Hematologic Cancer is a cancer that affects the body’s blood, bone marrow\(^1\) or lymphatic system.\(^2\)
Hematologic cancers represent the fifth most commonly occurring cancers and the second leading cause of cancer death.\(^3\) The most common forms of hematologic cancers include:

- **Leukemia** occurs when the bone marrow overproduces abnormal white blood cells, and is classified by the type of white blood cell affected: myeloid or lymphocytic.\(^4\)
- **Lymphoma** is a cancer of the lymphatic system that results in uncontrolled growth of malignant white blood cells, forming tumors in the lymph nodes.\(^5\) Lymphoma is classified into two main types: Hodgkin’s and Non-Hodgkin’s lymphoma (HL and NHL).\(^5\)
- **Myeloma** occurs when abnormal plasma cells (a type of white blood cell that produces antibodies) accumulate in the bone marrow.\(^7\)

**Facts and Figures**

- In the United States (US), an estimated 43,050 new cases of leukemia will be diagnosed in 2010, with approximately 21,840 related deaths.\(^8\)
  - Leukemia, including chronic and acute myeloid leukemia (CML and AML), and chronic and acute lymphocytic leukemia (CLL and ALL), is one of the ten most frequently occurring cancers.\(^8\)
  - The five year survival rate for leukemia is around 55 percent.\(^8\)
- About 74,030 people in the US are expected to be diagnosed with lymphoma in 2010.\(^6\) NHL is the seventh most frequently occurring cancer and occurs more often than HL.\(^6\)
  - Approximately 65,540 people in the US will be diagnosed with NHL in 2010, with over 20,000 related deaths.\(^9\)
  - HL accounts for 11 percent of all lymphoma diagnoses,\(^6\) and in 2010, there are 8,490 new cases estimated to occur in the US and approximately 1,320 related deaths.\(^9\)
  - The overall five-year survival rate is approximately 68 percent for NHL\(^10\) and 85 percent for HL.\(^11\)
- An estimated 20,180 new cases of myeloma are expected to be diagnosed in the US in 2010, with approximately 10,650 related deaths. The five-year survival rate for myeloma patients is around 38.5 percent.\(^12\)

**Risk Factors**

- Age is the most significant risk factor in hematologic cancers, which occur most often in patients 60 or older.\(^8,9,13\)
- Exposure to benzene, radiation and certain cancer therapies has been linked to the development of leukemia.\(^6\)
- A weakened immune system and certain infections, such as HIV, can increase the risk of NHL.\(^9\)
- Long-term exposure to certain chemicals may increase the risk for developing myeloma, but for the most part, the cause of myeloma remains unknown.\(^13\)

**Diagnosis and Treatment**

- A biopsy is the only certain way to diagnose lymphoma, leukemia, and multiple myeloma, while a blood test and cytogenetic analyses can help diagnose different subtypes of these diseases.\(^14,15,16\)
- Treatment options for leukemia and lymphoma patients depend on the specific type of cancer, stage of disease, the speed at which the cancer is growing, and the patient’s overall health. Based on these factors, treatment may include chemotherapy, targeted therapies, biologic therapy and blood stem cell transplant.\(^17,18,19\)
  - The use of the tyrosine kinase inhibitor (TKI) imatinib in the treatment of leukemia, specifically CML, has played a major role in increasing five-year survival rates from approximately 56 percent\(^20\) to 89 percent.\(^21\)
  - In aggressive NHL, standard of care treatment achieves long-term remission in less than half of cases, demonstrating a need for new therapeutic approaches for relapsed patients, particularly those who are transplant ineligible.\(^22\) With no standard of care available for these patients, the current two year overall survival is less than 10 percent,\(^23\) with an average survival of less than one year.\(^24\)
New treatment strategies are under investigation for patients with genetic alterations in specific subtypes of lymphoma.25,26

Myeloma treatment may depend on whether the patient is experiencing symptoms, and includes chemotherapy, radiation therapy, and stem cell transplant.27

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