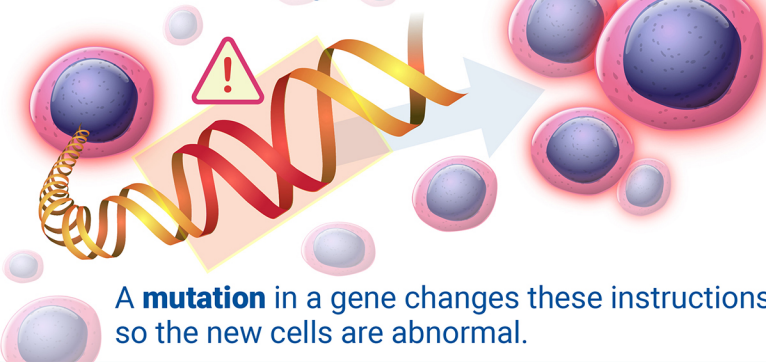
DNA damage from chemotherapy for a previous cancer



Genetic mutations from bone marrow cell replication

Genetic changes and MDS

Genes are small segments of **DNA** that provide the instructions for making new cells.

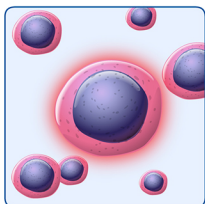


A **mutation** in a gene changes these instructions so the new cells are abnormal.

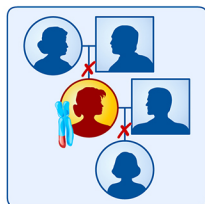
Somatic mutations develop in our cells over time and are **not inherited**. They are an important cause of all forms of MDS.



Chemotherapy and radiation can make somatic mutations more likely to develop

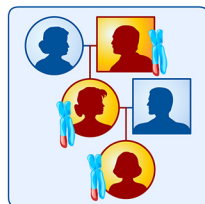


Somatic mutations appear in an abnormal blood cell and not found in other cells

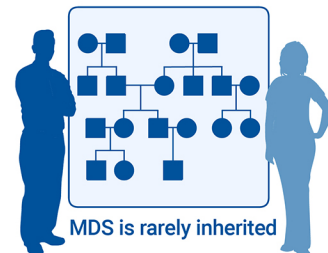


Somatic mutations are not inherited from your parents and cannot be passed on to children

Germline mutations are **inherited from a parent**. They are **rare with MDS** so tell your doctor if there is a family history of MDS or other blood disorders.



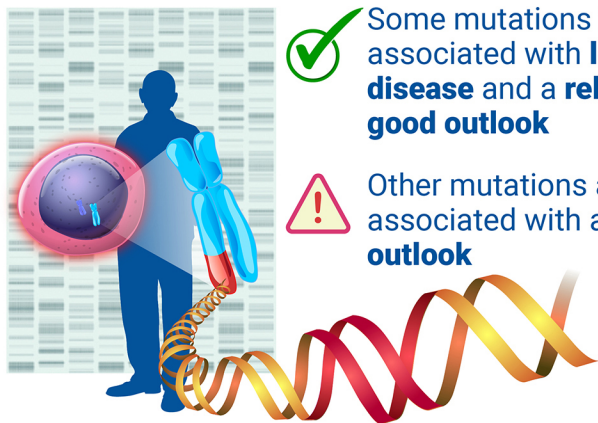
Germline mutations are passed down from a parent



MDS is rarely inherited

Driver mutations and MDS

Driver mutations promote cancer development. Most people with MDS have **2 to 4 driver mutations**.



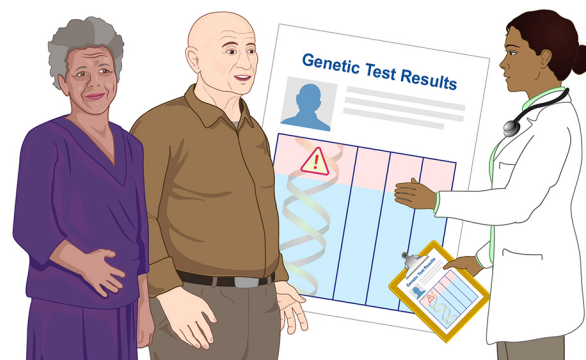
✓ Some mutations in MDS are associated with **lower-risk disease** and a **relatively good outlook**

⚠ Other mutations are associated with a **poorer outlook**

Learning about your mutations in MDS

MDS is very different from person-to-person, so learning your **mutation profile** is important.

Knowing your mutations can help you and your doctor understand your **outlook** and **treatment decisions**.



For more information about MDS, visit:

www.YouAndMDS.com



Developed by the Myelodysplastic Syndromes Foundation, Inc. and Mechanisms in Medicine Inc.

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References:

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2. Malcovati L, Stevenson K, Papaemmanuil E, et al. *SF3B1*-mutant MDS as a distinct disease subtype: a proposal from the International Working Group for the Prognosis of MDS. *Blood*. 2020;136(2):157-170.
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4. The Myelodysplastic Syndromes Foundation, Inc. and Mechanisms in Medicine Inc.: You And MDS: An Animated Patient's Guide to Myelodysplastic Syndromes. Available at: www.YouAndMDS.com