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Memorial Sloan Kettering  
Cancer Center

[Make an Appointment](#)

[Back](#)

[Myelodysplastic Syndrome \(MDS\)](#)

[Learn About Supportive Care & Treatment](#)

[Refer a Patient](#)

#### ABOUT US

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

[Leadership](#)

[History](#)

[Equality, diversity & inclusion](#)

[Annual report](#)

[Give to MSK](#)

## Stem Cell Transplant

If you have been diagnosed with MDS, you may be able to receive a stem cell transplant, also called a bone marrow transplant. It has the potential to cure MDS. [Learn more about our stem cell transplantation program.](#)

Stem cell transplants may be considered as a treatment option if you are below the age of 75 and are otherwise healthy. In order to receive a transplant, you must have a matched stem cell donor. This person can be a family member or an unrelated volunteer donor. You may need to undergo other treatments for MDS before your transplant.

Memorial Sloan Kettering (MSK) is one of the largest centers for stem cell and bone marrow transplants in the country. We developed many of the transplant methods widely used today and have done more than 10,000 transplants.

## Supportive Care

Supportive care is the cornerstone of all MDS treatments. Its goal is to help alleviate or prevent symptoms from low blood counts.

Supportive care includes the use of blood and platelet transfusions for people with dangerously low red blood cell and platelet counts. Antibiotics can be used to treat infections. People with MDS may also benefit from taking injections such as erythropoietin (Procrit®) and darbepoetin (Aranesp®). These drugs stimulate the bone marrow to produce red blood cells. Medications that coax the bone marrow to produce more white blood cells include granulocyte colony-stimulating factor (Neupogen®) and pegfilgrastim (Neulasta®).

Treatments may help improve blood counts temporarily and reduce or eliminate symptoms from low blood counts. They do not fix the underlying cause of MDS.

Even if you are receiving chemotherapy for MDS or in preparation for a stem cell transplant, you will also receive supportive care.

## Additional Treatments for MDS

For people with MDS who are not eligible for a stem cell transplant, Memorial Sloan Kettering offers the following treatment options:

### Chemotherapy

## 5-azacytidine (Vidaza®)

The US Food and Drug Administration approved 5-azacytidine for the treatment of MDS in 2004. The drug improves bone marrow function by freeing up the genes the body needs to make normal blood cells. When bone marrow function improves, blood counts increase. For some people, the blast count in their bone marrow goes back to normal.

The development of leukemia is also lessened or delayed with 5-azacytidine. The survival of people with MDS who take the drug can be prolonged. Doctors generally prescribe 5-azacytidine for people who have significantly low blood counts or an increased number of bone marrow blasts.

## Decitabine (Dacogen®)

Decitabine is FDA approved to treat MDS. It is similar to 5-azacytidine in many ways, including the way it works. It too improves bone marrow function, increases blood counts, and decreases bone marrow blast counts. Decitabine can also delay the development of leukemia and prolong the survival of people with MDS.

Decitabine and 5-azacytidine have similar side effects, including a temporary lowering of blood counts.

## Immunomodulatory Drugs

### Lenalidomide (Revlimid®)

Lenalidomide is FDA approved for only a relatively rare subtype of MDS with the chromosome 5 abnormality known as the deletion 5q abnormality. When people with MDS have that abnormality, there is a very high chance that if they are anemic, lenalidomide will improve their levels of hemoglobin (the protein in red blood cells that carries oxygen). Lenalidomide can work in some people who do not have the deletion 5q abnormality but not as well.

Lenalidomide has to be used very carefully. Even if it improves the hemoglobin level and the anemia gets better, it will actually decrease levels of neutrophils. This type of white blood cell is the body's first line of defense against most infections. Lenalidomide will also decrease the platelet count. These lowered counts increase the risk of bleeding and infection.

## Immunosuppressive Therapy (IST)

Another treatment approach is called immunosuppression. It uses the antibody antithymocyte globulin and the immune-suppressing drug cyclosporine to suppress the activity of white cells that, in some cases of MDS, interfere with normal blood cell production. This approach works temporarily in fewer than half of people with MDS.

## Leukemia Therapy

For people with MDS whose bone marrow has a large number of blast cells, doctors may use therapy for acute leukemia. This is particularly likely if the goal is to decrease the bone marrow blast count in preparation for a stem cell transplant procedure. [Learn more about how we treat leukemia.](#)

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Available Monday through Friday, 8 a.m. to 6 p.m. (Eastern time)

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