



The Essential Guide To Post-Surgical Care

KIDNEY TRANSPLANT

PATIENT DETAILS

Name: _____

IC/BC/PP: _____ DOB: _____

Age/Sex: _____ Adm Doc: _____

MRN: _____ Episode: _____

Adm/Reg Date: _____ Ward No: _____

Telephone: (M) _____ (H) _____

Allergies: _____

Name of Nephrologist: _____

Date of Transplantation: _____

Emergency Contact

Name: _____

Relationship: _____

Telephone: (M) _____ (H) _____

CONTENT

POST-SURGERY ADVICE

- a. Medication advice 03
- b. Physiotherapy advice 21
- c. Dietary Advice 27

POST KIDNEY TRANSPLANT MONITORING CHART 33

Disclaimer: The content herein is not intended nor implied to be a substitute for professional medical advice, it is provided for educational purposes only. You assume full responsibility for how you choose to use this information. Always seek the advice of your physician or other qualified healthcare provider with any question regarding a medical condition.

POST-SURGERY ADVICE

Medication advice

► Preface

Kidney transplantation is a surgical procedure to implant a healthy kidney either from a living or deceased donor into a person whose kidneys are no longer functioning properly.

It is a treatment for kidney failure and provides a lifestyle free from dialysis as well as fluid and dietary restrictions. It is the treatment of choice for those who are suitable and fit to undergo the transplant surgery and process. Many patients are well enough to return to work and have a healthy life post surgery.

The body's natural response to a foreign object (i.e. transplanted organ) is to destroy it. Hence, immunosuppressants are prescribed to suppress your immune system so that it does not destroy the new kidney. As time passes, your immune

system's response will be less aggressive and the doses and/or number of medications will be reduced gradually. With a suppressed immune system, you are at higher risk of getting bacterial or viral infections, thus you will also need to take medications to prevent infections. However, the medications are usually only needed for the first 6 to 12 months after your transplant.

With transplantation comes the duties and responsibilities of caring for your own health. For the new kidney to function and to avoid rejection, medications must be taken according to your prescription for as long as the kidney is working. Missing any medications will put you at risk of rejection.

You need to have a comprehensive understanding of the medications. You will need to know the name, dose, and schedule of the medications you are taking. If you experience any side effects, please inform the doctor or the transplant team as soon as possible.

This manual covers the medications commonly used after a kidney transplant and can be used as a learning tool or guide. It does not replace advice from your doctor. We hope the information provided in this manual will give you a better understanding and compliance to your transplant medications.

Immunosuppressant regimen

In many patients, two or three different immunosuppressive medications are prescribed. By using different medications, the overall immunosuppressive effect can be optimised to prevent rejection. The dose of your medication will be frequently changed at the initial period of your transplant. Please clarify with your doctor and pharmacist if the dose adjustment is made at every clinic visit.



Before leaving the hospital, you should know:

- The names of all your medications
- What each medication looks like
- The dose of each medication
- When to take each medication
- What each medication is for
- Possible side effects

What do you **NEED TO DO** after a kidney transplant?

- Take your medications accordingly
- Inform other doctors about your current medical condition
- Inform your doctor or pharmacist if you experience any side effects
- Inform your doctor or pharmacist immediately if you forget to take your medications
- Always maintain an up-to-date list of your medications. Bring the current list with you to each doctor's appointment



- Store your medications in a clean, dry place, away from extreme temperatures, direct light and moisture.
- When you travel, keep your medications with you in your carry-on bag and always keep an updated medication list with contact details of your doctors with you at all times.

What should you **NOT DO** after a kidney transplant?

- Do not skip taking your medications or take a different dose from what was prescribed, unless advised by your doctor.
- Do not compare and share your medications with other transplant patients. Each patient's medications are individually determined by the doctors based on blood levels and side effects.
- Do not stop taking your medications when you feel better or if you experience any side effects of the medications.
- Do not double the next dose of medications if you forget to take it.
- Do not run out of your medications. Contact the pharmacy ahead of time for medication refills.
- Do not consume or purchase over-the-counter products or medications, dietary supplements or herbal preparations without first consulting your doctor or pharmacist.



TACROLIMUS (PROGRAF®)



0.5mg Yellow Capsule



1mg White Capsule



5mg Pink Capsule

TACROLIMUS (ADVAGRAF®)



0.5mg Yellow Capsule



1mg White Capsule



5mg Pink Capsule

► How to take TACROLIMUS?

- There are two types of Tacrolimus capsules which are **Prograf®** and **Advagraf®**
- If you are taking **Prograf®**, take this medication two times a day (every 12 hours i.e. 9.00 am and 9.00 pm).
- If you are taking **Advagraf®**, take this medication one time a day (every 24 hours i.e. 9.00 am).
- Take these medications on an **empty stomach** (1 hour before or 2 hours after meal).
- If you miss a dose:
 - Take the dose if you remember within 4-6 hours of the prescribed time.
 - If the duration missed exceeds 6 hours, skip the missed dose and return to your regular schedule.
 - **DO NOT** take double doses.
- If you need to take blood levels on the day, do not take the morning dose at home but bring some supply with you and take your Tacrolimus capsules **as soon after the blood is drawn** to ensure accuracy of the results. For **Prograf®**, the second dose should be taken in the evening (i.e. 9pm) as usual.
- You may be supplied with multiple strengths of **Prograf®** and **Advagraf®** capsules upon discharge. Be alert of the different strengths of each capsule.
- Whenever taking each dose of **Prograf®** and **Advagraf®** capsule, make sure the correct strength is taken prior to ingestion.
- The capsule, dosage and strengths for both **Prograf®** and **Advagraf®** are **NOT INTERCHANGEABLE**.

NOTE: *The doctor may change your dosage if the blood level is either too high or too low, therefore please take note of your latest dosage.*

► Precaution

- Do not drink grapefruit or pomegranate juice whilst taking Tacrolimus as it may increase the amount of Tacrolimus in the body which will increase its effects or side effects.

(Note: Grapefruit is not similar to grapes)

- Tacrolimus blood levels may be altered by some medications. Before you consume any new medications, please consult your doctor or pharmacist.
- This medicine may increase your risk of getting an infection. Take precautions to prevent illness and injury. Wash your hands often.
- This medicine may increase your blood pressure, blood sugar, cholesterol, potassium and magnesium levels. Doctors will notify you of these issues and will perform the necessary action as they see fit.



Grapefruit

► Possible side effects

Inform your doctor right away if you notice any of these side effects:

- Headache
- Tremor
- Nausea or vomiting
- Hair loss
- Trouble sleeping
- High blood pressure
- High blood sugar
- Numbness or tingling of the hands/feet
- Blurred vision



Pomegranate

CYCLOSPORINE (NEORAL®)



25mg Gray Capsule



100mg Gray Capsule

► **How to take CYCLOSPORINE?**

- Take this medicine two times a day (every 12 hours i.e. 9.00 am and 9.00 pm).
 - Take it consistently either **1 hour before meals or 2 hours after meals**.
 - Take the medication by swallowing it whole with a glass of water. Do not break or chew the soft capsule.
 - If you miss a dose:
 - Take the dose if you remember within 4-6 hours of the prescribed time.
 - If the duration missed exceeds 6 hours, skip the missed dose and return to your regular schedule.
 - **DO NOT** take double doses.
 - If you need to take blood levels on the day, do not take the morning dose at home but bring some supply with you and take your Cyclosporine capsules **as soon after the blood is drawn** to ensure accuracy of the results. The second dose should be taken in the evening (i.e. 9pm) as usual.
 - You may be supplied with multiple strengths of Cyclosporine capsules upon discharge. Be alert of the different strengths of the capsules.
 - Whenever taking each dose of the Cyclosporine capsule, make sure the correct strength is taken prior to ingestion. (Caution should be taken as both the 25mg and 100mg capsule look similar)
- NOTE:** *The doctor may change your dosage if the blood level is either too high or too low, therefore please take note of your latest Cyclosporine dosage.*

► Precaution

- Do not drink grapefruit or pomegranate juice whilst taking Cyclosporine as it may increase the amount of Cyclosporine in the body which will increase its effects or side effects.
(Note: Grapefruit is not similar to grapes)
- Cyclosporine blood levels may be altered by some medications. Before you consume any new medications, please consult your doctor or pharmacist.
- This medicine may increase your risk of getting an infection. Take precautions to prevent illness and injury. Wash your hands often.
- This medicine may increase your blood pressure, blood sugar, cholesterol, potassium and magnesium levels. Doctors will notify you of these issues and will perform the necessary action as they see fit.



Grapefruit

► Possible side effects

Inform your doctor right away if you notice any of these side effects:

- Headache
- Tremors
- Numbness or tingling of the hands/feet
- Fluid retention
- Excessive hair growth
- Swelling or overgrowth of gums
- High blood pressure
- High blood sugar
- Leg cramps
- Trouble sleeping
- Increased risk of infection



Pomegranate

MYCOPHENOLATE MOFETIL (CELLCEPT®/ MMF)



250mg Capsule



500mg Tablet

MYCOPHENOLATE SODIUM (MYFORTIC®)



180mg Tablet



360mg Tablet

► How to take Mycophenolate Mofetil (CELLCEPT®) or Mycophenolate Sodium (MYFORTIC®)?

- There are two types of Mycophenolate, which are **Cellcept®** and **Myfortic®**.
- Take this medicine two times a day (every 12 hours i.e. 9.00 am and 9.00 pm).
- Take these medications on an **empty stomach** (1 hour before or 2 hours after meals) for better absorption.
- Swallow the tablets or capsules whole. Do not crush the tablets or open the capsules because doing so can lead to inadequate dosing.
- If you miss a dose:
 - Take the dose if you remember within 4-6 hours of the prescribed time.
 - If the duration missed exceeds 6 hours, skip the missed dose and return to your regular schedule.
 - **DO NOT** take double doses.
- You may be supplied with multiple strengths of **Cellcept®** and **Myfortic®** upon discharge. Be alert of the different strengths of the capsule or tablets.

- Whenever taking each dose of **Cellcept®** or **Myfortic®**, make sure the correct strength is taken prior to ingestion.
- The capsule and tablet dosage forms and strengths for both **Cellcept®** and **Myfortic®** are **NOT INTERCHANGEABLE**.

► Precaution

- Antacids containing magnesium or aluminium (e.g. **Gaviscon®**) can decrease your body's absorption of **Cellcept®** or **Myfortic®**. Avoid taking antacids with or within 2 hours after taking **Cellcept®** or **Myfortic®**.
- Avoid prolonged skin exposure to the sun. Apply sunscreen when necessary.
- It is not safe to take **Cellcept®** or **Myfortic®** during pregnancy as it is harmful to the unborn baby. Please inform the doctors if you are planning to get pregnant.
- Use effective birth control methods during the treatment and for at least six weeks after stopping the treatment prior to conceiving.

- This medicine may cause a decrease in white blood cells, red blood cells and platelet levels. Doctors will notify you of these issues and will perform the necessary action as they see fit.
- This medicine may increase your risk of getting an infection. Take precautions to prevent illness and injury. Wash your hands often.

► Possible side effects

Inform your doctor right away if you notice any of these side effects:

- Stomach upset, nausea or vomiting, diarrhoea (smaller doses may be taken up to 4 times a day if directed by doctor)
- Headache
- Dizziness
- Difficulty sleeping
- Tremors
- Increase in cholesterol and blood sugar levels



AZATHIOPRINE



50mg Tablet

► **How to take AZATHIOPRINE?**

- Take this medicine one time a day (every 24 hours i.e. 9.00 am).
- Take this medicine in the morning **AFTER FOOD** (immediately after breakfast) to prevent stomach upset.
- If you miss a dose:
 - Take the dose if you remember within 12 hours of the prescribed time.
 - If the duration missed exceeds 12 hours, skip the missed dose and return to your regular schedule.
 - **DO NOT** take double doses.
- Do inform your doctor if you notice any unusual bleeding or bruising; or any rash or yellowing of skin or whites of eyes.
- Do not take Allopurinol (medication for gout) when taking Azathioprine as it can suppress your bone marrow.
- Advisable to use sunscreen, wear protective clothing, and avoid tanning beds.
- This medicine may cause a decrease in white blood cells and platelet levels. Doctors will notify you of any of these issues and do the necessary.
- This medicine may increase your risk of getting an infection. Take precautions to prevent illness and injury. Wash your hands often.

► **Precaution**

- Azathioprine blood levels may be altered by some medications. Before taking any new medications, please consult your doctor or pharmacist.

► **Possible side effects**

Inform your doctor right away if you notice any of these side effects:

- Stomach upset (nausea and vomiting)
- Unusual bleeding or bruising (low platelet count)
- Unusual tiredness or weakness
- Skin rash or joint pain
- Cough and hoarseness of voice

PREDNISOLONE



5 mg capsule



► **How to take PREDNISOLONE?**

- Take this medicine one time a day (every 24 hours i.e. 9.00 am).
- Take this medicine in the **MORNING AFTER FOOD** (immediately after breakfast) to prevent insomnia (difficulty in sleeping) and stomach upset.
- If you miss a dose:
 - Take the dose if you remember within 12 hours of the prescribed time.
 - If the duration missed exceeds 12 hours, skip the missed dose and return to your regular schedule.
 - **DO NOT** take double doses.

► **Precaution**

- Do not stop taking Prednisolone all at once. The dose should be reduced as per your doctor's instructions.
- Report any black tarry stools or abdominal pain.
- Consult your doctor or pharmacist for any possible drug interactions before taking any new medications or herbal supplements when you are taking this medication.
- This medicine increases your risk of getting an infection. Tell your doctor immediately if you have been exposed to another person with chicken pox, measles, or other serious infections.

► Possible side effects

Inform your doctor right away if you notice any of these side effects:

- Increase in appetite
- Weight gain
- Signs of infection (sore throat, unhealed injuries)
- Mood changes, excessive nervousness or anxiety
- Trouble sleeping
- Swelling of the face or extremities (Round face or “chubby cheeks”)
- Difficulty breathing
- Bruising easily and delayed wound healing
- High blood sugar
- High blood pressure
- Water retention (swelling in ankles/feet)
- Acne / Pimples
- Vision changes or cataracts
- Stomach irritation or ulcers



EVEROLIMUS (CERTICAN®)



0.25mg Tablet



0.75mg Tablet

► How to take EVEROLIMUS?

- Take this medicine two times a day (every 12 hours i.e. 9.00 am and 9.00 pm).
- Swallow the tablet whole with a full glass of water.
- Do not crush or chew the tablet.
- Take it consistently either **1 hour before meals** or **2 hours after meals**.
- If you miss a dose:
 - Take the dose if you remember within 4-6 hours of the prescribed time.
 - If the duration missed exceeds 6 hours, skip the missed dose and return to your regular schedule.
 - **DO NOT** take double doses.
- If you need to take blood levels on the day, do not take the morning dose at home but bring some supply with you and take your Everolimus tablet **as soon after the blood is drawn** to ensure accuracy of the results. The second dose should be taken in the evening (i.e. 9.00 pm) as usual.
- You may be supplied with multiple strengths of Everolimus tablet upon discharge. Be aware of the different strengths of the tablets.
- Whenever taking each dose of Everolimus tablet, make sure the correct strength is taken prior to ingestion. (Caution should be taken as both the 0.25mg and 0.75mg tablets look similar)

Note: *The doctor may change your dosage if the blood level is either too high or too low, therefore please take note of your latest dosage.*

► Precaution

- Do not drink grapefruit or pomegranate juice whilst taking Everolimus as it may increase the amount of Everolimus in the body which will increase its effects or side effects.

(Note: Grapefruit is not similar to grapes)

- Everolimus blood levels may be altered by some medications. Before you consume any new medications, please consult your doctor or pharmacist.
- This medicine increases your risk of getting infection. Take precautions to prevent illness and injury. Wash your hands often.
- This medicine may cause body swelling, slow wound healing and increase cholesterol, blood pressure and blood sugar level. Doctors will notify you of these issues and will perform the necessary action as they see fit.



Grapefruit

► Possible side effects

Inform your doctor right away if you notice any of these side effects:

- General pain, muscle tenderness or weakness
- Acne
- Mouth sores
- Abdominal pain
- Nausea, vomiting, diarrhoea
- Swelling of hands, feet or limbs due to fluid retention
- Burning sensation on urination or increased urgency to urinate
- Decreased appetite



Pomegranate

Other related medications

| DRUG CLASS | EXAMPLE | WHEN TO TAKE | POSSIBLE SIDE EFFECTS | SPECIAL NOTES |
|------------------|--|---------------------------------|--|--|
| Antibiotics | Trimethoprim/ Sulfamethoxazole (Bactrim) | After food | Skin rash, stomach irritation | Wear sunscreen to protect the skin from sunburn |
| | Erythromycin, Azithromycin, Clarithromycin (Macrolide Antibiotics) | After food | This group of antibiotics significantly increases the level of tacrolimus, cyclosporine and evero- limus. Take this medication only after consultation with your transplant doctors | |
| Antifungal | Nystatin Syrup | After food | Skin rash, stomach irritation, nausea or vomiting, unpleasant taste | Do not eat or drink for at least 30 minutes after using Nystatin |
| | Fluconazole, Itraconazole, Voriconazole, Ketoconazole, Posaconazole (Azole Group) | After food | This group of antifungals significantly increases the level of tacrolimus, cyclosporine and evero- limus. Take this medication only after consultation with your transplant doctors | |
| Antiviral | Valganciclovir | With food | Diarrhoea, nausea, headache, dizziness, decrease in white blood cell count and red blood cell count | Do not crush, chew or cut tablets before swallowing. Avoid direct skin contact with broken or crushed tablets |
| Antihypertensive | Amlodipine, Felodipine, Lecarnidipine | Before food OR After food | Headache, dizziness, swollen gums, leg swelling | Monitor blood pressure |
| | Diltiazem | Before food | * Diltiazem significantly increases the blood level of tacrolimus, cyclo- sporine and everolimus. Take this medication only after consultation with transplant doctors | |
| Antiulcer | Omeprazole, Pantoprazole, Esomeprazole, Rabeprazole, Deslansoprazole | Before food | Abdominal Pain, Headache | |
| | Ranitidine | Before food OR After food | | |

Over the counter medications and prescription medications to avoid

DO NOT take any NSAIDs (Nonsteroidal Anti-Inflammatory Drugs) over the counter. These medications can interact with your transplant medication or harm your kidneys.

| Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) | |
|---|----------------|
| Ibuprofen | Naproxen |
| Celecoxib | Etoricoxib |
| Diclofenac | Mefenamic Acid |
| Meloxicam | |

Herbal medications or supplements

- Do not use any herbal products or supplements. There may be an interaction between your transplant medication and these products, which may be harmful to you and your new kidney.

How do I store the medicines?

- Keep it away from children.
- Keep in a cool dry place.
- Protect from sunlight.
- Keep your tablets in the bottle or blister pack they were provided in until it is time to take them.

Pregnancy and transplant medications

- Most medications used after a kidney transplant can pose a risk to an unborn baby developing in the mother's womb. Some of the medications can even affect the fertility of a male transplant patient. Always check with your doctor before planning a pregnancy and contact your doctor immediately if you think you are pregnant.

What should I do with the left-over medicine?

If your doctor tells you to stop taking the medicine or it has passed its expiry date, please return the medicine to the pharmacy for proper disposal.



Physiotherapy advice

This chapter provides simple advice and exercises which can help prevent potential complications and speed up your recovery following your transplant.

You will be seen by a member of the physiotherapy team to discuss participation at our Renal Rehabilitation Class or other exercise options accessible to you.

If you have any further questions, please speak to the doctor or nurse who is caring for you.

► **Recommended rehabilitation plan**

Below is a recommended plan for you to follow as closely as possible to aid your recovery. If you feel you need more help to achieve this, please speak to your physiotherapist.

Pre Operative

Breathing exercises, active ROM exercises, education about post-operative rehabilitation programme

DAY ONE (1)

Chest physiotherapy - percussion, vibration, breathing exercises, effective coughing, active ROM exercises, sitting up in bed

DAY TWO (2)

Breathing exercises, sit out of bed at least 4 hours for twice a day, walking - short to longer walks

DAY THREE (3)

Complete breathing exercises, sit out of bed for most of the day; aim to increase the distance and frequency of your walks

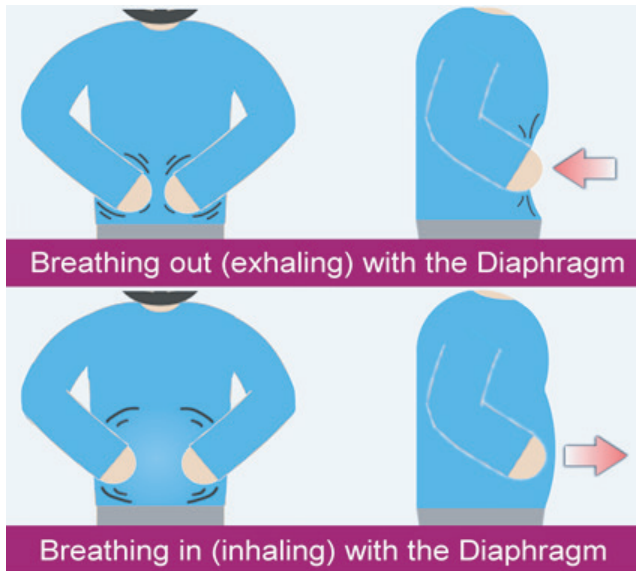
Speak to your physiotherapist or nurse if your pain stops you from completing the tasks above as your nurse can adjust your pain relief medication to help with your recovery.

► Breathing exercises

Breathing exercises and moving around will help to re-expand your lungs. They also help to clear phlegm from the airways and therefore reduce the risk of chest infections.

Take four slow deep breaths, holding for three to five seconds, and repeat every hour during the day. You should continue with these breathing exercises until you are spending most of the day out of bed and are walking around.

It is normal to have more phlegm in your chest after surgery, and coughing can often be uncomfortable. When you cough, hold a rolled up towel or pillow against your wound to provide some support. Coughing will not do any damage to your wound.



► Exercises in bed

Aim to complete the following exercises three times a day. This will improve your circulation and maintain your movement and strength. It is also important that you try to sit upright in bed as much as possible during the day to help prevent other complications.

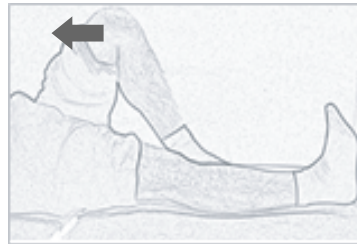
1. Ankle pumps

Move your ankles up and down repeatedly for one minute.



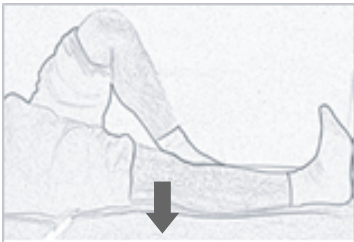
2. Knee bends

Bend one knee at a time up towards your chest and then straighten it out. Repeat this 15 times on each side.



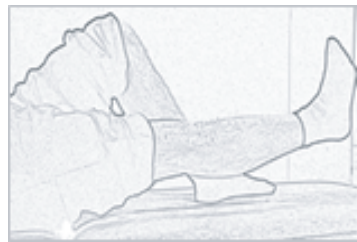
3. Straightening the knee

With a straight leg, push your knee down into the bed. Hold this for 5 seconds and repeat 15 times on each side.



4. Leg raises

Lift one leg up straight in the air, keeping your knee straight. Hold it up off the bed for five seconds and repeat 15 times on each side.



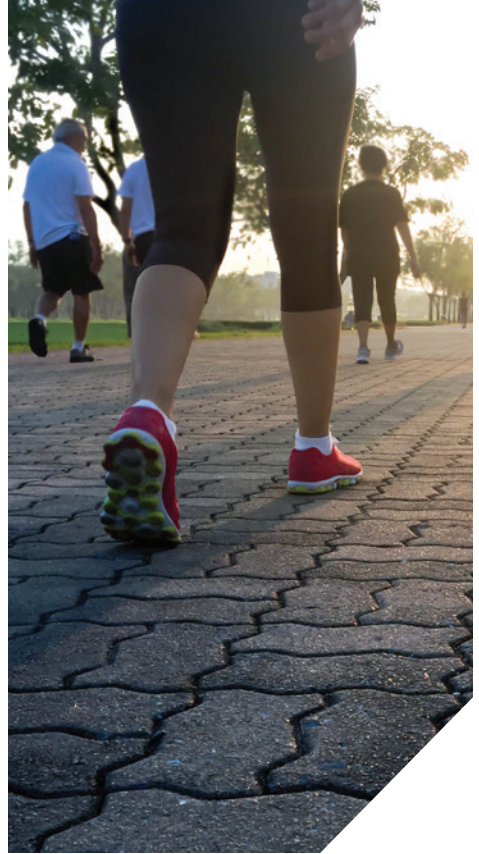
► Walking & exercise

Once you are at home, it is important that you continue taking walks to improve your fitness and continue the recommended plan.

Begin with the distance you have been walking in the hospital and aim to increase this distance gradually. A good indicator to show that you are on the right track would be:

1. Able to feel your heart beat faster
2. Slight shortness of breath every time you increase your walking distance.

Returning to other forms of exercise or any gym programmes need to be approved by your doctor. To minimise the risk of injury, you should slowly increase the intensity of the exercise and take note of any unusual pulling or pain over your wound site – this is an indication to stop.



Exercise Diary

Use the exercise diary below to monitor your exercises independently post operatively. The white boxes show the days that you are expected to complete the exercises, i.e. complete breathing exercises for two days. If you are unsure, you can ask the ward physiotherapist for advice.

| | Breathing Exercises | Bed Exercises | Walk 1 | Walk 2 | Walk 3 | Walk 4 |
|---------|---------------------|---------------|--------|--------|--------|--------|
| Example | | | | | | |
| Day 0 | | | | | | |
| Day 1 | | | | | | |
| Day 2 | | | | | | |
| Day 3 | | | | | | |
| Day 4 | | | | | | |
| Day 5 | | | | | | |

NOTES

► **Your diet after a kidney transplant**

The following general nutrition guidelines apply to most people who have received a kidney transplant. Your dietitian will discuss with you on your specific dietary requirements.



► **Food safety and hygiene after kidney transplant**

The medication used to prevent rejection also suppresses your immune system. Therefore, after your transplant you will need to pay particular attention to food safety and hygiene to reduce the risk of infection.

► **The following food items may increase the risk of infection. You are advised to avoid:**

- Half-boiled or soft-cooked eggs
- Raw and undercooked meat, poultry, fish and seafood
- Salad and uncooked vegetables
- Soft-serve ice-creams
- Unpasteurised dairy products such as cheeses and yogurt made from raw milk

► **During hospital stay**

- It is advised to consume your food immediately after it is served. Otherwise, you will need to heat up your food for 3 minutes in a microwave before consumption.
- You are not encouraged to consume any foods or beverages other than the food that has been provided for you by the hospital.
- Do talk to our dietitian if you have any special food requests.

► Safe food handling at home

- Always wash hands thoroughly with soap and water and dry thoroughly before eating as well as before and after handling foods.
- Wash all kitchen utensils and food preparation surfaces with hot water and soap. Dry thoroughly, especially after contact with raw poultry, meat and seafood.
- Thaw chicken, meat and fish in a fridge but not at room temperature as bacteria grow quickly at room temperature. Cook the defrosted food right away. Never refreeze them.
- Wash fruits and vegetables well under running water before cutting or peeling.
- Wash can top before opening. Wash can opener with soapy warm water after every use and rinse well.

► Cooking and reheating foods

- Cook all food thoroughly and ensure it is piping hot all the way through. Heat up cooked food to at least 70°C before consumption.
- Any food or drinks that are left at room temperature for more than 2 hours, please reheat properly or else, discard it.
- Do not keep cooked food in the fridge for more than 2 days, discard if done so.
- Do not taste any suspicious foods or foods with odour.

► Dining out

- Ask for food to be freshly prepared.
- Don't purchase foods when foods or ingredients have been sitting for an unknown time.
- Choose restaurants with good reputation on hygiene.



Nutritional concerns after kidney transplant

► Protein

- During the first 6 weeks after your transplant, your protein intake is important to help promote wound healing and prevent muscle losses.
- Good sources of protein include fish, chicken, lean meat, eggs, legumes, unsalted nuts and low-fat dairy products.

| My daily protein requirement | |
|--|---|
| Short term (first 6 weeks of post-transplant) | Long term (after 6 weeks of post-transplant) |
| _____ g protein (_____ exchanges) | _____ g protein (_____ exchanges) |

► Phosphorus

- Blood phosphorus levels may actually fall shortly after the transplant.
- Food high in phosphorus are fish, chicken, lean meat, eggs, legumes, unsalted nuts and seeds, low fat dairy products, chocolate or malted milk drinks, potato and sweet potato.

► Sodium (Salt)

Sodium or salt restrictions can help you to have a better control of blood pressure and minimise fluid retention. There is usually enough salt in natural foods to meet your daily requirement.

Tips on cutting down sodium (salt):

- Cut back on salt or sauces in food preparation or during meals.
- Flavour food by using herbs or whole spices.
- Choose food low in salt such as fresh food from the market, vegetables and fruits.
- Reduce high sodium foods, e.g. canned food, preserved food, processed meat, savoury snacks, artificial seasoning and meat extracts.
- When dining out, order your food with lesser seasoning, e.g. salt, soy sauce and MSG.
- Minimise gravies or soups when eating out.

► Fluids

Fluids are important to prevent dehydration. You will need more fluids after a kidney transplant to assist the kidney in filtering wastes and clearing out toxins. Fluids include water, soup, beverages, ice cream, fruits and juices. Drink a mixture of fluids.

► Blood sugar levels

- You may experience high blood sugar levels as a consequence of the immuno-suppressant therapy.
- Proper diet can help to better control your blood sugar level.
- To help control blood sugar levels:
 1. Understand foods that contain carbohydrates including grain products, starchy vegetables, fruits and dairy products.
 2. Have regular meals. Do not skip meals.
 3. Eat carbohydrate foods that are rich in fibre, e.g. brown rice, wholemeal breads/cereal and starchy vegetables.
 4. Avoid large quantities of carbohydrate foods in one meal.
 5. Minimise the intake of simple sugars e.g. white/ brown sugar, honey and corn syrup.
 6. In any meal that contain carbohydrate foods, try to include sufficient amounts of fibre such as non-starchy vegetables, together with lean proteins and unsaturated fats and oil.

- Your dietitian will help you to prescribe the total carbohydrates that you require for a day.

My daily carbohydrate requirement:

► Weight gain

- Weight gain is a common occurrence following kidney transplant.
- Tips below can help you avoid gaining too much weight after your kidney transplant
 1. Limit/avoid sweetened beverages and high fat foods.
 2. Small and frequent meals and snacks at regular timings.
 3. Eat a balanced diet.
 4. Food portion control.
 5. Increase physical activity and maintain an active lifestyle.

My Ideal body weight:

My daily energy requirement:

► **Breakfast**

► **Morning tea**

► **Lunch**

► Afternoon tea

► Dinner

► Evening snack

References:

- https://www.health.qld.gov.au/__data/assets/pdf_file/0022/151348/renal_transplant.pdf
- McQuiston B., Nutrition Guidelines after Kidney Transplantation, Journal of Renal Nutrition, Vol 10 No 3 (July) 2000, pp 161-167
- Manual of Clinical Dietetics 6th edition, American Dietetics Association & Dietitians of Canada



Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phospate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]



Post kidney transplant monitoring chart

| Date | | | | |
|---|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholestrol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |



Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phosphate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]

Clinical Chemistry



Post kidney transplant monitoring chart

| Date | | | | |
|---|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholestrol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |



Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phosphate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]



Post kidney transplant monitoring chart

| Date | | | | |
|---|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholesterol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |

Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phospate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

Haematology

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Clinical Chemistry

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



Post kidney transplant monitoring chart

| Date | | | | |
|--|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholestrol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |

Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phospate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

Haematology

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Clinical Chemistry

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



Post kidney transplant monitoring chart

| Date | | | | |
|--|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholesterol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |

Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phosphate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]



Post kidney transplant monitoring chart

| Date | | | | |
|--|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholestrol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |



Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phosphate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]



Post kidney transplant monitoring chart

| Date | | | | |
|--|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholestrol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |



Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phosphate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]

Post kidney transplant monitoring chart

| Date | | | | |
|--|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholesterol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |

Post kidney transplant monitoring chart

| Date | | | | |
|--------------------|--|--|--|--|
| Weight (kg) | | | | |
| BP (mmHg) | | | | |
| T°C | | | | |
| Haematology | | | | |
| Hb | | | | |
| TWC | | | | |
| % Neutrophil | | | | |
| % Lymphocyte | | | | |
| Platelet | | | | |
| Clinical Chemistry | | | | |
| FBS | | | | |
| Urea | | | | |
| Sodium | | | | |
| Potassium | | | | |
| Creatinine | | | | |
| Chloride | | | | |
| Magnesium | | | | |
| Calcium | | | | |
| Phosphate | | | | |
| Uric Acid | | | | |
| Total Protein | | | | |
| Albumin | | | | |
| Bilirubin | | | | |
| ALT | | | | |
| ALP | | | | |
| GGT | | | | |

[illegible]



Post kidney transplant monitoring chart

| Date | | | | |
|--|--|--|--|--|
| Clinical Chemistry | | | | |
| Total Cholestrol | | | | |
| LDL | | | | |
| Triglyceride | | | | |
| Urine RBC | | | | |
| Urine Protein | | | | |
| Infectious Disease | | | | |
| BKV PCR | | | | |
| CMV PCR | | | | |
| Medication | | | | |
| Induction: _____ | | | | |
| Tacrolimus (Prograf ®) dose (mg) | | | | |
| Tacrolimus (Advagraf ®) dose (mg) | | | | |
| Tacrolimus Level | | | | |
| Mycophenolate Mofetil (Cellcept ®) dose (mg) | | | | |
| Mycophenolate Acid (Myfortic ®) dose (mg) | | | | |
| MMF / MPA Level | | | | |
| Everolimus (Certican ®) dose (mg) | | | | |
| Everolimus Level | | | | |
| Sirolimus (Rapamune ®) dose (mg) | | | | |
| Sirolimus Level | | | | |
| Corticosteroids | | | | |
| Azathioprine | | | | |

| Clinical Chemistry | | | | | |
|--------------------|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Infectious Disease | | | | | |
| | | | | | |
| | | | | | |
| Medication | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

NOTES

For more information,
kindly contact us at:

Clinical Pharmacy Services

T +603-7491 9191,
Ext: 20035 / 11073

Rehabilitation Medicine Department

T +603-7491 1101 / 1102

Dietetics and Nutrition Services

T +603-7491 9191,
Ext: 71152 / +6012-774 7962

Sunway Medical Centre Sdn Bhd

[341855-x]

No. 5, Jalan Lagoon Selatan,
Bandar Sunway,
47500 Selangor Darul Ehsan,
Malaysia.

☎ +603-7491 9191 / 5566 9191

☎ +603-7491 8181

✉ smc@sunway.com.my

Find us on:



🌐 sunwaymedical.com

APRIL 2022

