Nutrition/Dehydration

Your Guide to Eating Healthy After Your Kidney Transplant

You have recently had a kidney transplant and may be wondering if your diet will be different from before your transplant. These diet guidelines describe changes you may need to make in order to feel your best. This includes:

- Food safety
- Calorie and protein needs to help in healing, while preventing weight gain
- How to monitor carbohydrate intake (while preventing high blood sugars)
- Your overall heart-healthy diet that includes electrolytes in your diet

Food Safety

Because of your recent transplant and medicines you are on to prevent organ rejection, this can cause an increase your risk for food-borne illness. To lower the risk:

- Do not eat:
  - Raw and undercooked meat
  - Raw and undercooked seafood
  - Raw and undercooked eggs
  - Dairy items or juice and cider that are not pasteurized
- Avoid cross contamination of raw meat by dirty knives, cutting boards, or dirty work surfaces with other foods
- Always wash fresh fruits and vegetables
- Clean work surfaces
- Change dish cloths daily
- Always wash your hands before eating

- Keep cold foods cold and hot foods hot. Avoid eating room temperature foods and meats thawed on the counter
- Do not eat leftovers that are more than 2 to 3 days old
- Calorie and protein needs
- Short-term goals: Your recovery
- Your calorie and protein needs will increase right after your transplant. This is because surgery has put more stress on your body and because your wounds need to heal

You must eat and drink to provide your body the building blocks for healing and to help prevent infection and muscle loss. You will be given a diet based on the transplanted kidney’s function. Usually this is a well-balanced general diet. If the new kidney isn’t working as well as expected, you may need to cut back on sodium, potassium and other fluids for a while. Your transplant team will talk to you about this.

During the first few weeks of recovery, be sure to eat nutritious foods. For example: lean beef and pork, chicken, turkey, fish, low-fat milk, cheese, yogurt, eggs, nuts, whole-grain breads and cereal, and fruits and vegetables will give you the protein, vitamins and minerals you need.

If you have a poor appetite or unintended weight loss, tell the transplant dietitian.

Maintain blood glucose control after transplant if you are diabetic. Anti-rejection medication can cause elevated blood sugars and increase your
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risk for diabetes. If this occurs after transplant it will be addressed by your transplant team.

Long-term Goals

Maintain a desirable weight. Weight gain after a transplant can be a problem and is common due to improved appetite and fewer diet restrictions. Weight gain also can occur from side effects of anti-rejection medications. Weight gain after transplant increases your risk for high blood pressure, diabetes, heart disease, joint or bone disease and may shorten the life of your new organ. We want you to be as healthy as possible to enjoy the life of your new organ for as long as possible.

To control your weight, pay attention to the number of calories you are getting in food and in drinks. Fat adds the most calories to your diet, so try low-fat ways to prepare your meals and trim added fats from your diet to save calories. Do not eat fast food. Have low-calorie snacks on hand for snacking — fruits, vegetables and low-fat dairy products. Read labels and pay attention to portion sizes. To keep your mind off of food, try to stay busy with your favorite hobbies and activities (reading, gardening or yard work, housework, dancing, crafts, etc.). Keep moving daily with exercise and activities you enjoy to burn more calories. Make a plan and stick with it. If you struggle to control your weight, contact the transplant dietitian — what do you have to lose besides weight?

Bone health is important. Anti-rejection medicines may affect bone strength. In addition, any poor bone health before transplant may make bone disease even more likely after transplant. Eat calcium-rich foods (low-fat dairy and cheese). Take calcium supplements and medicines as prescribed. Exercise to keep your bones strong. Don’t smoke.

Heart-healthy Eating

A heart healthy diet is meant to help lower cholesterol levels and blood pressure. It may also help to decrease the risk of heart disease. It includes eating a variety of foods that are low in fat, especially saturated fat and trans fats. The diet is also low in cholesterol and low in sodium. Adding fiber and Omega-3 fatty acids to your diet are recommended.

What Do These Terms Mean?

**Saturated Fats:** These fats are usually solid at room temperature. They are the “bad” fats that raise cholesterol. Some sources are: high-fat dairy products, high-fat meat products, butter, lard, palm and tropical oils.

- A low saturated fat item will have only 1 gram/serving
- A saturated fat-free item will have less than 0.5 gram/serving
- Aim for <5-6 percent of total calories from saturated fat
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Trans Fats: A process called hydrogenation turns liquid (unsaturated) fats (or oils) into solid fats. This type of fat, like saturated fat, can raise your cholesterol levels. You should avoid this type of fat. Some sources of trans fat include: some margarines, vegetable shortenings, peanut butter, crackers, cookies, etc. Recommended <1 percent of total calories from trans fat.

Omega-3 Fatty Acids: This is a type of polyunsaturated fat that may help to prevent blood clots and help your blood vessels dilate (or get bigger). This can make your blood flow more smoothly. They are the “good” types of fat. Adding this type of fat to your diet is recommended.

- Sources include: Fatty fish (salmon, mackerel, tuna, halibut, lake trout, sardines, etc.), canola oil, flaxseed and nuts (1 1/2 oz/day)
- Consumption of fish two to three times a week is recommended

Sodium: Sodium is in most foods naturally. Processed foods are usually high in sodium. Many food items have low-sodium varieties. Sodium can cause you to retain fluid and/or increase your blood pressure. No more than 1,500 mg of sodium (new guidelines) a day is recommended.

- Try to use other herbs/seasonings instead of salt (use salt substitutes only with a doctor’s permission)
- A low sodium item will have 140 mg of sodium or less/serving
- A very low sodium item will have 35 mg of sodium or less/serving

How much fat can I have in a day?

The American Heart Association (AHA) recommends no more than 30 percent of your total calories to come from fat. The recommendation is different for each person. It is based on how many calories you need everyday. You can visit www.mypyramid.gov to find a meal plan for you.
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Hydration
It is important to drink approximately two liters of fluid (eight full 8-ounce glasses of fluid, 68 ounces) per day. Make sure you understand what your fluid needs are. It is best to avoid fluids that have caffeine or limit your caffeine drinks to one per day.

It is important for you to know the symptoms of dehydration. Dehydration can be the cause for an increase in BUN and creatinine levels. Dehydration (and low blood pressure) can also cause acute tubular necrosis (ATN) in which the kidney can temporarily shut down, causing a rise in creatinine and BUN.

Signs of Dehydration
• Low blood pressure, especially when standing up
• Dizziness when standing up
• Rapid pulse rate
• Weight loss
• Fatigue, loss of strength and confusion
• Dry mouth
• Certain lab values may increase, such as your BUN, creatinine and hematocrit
• Low urine output
• Constipation/abdominal pain

Your medicines may affect the levels of certain electrolytes in your body, especially potassium and magnesium. You may need to decrease or increase the foods you eat that are high in these electrolytes.

It is best to talk to a registered dietitian with all of your nutrition-related questions. A registered dietitian has specific training and can provide you with the best information regarding the foods you eat and any diet restrictions you may need. A transplant registered dietitian can be reached at 402.552.3648.
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Potassium Content of Foods
Approximate serving of fruit and vegetables ½ cup (unless specified)

**High Potassium Foods**
- Avocado
- Apricots, canned or dried
- Banana, 1/2
- Beans, canned with pork
- Beef, ground
- Beef roast
- Beets
- Beet greens
- Broccoli
- Brussel sprouts
- Cantaloupe, 1/8 small
- Chicken
- Chinese cabbage
- Dates, 1/4 cup
- Figs, 2 whole
- Fish: tuna, salmon, haddock or cod
- French fried potatoes
- Honey dew melons, 1/8 small
- Kiwi
- Kohlrabi, fresh or cooked
- Lentils
- Mango
- Milk
- Nectarines
- Okra
- Orange, fresh
- Orange juice
- Peanut butter
- Pears
- Potato, baked, boiled or mashed
- Prune juice
- Prunes
- Pumpkin, canned
- Rutabagas
- Spaghetti sauce
- Spinach, cooked
- Sweet potatoes/yams
- Tomato, 1 medium
- Tomato or vegetable juice, low sodium
- Tomato sauce/paste
- Winter squash: acorn and butternut
- Yogurt
- Zucchini

**Medium Potassium Foods**
- Apple
- Apple juice
- Apricot nectar
- Asparagus, fresh or cooked
- Blackberries
- Broccoli
- Cabbage
- Carrots
- Cauliflower
- Celery
- Cherries
- Collard: mustard or turnip greens
- Corn
- Cottage cheese
- Eggplant
- Figs, canned
- Fruit cocktail
- Gooseberries
- Grapes, 15 small
- Grapefruit, 1/2
- Lemon juice
- Mushrooms, canned or fresh
- Onions
- Papaya
- Peach
- Peas
- Pineapple, juice or canned
- Plums, canned or fresh
- Pudding, vanilla
- Radishes
- Raisins, 2 tablespoons
- Raspberries
- Rhubarb
- Summer squash
- Tangerine
- Turnips
- Watermelon, 1 cup
- Spinach, raw
## Nutrition/Dehydration, continued

### Low Potassium Foods
- Applesauce
- Blueberries
- Cranberry juice/sauce
- Cucumbers
- Grape juice
- Green beans
- Green peppers
- Lemon
- Lettuce
- Peach, canned or nectar
- Pears, canned or nectar
- Wax beans, canned (low sodium)

### Magnesium Content of Food

#### High Magnesium Foods
- Avocado
- Cereal, all bran or 100 percent bran
- Muffin, oat bran
- Nuts: almonds, brazil nuts or cashews
- Seeds: pumpkin or squash
- Soybeans, cooked
- Spinach, fresh, frozen or canned
- Swiss chard, cooked
- Tofu, raw or regular

#### Medium Magnesium Foods
- Acorn squash
- Artichoke
- Bean: black, lima, navy, white, kidney, pinto or great northern
- Beet greens
- Chocolate milk
- Fish: tuna
- Nuts: chestnuts, hazelnuts, walnuts, peanuts
- Oatmeal
- Okra, frozen
- Peanut butter
- Potato, baked with skin
- Rice: brown
- Soy milk
- Spaghetti: whole wheat

#### Low Magnesium Foods
- Banana
- Baked beans
- Bread: whole wheat
- Chickpeas
- Lentils
- Milk: all types
- Prune juice
- Pumpkin, canned
- Sardines
- Seeds: sunflower
- Spinach, raw
- Summer squash
- Sweet potato, canned
- Tomato sauce
- Wild rice
- Yogurt
Nutrition/Dehydration, continued

Phosphorus Content of Food

**High Phosphorus Foods**
- Almonds
- Biscuit
- Beef
- Bran cereal
- Cheese and yogurt
- Chicken
- Cottage cheese
- Fish: tuna
- Granola
- Milk: all kinds
- Nuts
- Oatmeal
- Organ meats
- Pancake and waffle
- Peanut butter
- Pork loin
- Potato, baked with skin
- Pudding
- Sardines
- Seeds
- Soybeans and soy milk
- Tofu
- Tortillas
- Turkey
- Dark colas

**Medium Phosphorus Foods**
- Asparagus
- Bagel
- Baked beans
- Bread: whole wheat
- Corn
- Eggs
- English muffins
- Granola bars
- Mushrooms
- Noodles: egg
- Peas
- Rice: brown or wild
- Spaghetti: whole wheat
- Sweet potato, baked with skin

**Low Phosphorus Foods**
- Beans: green or yellow
- Bread: white, pumpernickel or rye
- Brussel sprouts
- Cereals: rice and corn
- Cream cheese
- Cream of wheat and grits
- Coffee and tea
- Fruit juices
- Fruits
- Gelatin
- Greens
- Pretzels and popcorn
- Spinach
- Soda: lemon lime or clear
- Tomato
- White rice and pasta
- Sausage: pork