Important Things to Know About Your Transplant Medications:

❖ For as long as you have a functioning transplanted kidney, you will need to take medications to prevent rejection.

❖ **Noncompliance (not taking your medications) is the most common reason for transplant rejection.** Try never to miss even one dose of your transplant medications. If you miss a dose of your medicine, take it as soon as possible.

❖ It is very important to note that doses of your medications may change very often. This is especially true right after the transplant. You need to be dedicated to keeping a list of your current medications and doses and bring it with you to all clinic visits.

❖ Because doses change so often, sometimes the doses listed on the prescription bottle may be incorrect.

❖ If you are ever confused about the dose of your medications, call a member of the transplant team for clarification.

❖ Try to establish a schedule, meaning, try to take the medications the same time everyday. This will help maintain a consistent level of the medications in your body and could help prevent rejection.

❖ If it is almost time for your next dose, skip the missed dose, notify a member of your transplant team and return to your regular schedule.

❖ Never “double-up” on your medications.

❖ All medications prescribed by your transplant team play an important role in keeping you healthy.

❖ However, along with their benefits, many of these medications can have several side effects and drug interactions.

❖ The side effects can be managed, but it is important that you notify the transplant team about any troubling side effects as soon as possible.

❖ Do not make changes in your own transplant medications to help prevent side effects; this can lead to rejection or toxicities.

❖ Many of the transplant medications have several drug interactions. Please check with a member of your transplant team when starting a new prescription or over-the-counter medication, as these drugs may impact your transplant medications.

Patients who receive a kidney transplant, receive two different types of medication regimens:

Induction Therapy

❖ Induction therapy is the use of very potent medications at the time of transplant. These medications are given intravenously during and immediately following the transplant procedure.

❖ In most cases, patients only require a few doses (2 – 5) of induction therapy medications. All doses are given in the hospital and are discontinued prior to you going home.

❖ Induction therapy is used to produce very rapid immunosuppression that can last for 3 to 4 weeks after the medications are stopped.

❖ The two most common medications used for induction therapy are Thymoglobulin (generic name: anti-thymocyte globulin) and Simulect (generic name: basiliximab).

❖ The most common side effects with induction therapy are flu-like symptoms after the infusion and a reduction in your white blood cell count.

❖ Your transplant team will decide which induction therapy agent is right for you.

Maintenance Therapy

❖ Maintenance therapy is the use of oral medications daily to suppress your immune system and help prevent rejection.

❖ Most patients will require 2 to 3 maintenance medications to help suppress their immune system.

❖ The most common maintenance medications that we use are Prograf (generic name: tacrolimus), CellCept (generic name: mycophenolate mofetil) and Prednisone.

❖ Some patients are able to get off Prednisone after 5 to 7 days. This is not possible in all transplant patients.

❖ Your transplant team will decide which maintenance medications are best for you.

Maintenance Medications – Prograf (tacrolimus, FK506, FK)

Tacrolimus (we often call this medication FK506 or just FK)

Prograf - this drug is not currently available as a generic

1 mg capsule | 5 mg capsule

What is Prograf?

- FK506 suppresses the immune system.
- This is necessary in kidney transplant patients to prevent organ rejection by the normal immune function of the body.

How long will I need to take Prograf?

- You will need to take FK506 for as long as the transplanted kidney remains working.

How much Prograf do I take?

- Doses are different for each patient.
- We generally start this medication at a low dose in the hospital after the transplant procedure and then titrate the dose of the medication up so that we can achieve an adequate level of drug in your blood.
- You will be required to take blood tests so that we can adjust the dose according to how much of the drug is in your blood.
- Doses of this medication change often, especially right after the transplant. It is important that you know how much of this medication you are taking at all times.

How do I take Prograf?

- Follow your transplant team's instructions carefully.
- This medication is generally given twice a day (the best way to take it is every 12 hours).
- You will be asked to take this medication with food to help prevent stomach upset.

Tell me about the special blood test that I will need while I am taking Prograf?

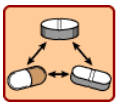
- In order to make sure that you get the appropriate dose of FK506, it is

necessary for the transplant team to check how much of this drug is in your blood.

❖ We will check your FK506 blood level every time you come to the outpatient transplant clinic for labs.

❖ To successfully check the FK506 level in your blood you must follow several steps:

1. Take all morning medications, except for the FK506, prior to coming to the clinic.
2. Once you arrive in the clinic go to give a blood sample.
3. After you have given the blood sample, take your morning dose of FK506.
4. It takes 4 – 6 hours for us to get results back, so, if we need to change your FK506 dose, we will call you at home to change your evening dose.



Are there interactions between Prograf and other drugs?

❖ An interaction generally means that one drug may increase or decrease the effect of FK506.

❖ Also, the more medications a person takes, the more likely there will be a drug interaction.

❖ FK506 interacts with many prescription and non-prescription medications, as well as some dietary supplements.

❖ Please consult with your transplant nephrologists or transplant pharmacist before starting any new medications because of the potential for drug interactions.

Are there interactions between Prograf and foods or beverages?

❖ It has been shown that grapefruit, grapefruit juice and other foods and beverages that contain grapefruit (for example, the soda Fresca has natural grapefruit juice in it) can increase the blood level of FK506.

It is recommended that you avoid grapefruit, grapefruit juice and other foods and beverages that contain grapefruit while taking FK

What are some of the more common side effects of Prograf?

❖ Increased creatinine: FK506, especially at high levels, may increase your creatinine. If this occurs, it may be necessary for one of the transplant team members to decrease your dosage. This is one of the major reasons why we will check your FK506 levels so much.

❖ Increased blood sugar: some patients who are not diabetic before the transplant may develop difficulties controlling their blood sugars after the

transplant. We often have to administer oral medications and sometimes insulin to help control these high blood sugars. This side effect is one that may go away with time.

❖ Increased potassium: elevations in potassium levels can be seen in patients who are receiving FK506. Potassium levels are monitored every time labs are drawn. We can manage high potassium levels by lowering the FK506 dose (if possible) or administering a medication that acts to lower the potassium levels.

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection.

❖ High blood pressure: high blood pressure is very common after transplantation. FK506 can contribute to this. Several medications are available for use in transplant patients with high blood pressure.

❖ High cholesterol: high cholesterol is very common after transplantation. FK506 can contribute to this. Several medications are available for use in transplant patients with high cholesterol.

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is common side effect with most medications. In order to help prevent this, we will ask you to take FK506 with food.

❖ Hand tremor: FK506 can cause a fine hand tremor in several transplant patients and usually occurs in patients with a high blood level. This tremor may go away with time, but if it occurs please let one of the transplant team members know and, if possible, we can lower the FK506 dose.

❖ Hair loss: hair loss occurs in about 20% of patients receiving FK506. This side effect is generally seen within the 3 months post-transplant, and generally resolves on its own after approximately 6 months.

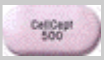
NOTES:

Maintenance Medications – CellCept (mycophenolate mofetil, MMF)

Mycophenolate mofetil

CellCept - this drug is not currently available as a generic

250 mg capsule



500 mg tablet

What is CellCept?

❖ CellCept suppresses the immune system, but works differently compared to FK506.

How long will I need to take CellCept?

❖ You will need to take CellCept for as long as the transplanted kidney remains working.

How much CellCept do I take?

❖ Most patients start taking between 1000 and 1500 mg twice a day.

❖ We generally start this medication either the night before the transplant or the day of the transplant.

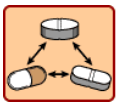
❖ Doses may be decreased if you experience some side effects.

How do I take CellCept?

❖ Follow your transplant team's instructions carefully.

❖ This medication is generally given twice a day (the best way to take it is every 12 hours), but it may be given three or four times a day.

❖ Even though, the manufacturer of this medication recommends taking it on an empty stomach, you will be asked to take this medication with food to help prevent stomach upset.



Are there interactions between CellCept and other drugs?

❖ CellCept does not have as many drug interactions as FK506, however, there are still some medications that may interact with CellCept.

❖ In particular, you will most likely be taking calcium carbonate as a calcium supplement after the transplant. **CellCept and calcium <u>cannot</u> be taken at the same time, because there is an interaction in the stomach that decreases the absorption of CellCept.** Because of this interaction, you will be instructed to take calcium supplements 1 hour before or 2 hours after taking

the CellCept.

❖ Please consult with your transplant nephrologists or transplant pharmacist before starting any new medications because of the potential for drug interactions.

Are there interactions between CellCept and foods or beverages?

❖ There are no known food or beverage interactions with CellCept.

What are some of the more common side effects of CellCept?

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection. Decreased white blood cell counts are common in patients taking CellCept. If this side effect occurs, it may require that we reduce your CellCept dosage.

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is the most common side effect with CellCept. In order to help prevent this, we may ask you to take CellCept with food. If this side effect occurs despite taking the CellCept with food, it may require that we split up the way we administer this medication (instead of two times a day, we may have you take smaller doses three or four times a day) or lower the total daily dose. Some patients who cannot tolerate the stomach upset or diarrhea from CellCept may be changed to another transplant medication called Imuran (azathioprine) that may cause less gut irritation.

NOTES:

Maintenance Medications – Prednisone

Prednisone

❖ This drug is available as a generic and is no longer available as a trade name product.

❖ Many pharmaceutical companies make a generic version of this medication; therefore, the pills are available in several different shapes and colors.

❖ In general, prednisone is available in 2.5, 5, 10 and 20 mg tablets.

What is Prednisone?

❖ Prednisone suppresses the immune system, but works differently compared to both FK506 and CellCept.

❖ Prednisone is known as a steroid. You may be familiar with this medication, as it can also used to treat inflammation and pain.

How long will I need to take Prednisone?

❖ The transplant team will let you know how long you will be taking this medication. Some patients need to take this medication for only a few days, while others need to take it for as long as the transplanted kidney is working.

How much Prednisone do I take?

❖ It should be noted that in patients who need to take prednisone for longer than 5 days, the average daily doses of the prednisone that we use today are much smaller than those used for kidney transplant patients a few years ago.

❖ You will be given very high intravenous doses (up to 200 mg) of this medication during and after the transplant procedure.

❖ We will taper this dose down very quickly over the next few days after the transplant. Most patients are taking 20 mg a day of prednisone 5 days after the transplant.

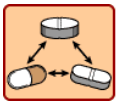
❖ Some patients can completely stop prednisone 5 – 7 days after the transplant. Your transplant team will make the decision whether or not you are a good candidate to stop taking prednisone.

How do I take Prednisone?

❖ Follow your transplant team's instructions carefully.

❖ This medication is generally given once a day.

❖ You will be asked to take this medication with food to help prevent stomach upset.



Are there interactions between Prednisone and other drugs?

❖ Prednisone can interact with many prescription and non-prescription medications, as well as some dietary supplements.

❖ Please consult with your transplant nephrologists or transplant pharmacist before starting any new medications because of the potential for drug interactions.

Are there interactions between Prednisone and foods or beverages?

❖ There are no known interactions with any foods or beverages. However, prednisone may cause retention of sodium (salt), so try to keep your salt intake to a minimum.

What are some of the more common side effects of Prednisone?

❖ It is important to note that most of the side effects listed below are seen in patients who continue taking prednisone after the transplant. Most patients who are taken off prednisone 5 – 7 days after transplant experience few side effects from this medication.

❖ Increased blood sugar: some patients who are not diabetic before the transplant may develop difficulties controlling their blood sugars after the transplant. We often have to administer oral medications and sometimes insulin to help control these high blood sugars. This side effect is one that may go away with time.

❖ High blood pressure: high blood pressure is very common after transplantation. Prednisone can contribute to this. Several medications are available for use in transplant patients with high blood pressure.

❖ High cholesterol: high cholesterol is very common after transplantation. Prednisone can contribute to this. Several medications are available for use in transplant patients with high cholesterol.

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is common side effect with most medications. In order to help prevent this, we will ask you to take prednisone with food.

❖ Weight gain: prednisone can cause patients to gain weight by two mechanisms. First, it makes people hold onto water; therefore, the more water they hold onto, the heavier they get. Second, this medication can cause in increased appetite in approximately 3% of patients.

❖ Bone loss: osteoporosis is a rare, yet serious side effect of prednisone. Even as little as one dose of prednisone can cause bone loss. If you are maintained on prednisone, we will periodically check your bone mineral density to check to see if prednisone is affecting your bones. Also, you will be asked to take a calcium and vitamin D supplement after the transplant to help prevent osteoporosis. Patients will be asked to receive a bone-mineral density test (also known as a DEXA scan) to determine the strength of their bones. This test is usually performed every two to three years in patients who remain on prednisone after the transplant.

❖ Night sweats: Some patients may experience night sweats while receiving prednisone. This side effect usually takes place with higher doses and goes away with time.

❖ Mood changes: We make a similar drug to prednisone in our bodies every night when we sleep called cortisol. Cortisol helps us deal with stress and our emotions. When prednisone is prescribed after the transplant, it is not uncommon to see patients develop rapid mood swings (i.e. happy to sad, laughing to crying). This side effect generally disappears after about 5 days of being on the prednisone. It is important that if you have had problems with depression or other psychiatric illnesses in the past that you let the transplant team know if the prednisone is making it worse.

❖ Cataracts: you will be asked to make yearly visits to your eye doctor to make sure that this side effect does not take place.

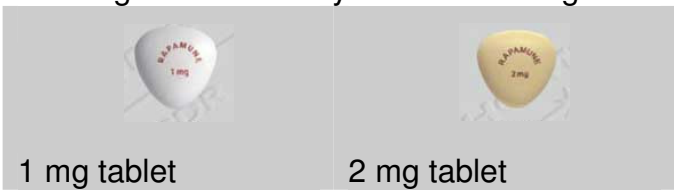
❖ Acne: a small percentage of patients may develop acne after the administration of prednisone. Good skin hygiene is the best prevention for this, and over-the-counter acne medications may be helpful, but please consult with a transplant team member before starting any medications for acne.

NOTES:

Maintenance Medications – Rapamune (sirolimus, rapamycin, RAPA)

Sirolimus (we often call this medication rapamycin or just RAPA)

Rapamune- this drug is not currently available as a generic



What is Rapamune?

- Rapamune suppresses the immune system.
- This is necessary in kidney transplant patients to prevent organ rejection by the normal immune function of the body.

How long will I need to take Rapamune?

- You will need to take Rapamune for as long as the transplanted kidney remains working.

How much Rapamune do I take?

- Doses are different for each patient.
- We generally start this medication at a low dose after the transplant and then titrate the dose of the medication up so that we can achieve an adequate level of drug in your blood.
- You will be required to take blood tests so that we can adjust the dose according to how much of the drug is in your blood.
- Doses of this medication may change often. It is important that you know how much of this medication you are taking at all times.

How do I take Rapamune?

- Follow your transplant team's instructions carefully.
- This medication is generally given once a day.
- You will be asked to take this medication with food to help prevent stomach upset.

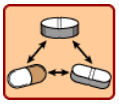
Tell me about the special blood test that I will need while I am taking Rapamune?

❖ In order to make sure that you get the appropriate dose of Rapamune, it is necessary for the transplant team to check how much of this drug is in your blood.

❖ We will check your Rapamune blood level every time you come to the outpatient transplant clinic for labs.

❖ To successfully check the Rapamune level in your blood you must follow several steps:

1. Take all morning medications, except for the Rapamune, prior to coming to the clinic.
2. Once you arrive in the clinic go to give a blood sample.
3. After you have given the blood sample, take your morning dose of Rapamune.
4. It takes up to 6 hours for us to get results back, so, if we need to change your Rapamune dose, we will call you at home and give you instructions on the dosing change.



Are there interactions between Rapamune and other drugs?

❖ An interaction generally means that one drug may increase or decrease the effect of Rapamune.

❖ Also, the more medications a person takes, the more likely there will be a drug interaction.

❖ Rapamune interacts with many prescription and non-prescription medications, as well as some dietary supplements.

❖ Please consult with your transplant nephrologists or transplant pharmacist before starting any new medications because of the potential for drug interactions.

Are there interactions between Rapamune and foods or beverages?

❖ It has been shown that grapefruit, grapefruit juice and other foods and beverages that contain grapefruit (for example, the soda Fresca has natural grapefruit juice in it) can increase the blood level of Rapamune.

❖ It is recommended that you avoid grapefruit, grapefruit juice and other foods and beverages that contain grapefruit while taking Rapamune.

What are some of the more common side effects of Rapamune?

❖ <u>Stomach upset and/or diarrhea:</u> stomach upset and diarrhea is common

side effect with most medications. In order to help prevent this, we will ask you to take Rapamune with food.

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection.

❖ Mouth ulcers: ulcers on lips or in mouth can occur after starting Rapamune. These will normally disappear on their own. However, rinsing your mouth with salt water may help. In rare cases, a prescription ointment can be applied to help decrease their size.

❖ Rash: rarely, patients taking Rapamune develop a skin rash when first starting this medication. This rash will normally disappear after a week or two. In some cases, patients will receive a cream to help decrease the rash. Tell your transplant nephrologist if the rash does not go away, or gets worse or becomes painful.

❖ High cholesterol: high cholesterol is very common after transplantation. Rapamune can contribute to this. In particular, Rapamune is associated with an increase in triglycerides. Several medications are available for use in transplant patients with high cholesterol.

❖ Increased liver function tests: this medication has been shown to have a rare side effect where it may affect the function of the liver. Routine tests are done in patients taking Rapamune to monitor for this potential side effect.

❖ Decreased wound healing: Rapamune may increase the risk of delayed wound healing in some patients. Let your transplant nephrologist know if you ever have difficulty healing any wounds or are planning on undergoing any elective surgical procedures.

NOTES:

Maintenance Medications – Azathioprine

Azathioprine

❖ **Imuran** - this drug is available as a generic and the trade name product is rarely dispensed.

❖ Many pharmaceutical companies make a generic version of this medication; therefore, the pills are available in several different shapes and colors.

❖ In general, Azathioprine is available in 50 mg tablets.

What is Azathioprine?

❖ Azathioprine suppresses the immune system, but works differently compared to FK506.

How long will I need to take Azathioprine?

❖ You will need to take Azathioprine for as long as the transplanted kidney remains working.

How much Azathioprine do I take?

❖ Most patients start taking between 50 and 200 mg once a day.

❖ Your transplant nephrologist and transplant pharmacist will decide the most appropriate starting dose for you.

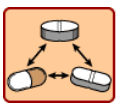
❖ Doses may be decreased if you experience side effects.

How do I take Azathioprine?

❖ Follow your transplant team's instructions carefully.

❖ This medication is generally given once a day.

❖ You will be instructed to take this medication with food to help prevent stomach upset.



Are there interactions between Azathioprine and other drugs?

❖ Azathioprine does not have as many drug interactions as FK506, however, there are still some medications that may interact with Azathioprine.

❖ The two most common medications that interact with Azathioprine include allopurinol (a medication used to prevent gout) and a class of medications used to treat high blood pressure called the ACE inhibitors (common ACE inhibitors include lisinopril and enalapril).

❖ Please consult with your transplant nephrologists or transplant pharmacist before starting any new medications because of the potential for drug interactions.

Are there interactions between Azathioprine and foods or beverages?

❖ There are no known food or beverage interactions with Azathioprine.

What are some of the more common side effects of Azathioprine?

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection. Decreased white blood cell counts are common in patients taking Azathioprine. If this side effect occurs, it may require that we reduce your Azathioprine dosage.

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea can occur with any of the transplant medications, but it is less common with Azathioprine compared to CellCept.

NOTES:

Some immunosuppressive medications will only be given to you in hospital. For your information a brief descritiption of these medicines is given below.

If you need any of these your doctors and nurses will give you more information about them.

Solumedrol (methylprednisolone): this is the intravenous version of prednisone. It is used at the time of transplant to help prevent an immune response against the transplanted kidney. You will receive this medication for a few days after the transplant prior to taking the oral prednisone. Solumedrol has also been used to treat acute rejection. In cases where patients develop an acute rejection, Solumedrol is used at 250 – 1000 mg per day for 3 days to help reverse the rejection. The side effects of Solumedrol are similar to prednisone.

Simulect (basiliximab): this is an intravenous medication that is used in some patients at the time of transplant, along with the oral medications described above, to help prevent acute rejection within the first few weeks after the transplant. If you receive this medication, you will get the first dose during the transplant (in the operating room) and the second (and last) dose will be given four days later (in the hospital). Most patients will only require two doses of this medication. This medication is very well tolerated, with no major side effects reported. Your transplant surgeon and transplant nephrologist will decide if Simulect is appropriate for you prior to the transplant procedure.

Thymoglobulin: this is an intravenous medication that is used in some patients at the time of transplant, along with the oral medications described above, to help prevent acute rejection within the first few weeks after the transplant. If you receive this medication, you will get the first dose during the transplant (in the operating room) and after the transplant, you will receive three more doses of Thymoglobulin. These doses are generally given over three to five days following the transplant. Most patients will only require four doses of this medication, but some will require more and some may require less (due to side effects). The most common side effects include a reduced white blood cell count, flu-like symptoms after the infusion and an increased risk for infection. Your transplant surgeon and transplant nephrologist will decide if this medication is appropriate for you prior to the transplant procedure. In some cases, Thymoglobulin is also used to treat acute rejection. If a patient is admitted to the hospital with acute rejection and Solumedrol does not completely resolve the rejection, Thymoglobulin is used to help reverse the rejection.

OKT3: this is a very potent intravenous medication used to suppress the immune system if a patient develops acute rejection that does not respond to both Solumedrol and Thymoglobulin. This medication has several side effects, including severe flu-like symptoms after the first 2 or 3 doses, reduced white blood cell count and increased risk for infections.

Rituxan (rituximab): this is an intravenous medication that is used in patients who are receiving our "desensitization protocol" prior to the transplant procedure. These patients have pre-formed antibodies in their systems that will attack their donor's kidneys as soon as it is transplanted. Rituxan has been shown to decrease the cells in our bodies that can potentially make new antibodies. Rarely, this medication is used after the transplant only in patients who may be developing antibodies against their transplanted kidney. The most common side effects include rash, flu-like symptoms and reduced white blood cell count. Your transplant surgeon and transplant nephrologist will tell you prior to the transplant if you need to undergo our "desensitization protocol".

NOTES:

Anti-infectives

❖ Anytime a person's immune system is suppressed they are at increased risks for infections.

❖ Proper hygiene, especially hand-washing, is essential to prevent infections.

❖ It is important to make sure that you have been adequately vaccinated prior to the transplant (i.e. pneuomococcal vaccine, flu-vaccine, etc.).

❖ In order to help prevent you from getting an infection after the transplant we will be putting you on two different types of antibiotics.

❖ You will receive one medication that is active against a type of pneumonia.

❖ Kidney transplant patients are at high-risk for developing a pneumonia called *Pneumocystis jiroveci* (formerly known as *Pneumocystis carinii* or PCP).

❖ This germ is spread in the air and is common all over the world. Since you can't help being exposed to this germ, you will receive a medication to prevent this infection.

❖ The most common medication used to prevent this pneumonia is called Bactrim, which is a sulfa-drug.

❖ Some patients have an allergy to sulfa-drugs. If you are allergic to Bactrim, you will receive another medication called Mepron.

❖ You will receive a second medication that is active against viral infections.

❖ Cytomegalovirus or CMV, is a virus that is common in about 70% of Americans.

❖ People are usually infected by the time they are 2 years old or during their teenage years.

❖ Many people are infected with CMV and don't even know it because CMV usually does not cause long-term problems.

❖ CMV is only spread through contact with an infected person's body fluids (such as saliva, blood, urine, semen or breast milk). It can be sexually transmitted or transmitted through an organ transplant.

❖ Both you and your donor will be tested to see if you have ever been exposed to this virus.

❖ If either you or your donor have been exposed to the CMV virus, then you will receive a medication called Valcyte (valganciclovir).

❖ If both you and the donor have never been exposed to the CMV virus, then you will receive a medication called Valtrex (valacyclovir).

Antibiotic – Bactrim (Sulfamethoxazole / Trimethoprim, SMZ / TMP)

❖ As mentioned above, the most common antibiotic used to prevent *Pneumocystis* pneumonia is called Bactrim, which is a sulfa-drug.

Sulfamethoxazole / **Trimethoprim** (also known as SMZ / TMP)

Bactrim or **Septra** - this drug is available as a generic medication.

How do I take Bactrim?

❖ You will take one tablet everyday.

How long will I need to take Bactrim?

❖ You will need to take Bactrim for 6-12 months.

What are some of the more common side effects from Bactrim?

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is common side effect with most medications. In order to help prevent this, we will ask you to take this drug with food.

❖ Increased potassium: elevations in potassium levels can be seen in patients who are receiving Bactrim. Potassium levels are monitored every time labs are drawn.

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection.

❖ Sensitivity to the sun: this medication can make your skin more sensitive to the sun and more likely to develop sunburn, even in the winter. Please wear sunscreen when you go out into the sun to help prevent sunburns.

❖ Rash: rarely, patients receiving Bactrim can develop a rash. If this happens to you please call your one of the transplant team member. You may need to be switched to another antibiotic.

NOTES:

Antibiotic – Mepron (Atovaquone)

❖ For those patients that are allergic to sulfa-drugs, we will use Mepron to prevent *Pneumocystis* pneumonia, which is just as effective, but does not cause the allergic reactions that are seen in some patients who take sulfa-drugs.

Atovaquone

Mepron - this drug is not currently available as a generic.

How do I take Mepron?

❖ You will take 1500 mg (10 mL or 2 teaspoons) everyday.

How long will I need to take Mepron?

❖ You will need to take Mepron for 6-12 months.

What are some of the more common side effects from Mepron?

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is common side effect with most medications. In order to help prevent this, we will ask you to take Mepron with food.

NOTES:

Antiviral – Valcyte (Valganciclovir)

❖ If either you or your donor have been exposed to the CMV virus, then you will receive a medication called Valcyte (valganciclovir), which is very effective at preventing the CMV virus from causing an infection.

Valganciclovir

Valcyte - this drug is not currently available as a generic.

450 mg tablet

How long will I need to take Valcyte?

❖ You will need to take Valcyte for 4-6 months.

How do I take Valcyte?

❖ You will take 450 mg (1 tablet) everyday or every other day depending on your kidney function.

What are some of the more common side effects from Valcyte?

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is common side effect with most medications. In order to help prevent this, we will ask you to take this drug with food.

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection.

NOTES:

Antiviral – Valtrex (Valacyclovir)

❖ If both you and the donor have never been exposed to the CMV virus, then you will receive a medication called Valtrex (valacyclovir), which is used to prevent an infection from Herpes Virus.

Valacyclovir

Valtrex - this drug is not currently available as a generic.


500 mg tablet

How long will I need to take Valtrex?

❖ You will need to take Valtrex for 6 months.

How do I take Valtrex?

❖ You will take 1000 mg (1 tablet) everyday.

What are some of the more common side effects from Valtrex?

❖ Stomach upset and/or diarrhea: stomach upset and diarrhea is common side effect with most medications. In order to help prevent this, we will ask you to take this drug with food.

❖ Decreased white blood cell count: it is important that we maintain your white blood cell count, as it is one way to prevent you from getting an infection.

NOTES:

Vaccinations

❖ It is important to make sure that you have been adequately vaccinated prior to the transplant (i.e. pneuomococcal vaccine, flu-vaccine, etc.).

❖ However, after the transplant, some vaccines should not be administered to patients on drugs that suppress the immune system.

❖ See below for a list of vaccines that are appropriate for patients before and after the transplant procedure**.**

❖ Please discuss the use of vaccines with a member of the transplant team before receiving any vaccinations.

❖ You will be given the flu (influenza) vaccine every year and the pneumococcal vaccine every five years in the kidney transplant clinics.

Vaccine	**Recommended for transplant candidates**	**Recommended for transplant recipients**
Influenza (Flu)	Yes	Yes
Hepatitis B	Yes	Yes
Hepatitis A	Yes	Yes
Tetanus	Yes	Yes
Polio, inactivated	Yes	Yes
S. pneumonia	Yes	Yes
N. meningitides	Yes	Yes
Rabies	Yes	Yes
Varicella	Yes	No
BCG	Yes	No
Smallpox	No	No
Anthrax	No	No

Calcium and Vitamin D Supplements

❖ We often have our transplant patients start taking calcium and vitamin D supplements after the transplant.

❖ The reason for this is to help maintain an adequate supply of calcium in your body, which will help to prevent osteoporosis.

❖ After the transplant, patients are giving a vitamin D supplement called Rocaltrol.

❖ Rocaltrol is usually continued for the first one or two months after the transplant, but some patients will require this for longer periods of time.

❖ Rocaltrol will be changed to over-the-counter vitamin D once the kidney is working properly.

Calcium Carbonate

This product is generic and over-the-counter. It is available in many different shapes, colors and tablet sizes.

How long will I need to take Calcium Carbonate?

❖ You will need to take Calcium Carbonate for as long as your transplant kidney continues working.

How do I take Calcium Carbonate?

❖ You will take 500 mg (1 tablet) twice a day on an empty stomach and separate from your transplant medications.

What are some of the more common side effects from Calcium Carbonate?

❖ Constipation: calcium carbonate is usually very well tolerated. The most common side effect is constipation. If this occurs, please speak with one of the transplant team members to discuss treatment options for constipation.

NOTES:

Vitamin D Supplements – Rocaltrol (Calcitriol)

❖ Rocaltrol is prescription strength vitamin D and you will receive this medication until your creatinine has dropped below 2 after the transplant (usually the first month after transplant).

Calcitriol

Rocaltrol - this drug is not currently available as a generic.

0.25 mcg capsule

How long will I need to take Rocaltrol?

❖ You will need to take Rocaltrol until your kidney function improves after transplant (usually for the first month after transplant).

❖ After your kidney function improves after the transplant you will be taken off of Rocaltrol and be put on over-the-counter Vitamin D_2.

How do I take Rocaltrol?

❖ You will take 0.25 mcg (1 capsule) everyday.

What are some of the more common side effects from Rocaltrol?

❖ Elevated calcium levels: some patients who take vitamin D supplements may develop high calcium levels. Every time that we check your blood, we will check your calcium levels to make sure that they are within the normal range.

NOTES:

Vitamin D Supplements – Vitamin D_2 (Over-the-Counter Vitamin D)

❖ Once your creatinine has dropped below 2, you will be taken off the Rocaltrol and started on Vitamin D_2, which is the over-the-counter form of Vitamin D and works just as well as the prescription strength formulation.

Vitamin D_2

This product is generic and over-the-counter. It is available in many different shapes, colors and tablet sizes.

How long will I need to take Vitamin D_2?

❖ You will need to take Vitamin D_2 for as long as your transplant kidney continues working.

How do I take Vitamin D_2?

❖ You will take 800 IU (2 capsules) everyday.

❖ Some patients who have low Vitamin D_2 levels will be asked to take 50,000 units of oral Vitamin D_2 every week until their levels become normal.

What are some of the more common side effects from Vitamin D_2?

❖ Constipation: vitamin D is usually very well tolerated. The most common side effect is constipation. If this occurs, please speak with one of the transplant team members to discuss treatment options for constipation.

NOTES:

High Blood Pressure and High Cholesterol Medications

❖ Heart disease is a very serious problem in kidney transplant patients.

❖ High blood pressure occurs in nearly 85% of patients after the transplant operation.

❖ High cholesterol occurs in nearly 65% of patients after the transplant operation.

❖ You blood pressures and cholesterol levels will be monitored very closely after the transplant operation.

❖ It is very important for transplant patients to try to stick to a heart-friendly diet and to try to exercise (walking, biking, swimming, etc.).

❖ Proper management of your blood sugars (in patients who have diabetes) and stop smoking (in patients who smoke) can all help improve your health.

High Blood Pressure	**High Cholesterol**
❖ The goal blood pressure after the transplant will be less than 130/80. However, if you are a diabetic, the recommended goal blood pressure is at or less than 125/75. ❖ Many patients require more than one medication to control their blood pressure. ❖ Your transplant team will choose the blood pressure medication(s) that is/are right for you.	❖ The important transplant medication FK506 is known to increase cholesterol, and so is prednisone. ❖ The goal "bad cholesterol" (LDL cholesterol) is less than 100. ❖ Diet is the first step to try to reduce your cholesterol. ❖ Many patients will require medication to lower their cholesterol level. ❖ Your transplant team will choose the cholesterol lowering medication that is right for you. ❖ When you are on a cholesterol medication, a muscle enzyme test known as "CK" and your liver enzymes will be checked every 3 months, because cholesterol-lowering medications may rarely affect the levels of these lab tests.

Over-the-Counter Medications and Dietary Supplements

❖ Over-the-counter medications and dietary supplements are consumed by millions of American for common illnesses such as aches and pains, stomach upset, diarrhea, the common cold, and others.

❖ Many over-the-counter medications are safe for transplant recipients to take, but several are not.

❖ If, at any time after the transplant, you want to use an over-the-counter medication, please call your transplant team to make sure that it is OK to take these medications.

❖ Some over-the-counter medications are not good to use in kidney transplant patients because they can harm the kidney, raise the blood pressure, or have interactions with some of the transplant medications.

❖ **Some common over-the-counter medications that should be avoided by kidney transplant patients include:**

- ❖ Aches and Pains:
  - Ibuprofen (also called – Motrin, Advil, Haltran, Ultraprin, I-Prin, Menadol, Proprinal)
  - Naproxen (also called – Aleve)
  - Ketoprofen (also called – Orudis KT)
  - Choline salicylate (also called – Arthropan)
  - Magnesium salicylate (also called – Doan's, Keygesic, Momentum)
  - Sodium salicylate
- ❖ Cough and Cold:
  - Pseudoephedrine (also called – Sudafed)
- ❖ Laxatives:
  - Sodium Phosphates (also called – Fleets Enema, Fleets Phospho-Soda)
- ❖ Anti-Diarrheals
  - Kaolin and Pectin (also called – Kaodene, KaoSpen, Kapectolin)

❖ It is important for you to know that many over-the-counter medications contain several different drug combinations. For example, Tylenol Allergy Sinus contains acetaminophen, chlorpheniramine and pseudoephedrine. Because this product contains pseudoephedrine, transplant patients should not use it.

❖ Please read over-the-counter medications boxes very carefully, looking specifically for the active ingredients.

❖ Call one of your transplant team members if you are confused about what over-the-counter products you can or cannot take.

❖ The Food and Drug Administration (FDA) do not approve dietary supplements for use in the United States; therefore, we cannot safely advise our patients to take them.

❖ Several dietary supplements have been shown to have severe interactions with transplant medications. For example, St John's Wort has been show to decrease the blood levels of FK506, which may cause rejection.

❖ **Please avoid the use of any dietary supplements, unless it is specifically discussed with one of the transplant team members.**

NOTES: