



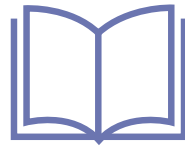
Children's  
Cancer and  
Leukaemia  
Group

the EXPERTS  
in CHILDHOOD  
CANCER

# Ruby's stem cell harvest and transplant

A children's guide to stem cell  
harvesting and transplant using their  
own stem cells (autologous transplant)





**If you need a stem cell harvest and transplant as part of your treatment, this booklet is for you.**

It tells the story of a girl called Ruby who also had a stem cell harvest and transplant. If there is anything you are not sure about, ask a grown-up to help you.

# About you

This booklet is yours to help you to understand your stem cell harvest and transplant and to explain some of the things that may happen to you.

**Your name:** .....

**Your age:** .....

**Your hospital:** .....

**Date of harvest:** .....

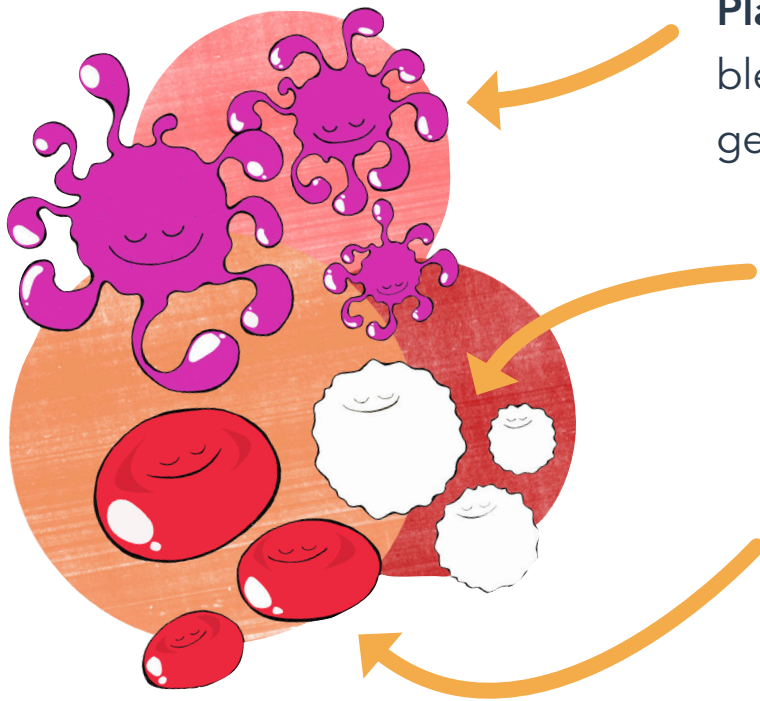
**Date of transplant:** .....

As part of your cancer treatment, you need to have some stem cells collected from your body. They are given back to you later in your treatment to help you get better.

# What are stem cells?

Stem cells are baby cells before they become the different parts of your blood. They are found inside the soft bit in the middle of your bones, called bone marrow. This is like a factory where all your blood is made.

Your blood flows all around your body and is made up of three different types of cells, each with an important job to do:



**Platelets** stop you from bleeding too much when you get a cut or hurt yourself.

**White blood cells** help your body to fight infections.

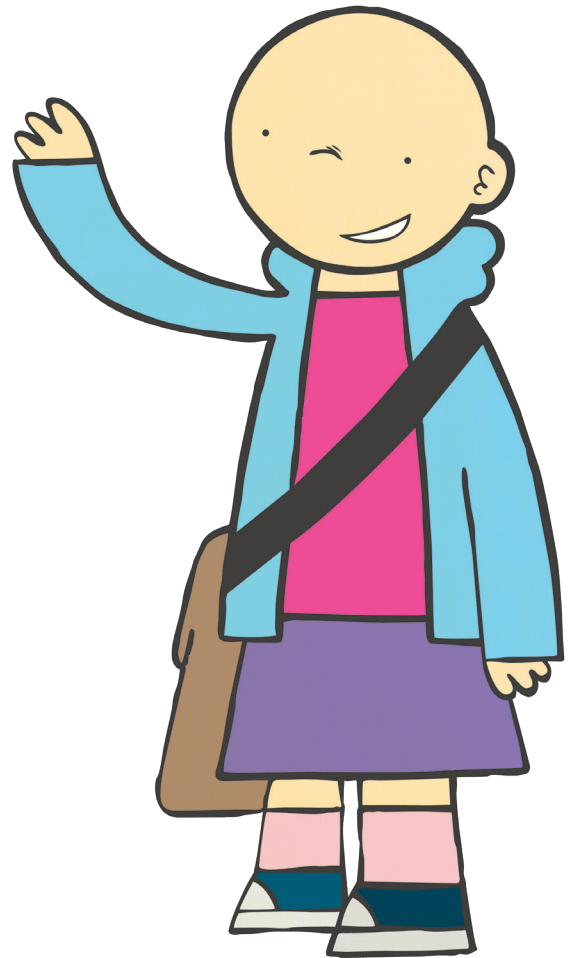
**Red blood cells** give you energy to help you run around and play.

# Meet Ruby

We would like you to meet Ruby. She is going to tell you what it is like to have a stem cell harvest and transplant.

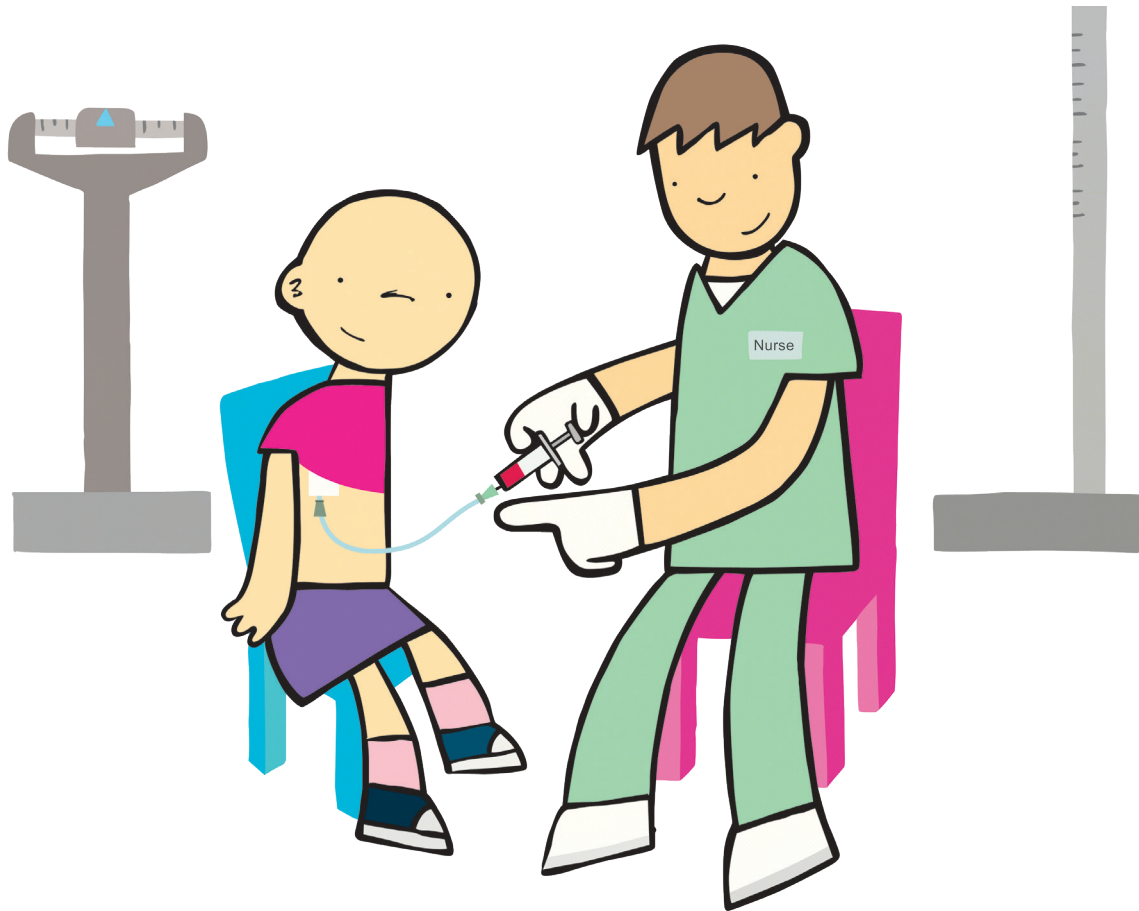
To make sure that your body can still make healthy blood after having some types of cancer treatment, stem cells are taken out of your body before treatment starts so that they are not damaged. This is called a **harvest**.

Your stem cells are kept safe and are then put back into your body when this treatment finishes. This is called a **transplant**.



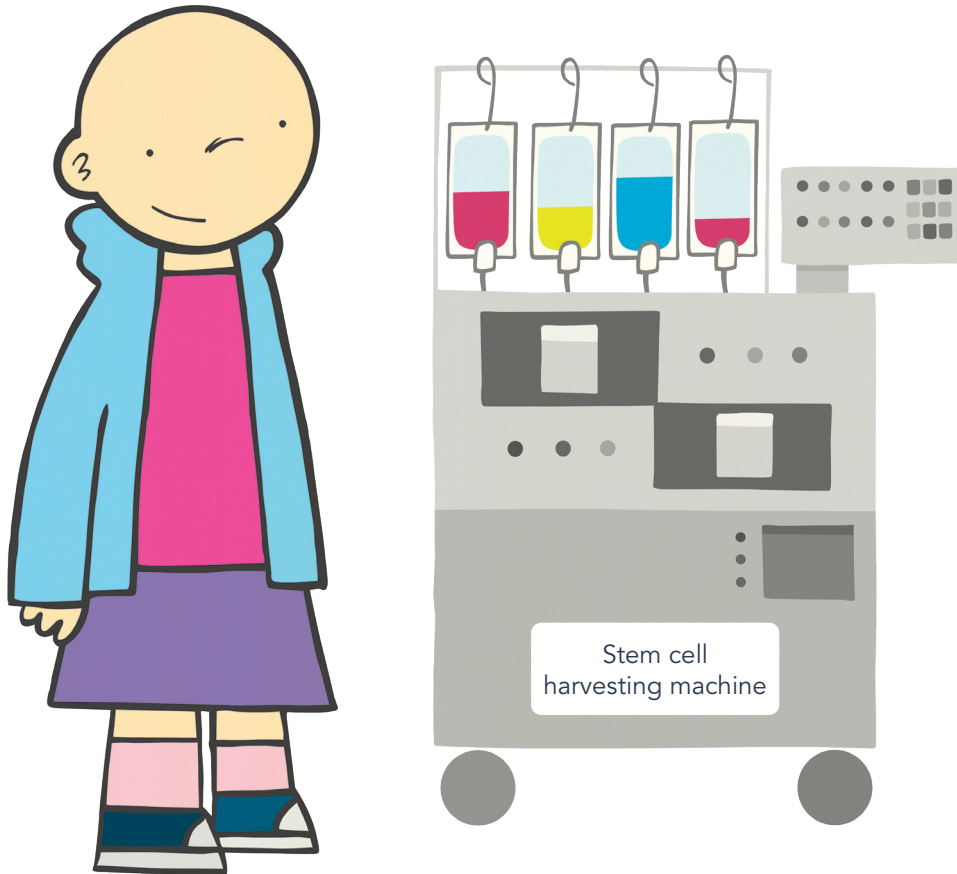
# At the beginning

Ruby came to see the stem cell nurse before having her stem cells collected. She had blood taken from her central line (wiggly) to make sure that her body was ready to have her stem cells collected. She also needed to have her height and weight checked.



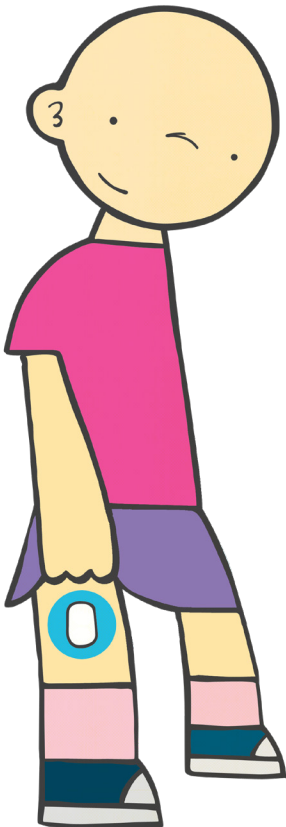
# How are stem cells collected?

Stem cells are collected from your blood using a machine called a harvest machine. You will be connected to the harvest machine while the cells are collected.



# Before the harvest

Before her harvest, Ruby had an injection (called GCSF) once a day in her leg. The injection made the stem cells move from her bone marrow into her blood. Ruby had numbing cream put on her leg before she had the injection.



The cream helped numb her skin so she didn't feel it as much. It did sting, but only for a short while. You can decide whether to have the injection given slowly or quickly.

**Ruby says:**  
"I had an ice pack to help take away the sting from the injection."



You might not have to stay in hospital as a nurse may be able to visit you at home to give you these injections.

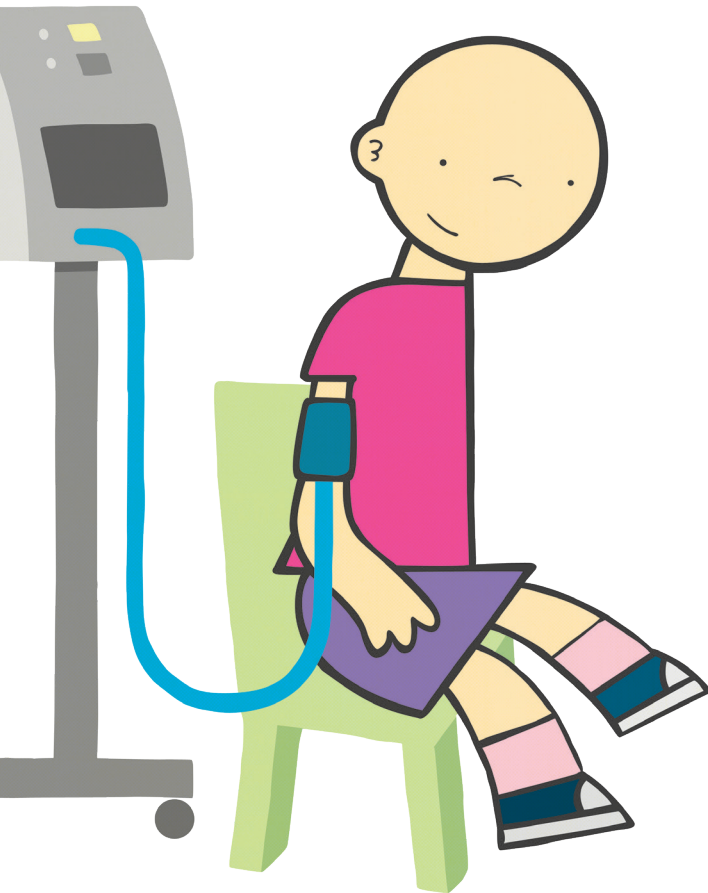
Sometimes a tiny tube, called an insuflon, can be used for the injections to be given through each day. The insuflon can stay in for seven days.

The nurses take blood regularly from your wiggly so that they know when it is the best time to collect your stem cells.

Some children's wigglies will not allow the harvest machine to work properly, so they may need a different tube or line. This may be a tube (called a cannula) in your arm or hand, or a short-term line (called a vascath) in your leg or neck. If you need to have a new line, you will have a medicine, called anaesthetic, to make you go to sleep and you will not be able to feel anything. The line will be taken out after the harvest is finished.

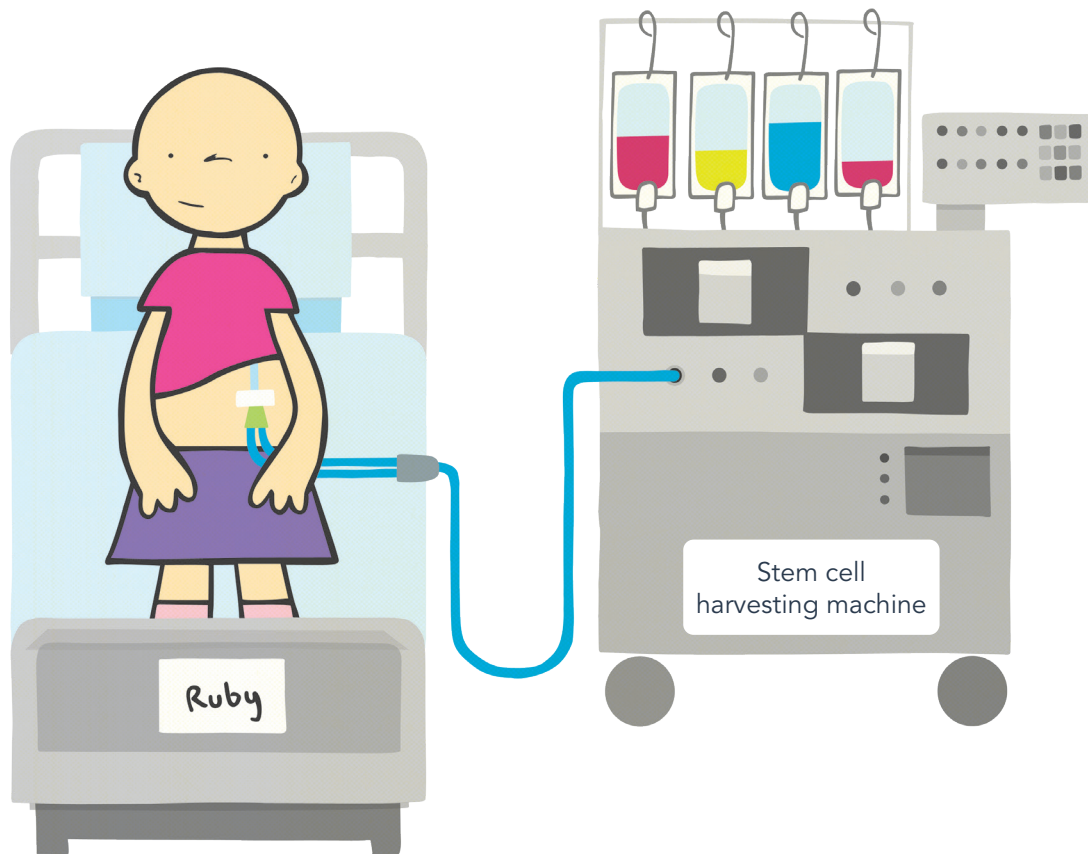
# What happens when the cells are collected?

When Ruby came to hospital to have her cells collected, the stem cell nurses checked her temperature, pulse and blood pressure.



The stem cell nurse put lots of numbers into the harvest machine so the machine knew how many cells to collect.

Ruby was then ready to be connected to the harvest machine. It was attached to Ruby's wiggly just like when she has medicine.



Ruby's blood goes into the harvest machine where it spins around very fast. This spinning separates out the blood so the stem cells and a liquid called plasma (which is also part of your blood) are collected in separate bags.

# Keeping busy

While the cells are collected, you will need to stay on your bed or in a chair. This usually takes about four hours. Ruby was able to eat, drink, play, and watch a film with her family.

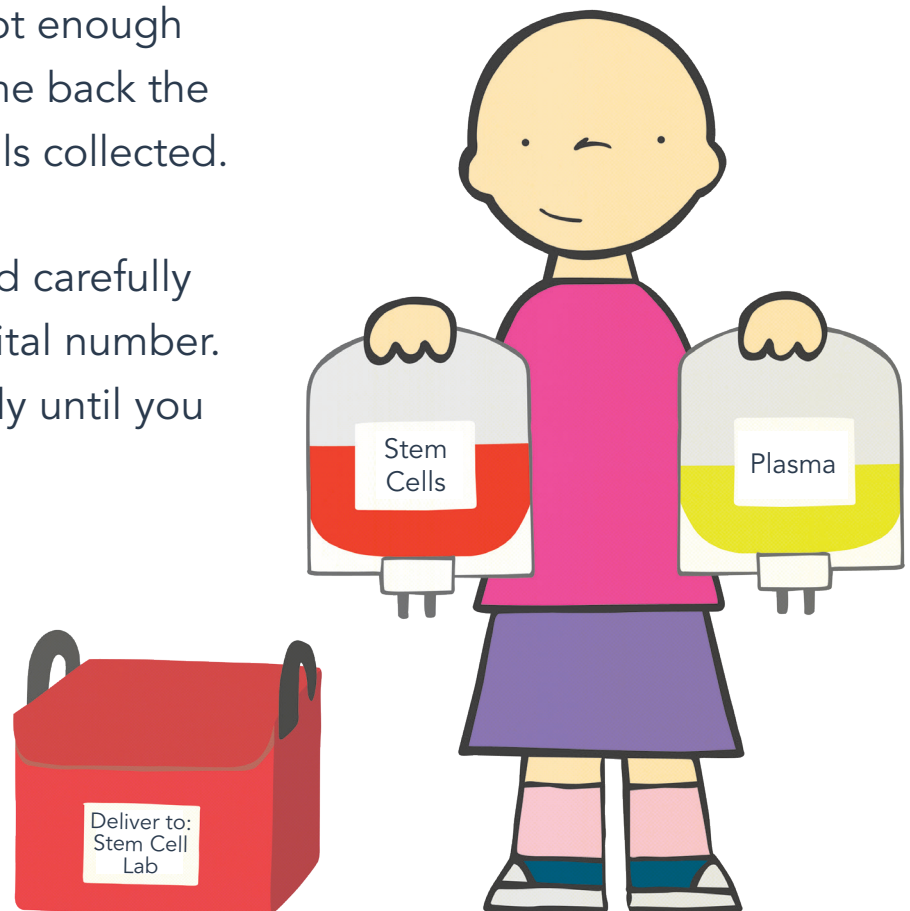


# How are stem cells kept safe?

When enough stem cells are collected, they are put in a specially designed box to keep them fresh, and taken to a laboratory where they are counted.

Sometimes, if there are not enough cells you may have to come back the next day to have more cells collected.

The stem cells are labelled carefully with your name and hospital number. Then they are stored safely until you need them.



# Transplant day

After Ruby's cancer treatment, she needed to have her stem cells put back in her body to help her make healthy blood cells. This is called a **stem cell transplant**.

The stem cells arrived in a big container. The cells have been frozen and kept in a liquid to keep them fresh.

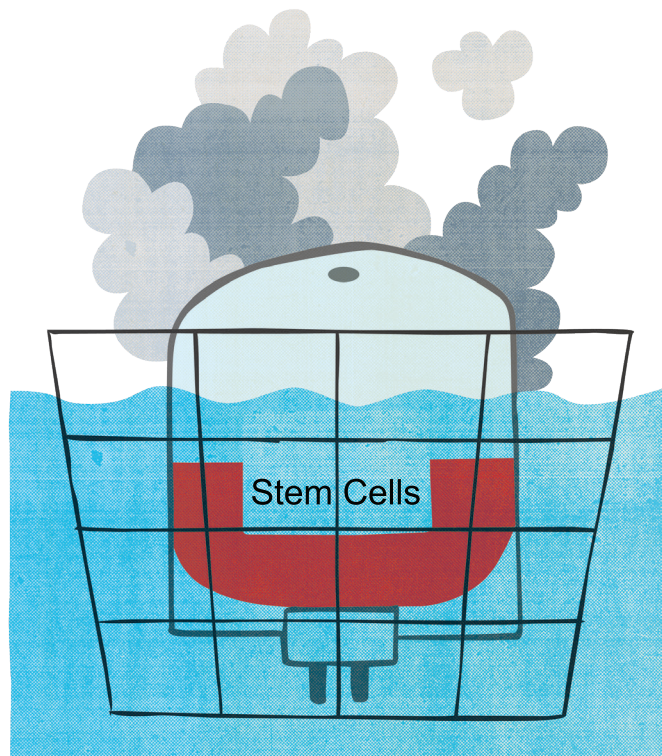
To make sure the cells belong to you, the nurses will check lots of paperwork (the same as when they check your medicines). They will do this lots of times.

**Ruby says:**  
"When the nurses took off the lid, there was lots of smoke because the cells were so cold."



The nurses checked Ruby's wiggly was working and gave her some medicine to stop her from feeling sick.

The nurses defrosted Ruby's stem cells ready to go through her wiggly. To do this, the bag of frozen cells is placed in a container of clean warm water. The cells can take a few minutes to defrost.

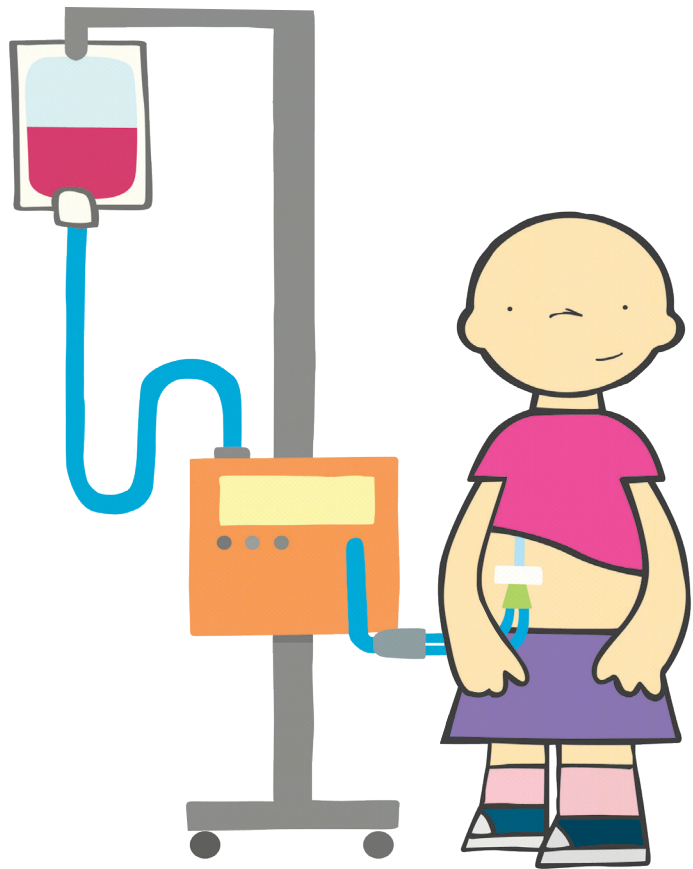


# Having the stem cells back

Once the cells have defrosted, the nurses check everything again. Depending on how many cells there are, sometimes they are given straight into your wiggly or sometimes they are given back through a pump or infusion.

The nurses will give the cells back quickly, as they want them to be as fresh as possible.

You may feel sleepy after you have had the cells, but this is quite normal.







Ruby says:

"I sucked a sweet and had a drink to take away the funny taste in my mouth while the cells were given back."

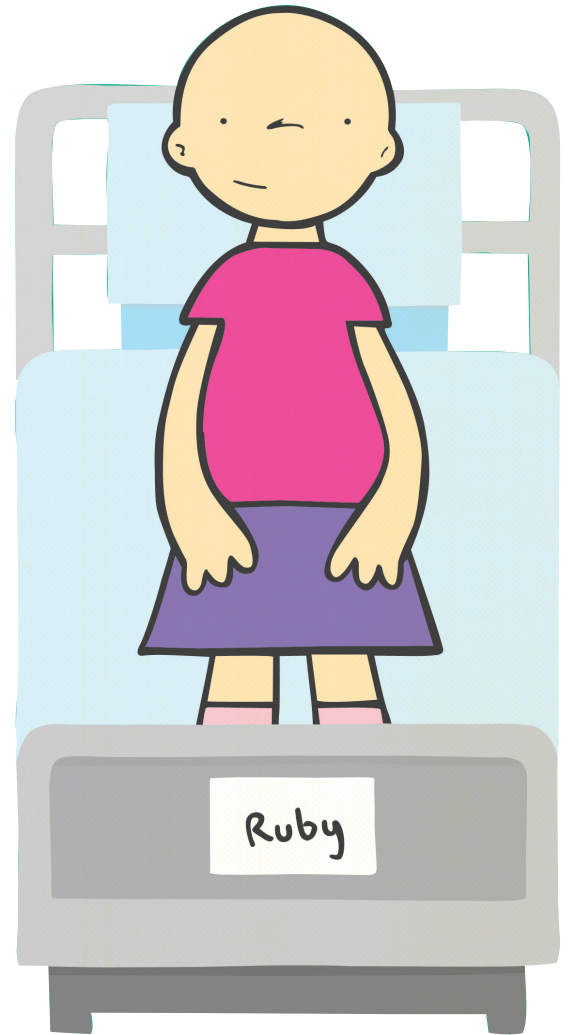
You might be able to smell sweetcorn for a few days. This is because of the liquid added to the cells to keep them fresh. The smell will soon disappear and is nothing to worry about.

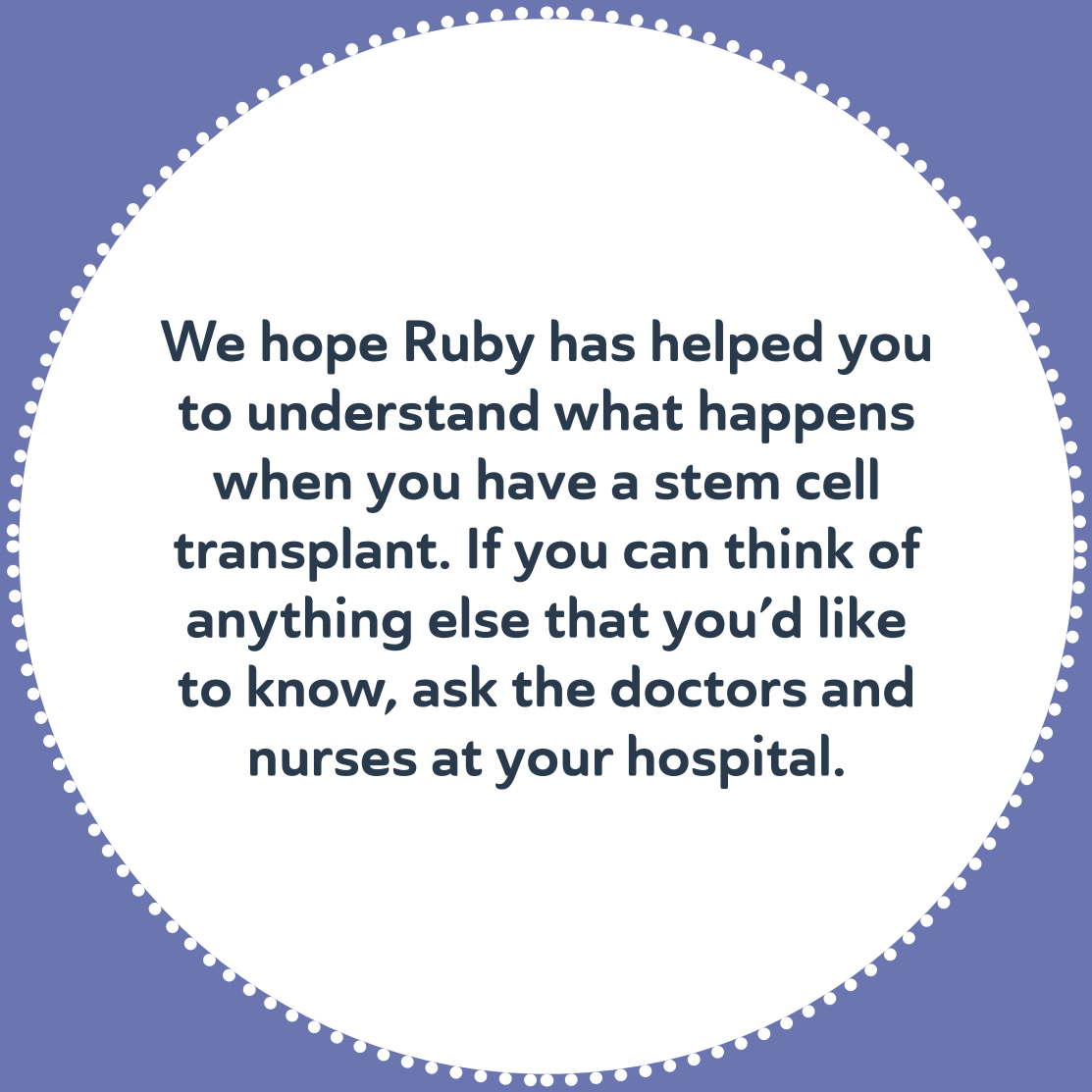
The nurses will check on you lots of times through the day to make sure your cells are starting to work.

## Getting better

Your new stem cells will travel to your bone marrow where they will grow. You will have regular blood tests to check that the cells are working and your body is making new blood cells to make you better.

Ruby had to stay in hospital for a few weeks until her stem cells started to work. Some children may be able to go home sooner or on the same day, depending on the treatment they have had. The nurses will tell you when you are able to go home.





**We hope Ruby has helped you to understand what happens when you have a stem cell transplant. If you can think of anything else that you'd like to know, ask the doctors and nurses at your hospital.**



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## Children's Cancer and Leukaemia Group (CCLG) is a leading national charity and expert voice for all childhood cancers.

Each week in the UK and Ireland, more than 30 children are diagnosed with cancer. Our network of dedicated professional members work together in treatment, care and research to help shape a future where all children with cancer survive and live happy, healthy and independent lives.

We fund and support innovative world-class research and collaborate, both nationally and internationally, to drive forward improvements in childhood cancer. Our award-winning information resources help lessen the anxiety, stress and loneliness commonly felt by families, giving support throughout the cancer journey.

CCLG publications on a variety of topics related to children's cancer are available to order or download free of charge from our website. If you have any comments on this booklet, please contact us at [publications@cclg.org.uk](mailto:publications@cclg.org.uk).

Our work is funded by donations. If you would like to help, text '**CCLG**' to **70085** to donate **£3**. You may be charged for one text message at your network's standard or charity rate. CCLG (registered charity numbers 1182637 and SC049948) will receive 100% of your donation.

Reviewed by Craig Baillie, Stem Cell Transplant Clinical Nurse Specialist, Royal Hospital for Children, Glasgow, in conjunction with the CCLG Information Advisory Group, comprising parents, carers, survivors and multiprofessional experts in the field of childhood cancer.

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