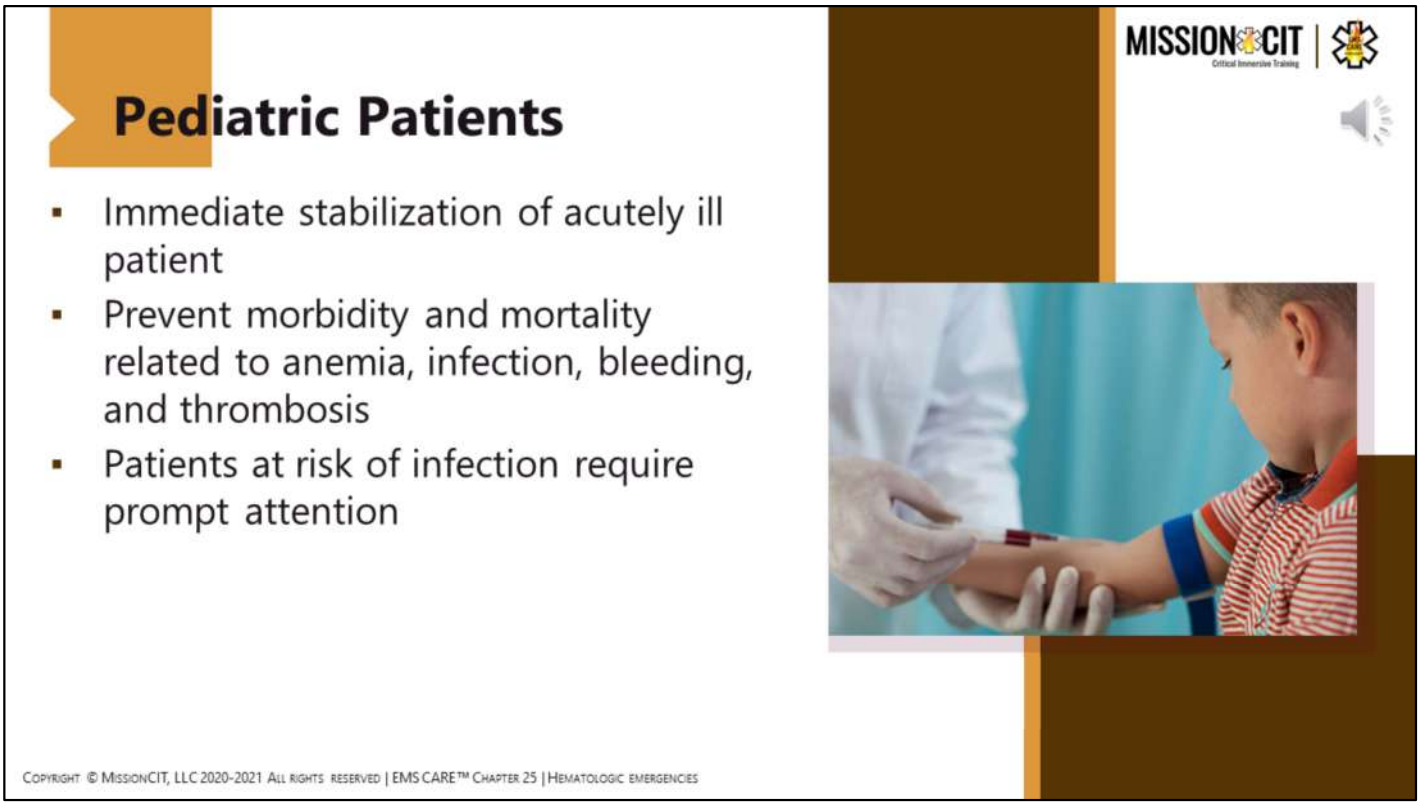


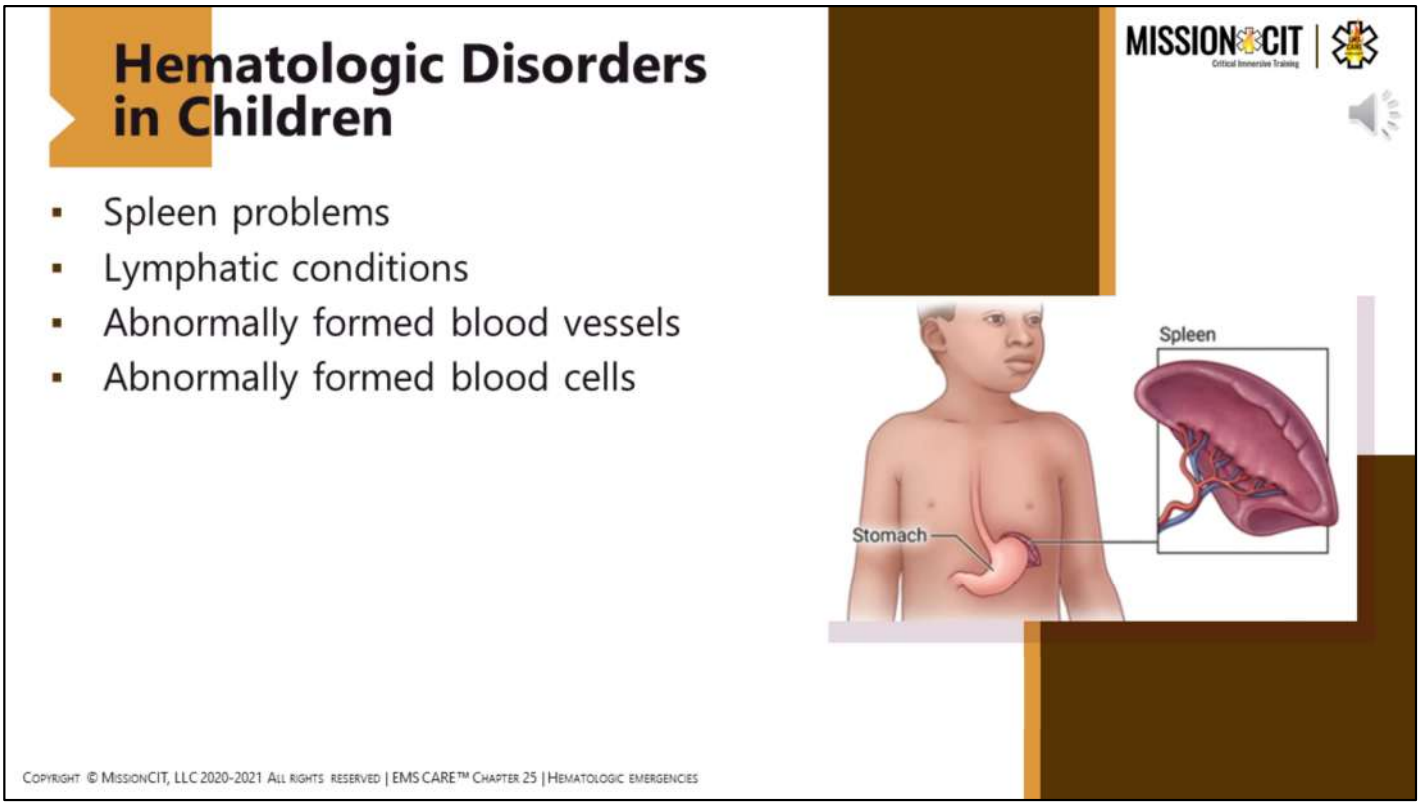
Thank you, Missah.

Hello again, this lesson discusses important special conditions you may face.



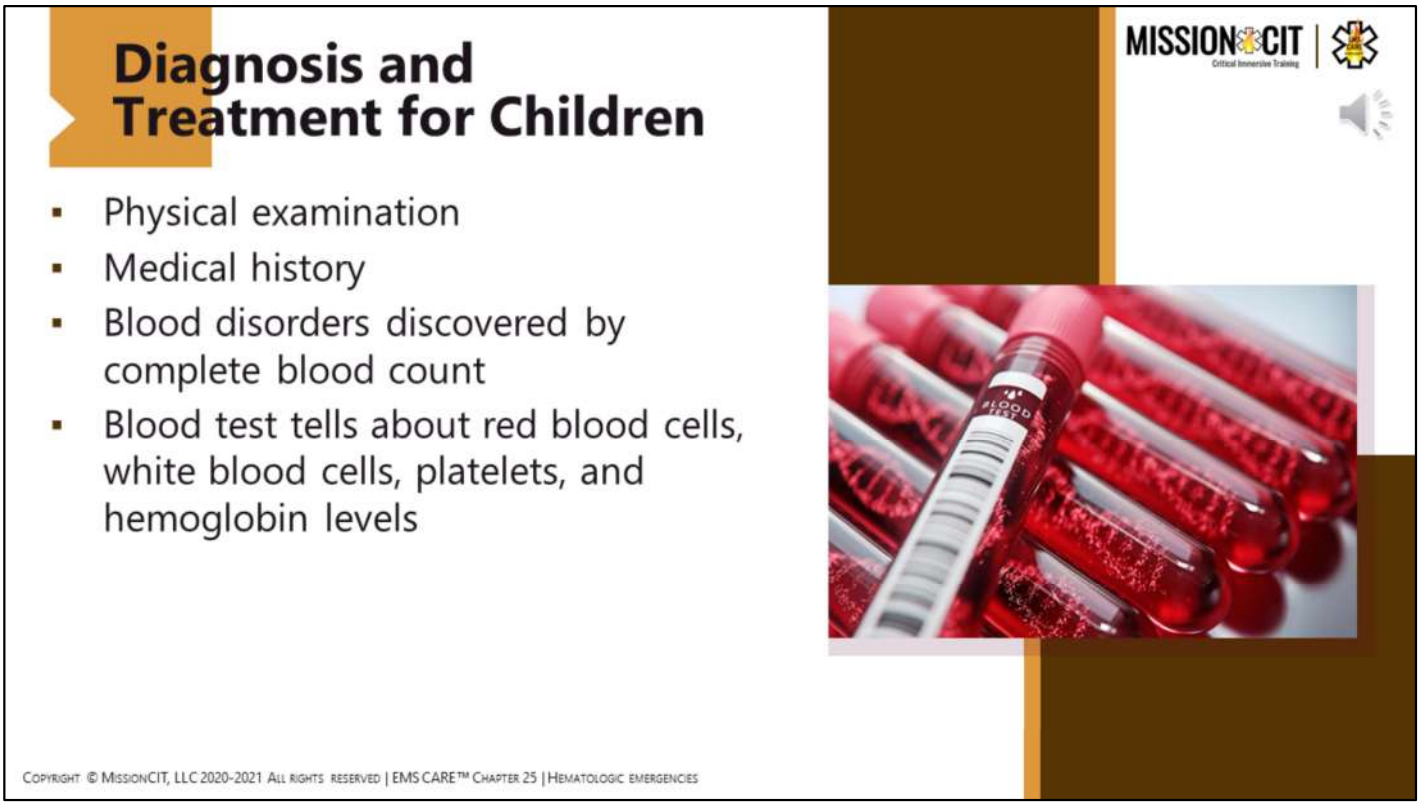
The management of pediatric hematologic emergencies is directed toward immediate stabilization of the acutely ill patient to prevent morbidity and mortality related to severe anemia, infection, bleeding, and thrombosis. Patients at risk for infection and sepsis, such as neutropenic or asplenic patients, require prompt attention.

Hematologic emergencies arise in children who have known blood disorders, or who have systemic disease. Initial measures of support, diagnosis, and treatment are based on general principles that often do not require a definitive diagnosis to initiate management.



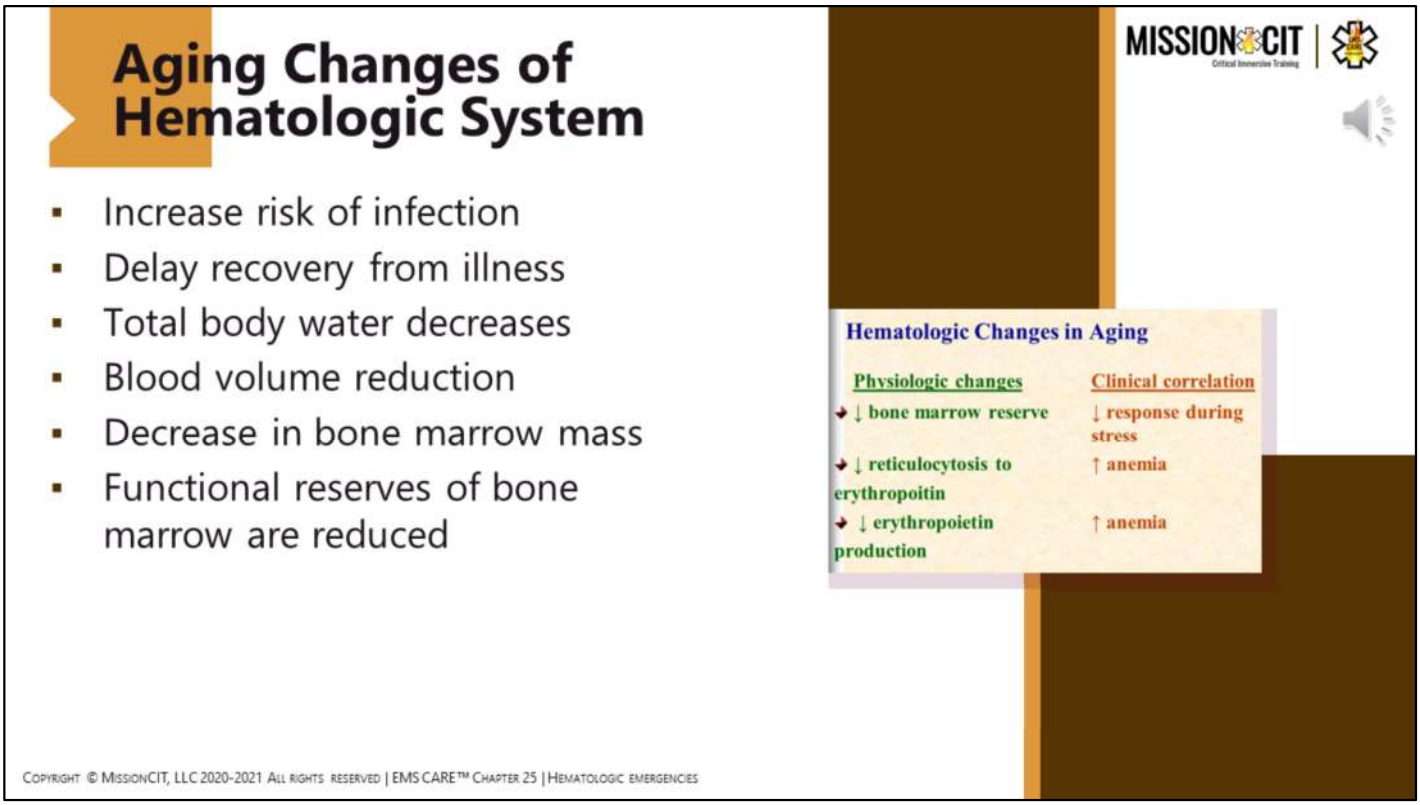
Hematologic disorders can affect the child's spleen, lymphatic system, or blood vessels.

- Spleen problems can have many causes. Sometimes the spleen becomes very large or stops working properly, which can cause low platelet and low blood counts.
- Lymphatic conditions, such as a lymphatic malformation, can cause a variety of symptoms. Lymphatic malformations are benign masses that result from improperly-developed lymph channels. If left untreated, they can increase in size and cause repeated infections.
- Abnormally formed blood vessels can cause vascular malformations and hemangiomas, which are non-cancerous tumors.
- Abnormally-formed blood cells can result in a variety of conditions, such as idiopathic thrombocytopenic purpura (ITP), sickle cell disease and hereditary spherocytosis. These conditions can result in low blood counts, low platelet counts and cause many symptoms, including shortness of breath, rapid heart rate, paleness, lack of energy and easy bruising.

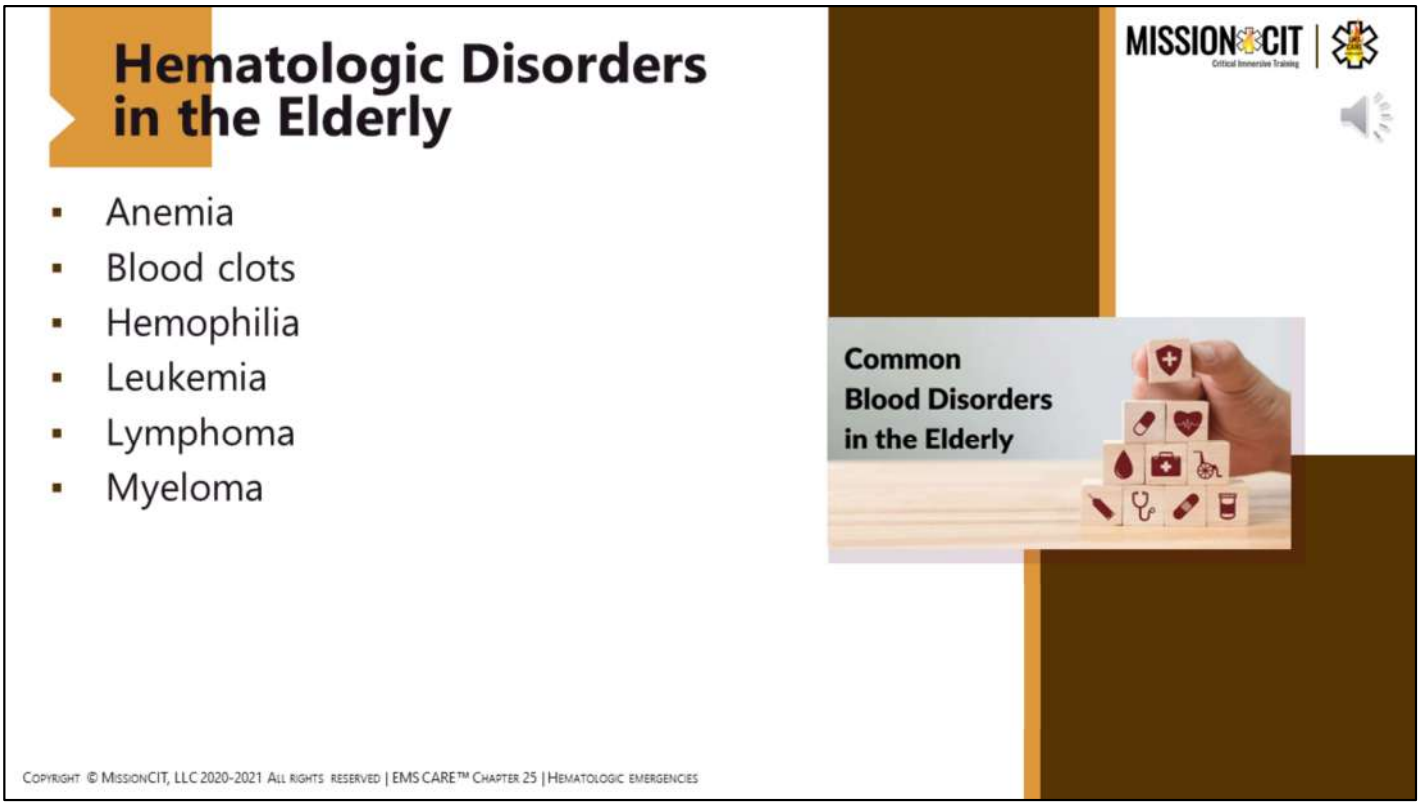


To diagnose hematological disorders, start with a physical examination and medical history. Generally, blood disorders are discovered by performing a complete blood count. This blood test tells us about the child's red blood cells, white blood cells, platelets, and hemoglobin levels.

Hematologic disorders are treated with medications and blood transfusions.

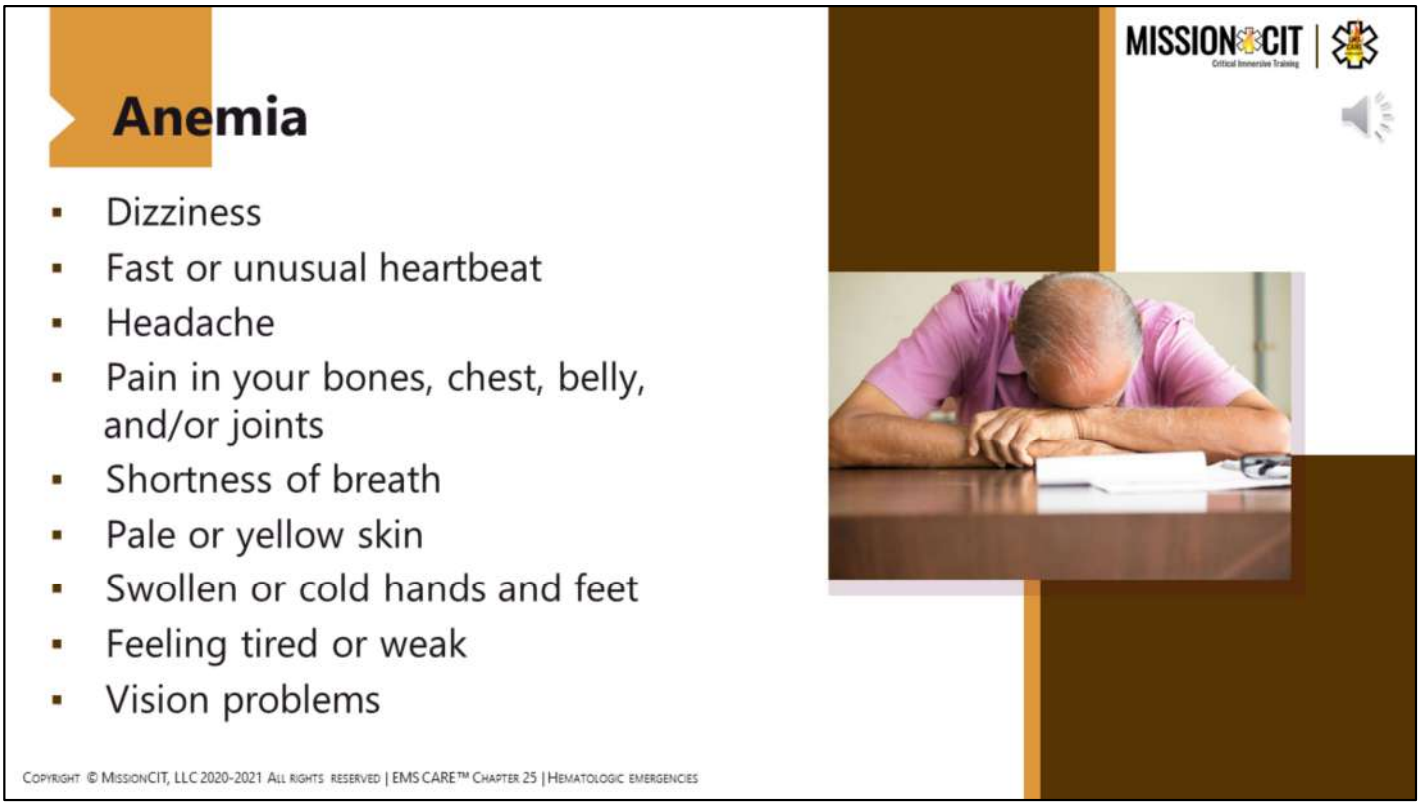


The hematologic and immune systems are affected by aging in multiple ways, which can increase the risk of infection and delay recovery from illness. Total body water decreases with age, thus reducing blood volume. Bone marrow mass decreases and fat in bone marrow increases, so functional reserves of bone marrow are reduced with age.



With age, patients may become more susceptible to blood disorders. Common blood disorders in the elderly range from conditions that can be treated with diet and supplements to chronic diseases. The most common blood disorders include:

- Anemia
- Blood clots
- Hemophilia
- Leukemia
- Lymphoma, and
- Myeloma



Anemia is a condition that happens when you have a lack of healthy red blood cells or a lack of hemoglobin. It can be caused by blood loss, decreased red blood cell production, and/or destruction of red blood cells. Anemia becomes even more common as people get older.

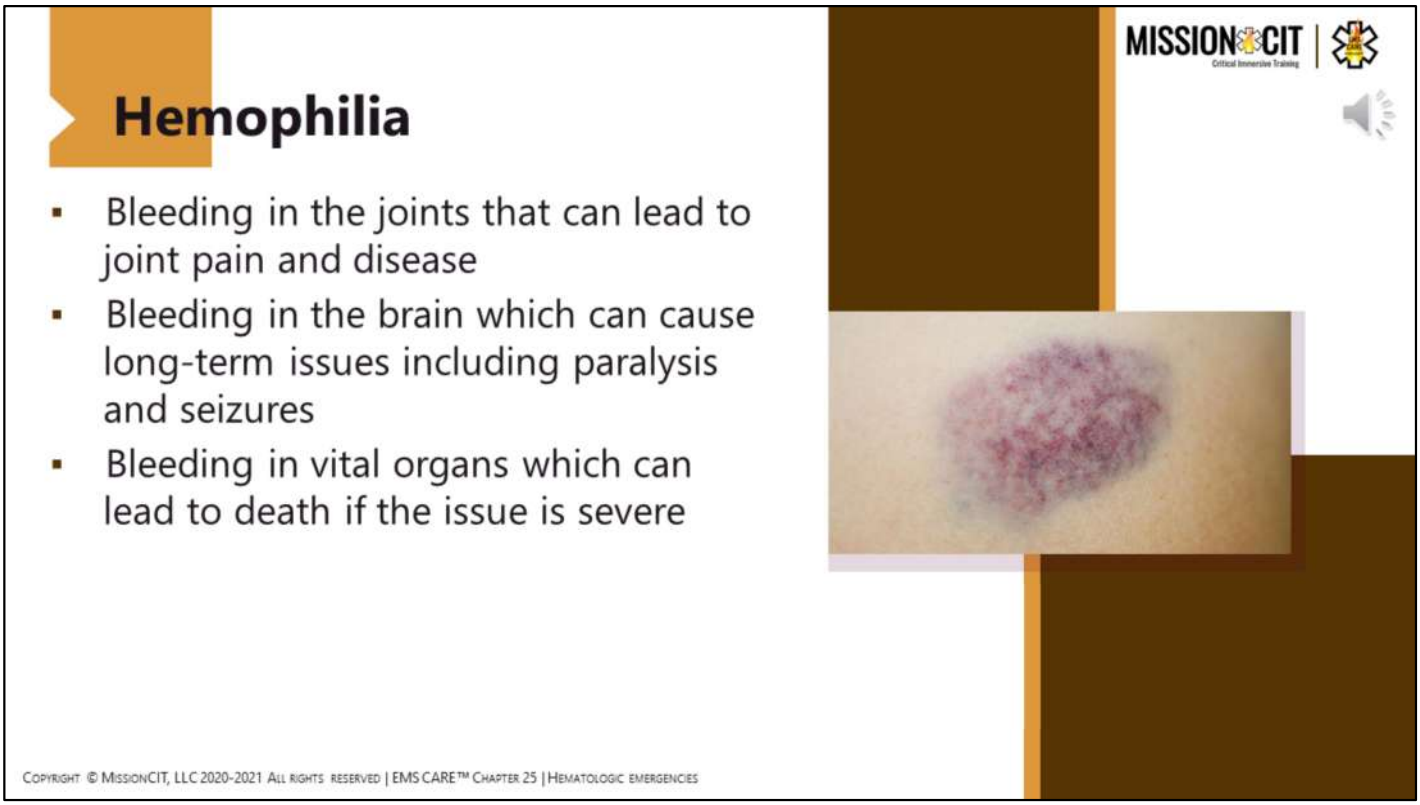
Symptoms include:

- Dizziness
- Fast or unusual heartbeat
- Headache
- Pain in your bones, chest, belly, and/or joints
- Shortness of breath
- Pale or yellow skin
- Swollen or cold hands and feet
- Feeling tired or weak
- Vision problems



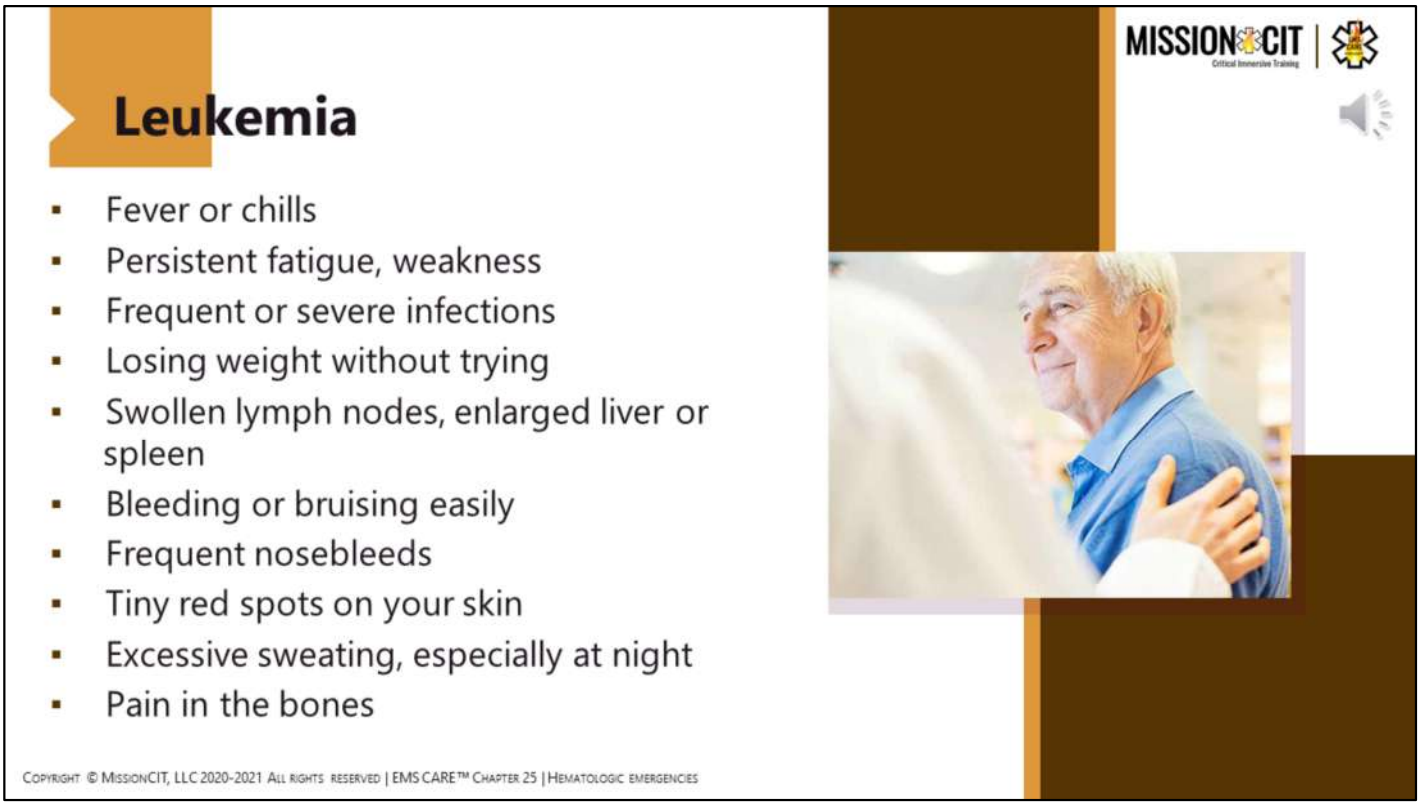
When a person gets a cut or scrape, blood cells called platelets and certain clotting proteins in the plasma work together to create clot over the injury. Usually, the body will dissolve the blood clot after healing. According to the American Society of Hematology, sometimes clots do not dissolve naturally, or they form on the inside of blood vessels without an injury.

Blood clot risk factors include diseases such as diabetes, obesity, smoking, and dehydration.



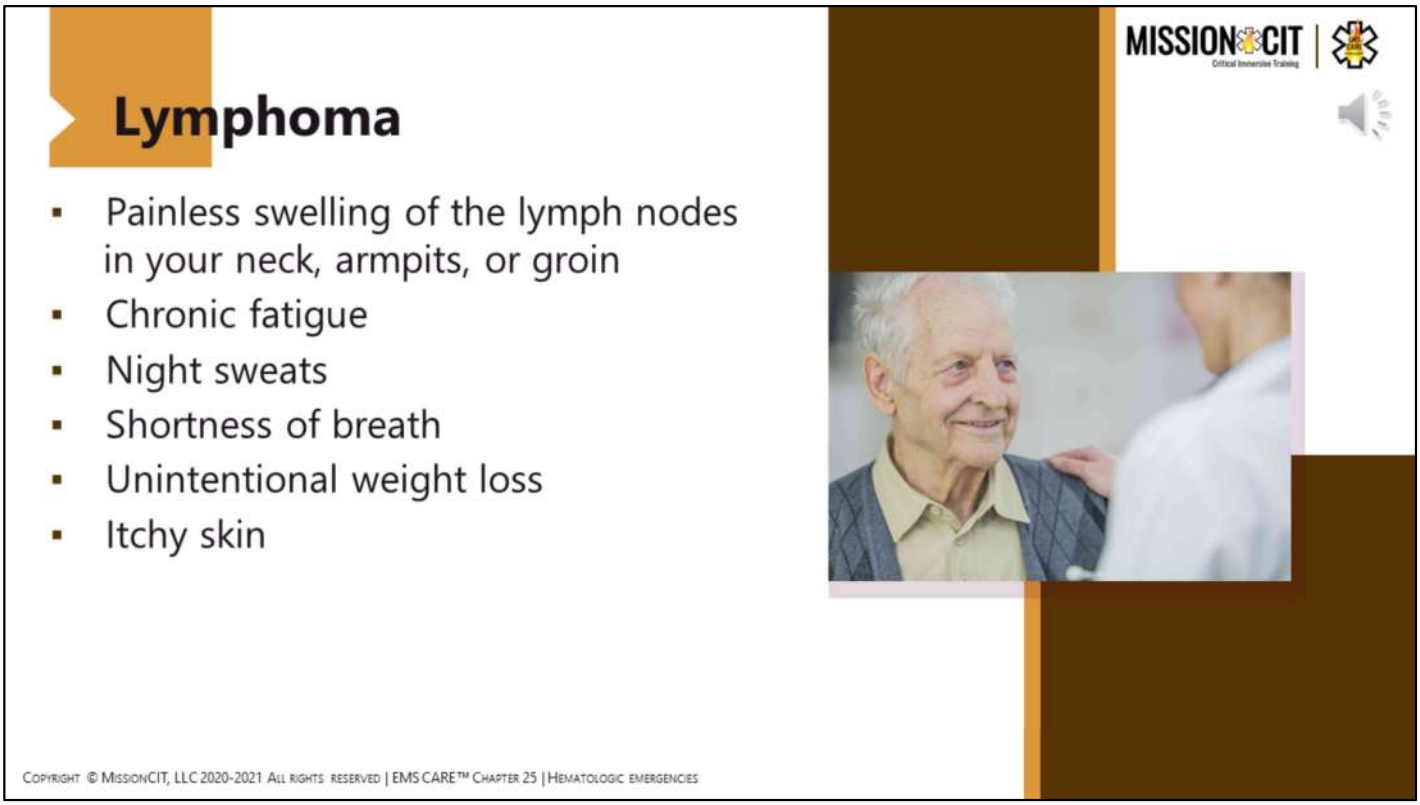
Hemophilia is a hematologic disorder in which the blood can't easily clot. If a person has hemophilia, even a slight injury can cause severe bleeding. According to the Centers for Disease Control and Prevention (CDC), hemophilia is caused by a mutation in the gene that provides clotting instructions. The mutation can stop the "clotting protein from working properly." Hemophilia can result in:

- Bleeding in the joints that can lead to joint pain and disease
- Bleeding in the brain which can cause long-term issues including paralysis and seizures
- Bleeding in vital organs which can lead to death if the issue is severe



Leukemia is cancer of the tissues that form blood, such as bone marrow and the lymphatic system. The cancer forms when mutated genes form in your DNA. According to the Mayo Clinic, symptoms include:

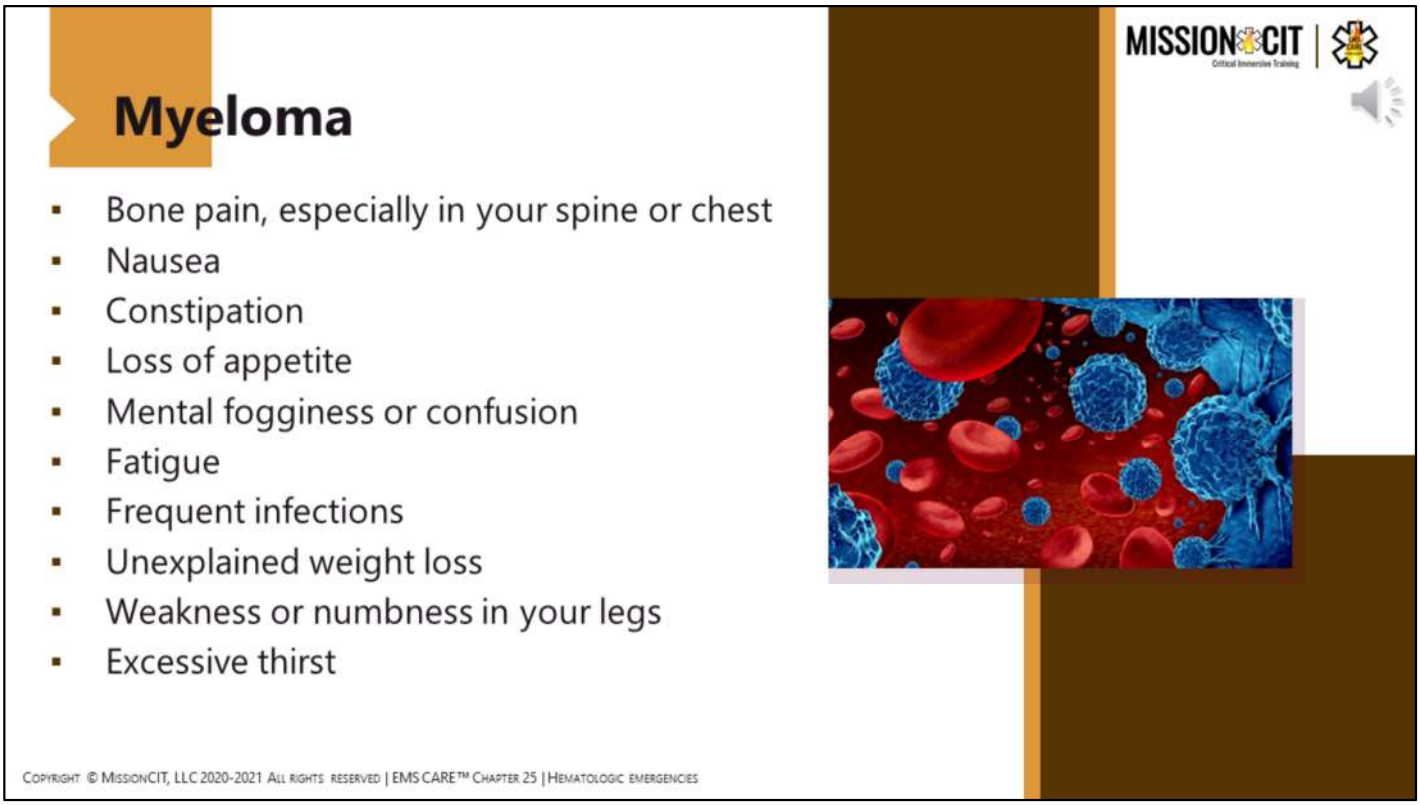
- Fever or chills
- Persistent fatigue, weakness
- Frequent or severe infections
- Losing weight without trying
- Swollen lymph nodes, enlarged liver or spleen
- Bleeding or bruising easily
- Frequent nosebleeds
- Tiny red spots on your skin
- Excessive sweating, especially at night
- Pain in the bones



According to the Mayo Clinic, lymphoma is a blood cancer that occurs in the lymphatic system — part of the body's "germ-fighting network." Lymphoma has two main subtypes, which are Hodgkin's and non-Hodgkin's.

Symptoms include:

- Painless swelling of the lymph nodes in your neck, armpits, or groin
- Chronic fatigue
- Night sweats
- Shortness of breath
- Unintentional weight loss
- Itchy skin



Myeloma is a cancer that forms in a type of white blood cell called a plasma cell. Plasma cells help fight infection by making antibodies that attack germs. The cancer forms in your bone marrow, where the cancer cells can eventually outnumber healthy plasma cells. When that happens, the plasma cells can no longer produce antibodies. The cancer cells begin to produce proteins that can cause serious complications.

Symptoms include:

- Bone pain, especially in your spine or chest
- Nausea
- Constipation
- Loss of appetite
- Mental fogginess or confusion
- Fatigue
- Frequent infections
- Unexplained weight loss
- Weakness or numbness in your legs

- Excessive thirst

That’s it, this brings us to the end of this chapter, and Missah will take you through the chapter review.