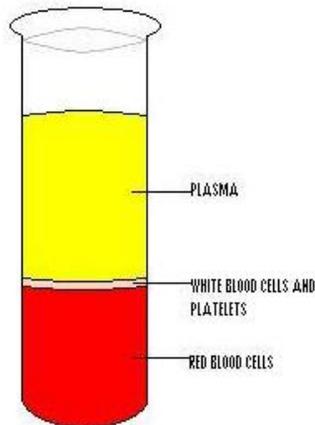


This pamphlet will give you some information about this procedure. When you talk with your doctor, please ask about anything you do not understand or would like to know more about.

## What is in blood?

- Plasma is the liquid part of the blood made up mainly of dissolvable substances. It carries minerals, hormones, vitamins, and antibodies.
- White Blood Cells help prevent and fight infections
- Platelets are small particles which help the blood to clot
- Red Blood Cells carry oxygen around the body



## What is a Red Blood Cell (RBC)?

Red blood cells carry oxygen throughout the body. Hemoglobin is a protein in the RBC that collects the oxygen in the lungs (when we breathe in) and releases it in other areas of the body. When hemoglobin drops off oxygen, it picks up a waste product called carbon dioxide. When the RBC comes back to the lungs, it drops off the carbon dioxide (which we then breathe out) and the process repeats.

## What is a red cell exchange (RBCX)?

Red cell exchange is a procedure that separates and removes abnormal red blood cells from a patient's blood, replacing the cells with healthy donor RBCs.

## Why is a red cell exchange necessary?

Abnormal RBC's cannot carry oxygen as well as healthy normal RBC's. They may be abnormal in shape, size, or function, or there may be too many. This can prevent oxygen from reaching tissues and organs in the body. In some diseases, RBC's break down (hemolysis) and cause harmful waste products to remain in the body. These waste products can harm cells and organs in our bodies.

Your physician will decide if these red blood cells need to be removed. RBCX may be prescribed to prevent damage, treat symptoms, or relieve your child of discomfort for a variety of diseases.

## What happens during a red cell exchange?

Apheresis nurses operate the blood cell separator and monitor your child's condition at all times.

A sample of your child's blood will need to be collected ahead of time to match blood specific to your child's blood group.

When the cell separator machine is set up, your child is connected to it with:

- Needles and tubing in the arm veins if these veins are suitable, OR
- A special venous catheter usually set into a big vein in the groin area (femoral line)

Your child's blood circulates through the cell separator machine. The red blood cells are removed and replaced simultaneously with donor Red Blood Cells. White blood cells, platelets and plasma are returned to your child.

## Preparing your child for a red blood cell exchange

We suggest that you prepare your child for this in the same way you do for other procedures. Ask for the pamphlet called "Helping your Child Manage Medical Procedures" for some tips. Children who understand what is happening have more feeling of control.

## What are the possible side effects?

1. The anticoagulant used to keep your child's blood from clotting in the machine may lower the amount of calcium in the blood. Your nurse will watch for early signs of low calcium, most frequently a tingling sensation on the lips, and take steps to prevent the problem.
2. The procedure may lower your child's platelet count. Your child will have a complete blood count drawn before and after the procedure.
3. If your child's arm veins are used, the arm may be tender and uncomfortable for a

while. If your child has a venous catheter inserted, there may be some bruising at the site.

4. Some children may have an allergic reaction to the donor red blood cells. Your child's nurse will monitor for side effects such as, fever, chills, nausea, vomiting, back pain, difficulty breathing, itching, and hives.

### **Frequently Asked Questions**

Is the procedure painful?

- A. If your child does not have a special venous catheter, insertion of needles may cause some discomfort. Keeping your child's arms in one position and remaining relatively still may also be uncomfortable.

How long does the red blood cell exchange take?

- A. The length of procedure is different for each patient. Most red blood cell exchanges take approximately two hours.

How often do red blood cell exchanges need to be performed?

- A. The number of red blood cell exchanges will depend on the disease being treated and your child's response to the procedure. The physician monitors your child's response and decides on the number and frequency of procedures needed.

If you have any questions about the procedure, please feel free to speak to one of the apheresis staff in the Oncology/Hematology Clinic who is familiar with Red Blood Cell Exchange procedures

Telephone (604) 875-2345 local 7079

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At Children's & Women's Health Centre of British Columbia we believe parents are partners on the health care team. We want you to be as informed as possible. This brochure will answer some of your questions. Please ask about things you do not understand and share your concerns.



## **Red Blood Cell Exchange**



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