**جامعـــــــــة المثنـــــــــى**

**كليــــــــــــــة التمريـــــــــــض**

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فـــــرع تمريــــض الأطفـــــــال

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[**Sickle cell anemia**](http://www.mayoclinic.org/diseases-conditions/sickle-cell-anemia/basics/definition/con-20019348)

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Sickle cell anemia is an inherited form of anemia — a condition in which there aren't enough healthy red blood cells to carry adequate oxygen throughout the body.

## Symptoms

## ****Anemia****

1. **Episodes of pain.**
2. **Hand-foot syndrome.** Swollen hands and feet may be the first signs of sickle cell anemia in babies. The swelling is caused by sickle-shaped red blood cells blocking blood flow out of their hands and feet
3. **Frequent infections.** Sickle cells can damage spleen, an organ that fights infection. This may make more vulnerable to infections. Doctors commonly give infants and children with sickle cell anemia vaccinations and antibiotics to prevent potentially life-threatening infections, such as pneumonia.
4. **Delayed growth.** Red blood cells provide your body with the oxygen and nutrients you need for growth. A shortage of healthy red blood cells can slow growth in infants and children and delay puberty in teenagers.
5. **Vision problems.** Some people with sickle cell anemia experience vision problems. Tiny blood vessels that supply your eyes may become plugged with sickle cells. This can damage the retina — the portion of the eye that processes visual images.
6. **Unexplained episodes of severe pain,** such as pain in the abdomen, chest, bones or joints.
7. **Swelling in the hands or feet.**
8. **Abdominal swelling,** especially if the area is tender to touch.
9. **Fever.** People with sickle cell anemia have an increased risk of infection, and fever can be the first sign of an infection.
10. **Pale skin or nail beds.**
11. **Yellow tint** to the skin or whites of the eyes.
12. **Any signs or symptoms of stroke.** If you notice any one-sided paralysis or weakness in the face, arms or legs, confusion, trouble walking or talking, sudden vision problems or unexplained numbness, or a headache, call 911 or your local emergency number right away.

## Complications :Sickle cell anemia can lead to a host of complications, including:

* **Stroke.**  Signs of stroke include seizures, weakness or numbness of your arms and legs, sudden speech difficulties, and loss of consciousness.
* **Acute chest syndrome.** This life-threatening complication of sickle cell anemia causes chest pain, fever and difficulty breathing. Acute chest syndrome can be caused by a lung infection or by sickle cells blocking blood vessels in lungs.
* **Pulmonary hypertension.** People with sickle cell anemia can also develop high blood pressure in their lungs (pulmonary hypertension). This complication usually affects adults rather than children. Shortness of breath and fatigue are common symptoms of this condition, which can be fatal.
* **Organ damage.** Sickle cells can block blood flow through blood vessels, immediately depriving an organ of blood and oxygen. In sickle cell anemia, blood is also chronically low on oxygen. Chronic deprivation of oxygen-rich blood can damage nerves and organs in your body, including kidneys, liver and spleen. Organ damage can be fatal.
* **Blindness.** Tiny blood vessels that supply eyes can get blocked by sickle cells. Over time, this can damage the portion of the eye that processes visual images (retina) and lead to blindness.
* **Skin ulcers.** Sickle cell anemia can cause open sores, called ulcers, on your legs.
* **Gallstones.** The breakdown of red blood cells produces a substance called bilirubin. A high level of bilirubin in your body can lead to gallstones.
* **Priapism.** Men with sickle cell anemia may experience painful, long-lasting erections, a condition called priapism. As occurs in other parts of the body, sickle cells can block the blood vessels in the penis. This can damage the penis and eventually lead to impotence.

## Treatments and drugs Bone marrow transplant offers the only potential cure for sickle cell anemia. But finding a donor is difficult and the procedure has serious risks associated with it, including death. As a result, treatment for sickle cell anemia is usually aimed at avoiding crises, relieving symptoms and preventing complications. If you have sickle cell anemia, you'll need to make regular visits to your doctor to check your red blood cell count and monitor your health. Treatments may include medications to reduce pain and prevent complications, blood transfusions and supplemental oxygen, as well as a bone marrow transplant.

## Medications :Medications used to treat sickle cell anemia include:

* **Antibiotics.** Children with sickle cell anemia may begin taking the antibiotic penicillin when they're about 2 months of age and continue taking it until they're at least 5 years old. Doing so helps prevent infections, such as pneumonia, which can be life-threatening to an infant or child with sickle cell anemia. Antibiotics may also help adults with sickle cell anemia fight certain infections.
* **Pain-relieving medications.** To relieve pain during a sickle crisis, your doctor may advise over-the-counter pain relievers and application of heat to the affected area. You may also need stronger prescription pain medication.
* **Hydroxyurea (Droxia, Hydrea).** When taken daily, hydroxyurea reduces the frequency of painful crises and may reduce the need for blood transfusions. Hydroxyurea seems to work by stimulating production of fetal hemoglobin — a type of hemoglobin found in newborns that helps prevent the formation of sickle cells. Hydroxyurea increases your risk of infections, and there is some concern that long-term use of this drug may cause tumors or leukemia in certain people. However, this hasn't yet been seen in studies of the drug.
* **Vaccinations to prevent infections**

Vaccinations, such as the pneumococcal vaccine and the annual flu shot, are also important for adults with sickle cell anemia.

* **Blood transfusions**In. Blood transfusions increase the number of normal red blood cells in circulation, helping to relieve anemia. In children with sickle cell anemia at high risk of stroke, regular blood transfusions can decrease their risk of stroke.
* **Supplemental oxygen**

Breathing supplemental oxygen through a breathing mask adds oxygen to blood and helps breathe easier. It may be helpful if you have acute chest syndrome or a sickle cell crisis

* **Stem cell transplant**

A stem cell transplant, also called a bone marrow transplant, involves replacing bone marrow affected by sickle cell anemia with healthy bone marrow from a donor.

### Treating complications

Treatment may include antibiotics, vitamins, blood transfusions, pain-relieving medicines, other medications and possibly surgery, such as to correct vision problems or to remove a damaged spleen.

### Experimental treatments Scientists are studying new treatments for sickle cell anemia, including:

* **Gene therapy.**  Scientists are also exploring the possibility of turning off the defective gene while reactivating another gene responsible for the production of fetal hemoglobin — a type of hemoglobin found in newborns that prevents sickle cells from forming. Potential treatments using gene therapy are still a long way off, however. No human trials using genes specifically for sickle cell have yet been done.
* **Nitric oxide.** . Nitric oxide is a gas that helps keep blood vessels open and reduces the stickiness of red blood cells. Treatment with nitric oxide may prevent sickle cells from clumping together. Studies on nitric oxide have had mixed results so far.
* **Drugs to boost fetal hemoglobin production.** Researchers are studying various drugs to devise a way to boost the production of fetal hemoglobin. This is a type of hemoglobin that stops sickle cells from forming.
* **Statins.** These medications, which are normally used to lower cholesterol, may also help reduce inflammation. In sickle cell anemia, statins may help blood flow better through blood vessels.