

What Is Sickle Cell Disease?

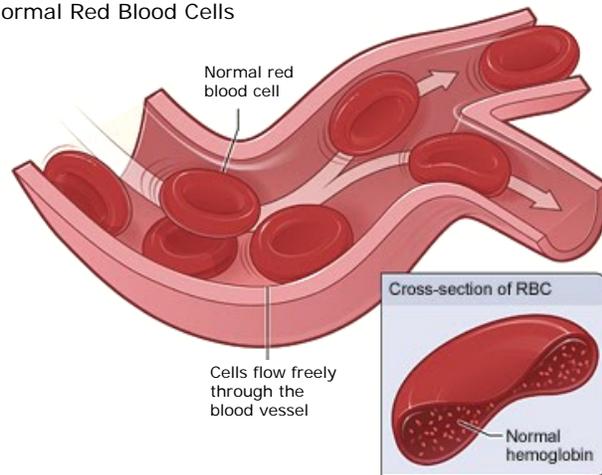
Sickle cell disease is a genetic illness caused by an abnormality in hemoglobin, resulting in a change in the shape and function of red blood cells.

In most people, red blood cells are smooth and round. This shape allows the cells to move easily through the blood vessels. However, sickle-shaped red blood cells are hard and sticky and do not easily pass through blood vessels. In people with sickle-shaped red blood cells, blood vessels can sometimes become clogged, preventing blood from smoothly flowing through them.

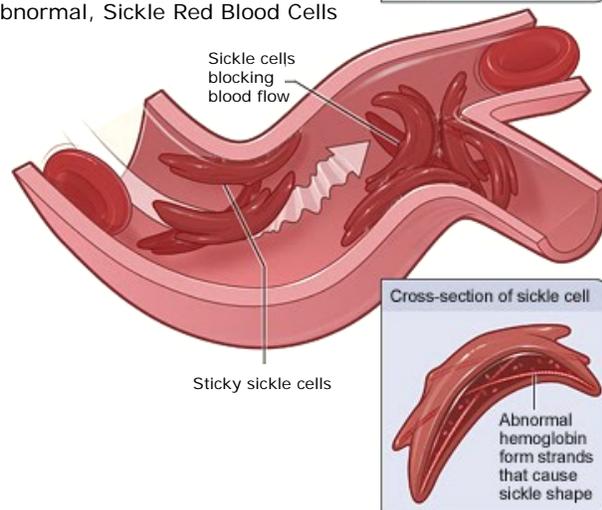
Common Symptoms of Sickle Cell Disease

- Pain
- Infection
- Anemia (or a low blood count)
- Fatigue
- Severe chest pain or breathing difficulties
- Eye problems
- Skin ulcers or skin sores
- Jaundice
- Damage to the liver, kidneys, or lungs
- Brain damage or stroke

Normal Red Blood Cells



Abnormal, Sickle Red Blood Cells

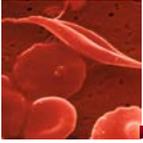


http://www.nhlbi.nih.gov/health/dci/Diseases/Sca/SCA_WhatIs.html
National Heart Lung and Blood Institute. 15 Dec 2008

Who Gets Sickle Cell Disease?

In the United States, sickle cell disease is most common among African and Hispanic Americans. The disease affects approximately 1 in 500 African Americans and 1 in 1,000 Hispanic Americans.





Sickle cell crises

Sickle cell crises can last hours to days, sometimes becoming so painful that people have to go to the emergency room for immediate treatment. During a crisis, pain may seem to come from the bones, in the arms, hands, legs, feet, back, stomach or chest. The frequency of sickle cell crises can range from every few years to many times per year.

Who experiences painful crises?

- 30% rarely or never experience a crisis
- 50% have only a few crises
- 20% have frequent and severe crises

Which factors increase the chance of a crisis?

- Infection
- Cold weather
- Fatigue
- Exercising too hard
- Not drinking enough water
- Lack of oxygen in the blood

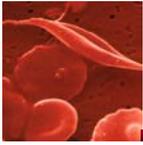
How will I know if I have a crisis?

- Fever of 101°F or higher
- Pain not relieved by medication
- Shortness of breath
- Severe headaches, dizziness
- Stomach pain or swelling
- Jaundice
- Painful erection (males)
- Sudden change in vision
- Seizures



How can I decrease the chance of having a crisis?

- Treat infection immediately
- Limit alcohol use and smoking
- Get plenty of sleep and rest
- Perform moderate exercise regularly
- Drink plenty of fluids (at least 8 glasses of water a day in warm weather).
- Reduce emotional and physical stress
- Monitor pain medication as recommended by your physician



Treatment for Sickle Cell Disease

These medical treatments are often recommended:

- Antibiotics (penicillin)
prevents bacterial infections
- Erythropoietin
increases the number of red blood cells (improve anemia)
- Blood transfusions
increases blood count to improve anemia
- Hydroxyurea
reduces the chance that red blood cells will change into the sickle shape
- Folic acid
a vitamin that helps to treat anemia



Pain management with non-drug treatments

- Heat and cold treatments can help with sickle cell disease pain. Warm compresses or heating pads can be applied to dilate blood vessels and relax muscle. Cold therapy decreases swelling by constricting blood vessels and reducing inflammation.
- Relaxation can help patients cope better with the illness and pain.
- Massage can decrease muscle stiffness and potentially reduce pain.
- Distraction – engaging activities (reading, video games and movies) can change the patient's focus and help relieve stress and pain.

Myers, C., Robinson, M., Guthrie, Jr., T., Lamp, S. and Lottenberg, R., "Adjunctive Approaches for Sickle Cell Chronic Pain," *Alternative Health Practitioner* 5,3 (Winter 1999): 204.