

# Transplant news

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## Editorial

Dr Jerome Loveland  
Editor

As healthcare workers, we often tend to forget about medical professionals outside one's immediate field of interest. Thus whilst I may consider surgery as the central point of the transplantation process, concentrating my efforts in this particular field, numerous other components of the process exist, around which successful outcomes of transplantation hinge. Although without your nephrologist you will never find yourself in the reception area of the operating room complex, awaiting your new organ, without all of the other members of the multidisciplinary team, your newly transplanted organ won't survive.

This edition of Transplant News provides an excellent overview of how important some of these other "cogs in the wheel" are, starting with an excellent overview of nutritional support by Mayuri Bhawan, emphasising the importance of an appropriate diet, not only during your evaluation and work up prior to transplantation, but particularly after receiving your new organ. This can be a tumultuous time, when increased requirements are necessary to facilitate wound healing and growth, complicated by the fact that the drugs that modulate your immune system may adversely affect numerous aspects that impact on your nutrition. Both Mayuri and Vanessa Wentink will alert you to many of these issues and provide clear advice on how to deal with them appropriately.

Thomas Starzl is widely regarded as the father of transplantation, having performed the first successful liver transplant in 1967. Concurrently, he was also pivotal in establishing successful kidney transplantation.



Thomas E. Starzl  
[www.laskerfoundation.org/awards/2012clinical.htm](http://www.laskerfoundation.org/awards/2012clinical.htm)



Roy Calne  
[www.laskerfoundation.org/awards/2012clinical.htm](http://www.laskerfoundation.org/awards/2012clinical.htm)

Starzl's lifetime work was recognised in September this year when together with another pioneer in the field of transplantation, Roy Calne, he was awarded the Lasker-DeBakey Award for his revolutionary contributions to clinical medicine; this was the first time ever that the Lasker Foundation had recognised work in the field of transplantation when considering potential recipients, perhaps because it is so difficult to isolate an individual that stands out so far above the rest. The award is most pertinent however: it highlights once again that in fact it is not individuals who make transplantation successful, but rather physicians like Starzl whose enormous energy in furthering the education of young doctors of the future, allows continuity, and leave a legacy well beyond their passing.

It should remain every Master's dream to exit their field of expertise having trained their successors to perform at a level that exceeds that which they themselves attained.



Kim Hudson, the world's longest liver-transplant survivor, who had biliary atresia as a child. Starzl replaced her liver on January 22, 1970. Before her surgery, jaundice coloured her skin yellow (left). After surgery, her colour improved (middle). As an adult (right), she continues to do well 42 years after her transplant.

Credit: Courtesy of Kimberly Hudson Rasmussen ([http://www.laskerfoundation.org/awards/2012\\_c\\_description.htm](http://www.laskerfoundation.org/awards/2012_c_description.htm))

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# The importance of a healthy diet after kidney transplantation



Mayuri Bhawan  
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As nutrition plays an important role towards managing your health before transplantation it is also of critical importance to manage your nutritional status after the transplant operation. Everyone who receives a transplant has to take immunosuppressive medications to protect their new kidney from the body rejecting it. It is important to note that the side-effects of immunosuppressant medications will change your nutrition requirements, and not everyone will experience the same side-effects, even if they are on the same medications. Over time, the doses of immunosuppressant medications decrease until a maintenance level is reached. You will have to continue taking them in order to keep your transplant working successfully.

## What are immunosuppressants?

Immunosuppressants are a class of drugs that suppress the immune response through various mechanisms.

The most common immunosuppressants used in kidney transplantation are the following:

- Cellcept
- Prograf, FK506
- Corticosteroids (Prednisone)

## Nutrition therapy

The objectives of nutrition therapy is to maintain your nutritional status while combatting the side effects of the immunosuppressants.

## Common side-effects

- Gastrointestinal disturbances (nausea, vomiting, diarrhoea)
- Abdominal pain
- Increase in blood pressure
- Increased blood glucose levels
- Hyperlipidemia
- Hyperkalemia (high potassium levels)
- Sodium and fluid retention
- Muscle wasting

Nausea and vomiting can prevent you from eating properly and obtaining an adequate amount of all necessary nutrients. If this continues, talk to your doctor about anti-nausea medication.

## Ideas to help control nausea and vomiting

- Eat smaller meals with snacks throughout the day. Eat slowly
- Eat foods and drink beverages that are cooled or chilled, as hot foods or hot drinks may add to the nausea (sorbet, low fat yoghurt,

fruit juice, low fat ice cream, custard, jelly, meal replacements (shakes) served chilled)

- Foods that may be tolerable are: wholegrain dry toast and crackers, pretzels, plain soft porridge, cooked rice, fruits and vegetables that are soft e.g. banana and paw-paw
- Avoid spicy or fatty and fried foods
- Once you have controlled vomiting, try small amounts of clear liquids e.g. fruit juices and continue taking small amounts as often as you can. Follow a full liquid diet, meal replacements are a good option too. Thereafter you can start including soft, bland foods.



**The objectives of nutrition therapy is to maintain your nutritional status while combatting the side-effects of the immunosuppressants.**

## Protein and energy

Poor nutritional status is a common problem for patients awaiting transplant. The nutritional status of patients is further compromised after the operation, due to the stress and trauma of the procedure and the side-effects of the immunosuppressant taken.

It is thus imperative that the first 6 weeks after your transplant, your protein and energy might need to be higher than normal to help promote wound healing and help build and repair muscle and tissue. The best advice is to consult a registered dietician regarding a diet that will meet your individual requirements for all nutrients, especially protein.

## Carbohydrates

Some of the medications that you need to take may lead to you experiencing high blood glucose levels. The type and amount of carbohydrates you eat affects your blood glucose levels. The fibre in carbohydrates delays the absorption and digestion, which results in slower and gradual release of glucose into the blood, after a meal. This is more beneficial to one's health.

Examples of high fibre, low GI foods are your whole grains, such as pearl wheat (stampkoring), corn (frozen or fresh on the cob), brown/wild rice, legumes, barley and bulgur wheat, oats, high fibre breakfast cereals, heavy health breads and rye breads and crackers. All types of fresh fruit and vegetables are also high in fibre.

Low fibre, high GI carbohydrate food made from white flour such as white and brown bread/rolls, pizza's, tramazini's, prego rolls, swarms, wraps, all bakery items (cakes/ biscuits/ muffins/croissants), white rice, mashed potato, mealie meal, and refined cereals **should be avoided/limited**. This principle applies to sugar and sugar containing foods such as juice, fizzy cool-drinks, desserts and sweets and chocolates.

## Fats

The immunosuppressant may also contribute to you having high cholesterol levels. It is important to limit the amount of unhealthy fats such as saturated fats and trans fats and increase your intake of good healthy fats such as mono-unsaturated fats, poly-unsaturated fats and omega-3 fatty acids in your diet.

Key points to remember when selecting fats for your daily eating plan are the following:

- Choose lean meats, poultry and fish. Trim all visible fat off meat and skin off chicken.
- Avoid foods high in saturated fats such as biscuits, chocolates most cheeses, butter, hard margarine and processed meats such as polony, vienna's, salami.
- For adding fats to food and all cooking use olive / canola oil.
- When cooking use various cooking methods such as bake, roast, broil, boil or sauté. Avoid all deep fat frying.
- Eat fatty fish at least three times a week for the beneficial affects of Omega 3 fatty acids such as sardines, pilchards, salmon and mackerel.

## Sodium

Corticosteroids may increase sodium and water retention and increase your blood pressure. Restrict your salt intake by limiting salt when cooking and using a variety of herbs and spices. Do not sprinkle salt on your food before eating. Limit your intake of salty foods such

as processed meats, canned foods and salty snacks like biltong, crisps or salted nuts.

## Fluid

Your fluid requirements after a kidney transplant are increased to assist the kidney in filtering wastes and clearing out toxins. A reasonable goal is 1½ to 2 litres per day. Water, sugar free cold drinks and cordials are better options than sugar based drinks.

## Potassium

Some medication may cause high potassium levels in your blood. Thus restrict potassium intake, it is necessary to limit/avoid the following foods high in potassium.

- Banana
- Oranges
- Avocado pear
- Dairy products
- Broad beans
- Potatoes

## Conclusion

To optimise your nutritional status and combat side-effects, you require an individual practical eating plan and menu that suits your lifestyle. Contact the Association of Dietetics South Africa (ADSA), [www.adsa.org.za](http://www.adsa.org.za) or 011 789 6621 for a dietician in your area.



# Side-effects of immunosuppression medication

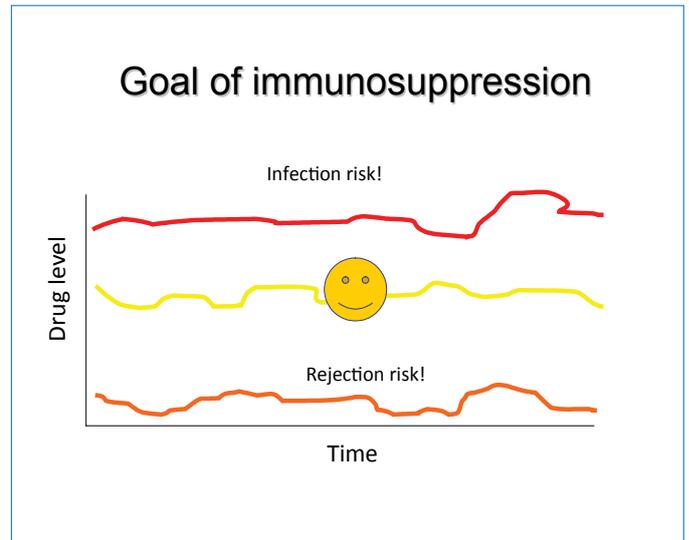


Vanessa Wentink  
Regional Manager - KZN Transplant  
Netcare Limited  
St Augustine's Hospital  
Kwa-Zulu Natal

When receiving your new transplant you will be required to take immunosuppression medication for life.

Our immune system is the body's defense against infection and foreign bodies that invade the body. An organ that is transplanted is foreign to your own genetic make up and your immune system will recognise the newly transplanted organ as a foreign invader and your body will attempt to "combat" the new invader by initiating an immune response. This is how your body will attempt to "reject" the transplant.

Your doctor will prescribe medication called immunosuppression medication to prevent your immune system from initiating a response to reject your newly transplanted organ. The aim of immunosuppression is to lower your immune system to the point that it does not recognise your newly transplanted organ as "foreign" but not so low that you have no immune system and can not fight any common infections such as colds etc.



## Classes of drugs

The maintenance immunosuppression drugs fall into 4 classes:

- **Calcineurin Inhibitors:**  
Tacrolimus (Prograf®) and Cyclosporine (Neoral®)
- **Antiproliferative agents:**  
Mycophenolate Mofetil (MMF) (Cellcept®); Mycophenolate Sodium (Myfortic®) and Azathioprine (Imuran® or Azapress®)
- **mTOR inhibitors:**  
Sirolimus (Rapamune®) and Everolimus (Certican®)
- **Steroids:**  
Prednisone

Your doctor will decide on the best combination of drugs you require but the most common combination is usually Tacrolimus, Mycophenolate Mofetil (MMF) and Prednisone.

Unfortunately the immunosuppression drugs are very powerful and have side-effects. Never adjust your own dose of medication or stop taking the medication or this may lead to rejection. If you have any symptoms or are struggling to cope with some of the side-effects, contact your doctor or transplant co-ordinator immediately.

## Side-effects of specific immunosuppression drugs

### Tacrolimus (Prograf®)

**Unfortunately the immunosuppression drugs are very powerful and have side-effects. Never adjust your own dose of medication or stop taking the medication or this may lead to rejection.**

- Increased blood sugar: some patients that are not diabetic before transplant may develop difficulties in controlling their sugar levels. Often following a diabetic diet will help to lower your sugar levels, if your doctor deems necessary you may be put onto oral medication or insulin to help control your sugar levels.
- High blood pressure: this can be controlled with medication.
- High cholesterol: follow a low cholesterol diet. Your doctor may put you on medication to lower your cholesterol.
- Upset stomach or diarrhoea: This is a common side-effect with most medications. To try and prevent this, take your medication with food.
- Hand tremor: This side-effect will lessen over time when your dose is decreased. If it becomes severe please talk to your doctor who may drop the drug dose which will assist in lessening the tremors.
- Decreased white blood cell count: your doctor will monitor the levels to make sure they are maintained in order to prevent you from getting infections.

Your drug levels will be monitored on a regular basis by your doctor. Do not eat or drink the juice of grapefruit, it will increase the drug levels which may become toxic to your kidney.

## Cyclosporine (Neoral<sup>®</sup>)

- Tremor: This will decrease over time as your dose is adjusted.
- High blood pressure: Your doctor may put you on medication to control your blood pressure.
- Increased hair growth: This should lessen with dose adjustments.
- Increased gum growth: maintain good dental hygiene with brushing and flossing which should minimise the effect.

## Mycophenolate Mofetil (MMF) (Cellcept<sup>®</sup>) and Mycophenolate Sodium (Myfortic<sup>®</sup>)

- Upset stomach or diarrhoea: This is the most common side-effect. To try to minimise the effects, take the medication with food. If the side-effects continue to be severe, your doctor may adjust your dose or change you to another medication.
- Decreased white blood cell count: Your doctor will monitor your levels and may adjust your drug dose.

## Azothioprine (Imuran<sup>®</sup> or Azapress<sup>®</sup>)

- Upset stomach or diarrhoea: Take the medication with or after food to lessen the effect.
- Rash or sensitivity to the sun: Always use sunscreen when outside.
- Decreased white blood cell count: Your doctor will monitor your levels.

## Sirolimus (Rapamune<sup>®</sup>) and Everolimus (Certican<sup>®</sup>)

- Upset stomach or diarrhoea: Take the medication with or after food to lessen the effect.
- Decreased white blood cell count: Your doctor will monitor your levels.
- High cholesterol: Follow a low cholesterol diet. Your doctor may put you on medication to control this side-effect.
- Mouth ulcers: This may occur during the first three months. Your doctor will prescribe you a special mouth wash to reduce the effects.
- Decreased wound healing: This drug may increase the risk of delayed wound healing. If you have any wounds that are not healing or are planning any elective surgery please call your doctor.

## Prednisone

- Increased blood sugar: Follow a diabetic diet, medication can be given to control the blood sugars.
- High blood pressure: Medication can be given to control the blood pressure.
- Weight gain: You may retain water and it may increase your appetite.
- Mood changes: You may experience mood swings, if this does happen and you are unable to cope, contact your transplant team for assistance.
- Bone loss: Osteoporosis can occur with taking prednisone. Your doctor will prescribe you calcium and vitamin D supplements to assist. Your bone density can be checked every two to three years to determine if there is any bone loss.
- Acne: some patients may develop acne. Maintain good skin hygiene. Don't take any acne medication without consulting your doctor first.

Some immunosuppression drugs may raise the risk of cancers, especially skin cancers. Always wear sunscreen and a hat. Always apply to the face, neck, ears, chest, forearms and hands as these areas see the most sun. If you find any lesions, seek advice early.

Do not take any medication that has not been cleared with your transplant doctor. Do not take any supplements (e.g. St. Johns Wort or immune boosters) as they may interfere with the drug levels.

Remain positive, your transplant team will assist you in trying to decrease the side-effects. Many are short term and will lessen over time.

**Do not take any medications or supplements (e.g. St. Johns Wort or immune boosters) that have not been cleared with your transplant doctor as they may interfere with the drug levels.**



# 10th National Transplant Games

## 16-19 August 2012 - Durban, KwaZulu-Natal



Heilie Uys  
SATSA National Secretary  
St Francis Bay

What a celebration of life we experienced during the 10th National Transplant Games in Durban!

The excitement ran high when old friends met again on Thursday 16th August during registration and the Welcome function. New athletes and their families were welcomed with open arms and soon felt part of the Transplant Sports family.

On Friday 17th August the road runners were the first to participate at the People's Park next to the Moses Mabhida Stadium, while the cyclists took on the hills of Camperdown. In the meantime the golfers teed off at Mount Edgecombe Golf Club in cool weather. The swimmers enjoyed the wonderful facilities of the Kings Park Aquatic Stadium.

There was much excitement amongst the petanque players as it was the first time ever that this event was scheduled at National Games. It was interesting to note that most of the petanque players at the Durban Bowling Club were also lawn bowlers! Tennis was played at the Berea Tennis Club and the competition was stiff.

Friday afternoon the squash players enjoyed the courts of the Durban Country Club while the table tennis players played against university students and their coach at the Westville campus of the University of KZN. The atmosphere at the ten pin bowling competition in the Galleria Super Bowling facility in Amanzimtoti was contagious.

On Saturday 18th August all athletes (90 of them) and supporters gathered at the Kings Park Athletic Stadium to enjoy a day of track and field events. Again the weather was perfect and the competition of high standard. Eleven world record times and distances were broken and 19 South African records improved.

All athletes were rewarded with participation medals at the Gala evening on Saturday. It was clear that new athletes and their families, who arrived on Thursday, became friends and "family" members during three days of Celebration.

With a spirit of camaraderie SATSA and its members are focusing now on making the World Transplant Games in 2013 in Durban a great success. Please join us on this road by becoming a member of SATSA.

### Athlete's performances:

Ninety (90) athletes participated in these Games with ages ranging from 6 to 69 years. For the first time ever we had 16 children participating and we thank Annemarie Wagner from The Kidney Beanz Trust for her endless efforts to encourage and sponsor most of these children. Sr. Rose Moloï from the Paediatric Transplant unit of the Charlotte Maxeke Johannesburg Academic Hospital chaperoned children from this unit and acted as a mother to their needs.



The main aim of participating in these Games was to qualify in different sports items to come into contention for selection to the National Team to participate in the World Transplant Games (WTG) that will be hosted in 2013 in Durban from 28 July till 4th August. Of the 90 athletes 55 qualified for selection while 21 athletes performed within 10% of

the qualifying standard and they will be given another opportunity to qualify till 31st January 2013.

The standard of competition was high as reflected in the number of South African and World Records that have been bettered. **Improved World Records will unfortunately not be recognised as such due to the fact that these records can only be recorded as such at World Transplant Games events.** At least the rest of the World's transplant athletes can take note of our wonderful athletes!





### 10th National Transplant Games - Results Table

Age	Name	Sports item	Time/Distance	SA record	World record
18-29	Bell Lizane	200m	34:80.0	x	
9-11	Dawson Luke	50m	8.70	x	x
		Ball throw	29.83	x	
9-11	De Jager Johan	Long jump	2.77	x	
50-59	Fourie Jan	20km Cycling	37:06.2	x	
30-39	Itumeleng Morokwane	5km Walk	36:56.1	x	
15-17	Lamprecht Herculaas	High jump	1.3	x	x
60-69	Laubscher Kosie	Javelin	29.89	x	x
6-8	Laurenz Joshua	50m sprint	8.40	x	x
60-69	Lombard Brain	Javelin	21.65	x	
18-29	Maartens Suretha	100m	13.50	x	x
30-39	Matsoso Daniel	5km Road race	19:11.0	x	x
18-29	Pretorius Koenraad	Shot put	9.54	x	
		Free style 50m	27:18	x	
50-59	Rwaxa Nombeko	200m	54.80	x	
50-59	Schultz Lourens	Javelin	32.24	x	x
		Discus	32.35	x	x
50-59	Smit Tersia	3km Walk	21:49.8	x	
		Breast stroke 50m	51.71	x	
6-8	Southworth Kyle	Long jump	2.37	x	
60-69	Uys Heilie	Discus	20.58	x	x
		Javelin	20.20	x	x
		Ball throw	34.12	x	x
30-39	Vd Berg Stephan	Javelin	32.40	x	x
6-8	Wagner Livia	Long jump	1.79	x	

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# A Transplant fellow's perspective



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Johannesburg

Transplantation in South Africa has a very 'prestigious' history with the first Heart transplant having been performed in December 1967 by Christiaan Barnard at Groote Schuur hospital in Cape Town. The first Kidney transplant in South Africa was also performed by Christiaan Barnard and preceded the first heart transplant by approximately two months in October 1967. Since then Liver, Lung, and Pancreas transplantation has been added to the armamentarium of whole organ transplantation in South Africa.

## Transplantation in South Africa

The vast majority of surgeons involved in transplantation in South Africa are specialist surgeons in fields other than transplant surgery, performing transplantation on top of their normal commitments.

At present the number of transplants performed in most centres every year in South Africa are too low to justify or sustain surgeons who solely perform transplant procedures. The transplant unit in Johannesburg may now be the exception to this, performing approximately 30-40 liver transplants and a 100 kidney transplants per year. The Johannesburg transplant unit is currently also the only unit in South Africa that performs Simultaneous Kidney Pancreas transplants, with numbers that compare favourably with busy international transplant centres.

In addition to the actual transplant procedure, patients often require other surgical interventions in preparation for dialysis, like placement of tunnelled dialysis catheters, formation of arterio-venous fistulas, and placement of peritoneal dialysis catheters, or as part of their work up for transplantation, like upper and lower endoscopy.

As the number of patients requiring organ replacement and the number of procedures performed increases, so the need for full time transplant surgeons also increases.

## The way forward

Currently the worldwide trend is to train surgeons in transplantation specifically and the associated management of these patients thereafter. Under the guidance of Prof. R Britz and the support of Wits Donald Gordon Medical Centre, Wits University have established a transplant fellowship programme, which has been mirrored on the American Transplant Societies fellowship programme. This encompasses a two year training programme in the surgical and medical management of patients requiring transplant procedures.

Guidelines have been established to standardise training of a transplant fellow. Surgical training is partly dependent on the

volume of procedures performed by each unit in a year. We have therefore adjusted the numbers from the American Society of Transplantation's guidelines to suit our local figures. This involves a gradual process of learning by assisting, to performing under senior supervision, and finally performing each of the listed procedures independently.

## Improving transplantation surgery and post-surgery management

In the past 2 years we have tried to lay down a foundation for the training of transplant surgeons. There have been changes made to the existing structure of the unit, which include daily multidisciplinary ward rounds, a weekly multidisciplinary Liver panel meeting, and the recruitment of an internationally acclaimed Transplant surgeon to the Johannesburg transplant unit with experience in training transplant fellows. I am sure that there will still be many changes taking place to optimise training.

**As the number of patients requiring organ replacement and the number of procedures performed increases, so the need for full time transplant surgeons also increases.**

A very important aspect to ongoing training, not only for the transplant fellow, but for everyone involved in caring for transplant patients, is the attendance of local and international transplant congresses and workshops. To make this possible we rely heavily on the support of the various drug companies for sponsorships.

After transplantation, the patient and his/her doctors must enter a lifelong relationship based on mutual trust and understanding. All but a few exceptional patients require lifelong immunosuppression to avoid rejection of their 'allograft'. This demands vigilance on the part of both the patient, and the treating team of surgeons and physicians, to identify problems with rejection, infections, drug toxicities and psycho-social issues as early as possible to timeously intervene.

There is something special about transplant surgery. Usually surgeons either remove cancer or diseased organs, or repair something when doing surgery. However in the case of transplantation one replaces an inadequately functioning organ with a carefully selected replacement organ from either a related (or unrelated) living donor, or a deceased donor. And this is where things are somewhat bitter-sweet.

The vast majority of transplanted organs in South Africa come from patients, who as a consequence of some or other tragedy, have been declared 'brain dead' and whose respiration and circulation are maintained with a ventilator and strong medication. Therefore every organ transplanted and recipient life restored, comes with an often sad story and devastated donor family. I hope these families find comfort in the realisation that they are saving, or changing up to 7 lives by donating their loved one's organs.