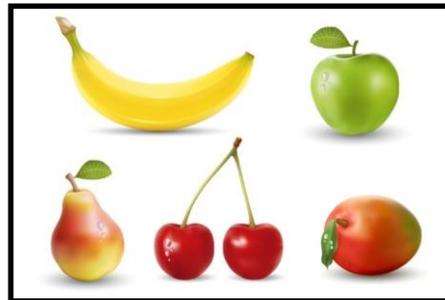


## Your Kidney Transplant

### Good Nutrition – Better Health



**Kidney Urinary Program**

Good Nutrition – Better Health

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## **Good nutrition and better health**

After you have been on dialysis, getting a good working kidney is a very precious gift. You want to look after yourself and your new kidney. The transplant team will help you learn how to care for yourself and your new kidney. Good nutrition is a part of this care.

After a kidney transplant, you need to:

- recover from surgery
- take medication to stop rejection of the new kidney
- take care of yourself and your new kidney

## **Medications to prevent rejection**

You will take several medications to prevent rejection of the transplanted kidney. These medications are called anti-rejection medications. They have side effects.

### **Prednisone:**

One of the medications is called prednisone. To avoid stomach upset, take this medication with food or milk.

After the transplant, you begin taking a larger amount of prednisone each day. After about 3 months, you may slowly go down to taking a small amount. You will stay on a low dose of prednisone as long as you keep the transplanted kidney. If you have signs of rejecting the kidney, you may be advised to take larger amounts of prednisone again or your doctor may give you other medications to help.

Prednisone causes an increase in:

- appetite and weight
- blood sugar
- cholesterol level in your blood
- blood pressure

Prednisone also causes:

- decrease in the amount of calcium in your bones
- breakdown of protein, muscle wasting and fragile or thin skin

These effects become less when the amount of prednisone you take is reduced.

**Cyclosporine** causes an increase in:

- cholesterol level in your blood
- blood pressure
- potassium in your body

**Tacrolimus or Advagraf** may increase:

- blood sugar

**Remember:**

- Avoid taking grapefruit or grapefruit juice when you take anti-rejection medications such as Cyclosporine or Tacrolimus or Advagraf.

**What should I watch for?**

**First month after your kidney transplant:**

Your body needs good nutrition right after your transplant. Both surgery and the medication you take demand healthy eating. Poor nutrition leads to slow, poor wound healing and more risk of infection.

To help your body heal after surgery and regain strength, you need extra protein and calories. You also need added protein to help prevent muscle breakdown caused by higher doses of prednisone. Examples of protein foods are meat, poultry, fish, seafood, milk, cheese, eggs, nuts, dried beans and soy products.

Choose a protein food at each meal. Add healthy snacks such as yogurt or a sandwich made with cheese or peanut butter.

Your dietitian may recommend you take a nutritional supplement as well.

**Later on:**

After your kidney transplant, you may put on weight even when you do not want to. If you were underweight on dialysis, gaining some weight is healthy. You will need to make sure you do not let yourself become overweight.

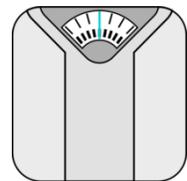
## Why do I gain weight after a transplant?

When you have kidney disease, you are on dialysis. The waste builds up in your blood and this lowers your appetite. When you get a new kidney, you are free from the restrictions of a dialysis diet. You start to enjoy your favourite foods and end up eating more than you should.

The prednisone you take to prevent kidney rejection causes weight gain as well. It makes you hungry. When you eat more than your body needs, you put weight on.

### Remember:

- Prednisone does add some weight, but overeating is the main cause of weight gain.



## What is a healthy weight for me?

With the help of your dietitian, you can set a goal weight that fits your height and body size. You need to always keep this weight in mind. After you leave the hospital, you will return to the Outpatient Transplant Clinic for regular check-ups. Your weight is checked at each visit. You will need to watch your weight between visits.

### Remember:

- A gain of 1 pound a week can soon add up to 30 or more pounds in 6 months.
- It is very hard to lose weight when you take prednisone. Instead, try not to put extra weight on in the first place. Overweight and obesity may increase your risk of heart disease, rejection of the transplanted kidney and the long-term survival of your new kidney.

## Ways to watch your weight

You will need to:

- Eat a good variety of food
- Eat small portions
- Balance the amount of food you eat with the amount of exercise and activity you get
- You can enjoy every food if you control portion size. **Say Yes to Less.** There is no food you cannot eat but you still need to eat sensibly.

## Physical Activity

After you recover from surgery, start an activity that you enjoy like walking, swimming or biking. Start slowly. Gradually increase your exercise to build up a routine. You need to exercise regularly to control your weight and improve your overall outlook on life. Physical activity burns calories and boosts your body's metabolism. It also raises 'good' cholesterol and helps lower 'bad' cholesterol. Activity builds strength, maintains strong muscles and helps you lose fat.

If you want to lose weight, do not focus all of your energy on eating less food. Eating less food slows down your metabolism. Your body will adjust to less food. Your nutrition status will also suffer because you may not get all of the nutrition you need.

### Remember:

- You need to find the right balance between the amount of food you eat and the exercise and activity you get. Choose good nutrition for life. Make healthy eating a way of life. Good nutrition is not a diet for a short time. It is a recipe for life.
- Exercise should make you happy and feel good. Try joining a local recreation centre, YMCA or YWCA to get started. It can help to have other people to exercise with. Use a treadmill and/or go for a swim or water-fit class.

### Remember:

The number of calories you eat need to equal the number of calories you use up being active.

↑calories eaten + ↓calories used up = ↑in weight

↓calories eaten + ↑in physical activity = healthy weight

Choose food from all 4 food groups in the Canada Food Guide for Healthy Eating. Select a healthy choice from each food group.

This makes sure that you get all the nutrition you need. If you leave out any food group, you miss the nutrition you need from that group.

**Food Groups**

<ul style="list-style-type: none"> <li>• Meat</li> <li>• Poultry</li> <li>• Fish</li> <li>• Egg</li> </ul>	 <ul style="list-style-type: none"> <li>• Milk</li> <li>• Cheese</li> <li>• Yogurt</li> </ul>
<ul style="list-style-type: none"> <li>• Fruit</li> <li>• Vegetables</li> </ul>	 <ul style="list-style-type: none"> <li>• Cereal</li> <li>• Pasta</li> <li>• Rice</li> <li>• Bread and Grains</li> </ul>

Increase fibre rich foods in your diet to reduce risk of obesity, heart disease, diabetes and high blood pressure (hypertension). These types of problems affect about ½ of all transplant patients.

**New onset diabetes after a kidney transplant**

Some people develop diabetes after a kidney transplant. This is caused by prednisone and other anti-rejection medications that you must take. 20 to 30% of patients develop new onset diabetes up to 3 years after a kidney transplant.

Factors that increase the risk of developing new onset diabetes are being older (e.g., over 45) when you get the transplant, being male, having a family history of diabetes, being non-Caucasian ethnicity such as African or Asian, having hepatitis C in the past, having a body mass index of 30 or more, being on peritoneal dialysis in the past, and getting a kidney from an older donor.

Steroid medication, which you must take (e.g., prednisone), can reduce the body's ability to use sugar for energy. This can cause high blood sugar.

Some of the risk factors are NOT under your control. You can reduce some risks by managing a healthy weight and eating well.

Limit sugar, honey, jam, syrup, candies, chocolate, jello, juices, desserts, regular pop etc.

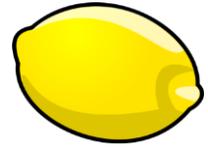
**There is a sample healthy eating plan on the last page.**

## Fluids and Drinking

When your kidney is working well you need to drink a lot. This can add up calories if you do not watch what you drink. For example, a can of regular pop can contain 10 to 14 teaspoons (50 to 70 ml) of sugar in it.

### Learn to drink wisely:

- Use artificial sweetener in tea, coffee and homemade lemonade or learn to drink these without sugar.
- Drink diet Kool-Aid, Tang, Crystal-Lite and diet pop
- Use broth and broth type soups



### Remember:

- Unsweetened juice in large amounts will add natural sugars and added calories to your diet.

## About Fat

Fats give you more than double the calories as proteins and carbohydrates do. There are 'good fats' and 'bad fats'. Good fats are unsaturated. Bad fats are saturated. Trans fats are included as bad fat. Trans fats are formed when liquid oils are hydrogenated.

Make healthy choices while eating less fat.

### Remember:

- Being overweight or having high LDL (bad) cholesterol increases your risk of heart disease. You may be prescribed medications that lower your bad cholesterol. Good nutrition and healthy eating work together for good health. 50% of people with a kidney transplant die from heart disease not kidney disease.

### Some foods high in fat, saturated fat, trans fat and cholesterol are:

- Sausages, wieners, bacon, lamb, spareribs and bologna are high in fat.
- Croissants, doughnuts and potato chips are high in fat.
- Lard, shortening, butter, hard margarine, whipping cream, ice cream, chocolate and cream cheese, are high in saturated fat and trans fat.
- Baked goods, store bought cookies and crackers are often made with palm oil and are high in saturated fat.
- Egg yolk and organ meats such as liver, kidney and heart are high in cholesterol.

## How do I lower fat and cholesterol in my diet?

- Choose 3 to 4 servings of low fat dairy products every day to make sure you get enough calcium for healthy bones. Low fat examples are:

- skim or 1 % milk
- 1% to 2% low fat yogurt
- 8% to 19% fat cheese
- 1% to 2% fat cottage cheese
- 1% to 7% fat sour cream
- 1% fat ice cream
- frozen low fat yogurt

- Choose lean or extra lean meat. Trim off the fat before cooking or eating.

- Bake or grill meats. Avoid frying.

- Eat fish and chicken without the skin 2 to 3 times a week. Use water packed canned tuna or salmon. Avoid organ meat such as liver, kidney and heart.

- Choose fresh fruit and vegetables.

- Use low calorie salad dressings.

- Choose oat bran, oatmeal, wholegrain bread, legumes, dried peas and beans. This increases fibre in your diet and helps lower LDL (bad) cholesterol.

- Avoid high fat items such as pie, cheesecake, doughnuts and chips.

- Eat bagels as they are low in fat.

- Eat melba toast instead of crackers.

- Remove solid fat that floats to the top when homemade soups and stews are refrigerated.

- Use less fat when cooking. Choose canola and olive oil in small amounts.

- Choose soft tub margarine that is free from trans-fat or low in trans-fat. Trans-fat can raise LDL (bad) cholesterol.

- Check product labels. Choose products with zero or low trans fat. Look for trans fat in baked goods and margarine.



## Calcium

You need calcium for strong bones and teeth. Your bones lose calcium and become weak when you take prednisone. This may cause osteoporosis and your bones may break easily.

Make sure you get the right amount of calcium from dairy products such as low fat milk, cheese and yogurt. You should have at least 3 servings of low fat dairy products each day. Examples of a serving size are:

- milk = 8 ounces (240 ml)
- cheese = 1½ ounces (45 grams)
- yogurt = 6 ounces (180 ml)

You may need to take a calcium supplement if the amount of calcium in your blood is not high enough or you cannot eat dairy products due to dislike, lactose intolerance or a milk allergy. Your doctor will prescribe this if needed.

## Phosphorus

After a kidney transplant, your new kidney filters phosphorus very well. In the first month or two after the transplant, the phosphorus level in your blood may be too low. Normal levels are between 0.8 and 1.6 mmols/litre. This can cause muscle weakness and more severe problems such as confusion and seizures. Your doctor will tell you when your phosphorus is low.

You get phosphorus from food. Phosphorus is in dairy products, dried beans, peas, legumes, whole grain breads and cereals, bran, bones in salmon, nuts, sardines and tofu. Choose low fat dairy products to keep saturated fat low. Ask your dietitian to guide you with the number of servings to have a day. After about 2 months, your new kidney will adjust and maintain a normal phosphorus level.

You may be prescribed phosphorus supplement if your phosphorus level is very low. A supplement can cause diarrhea.

## Potassium

Your potassium may become high even when your new kidney starts to work well. This may be from blood pressure and/or anti-rejections medications. You may need to be careful with the amount of potassium you have in your diet for a short period of time if needed. You can meet with a dietitian to learn more about this if needed.

## **Magnesium**

You may have a low magnesium level after a kidney transplant. This can happen if you take a medication called a diuretic. A diuretic helps remove water weight, which can build up after surgery. Water weight goes away once the kidney is working well and you are back to your 'before kidney transplant weight'. Some examples of foods high in magnesium are nuts, seeds, legumes, lentils, dark leafy green vegetables and whole grains such as quinoa, brown rice and whole wheat pasta. For a while, you may need to take a magnesium supplement.

## **Vitamins**

Following a well balanced diet is the best way to get the vitamins you need. You can take a multivitamin with minerals if you want but avoid the ones that are extra strength or high dose.

After a kidney transplant, about 70% of people may lack vitamin D and have to take a vitamin supplement. Your dietitian and/or doctor will talk to you about this if needed.

## **Salt**

Prednisone can increase salt retention and therefore cause you to retain or hold more water in your body. This can lead to an increase of blood pressure, which can be harmful. When you were on dialysis treatments, you used to eat foods without salt. It is a good practice to continue to avoid salt and limit salty foods.

## **Health Food Store and/or Herbal Products**

Before you take any health food or herbal products, check with your dietitian. Some of these products may harm your transplanted kidney.

**Who can I contact to get help with my diet?**

Your dietitian will meet with you after your kidney transplant to discuss your new way of healthy eating. After you are discharged from the hospital you will come to the Outpatient Transplant Clinic check-ups.

If you want help with your diet, you or your clinic nurse can contact the dietitian and ask him or her to come and see you in the Outpatient Clinic.

You may want some help with weight control, cholesterol, or blood sugar management.

**Dietitian:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**About Me:**

- My height: \_\_\_\_\_ cms or \_\_\_\_\_ feet \_\_\_\_\_ inches
- My weight: \_\_\_\_\_ kgm or \_\_\_\_\_ pounds on \_\_\_\_\_  
(date)
- My goal weight: \_\_\_\_\_ kgm or \_\_\_\_\_ pounds

## Sample Menu for Meal Planning

### Breakfast

- 1 orange
- 1 cup high fibre whole grain cereal bran flakes
- 1 cup skim or 1% milk
- 1 slice whole wheat toast
- 1 tablespoon peanut butter

### Lunch

- 1 sandwich on pumpernickel bread
- 2 ounces turkey breast
- 1 teaspoon mayonnaise
- lettuce salad with low calorie dressing
- 1 peach
- 1 cup skim or 1% milk

### Afternoon snack (if needed)

- 2 to 3 oatmeal cookies

### Dinner

- 3 ounces of chicken
- 1 baked potato
- carrots
- green beans
- ¼ cantaloupe

### Evening Snack (if needed)

- 1 cup skim or 1% milk
- 6 crackers
- 1 ounce low fat cheese

<b>1 cup</b>	<b>250 ml</b>
<b>½ cup</b>	<b>125 ml</b>
<b>1 teaspoon</b>	<b>5 ml</b>
<b>1 tablespoon</b>	<b>15 ml</b>
<b>1 ounce</b>	<b>30 grams</b>