

Sickle cell disease (SCD): surgery



Why is surgery a problem for patients with sickle cell disease?

Patients with sickle cell disease can have certain problems during or after surgery. One reason is because less oxygen gets to the tissues. This is because:

- Patients with sickle cell disease often have low hemoglobin. This is called **anemia**. Anemia means the red blood cells are less able to carry oxygen to the tissues.
- During surgery, blood flow may change because your child receives anesthesia (medicines used to put your child to sleep). This can lead to less oxygen going to the tissues.
- Some surgeries may cause bleeding. This also leads to less oxygen going to the tissues.

Sickle cell problems, as well as the stress of surgery, may cause:

- A sickle cell vaso-occlusive episode (VOE) or pain episode (called a pain crisis in the past).
- A serious crisis in the lungs called acute chest syndrome (ACS). ACS is a lung problem (infection and/or fluid in the lungs) with fever, low oxygen levels or chest pain.
- Healing to take longer.

Why might my child need surgery?

Some children with sickle cell disease may need the same types of surgery as other children, such as:

- Putting tubes in the ears to help prevent ear infections.
- Taking out tonsils and adenoids to help prevent throat infections.

Surgeries for sickle cell problems may include:

- Taking out the spleen. This needs to be done if the spleen gets too large from blood being trapped inside (called splenic sequestration crisis).
- Taking out the gallbladder if gallstones occur.
- Repairing or replacing a damaged hip joint.

How should I schedule surgery if my child needs it?

Most surgeries need to be scheduled like any other clinic visit or test. This depends on:

- The type of surgery and if it is needed right away.
- Your schedule.
- The surgeon's schedule.

Most of the time, you may schedule surgery in advance. This helps you to:

- Complete forms or make phone calls to arrange things.
- Work with your employer, insurance company or your child's doctor's office.

In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.

SCD: surgery, continued

What happens before surgery?

Here are some guidelines for what to expect before your child's surgery:

- Your child's providers will talk with you about why your child needs surgery. They will tell you what will be done and how to help prepare your child.
- Your child may need several clinic visits for exams and tests before surgery.
- Your child will need a consult visit with the surgeon before the care team can schedule surgery. The sickle cell clinic team will work with the surgeon's team to schedule the surgery date.
- Your child will mostly likely need to be admitted to the hospital the day before surgery. They may get intravenous (I.V.) fluids, breathing treatments or blood transfusions.
- In some cases, certain vaccines may be required before surgery depending on the age of the child and the type of surgery.

Some things to know about blood transfusions include:

- Your child may need **at least** 1 blood transfusion before surgery. This can be done in the clinic or in the hospital. The transfusion helps to:
 - Avoid sickle cell problems after surgery.
 - Reduce the amount of sickle hemoglobin by replacing it with blood that has normal hemoglobin.
 - Raise the blood count (hemoglobin) to a higher level so oxygen can be carried throughout the body easier.
- Children who have problems with blood transfusions may need other treatments before surgery.
- Children who have high hemoglobin levels or who have minor surgery may not need a transfusion.

What tests could my child have before surgery?

Some tests may include:

- A physical exam
- Oxygen checks (oxygen saturation level)
- Blood or urine tests
- Echo and EKG to check the heart
- Chest X-ray to check the heart and lungs
- Other X-rays or an ultrasound to look at certain organs depending on the type of surgery
- Breathing tests to check the lungs

Some tests can be done at your child's doctor's office. Others need to be done at the clinic or hospital. Talk with your child's provider or care team member to schedule tests.

In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.

SCD: surgery, continued

What happens after surgery?

Your surgeon will talk with you about your child's surgery and what type of care they need afterwards. Your child may need to stay in the hospital for at least 1 night after surgery. Some care may include:

- I.V. fluids until your child can drink on their own.
- Pain medicine as needed. Your child may only need strong pain medicine for 1 to 2 days. This depends on the type of surgery and how your child reacts to pain.
- Oxygen checks often. Your child will need extra oxygen if their oxygen levels are low.
- Breathing treatments and using an incentive spirometer or blowing bubbles to help the airways and lungs stay open and work better.
- Getting out of bed and taking short walks to help prevent complications. Your child's care team will let you know when this is OK for your child.

Your child's providers will let you know when your child may go home and what kind of care they need at home.

What follow-up care will my child need?

Your child will need a follow-up visit with the surgeon and their sickle cell provider within 4 weeks after surgery or as advised. This is to make sure your child is healing well and their sickle cell disease is under control. They will talk with you about:

- The care your child needs.
- When your child may return to normal activities and go back to day care or school.

What should I do if my child is sick?

- Follow your child's sickle cell provider's advice for what you should do.
- Call your child's provider and **get medical care right away** anytime your child has a fever of 101°F (38.3°C) or higher.
- During the time when the sickle cell clinic is closed (between 5 p.m. and 8 a.m. during the week and on weekends and holidays), call the hematologist on call before going to the hospital. They will call the emergency department (ED) and help with your child's care.
- **ALWAYS** tell the ED doctors and staff that your child has sickle cell disease, and tell them if had surgery recently. Also tell them which sickle cell clinic they visit.

For more details on sickle cell disease and services, visit the Children's Healthcare of Atlanta website at choa.org/sicklecell.

This teaching sheet contains general information only. Talk with your child's doctor or a member of your child's healthcare team about specific care of your child.

In case of an urgent concern or emergency, call 911 or go to the nearest emergency department right away.