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.

### About MDS

In healthy people, bone marrow is responsible for making blood stem cells, which eventually transform 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.

### Incidence

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

Median age at diagnosis is approximately 77 years old.

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

### Prognosis and Survival

For the most severe forms of MDS: ~10 months

For lower-risk MDS (LR-MDS): ~5 years

For 40% of patients with higher-risk MDS, their disease may rapidly progress to a blood cancer called Acute Myeloid Leukemia.

### Impact of anemia

- Chronic anemia and transfusion dependency are the main clinical challenges of lower-risk MDS.
- Anemia occurs in up to 90% of patients with MDS.
- 50% of patients with MDS require regular RBC transfusions within 2 years of diagnosis.
- Transfusion dependence and low hemoglobin levels can negatively impact survival.

### 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 treatment with an erythroid maturation agent or erythroid stimulating agent.
- Chemotherapy
- Stem cell transplant
- Immunosuppressive therapy

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.