



Transfusion

Sickle Cell

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What is a red blood cell transfusion?

All people have red blood cells to carry oxygen. Some red blood cells are normal and other people have red blood cells that are sickle cells. People can donate their red blood cells for other people that need them.

How does a red blood cell transfusion help patients with sickle cell disease?

Having red blood cells that do not sickle can help certain complications or prevent new complications from occurring. Receiving a red blood cell transfusion of normal cells allows your body to have a lower level of sickle cell red blood cells.

How does a transfusion work?

Prior to receiving blood:

- After red blood cells are donated, they are tested for diseases.
- If the blood center (example, Red Cross) does not identify any diseases, they are stored in a refrigerator.
- When a patient needs blood, the blood will be tested to determine his/her type of red blood cells.
- The hospital tries to find red blood cells that are the exact same type. If we cannot find the perfect red blood cells in the hospital, we will try to find the best red blood cells throughout the country. This may take a 1-3 days to get the best blood to your child.
- We ask you to get labs drawn 1-3 days prior to a visit so we can take the time to find the best available blood.

Receiving the blood:

- Red blood cells are given directly into your body through an IV or central line.
- Red blood cells are given slowly, so it often takes 3-4 hours for a transfusion.
- After the transfusion, the patient may go home from clinic.

Why would a patient receive blood transfusions?

Through clinical trials with hundreds of sickle cell children, we have learned that transfusions are needed to prevent complications from sickle cell.

Stroke: Patients that have had a stroke are placed on monthly red blood cell transfusions.

- o While this may not prevent a new stroke in all patients, it has been proven to be better than not doing therapy
- o In some cases this therapy may be more effective than Hydroxyurea.
- o Patients at risk for a stroke may also require transfusions for at least two years.

Acute Chest Syndrome: A sickle cell patient diagnosed with acute chest syndrome (pneumonia) may have a hard time breathing and may need to be placed on oxygen.

- o Your doctor will perform a red blood cell transfusion to try and help your body get more red blood cells to carry oxygen.
- o Some patients that have had several episodes of acute chest syndrome may be placed on monthly transfusion therapy for one or two years.

Pain: We do not have strong evidence from clinical trials that transfusion therapy can stop a pain crisis. Some patients that have developed frequent hospitalizations from pain may benefit from monthly transfusion in preparation of surgery.

What are the side effects of a blood transfusion?

Please discuss all of the side effects of a red blood cell transfusion with your doctor. The three main side effects are:

Iron overload: Every red blood cell has iron in it. When you receive a red blood cell transfusion, you receive extra iron that your body may not need.

Over time, your body may begin to have too much iron in it.

- Too much iron in the body can lead to heart liver and other organ complications.
- After one year of transfusions, your doctor may place you on a medication to help remove iron from the body.

Transfusion reaction: The hospital makes every attempt to make sure the red blood cells you receive are a perfect match for your body. However, your body may realize that these are not year exact red blood cells. If this happens, your body's immune system may attack the red blood cells that were transfused causing you to have a rash, itching, chills, or fever.

- The side effects can be treated with allergy or fever medications.
- In rare cases, a transfusion can lead to a patient having shortness of breath. If this happens, we would admit you to the hospital.
- Over time, some people's immune system may realize that these blood cells are not your own and reject blood transfusions. This makes it very difficult to find red blood cells that we can transfuse to a patient.

Infection: All blood products are carefully screened to prevent a patient from receiving blood from a person with an infection including diseases such as hepatitis or HIV. This risk is very small. For example, the current risk of getting HIV from a blood transfusion is less than 1 in a million. The blood bank continues to try to identify new ways to make this even a lower risk.