For us, cancer is personal

Mini Allogeneic Stem Cell Transplant
A guide for patients and their families
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Allogeneic stem cell transplant
Allogeneic stem cell transplant has been used as a treatment for cancer and diseases of the blood for many years. For this treatment, stem cells are collected from either related or unrelated donors. High doses of chemotherapy, with or without radiation therapy, are usually used to treat the disease. Side effects or toxicities of these treatments are often severe.

Mini-allogeneic stem cell transplant
Mini-allogeneic stem cell transplant means that less toxic chemotherapy is used. The treatment regimens generally result in fewer chemotherapy side effects for the patient.

The decision to undertake a stem cell transplant is a significant event and you are encouraged to involve family members and friends to support you during your stem cell transplant.

Your care will be under the supervision of your doctor. Treatment will be coordinated between Icon Cancer Care, the Wesley Hospital or the Mater Private Hospital. The staff of Icon and the hospitals will work together to provide the best care for you to achieve a successful outcome. Please ask any questions about your transplant and discuss any concerns you may have with your doctor and nursing staff.
Preparation for mini-allogeneic stem cell transplantation

There are a variety of ways in which you can help to prepare yourself for the transplant process. Here are some suggestions:

1. Establish one or two close support people/carers to assist you throughout your treatment and follow-up. They will be needed for both practical and emotional support.
2. Discuss health insurance issues, pharmacy and other costs with your doctor.
3. Ensure you maintain a nutritious, well balanced diet. A referral to a dietitian will be arranged prior to admission.
4. Stop smoking.
5. Establish an exercise program that can be maintained throughout your treatment period.
6. Discuss contraception with your doctor (if applicable).
7. Start preparing for the financial and practical arrangements you will need to make prior to the transplant period. This may include arranging for time away from work or arrangements at home regarding children and pets.
8. Check if you or your support person are eligible for any financial support (e.g. Patient Transit Scheme, carer pension, sickness benefits, assistance from the Leukaemia Foundation of Queensland or the Queensland Cancer Fund).
9. Discuss any fears, worries or concerns that you may have with your family, doctor or nurse. It is a good idea to write down any questions that may arise so that you do not forget them at your next hospital visit.
10. You may wish to have your hair cut in preparation for hair loss due to the chemotherapy. Remember hair loss is not permanent.

Health insurance

It is important to have accurate information and a good understanding of your health insurance cover and reimbursement. Out-of-pocket expenses may apply depending on your level of cover and health insurance fund. Become familiar with your health insurance plan. Hospital and clinic staff can assist with information regarding out-of-pocket expenses.

If your donor does not have health insurance, there will be costs incurred from the stem cell collection process. It is important to discuss this issue with your doctor.

Preparing for hospital

You may like to bring the following to hospital:

- comfortable pyjamas (preferably open up the front) and day clothes (tracksuit, t-shirts)
- scarves and turbans
- moisturiser containing no perfume or alcohol (e.g. Sorbolene)
- antibacterial soap for showering
- new soft toothbrush, low irritant toothpaste and lip balm
- alcohol free nappy wipes
- an electric razor
- new pillow and or sheep skin (optional)
- books, magazine or dvds – items such as magazines should be new and restricted to a few copies at any given time
- no fresh flowers are allowed in the ward, however balloons, cards or silk flowers are acceptable.
Pre-transplant tests

Before proceeding with this treatment, you will have a thorough history and physical assessment performed by your transplant doctor to determine your overall suitability for transplant. Some tests are used to assess the state of the disease for which the transplant is being done, but the majority are used as a baseline so that any changes that occur during or after transplant can be more easily detected and interpreted. Specific tests and assessments will be performed to assess the health of your major organs such as your heart, lungs, kidneys, skin, and eyes prior to beginning treatment. You will undergo some routine blood testing before treatment is begun. These tests will measure blood counts, the level of various chemicals in your blood and your previous exposure to certain viruses.

1. **Blood tests**
   You may require a wide range of blood tests, including tests for hepatitis and HIV. These tests will be arranged with your routine blood tests.

2. **Echocardiogram**
   This scan looks at the efficiency of your heart muscle by measuring the percentage of blood that is ejected from your heart over a series of beats. There is no special preparation required. The test will take approximately one hour.

3. **Lung function test**
   This test measures various aspects of your lung function. It will assist in the selection of appropriate transplant care. The test will take approximately one hour.

4. **Bone marrow biopsy**
   Not everyone will require a bone marrow biopsy prior to transplant. Your doctor will discuss this with you. If required, the bone marrow biopsy will be performed in our day hospital.

5. **CT scan**
   This procedure is performed in the x-ray department and takes approximately one hour to complete. You will be required to fast for two hours prior to your appointment time. Some scans use contrast dye that you drink and/or have injected into a vein. Please alert the x-ray department if you have a known allergy to contrast dye, iodine or seafood.

6. **Dermatologist**
   A baseline review is required by a skin specialist.

7. **Ophthalmologist**
   A baseline review is required by an eye specialist.

8. **Dentist**
   A review by your dentist is required to ensure gum health.

Donor stem cells

Your donor will receive an injection of Neupogen on a daily basis from around the time that you are admitted to the hospital for your transplant. On the fifth day of injections, your donor will have their stem cells collected by apheresis, which will continue daily until an adequate amount of stem cells are collected. Granulocyte Colony Stimulating Factor (GCSF) or Neupogen is a naturally occurring protein hormone that promotes the release of stem cells into the blood stream. The number of stem cells in the blood can be substantially increased by the use of GCSF.
Central venous catheter/hickman
Prior to commencing your treatment, a central venous catheter will be placed into a large vein in your chest. The catheter is used to facilitate the delivery of chemotherapy and infusion of donor stem cells. The catheter will also be used for taking blood tests and the administration of other medication and blood products. The catheter is a plastic tube with two or three lumens or tubes and is usually inserted using sedation and local anaesthesia in the x-ray department.

Chemotherapy
Your doctor will explain in detail the chemotherapy drugs that will be used in your case and any side effects that you may experience. Most protocols will include a combination of two of the following drugs: Fludarabine, Cyclophosphamide, Busulphan and Melphalan.

Briefly, Fludarabine, an immune system suppressant, is usually well tolerated with only mild nausea. Cyclophosphamide will cause lowering of the blood counts and temporary hair loss; it can also cause inflammation of the bladder, which is prevented by administration of a drug called Mesna. Busulphan will lower your blood counts and may cause nausea and vomiting. Melphalan also lowers blood counts and may cause mouth ulceration and diarrhoea. These symptoms usually subside once the donor cells engraft and the blood counts normalise. It may be possible to receive a portion of your chemotherapy as an outpatient.

Transplant day
Transplant day (Day 0) is the day that you receive the donor stem cells. The stem cells are given through an intravenous (IV) infusion. You will be given medications prior to the stem cell infusion to prevent side effects. Side effects that may occur include fever, flushing, skin rash and shortness of breath.

Engraftment
A period of watchful waiting begins after the donor stem cells have been infused. At this point, it is the job of your new donor stem cells to produce all the white blood cells, red blood cells and platelets that your body needs. This process is called engraftment.

Engraftment is said to occur when new white blood cells are detected in your bloodstream. The timing of engraftment varies – it usually takes between two to four weeks, but may take longer in some cases.

At this point, it is the job of your new donor stem cells to produce all the white blood cells, red blood cells and platelets that your body needs.
Side effects often depend on your blood counts. Most side effects will start to occur as your blood counts decline, approximately Day +5, and will increase in severity until your donor cells engraft. As your blood counts recover, normal cells will also recover and the side effects associated with transplantation will become less. Ways to minimise side effects of conditioning therapy will be discussed in the next section.

The following are some potential side effects that may occur. You may experience some or all of these in the post transplant period.

The above time frames given for the occurrence of potential side effects are a guide only. The timing, duration and severity of side effects will vary from person to person.

Neutropaenia/infection
As your white cell count drops following chemotherapy, your body will not have the defenses to fight infection. This will cause you to be more susceptible to infections. Infections that occur when your counts are low are generally caused by organisms that naturally occur within your own body. As will be discussed in more detail in the next section, particular attention to personal hygiene and frequent thorough hand washing is very important. Infections that occur when your counts are low are generally caused by organisms that naturally occur within your own body.

Thrombocytopenia/bleeding
As your platelet count drops, you are at an increased risk of bleeding and bruising. It is important that you avoid any activity that may promote bruising or bleeding. If you experience any excessive bruising, bleeding from any part of the body, headaches or visual disturbances, please inform the nursing staff. Your platelet count will be checked each day and if necessary, your doctor may request platelet transfusions.

Anaemia
Following your transplant, your bone marrow may not produce adequate numbers of red blood cells, so anaemia may occur. This may be one reason why you feel tired. Your doctor will monitor your red blood cell count regularly and will order blood transfusions when necessary. You will need to be transfused with red blood cells and platelets in order to sustain your blood counts at a safe level. Although all blood products, as well as all blood donors, are screened for evidence of bacteria and viral infections, there is a small risk of transmitting viral infections through transfusions. The total number of transfusion that you will require cannot be predicted.
Mucositis and oral hygiene
Mouth ulcers and inflammation of the lining of your mouth may occur. This is called mucositis and is most likely to occur from day +5. This could lead to problems with eating and drinking and/or infection. The doctor and nurses will assess your mouth for signs of mucositis and infection each day and you will be provided with a mouth care regime. It is important during the transplant period that you strictly adhere to the mouth care regimen to help reduce discomfort and infection. If you are having difficulties performing your mouth care, you must inform your doctor and nurse. Pain from mucositis can become severe and may require the administration of strong pain relief.

Nausea and vomiting
Nausea and vomiting is one of the most common side effects experienced with high dose chemotherapy. Regular medication (antiemetics) will be given to prevent or reduce the severity of nausea and vomiting. Other strategies that you can do to reduce much of the nausea and vomiting include eating small frequent meals or foods with minimal smells. The dietitian and nurse will discuss other strategies with you.

Diarrhoea
Diarrhoea is a common side effect experienced with high dose chemotherapy and can usually be relieved by medication. You must inform your doctor and nurses of loose bowel motions so appropriate medication and supportive care can be given. It is also important to clean the anal area with warm soapy water following each bowel motion. Some patients find toilet paper rough and may prefer to use a softer material like baby wipes (containing no alcohol) following bowel motions.

As your blood counts recover, normal cells will also recover, and the side effects associated with transplantation will become less.

Fatigue
Fatigue – the feeling of being exhausted all or most of the time – is common and can be frustrating and overwhelming following high dose chemotherapy and transplantation. Fatigue may continue for several months following transplant. It is important that you schedule frequent rest periods throughout your day and do not over exert yourself. Maintain a nutritious diet and gentle exercise. Monitor the number of visitors you receive and allocate one carer that friends and relatives can ring to check on your progress.

Hair loss (alopecia)
Unfortunately, hair loss is inevitable. Usually scalp hair begins to fall out about 1-2 weeks after the start of chemotherapy. You may prefer to have your hair on your head cut short or shaved prior to commencing high dose chemotherapy transplant. Loss of other body hair may also occur. Hair will start to grow back within 2-3 months.
Skin changes
You may notice changes to your skin, in particular discolouration or pigmentation. These changes are dependent on which drugs you have received. Unless otherwise indicated you may wish to use a body moisturiser. It is recommended you use a moisturiser free of perfume or alcohol, for example sorbolene. Use sunscreen (SPF30), a hat and long sleeves when outdoors as your skin will be very sensitive during and after this process.

Taste bud changes
Food may taste different from usual. Trying different foods or adding more flavour to your current meals may help. Changes in taste may last up to a few months following transplant.

Emotions
Depression may occur in varying degrees. You may find that you cry a lot or get angry or uptight more frequently than normal. You may also lose interest in doing things. You, your partner, or your children may find the change in your daily routine throughout this period very stressful. Your doctor or nurse can assist if you experience any of these feelings, or at any time, you are finding the treatment difficult.

Infertility and sexuality
Concerns regarding your ability to have children following transplant needs to be discussed with your doctor. There are some reports of fertility recovering following certain chemotherapy regimes, but this seems to be dependent on your gender, age at transplant and previous therapy. For men, there may be the option of sperm banking. For women the option for storing eggs may prove difficult to achieve. Any questions should be discussed with your doctor. You may lose interest in sexual activities and your partner may also experience similar changes in their libido. This may be related to the treatment and the stress associated with your current situation.

Physical changes may also occur, such as vaginal dryness. Such concerns can be overcome with measures such as lubricants. Ensure you raise any concerns with your doctor. Contraception should also be discussed with your doctor.

Use sunscreen (SPF30), a hat and long sleeves when outdoors as your skin will be very sensitive during and after this process.
Long term effects of treatment

Following allogeneic stem cell transplantation there is a risk that you may develop Graft versus Host Disease (GVHD). This refers to a reaction of particular cells from your donor (T-lymphocytes) against yourself.

GVHD can cause skin rashes, vomiting, diarrhoea, and liver inflammation. GVHD occurs in approximately fifty percent of allogeneic transplants but is usually mild and responds to medications such as Cyclosporin and Prednisone. In ten percent of cases, GVHD can be fatal. GVHD is divided into two categories: acute (symptoms occurring in the first one hundred days following transplant) and chronic (symptoms occurring after the first one hundred days).

A combination of Cyclosporin and Methotrexate are given after the donor cells are transplanted to minimise the risk of severe GVHD. Cyclosporin can cause tremors, kidney and liver abnormalities, loss of appetite, nausea, vomiting, fluid retention, high blood pressure and a burning sensation in the hands and feet. It can also cause headaches, convulsions and skin rashes. These effects are usually reversible with dose reduction or ceasing taking the drug. Methotrexate may worsen mouth sores and diarrhoea in the immediate post transplant period. GVHD is generally treated with Prednisone or Methylprednisolone. This medication can cause fluid retention, muscle weakness, sleep difficulties, increase in blood sugar and an increased risk of infection.

As a result of the chemotherapy that you will receive and the medications to prevent GVHD, you will be at a high risk for developing an infection.

The risk of infection continues while you remain on immunosuppressant medication (ie. Cyclosporin). You will be required to take antibiotics, anti-viral and antifungal medications either in pill form or through an IV for a period of time. Some of the infections that you may be susceptible to are considered life threatening.

A condition known as veno-occlusive disease (VOD) can occur as a result of chemotherapy. VOD causes severe swelling of the liver capsule, which causes pain and fluid retention. This condition can be life threatening in approximately ten percent of those patients in which it occurs.

Kidney damage may occur ranging from mild to severe in nature. Occasionally, dialysis may be required until kidney function resumes. Heart damage, although rare, may occur and can occasionally be severe and, rarely, life threatening. Bone marrow abnormalities may occur, and this may also be a delayed effect occurring months to years later. Lung failure can occasionally occur due to either infection or the cumulative effects of chemotherapy.
Your hospital stay

It is anticipated that you will need to be in hospital for four to six weeks during the initial part of your treatment. This time may be longer or shorter depending on your response to treatment. You will require close monitoring both during and after the chemotherapy and transplant. Even after you are discharged from the hospital, you will need to be seen in the day hospital several times a week for up to six months, and perhaps longer.

Before you leave hospital

Ensure that the person or persons who intend being your main support at home are involved in your discharge planning.

Learn how to read a thermometer and understand why it is important to report a reading of 38ºc or higher.

Understand the reasons that specific medications have been prescribed for your discharge.

Ensure that you have the contact telephone number of the Icon day hospital, including the after hours number.

Preparing your home

You may like to prepare the following for your home:

- vacuum and clean house
- keep tidy and as dust free as possible
- buy soap on tap (antibacterial) and paper towel for regular hand washing
- if possible, organise a quiet area where you can rest through the day – this area should be away from general noise and cooking smells
- ensure any pets can be kept away from sleeping areas
- clean fridge and keep shelf available for medication
- buy high protein foods such as sustagen (refer to dietitian section)
- organise magazines, books, videos etc
- ensure after hours telephone numbers are readily accessible
- ensure a working thermometer is available
- avoid areas of construction
- do not work in the garden whilst on immune suppressant medication.

After discharge

During the first year after your transplant, your immune system is deficient and thus there is a significant risk of acquiring an infection. Persons with obvious coughs and colds should be avoided, along with crowds and children that you do not know (especially during the first month after discharge).
Take your temperature if you feel unwell, or hot and sweaty, and note the symptoms that you are experiencing at the time. Take special care of your hickman catheter (care instructions). Observe the site around the catheter regularly and report any changes which may indicate infection (discharge, redness, pain, crusting).

Contact with household pets is safe but pets should not be permitted to lick you. You are advised not to bring any new pets into the home while your immune system is less than normal. Contact with farm animals is not advisable. Avoid cleaning up excreta of all pets.

You may want to remove household plants to another location until your immune system has recovered.

Do not swim in public pools, lakes, rivers or oceans.

Have someone else do the house cleaning, especially cleaning toilets, floors and vacuuming.

Have sheets and towels laundered frequently in hot water and detergent.

Avoid construction areas.

Do not work in the garden while on immunosuppressant medication.

**Take your temperature if you feel unwell, or hot and sweaty, and note the symptoms that you are experiencing at the time.**

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**How to care for your:**

**Skin**

During your daily shower you should inspect your skin and report to your doctor any changes in:

- colour
- texture
- a rash.

It is common to have dry skin so it is essential to use a non-perfumed moisturiser. Use sunscreen to avoid the possibility of sun-induced activation of chronic Graft versus Host Disease of the skin. Avoid direct sunlight if possible, and wear protective clothing (ie. long sleeves and a hat) and sunscreen when outdoors.

**Eyes**

Do not ignore changes in your eyes. Report any of the following changes to your doctor:

- a 'gritty' feeling
- discharge
- visual changes
- continual redness.

**Mouth**

Continue your prescribed mouthwashes until you are advised that this is no longer necessary. All dental work should be postponed until your blood counts and general clinical condition are adequate. Your doctor will advise you. You should report any changes such as:

- sores/ulcers
- dryness
- loose teeth
- continual redness.

Have someone else do the house cleaning, especially cleaning toilets, floors and vacuuming.

Have sheets and towels laundered frequently in hot water and detergent.

Avoid construction areas.

Do not work in the garden while on immunosuppressant medication.

*Take your temperature if you feel unwell, or hot and sweaty, and note the symptoms that you are experiencing at the time.*
Adjusting to being at home

It usually takes a few days to adjust to being at home again. You will probably feel tired and lethargic and wish you could do more than you are physically ready for. Do not expect to be able to do any more physical activity than you could on your best days in hospital.

To boost your self-esteem, set yourself a routine. Get up in the morning, shower, get dressed and set a plan for the day. Learn to recognise the signals that your body sends you when you are tired and rest when you need to. Most patients feel that the days are too long, this is quite normal. Your strength and fitness will return.

Activity

Studies performed have documented the benefit of exercise in promoting overall recovery and quality of life. It is recommended that you perform gentle exercises and stretching to keep muscles functioning. Do as much of your care as possible yourself. However, it is important not to over do it. Discuss with your doctor and nurse types of exercise or activities you would like to do.

Nutrition

It is recommended that you try to drink about 2-3 litres of fluid each day. Maintaining nutritional status is important to help prevent weight loss and to maintain quality of life. Eating regular meals including nourishing snacks between meals is necessary to meet energy and protein requirements. If your oral intake deteriorates or you have any questions regarding your diet, ask to see the dietitian who is able to advise you on appropriate food choices and use of nutrition supplements.

An appointment will be made for you to see the dietitian prior to transplant. During your hospital admission, it is expected that you will experience one or more of the following symptoms – poor appetite, nausea, sore mouth and throat, taste changes or diarrhoea.

During this time, it may be necessary to modify the texture or fibre content of your diet or to use nutritional supplements. The dietitian is available to assess your nutrition requirements and to advise on appropriate menu selection and dietary restrictions when following a low pathogen diet.

Returning to work

It is generally recommended that you wait 6 to 12 months after an allogeneic transplant before returning to regular employment. The major reason for this is the risk of infection. It may be possible to work from home or resume work at limited hours (depending on your type of employment) prior to six months. Please discuss these issues with your doctor.
Conclusion

This booklet has been written to assist you throughout your transplant experience. It is in no way conclusive. Many of the experiences you may have will be individual to your diagnosis, treatment and physical condition.

You are encouraged to ask questions of your doctor and nurse. Written literature on the specific drugs and management will be given to you at the appropriate time.

It is important that you ask questions, even if the questions have been asked before. Write down any questions, you may have for discussion with your doctor. Remember it is ultimately your decision as to whether you go through with the transplant procedure or not.

We are here to assist you in making the decision and to support you throughout the treatment process and afterwards.

We value your views and encourage you to assist us in improving this booklet. Any suggestions as to how this booklet could be improved would be greatly appreciated.

*It is important that you ask questions, even if the questions have been asked before.*
Questions you want to ask

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Questions you want to ask
Glossary of terms

A

**Allogeneic transplant**: a transplant using stem cells from peripheral blood or bone marrow from a related or unrelated donor

**Alopecia**: hair loss

**Anaemia**: when your haemoglobin count is below the recommended normal range

**Analgesia**: pain-relieving medication

**Anticoagulant**: medication used to stop your blood from clotting

**Antiemetic**: medication to prevent you feeling sick/nauseated

**Antifungal**: medications given to fight or prevent fungal infections, e.g. Amphotericin, Diflucan, Nilstat

**Apheresis**: (also known as cell separation) the procedure used to separate certain blood cells from the blood for collection and later use

**Autologous transplant**: transplant using one’s own marrow or stem cells

**Catheter chemotherapy**: treatment with drugs to destroy cancer cells or to prevent or slow down further growth. There are many different forms of chemotherapy which act on cells in different ways

**Cytomeglovirus**: (CMV) virus present in the majority of the population, normally harmless but can cause a life threatening infection in some transplant patients

**CD 34 blood test**: a blood test used to measure the number of stem cells in your peripheral blood

**Diuretic**: medication which helps rid the body of excess fluids

**Engraftment**: process whereby new marrow begins to grow and produce new blood cells. Is when blood counts begin to rise

**Electrolytes**: certain elements in the blood such as potassium, sodium and magnesium

B

**Blood counts**: a measure of the number of red cells, white cells and platelets in the blood stream (see FBC)

**Blood cultures**: blood test taken to assess for infection in the blood

**Bone marrow**: soft spongy material in bones that produces blood cells

**Central venous catheter**: line put into one of the large veins of the chest in order to give chemotherapy and other drugs eg. Hickman Catheter

**FBC**: (Full Blood Count) a laboratory examination to count the number of white and red blood cells and platelets in a measured volume of blood

C

**GCSF**: (Granulocyte Colony Stimulating Factor) a hormone which stimulates the stem cells to produce more neutrophils (a type of white cell)

**Graft versus Host Disease (GVHD)**: a condition that can occur following an allogeneic stem cell transplantin which some of the donors bone marrow cells attack the patients tissues and organs

**Growth factors**: hormones which stimulate the production of certain blood cells
**H**

**Harvesting:** the collection of stem cells  
**Haemoglobin:** component of your red blood cells which carries oxygen to the cells in your body  
**Haematologist:** a Doctor who specialises in the management of diseases of the blood  
**Hickman’s Catheter:** the trade name of a type of central venous catheter (a silicone tube inserted into a large vein in the chest)  
**HLA:** (Human Leukocyte Antigens) are proteins that appear on all blood cells and most tissues. The test is used as part of tissue typing to compare compatibility of donor and recipient  

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**I**

**Immunosuppression:** suppression of immune system making the person more susceptible to infection and/or bleeding  
**Infusion:** introduction of a solution into the body through a vein for therapeutic purposes  

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**L**

**Leucocytes:** the term used collectively for all white blood cells  
**Leucopaenia:** a decrease in the total number of white blood cells resulting in a decreased ability for the body to fight infection  
**Lymphocytes:** a type of white blood cell  

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**M**

**Medical oncologist:** a physician who specialises in the management of cancer  
**Mobilisation:** the process of stimulating stem cells from the bone marrow into the peripheral blood stream  
**Mucositis:** inflammation of the tissues which produce mucous throughout the body (for example the tissue which lines your mouth)  

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**N**

**Nadir:** point when blood count is at its lowest level (usually 7-10 days following chemotherapy)  
**Neutrophil:** one type of white blood cell which fights infection  
**Neutropenia:** a decrease in the number of neutrophils resulting in a decreased ability for the body to fight infection  

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**O**

**Oedema:** the retention of fluid in legs or abdomen  
**Oncologist:** a Doctor who specialises in the management of cancer  

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**P**

**Petechiae:** small dark purple spots or rash under the skin, caused by blood leaking from small blood vessels  
**Platelet:** a component of blood involved in the body’s ability to clot  

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**R**

**Remission:** the absence of detectable disease following bone marrow biopsy, CT scans and/or specific blood tests  

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**S**

**Septicaemia:** infection in the blood stream  
**Stem cells:** the bone marrow stem cells are responsible for the manufacture of all the blood cells  

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**T**

**Thrombocytopenia:** a decrease in the number of blood platelets resulting in the blood taking longer than usual to clot  

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**V**

**Veno-Occlusive Disease (VOD):** a disease that sometimes occurs following high dose chemotherapy and/or radiation, in which the blood vessels that carry blood through the liver become swollen and clogged
Appendix 1:
Understanding your blood tests

Here is a guide to help you make sense of your blood counts. A calendar is provided to document these, so you can chart your progress. During your treatment your blood counts will fall to very low levels. Following the progress of your counts determines the function of your bone marrow.

**Full blood count (FBC)**
A full blood count tells you the number and type of each blood cell. The following table displays the normal values:

- Haemoglobin (Hb) 115-175g/L
- White Cells (WCC) 3.5-11.0 x 10/L
- Neutrophils (Nts) 1.5-6.5 x 10/L
- Platelets (Plts) 150 - 400 x 10/L

**Red blood cells**
The main role of red blood cells is to absorb and hold oxygen molecules that are transported by the circulatory system to the cells of the body. Red blood cells are able to do this because they contain a substance called haemoglobin.

If there are not enough red blood cells you may feel weak and run down. You may be pale and tire easily because your body is not getting all the oxygen that it needs. A shortage of red blood cells is called anaemia.

**White blood cells**
White blood cells are part of the body’s defense system. When they detect a foreign substance, such as bacteria or a virus, white blood cells can be produced rapidly and in very large numbers in order to destroy the substance. Insufficient white cells increases the frequency and severity of infections which can be life-threatening.

**Platelets**
Platelets congeal or clot blood to prevent bleeding. If a blood vessel is damaged (eg. by a cut or bruise) the platelets rush to the site and clump together to ‘plug the leak’, which will help prevent blood loss.
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Appendix 2:

*Recommended vaccinations for haematopoietic stem cell transplant recipients*

A table is shown below with the vaccines listed:

<table>
<thead>
<tr>
<th>Vaccine or toxoid</th>
<th>Administration post-transplant*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetanus-diphtheria toxoid (DT)</td>
<td>12, 14 and 24 months post-transplant</td>
</tr>
<tr>
<td>Haemophilias Influenzae Type B</td>
<td>12, 14 and 24 months post-transplant</td>
</tr>
<tr>
<td>Hepatitis B vaccination</td>
<td>12, 14 and 24 months post-transplant</td>
</tr>
<tr>
<td>23-valent pneumococcal vaccine</td>
<td>12 and 24 months post-transplant</td>
</tr>
<tr>
<td>Influenza</td>
<td>6 months post-transplant and lifelong seasonal</td>
</tr>
<tr>
<td>Inactivated polio vaccine (IPV)</td>
<td>12, 14 and 24 months post-transplant</td>
</tr>
<tr>
<td>Measles/mumps/rubella (MMR) - live vaccine</td>
<td>≥24 months post-transplant (not receiving immunosuppressive therapy)</td>
</tr>
</tbody>
</table>

* Prior to receiving any vaccine or toxoid, please discuss with your Doctor.

(Modified from the joint guidelines issued by the Centres for Disease Control, Infectious Disease Society of America and the American Society of Blood and Marrow Transplantation on October 20, 2000)
Appendix 3:

**Diet guidelines for immunosuppressed patients**

The Wesley Hospital, Department of Nutrition Services Acknowledge:
Fred Hutchinson Cancer Research Centre Seattle Washington USA

Persons with depressed immune function due to chemotherapy are at increased risk of developing a food-related infection. The purpose of this diet is to help you avoid specific foods that are more likely to contain infection-causing organisms while allowing maximum healthy food choices. Choose food from the ‘approved’ column. Do not eat foods in the not allowed’ column. You may want to discuss the safety of these or other foods with your dietitian.

This diet should be followed after all conditioning (high dose) chemotherapy. Your doctor and dietitian will provide guidelines as to when the diet is no longer required. In general, we are recommending that peripheral blood stem cell transplant patient follow the diet for the first three months after transplant. Prior to the end of these time periods, patients and their caregivers should discuss with their doctor whether or not the diet or parts of the diet should be continued.
<table>
<thead>
<tr>
<th>Food Group</th>
<th>Approved</th>
<th>Not Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dairy</strong></td>
<td>• All pasteurised, grade ‘A’ milk and milk products</td>
<td>• Unpasteurised or raw milk, cheese, yoghurt, and other milk products</td>
</tr>
<tr>
<td></td>
<td>• Commercially-packaged cheese and cheese products made with pasteurised milk (eg. mild and medium cheddar, mozzarella, parmesan, Swiss etc.)</td>
<td>• Cheeses from delicatessens</td>
</tr>
<tr>
<td></td>
<td>• Pasteurised yoghurt (most Australian varieties)</td>
<td>• Cheeses containing chilli peppers or other uncooked vegetables</td>
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<tr>
<td></td>
<td>• Dry, refrigerated, frozen and pasteurised whipped topping</td>
<td>• Cheeses with moulds (eg. blue, stilton)</td>
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<tr>
<td></td>
<td>• Ice cream, frozen yoghurt, sherbet, ice cream bars, homemade milkshakes</td>
<td>• Sharp cheddar, brie, camembert, feta, farmer’s cheese</td>
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<tr>
<td></td>
<td>• Commercial nutritional supplements and baby formulas, liquid and powdered</td>
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<tr>
<td><strong>Meat and Meat Substitutes</strong></td>
<td>• All well cooked or canned meats (beef, pork, lamb, poultry, fish, shellfish, game, ham, bacon, sausage, hot dogs)</td>
<td>• Raw or undercooked meat, poultry, fish, game, tofu</td>
</tr>
<tr>
<td></td>
<td>• Well cooked eggs (white cooked firm with thickened yolk is acceptable)</td>
<td>• Meats and cold cuts from delicatessens</td>
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<td>• Pasteurised eggs substitutes (eg. egg beaters)</td>
<td>• Hard cured salami in natural wrap</td>
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<td>• Commercially-packaged salami and other luncheon meats</td>
<td>• Cold smoked salmon (fish)</td>
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<td>• Canned and commercially-packaged hard smoked fish: refrigerate after opening</td>
<td>• Pickled fish</td>
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<td>• Cooked tofu (cut into small sizes and boiled for a minimum of five minutes)</td>
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<tr>
<td><strong>Entrees/Soups</strong></td>
<td>• All cooked entrees and soups</td>
<td>• All miso products (eg. miso soups)</td>
</tr>
<tr>
<td><strong>Fruit and Nuts</strong></td>
<td>• Canned and frozen fruit and fruit juices</td>
<td>• Unwashed raw fruits</td>
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<td></td>
<td>• Well washed raw fruit; foods containing well washed raw fruits</td>
<td>• Unroasted raw nuts</td>
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<td>• Dried fruits</td>
<td>• Roasted nuts in the shell</td>
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<td></td>
<td>• Canned or bottled roasted nuts</td>
<td>• Unpasteurised fruit and vegetable juices</td>
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<td>• Commercially-packaged peanut butter</td>
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<tr>
<td><strong>Vegetables</strong></td>
<td>• All cooked frozen, canned or fresh vegetables and potatoes</td>
<td>• Unwashed raw vegetables or herbs</td>
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<tr>
<td></td>
<td>• Well washed raw vegetables</td>
<td>• Salads from delicatessens</td>
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<td>• Fresh, well washed herbs and dried herbs and spices (added to raw or cooked foods)</td>
<td>• Commercial salsa stored in refrigerated case</td>
</tr>
<tr>
<td>Food Group</td>
<td>Approved</td>
<td>Not Allowed</td>
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</tbody>
</table>
| Bread, Grains & Cereal Products | • All breads, bagels, rolls, muffins, pancakes, sweet rolls, waffles, french toast  
• Potato chips, corn chips, tortilla chips, pretzels, popcorn  
• Cooked pasta, rice and other grains  
• All cereals, cooked and ready-to-eat | • Raw grain products                                           |
| Beverages              | • Tap water and ice made from tap water (if using a water service other than city water service recommend using distilled or bottled water)  
• Commercial bottled distilled, spring and natural waters  
• All canned, bottled, powdered beverages  
• Instant and brewed coffee, tea; cold brewed tea made with boiled water  
• Brewed herbal teas using commercially-packaged tea bags  
• Commercial nutritional supplements, liquid and powdered | • Bore or well water  
• Cold-brewed tea made with warm or cold water  
• Unpasteurised fruit and vegetable juices |
| Desserts               | • Refrigerated commercial and homemade cakes, pies, pastries and pudding  
• Refrigerated, cream-filled pastries  
• Homemade and commercial cookies  
• Shelf-stable cream-filled cupcake, fruit pies, and canned puddings  
• Popsicle-like products | • Unrefrigerated, cream-filled pastry products (not shelf stable) |
| Fats                   | • Oil, shortening  
• Refrigerated lard, margarine, butter  
• Commercial, shelf-stable mayonnaise and salad dressings (including cheese-based salad dressings; refrigerated after opening)  
• Cooked gravy and saucesr | • Fresh salad dressing containing aged cheese (eg. blue) or raw eggs, stored in refrigerator case |
| Other                  | • Salt, granulated sugar, brown sugar  
• Jam, jelly, syrups: refrigerated after opening  
• Commercially-packaged (pasteurised) honey (may not say ‘pasteurised’ on the label)  
• Tomato sauce, mustard, BBQ sauce, soy sauce, other condiments (refrigerated after opening)  
• Pickles, pickle relish, olives (refrigerate after opening)  
• Candy, gum | • Unwashed raw vegetables or herbs  
• Salads from delicatessens  
• Commercial salsa stored in refrigerated case |

**NB:** ‘Shelf-stable’ refers to unopened canned, bottled, or packaged food products that can be stored before opening at room temperature; container may require refrigeration after opening.
# Contacts

## Your Doctor

<table>
<thead>
<tr>
<th>Name</th>
<th>Telephone: 07 3737 4500</th>
<th>After Hours: 07 3834 6922</th>
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## Your General Practitioner

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## Clinic Nurse

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<tr>
<th>Name</th>
<th>Telephone: 07 3737 4500</th>
<th>After Hours: 07 3834 6922</th>
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## Hospital

- **Ward 4W (The Wesley Hospital):**
  - Telephone: 07 3737 4500
  - After Hours: 07 3840 1566

## Other contacts

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For us, cancer is personal

Icon Cancer Care locations

Adelaide
First Floor, Tennyson Centre
520 South Road
Kurralta Park SA 5037
P 08 8292 2333 | F 08 8292 2287

South Brisbane
Level 5, Mater Medical Centre
293 Vulture Street
South Brisbane QLD 4101
P 07 3737 4500 | F 07 3737 4701

Townsville
9–13 Bayswater Road
Hyde Park QLD 4812
P 07 4795 7100 | F 07 4795 7101

Chermside
Level 1, Chermside Medical Complex
956 Gympie Road, Chermside QLD 4032
P 07 3737 4500 | F 07 3737 4801

Southport
Level 9, Premion Place, 39 White Street
(Corner Queen and High Streets)
Southport QLD 4215
P 07 5657 6400 | F 07 5657 6401

Wesley
Level 1, Wesley Medical Centre
40 Chasely Street
Auchenflower QLD 4066
P 07 3737 4500 | F 07 3737 4601

This information was current at the time it was published and is intended as a guide only. It is not intended to replace information provided by your doctor or nurses. Each patient is an individual and responses may vary. If you have any questions, please talk to your doctor or clinic nurse.