

# Myelodysplastic Syndromes

Myelodysplastic Syndromes (MDS) are a group of hematologic malignancies in which mutations prevent the bone marrow from properly making blood stem cells that form healthy blood cells.

## What is MDS?



In healthy people, bone marrow is responsible for making blood stem cells, which eventually form into healthy blood cells. Low blood cell counts, known as **cytopenias**, are known as a **defining feature of MDS**.

Three types of blood cells are needed for different functions in the body. All three are affected by MDS:



**Red blood cells (RBCs)** work to bring oxygen from the lungs to the rest of the body



**White blood cells (WBCs)** help the body fight off infections



**Platelets** help the blood clot after an injury

## Global Incidence



Approximately **87,000** new cases of MDS are diagnosed every year



Median age at diagnosis: approximately **70** years old



Overall incidence of MDS is slightly higher in **males** than in females

However, the incidence of MDS is considered to be underestimated due to lack of reporting and under-diagnosis

## Symptoms

Many symptoms of MDS can be life-threatening:



**Anemia** (low RBC count) can cause fatigue, weakness and shortness of breath



**Neutropenia** (low WBC count) can cause recurring infections, fevers and sore mouth



**Thrombocytopenia** (low platelet cell count) can cause easy bruising, bleeding from the nose and mouth and a rash of small red dots on the skin

Due to this lack of mature RBCs, many patients with MDS experience severe chronic anemia, eventually requiring frequent red blood cell transfusions

## Prognosis

For the most severe forms of MDS:

**~5 months**

For lower risk MDS:

**~6 years**

**>30%**

For **>30%** of patients with MDS, their disease may progress to a deadly blood cancer called **Acute Myeloid Leukemia (AML)**.

## Risk Factors



Older age



Prior cancer treatment



Family history



History of smoking



Exposure to high dose radiation or workplace benzene

## Treatment

Treatment options depend on the needs of the individual patient. Some treatment options include:



Supportive care such as blood transfusions and erythropoiesis-stimulating agent (ESA) therapy



Chemotherapy



Stem cell transplant

**It is important** for people with MDS to understand the symptoms of their disease and to talk to a healthcare professional about appropriate treatment options.