

**Sickle Cell Disease Facts for Teachers and School Nurses**

Sickle cell disease is a genetic disorder that affects hemoglobin in red blood cells. Hemoglobin is a protein that carries oxygen to all parts of the body. With sickle cell disease, red blood cells assume a sickle shape which causes the cells to clog in the vessels. This can lead to severe pain and tissue damage.

The three most common types of sickle cell disease are:

* Hemoglobin SS disease (also called sickle cell anemia)
* Hemoglobin SC disease
* Sickle cell beta thalassemia

Teachers and school nurses need to take certain actions to help children with sickle cell disease maintain their health. Simple accommodations can prevent serious complications and hospitalizations. Take a proactive approach by knowing the basics about sickle cell disease and what steps to take if a child with sickle cell disease becomes ill at school.

**Everyday Needs of Children with Sickle Cell Disease**

* **Give plenty of fluids:** Make sure the child has water readily available at all times in class. The child should be allowed to carry a water bottle at all times and to drink water during class, during physical education or at any other time.
* **Why?** Fluids assist red blood cells in moving more easily throughout blood vessels, which ultimately decreases the number of pain crises children with sickle cell disease may experience.
* **Provide liberal bathroom privileges:** Allow the child to have free access to the bathroom. Provide a bathroom pass for an older child so all school personnel will be aware that permission has been granted.
* **Why?** Children with sickle cell disease need to go to the bathroom more often due to their high fluid intake and because their kidneys do not function as well as those in healthy children.
* **Avoid physical exhaustion:** Allow the child time to rest when needed, or slow down the activity. This is particularly important during physical education. If a parent prefers that a child be excused from any activity, permission should be granted. If a child has difficulty carrying textbooks, allow a rolling backpack or an extra set of books.
* **Why?** Children with sickle cell disease tire more easily than other children. Physical exhaustion may trigger a pain crisis. A pain crisis may lead to hospitalization and school absences.
* **Avoid extreme temperatures:** Keep the child out of the cold for long periods of time. In hot weather, allow for frequent breaks with plenty of fluid to avoid dehydration. Avoid frequent changes in temperature. Temperatures in the classroom must also be regulated. Classrooms that are too cold or too hot may cause complications and possible hospitalization of the child. Allow the child to wear a coat, hat and gloves as needed. Do not apply ice to injuries.
* **Why?** Temperature extremes can trigger a pain crisis. A pain crisis may lead to hospitalization and school absences.

**Common Medical Complications of Sickle Cell Disease**

* **Pain crises:** Living with pain is a challenging part of sickle cell disease. Pain may be treated with acetaminophen, ibuprofen or a narcotic drug prescribed by a doctor. It is important to check for fever and follow the fever precautions listed below before giving medication. If no fever is present, administer medications as directed, and as soon as possible. Give plenty of fluid. To help ease the pain, try warm compresses or distractions such as quiet activities and listening to music. If a child’s pain cannot be managed with the above, call the parents immediately so they may seek medical attention.
* **Acute chest syndrome:** This is believed to be caused by sickled red blood cells clogging blood vessels in the lungs. It can also be associated with respiratory infection. Contact the parents immediately if the child experiences any of these symptoms
  1. Fever (temperature 101°F or above)
  2. Chest pain
  3. Congested cough
  4. Labored breathing
  5. Rapid breathing
* **Anemia:** Normally red blood cells live for 100 to 120 days. In sickle cell anemia, red blood cells live only 15 to 20 days. Due to the shorter life span of the sickled red blood cells, children with sickle cell are frequently anemic. Some symptoms of anemia are:
  1. Pale color of lips
  2. Headache
  3. Weakness
  4. Decreased energy/easily fatigued
  5. Sleeping for long periods of time
* **Jaundice:** Jaundice, or yellow coloring of the eyes or skin, is caused by bilirubin, a byproduct of red blood cells. Since children with sickle cell disease break down more red blood cells, they have increased amounts of bilirubin.
* **Fever:** Fever is often the first sign of infection. Contact the parents immediately if the child has a fever of 101°F or higher. The child will need to be seen by a medical provider or in the emergency department right away. Do not treat the fever with medication, such as acetaminophen or ibuprofen.
* **Stroke:** Sickled cells can block blood vessels in the brain and keep the brain from getting enough oxygen. If you notice cognitive changes in the child or changes in school performance, discuss these concerns with a parent as soon as possible. Call a parent immediately if you notice any of the symptoms listed below. If a parent is not available, the symptoms are severe, the student has a change in mental status, or has an extended seizure, call 999.
  1. One-sided weakness or paralysis
  2. Facial asymmetry
  3. Difficulty swallowing
  4. Seizure
  5. Slurred speech
  6. Very severe headache
  7. Sudden-onset vision change