Sickle cell disease is a lifelong, inherited blood disorder that impacts red blood cells. Children with sickle cell disease have an abnormal type of hemoglobin that causes blood cells to become crescent-shaped. These misshapen cells are more fragile and have difficulty passing through the body's blood vessels. This means there are less cells to carry around oxygen and tissues throughout the body are damaged.

Sickle cell disease can cause problems all over the body. Because most patients with sickle cell have anemia, they may have decreased energy. They may also develop jaundice and/or gallstones from the broken red blood cells. Patients may experience symptoms due to sickle-shaped cells reducing the flow of blood through a person's blood vessels.

Treatment for sickle cell disease varies greatly and depends on the severity of symptoms. Ongoing treatment plans often involve:

- Healthy habits include drinking lots of water, washing hands properly, and avoiding things that trigger sickling like smoking and exposure to cold temperatures
- Stroke, in more severe cases
- Episodes of pain and/or infection
- Damage to organs (lungs, kidneys, liver, spleen)
- Damage to joints (usually hips and knees)

Around 100,000 people have sickle cell disease in the United States. African-American births 1 in 365 out of Hispanic-American births 1 in 16,300. While a child of any race or nationality can be born with sickle cell, it occurs most often among African-Americans.

How are the symptoms diagnosed?

Early diagnosis is key to the success of ongoing management of sickle cell disease. Physicians use a blood test to confirm or rule out the presence of sickle cell disease or sickle cell trait. Testing is part of mandatory newborn screening.

Is there a cure?

Currently, the only cure for sickle cell disease is stem cell transplantation. This is when healthy blood stem cells are transplanted into the patient's body, replacing the bone marrow with blood cells that make normal hemoglobin instead of sickle hemoglobin.

New gene therapy approaches also allow the patient's own bone marrow cells to be modified to make normal hemoglobin and then be transplanted back into their body.