Can Sickle Cell Be Cured?

The short answer is yes. but the procedure isn't suitable for everyone.

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Currently, a stem cell or bone marrow transplant is the only way doctors can cure sickle cell disease (SCD). But, according to the National Heart, Lung and Blood Institute, not all people with sickle cell disease are suitable for a transplant.

Today, doctors perform most sickle cell-related stem cell transplants on kids who have suffered certain complications from the blood disorder. The procedure requires that doctors use a matched donor from the child's family, such as a sibling, who doesn't have SCD. But only a small proportion of children will have a matched donor. That's why so few people with sickle cell get stem cell transplants.

While the great majority of children who receive stem cell transplants from a matched donor will be cured, a small proportion will either reject the transplanted cells, or develop a problem known as chronic graft versus host disease, which can be fatal.

Researchers are now looking for a way to use stem cells from a donor who isn't related to the sickle cell patient, and a potentially safer way to destroy the stem cells that form sickle-shaped blood cells in bone marrow. One researcher at Boston Children's Hospital says it's not even necessary to replace all of a patient's red blood cells to correct sickle cell disease.

Adults with sickle cell disease have not been considered to be good candidates for stem cell transplant, due to the increased risk of dying from the complications of the transplantation procedure. However, new regimens that are associated with fewer complications are being developed that have resulted in excellent disease conrol and fewer complications.

Finally, scientists are also studying gene therapy, which requires they harvest blood-producing stem cells from a patient's own body, then add a gene with anti-sickling properties. Doctors would place these altered genes into the patient so their bone marrow could produce normal blood cells, thereby curing SCD.