

Food Safety After Organ Transplant

Indications

After transplant, you will take immunosuppressant medications to prevent graft vs. host disease (GVHD). The suppression of the immune system makes it difficult to fight off infection. Your risk is highest one to six months after transplant. **Food can cause an infection** if proper food safety guidelines are not followed. This educational handout will be a reference to help keep you healthy.

Safe Food at the Store

- Buy cans and jars that look perfect
- Dented or bulging cans, cracked jars, unsealed lids may mean food has germs that could make you sick
- Check for “use by” dates - **DO NOT USE IF BEYOND THE EXPIRATION DATE**
- Put refrigerated or frozen items in cart last and take home immediately
- Put raw meat and poultry into a plastic bag so meat juices won't drip on other foods such as lettuce or fruit that will be eaten raw
- Check eggs - open carton and do not buy if any are broken or cracked. Only buy refrigerated, pasteurized eggs
- Deli foods = **DANGER!**
- Be sure food is being stored at safe temperatures - hot food is steaming and cold food is cold
- Make sure counter person washes hands and changes gloves

Quick Tips

- Wash hands frequently when working with food
- Avoid cross-contamination
- Cook all animal foods to appropriate temperatures
- Do not eat raw or undercooked meats
- Drink from safe water supplies - **NO** well water

Safe Food at Home

Storing

- After shopping – **go directly home** and put food away immediately
- **Refrigerator**
 - Use a thermometer to ensure food is being kept at **40° F or below**
 - Make sure thawing juices from meat and poultry do not drip on other foods
 - Leave eggs in carton and do not store in door
 - Keep refrigerator clean
 - Store ground meat, poultry and fish **up to 1-2 days**; other red meats such as steak or roasts **3-5 days**
- **Freezer**
 - Keep food safe by preventing the growth of microorganisms that cause food to go bad and make you sick
 - Use a thermometer to ensure food is being kept at **0° F or below**
- **Pantry**
 - Store canned foods and other shelf stable products in a cool, dry place.
 - Never put them above the stove, under the sink, in a damp garage or basement
 - High acid foods (tomatoes and fruit) – **up to 18 months**
 - Low acid foods (meat and vegetables) – **2 to 5 years**

Cooking/Preparing Food Safely

- Make sure that you and your kitchen are clean
- Always **wash your hands for at least 20 seconds** before and after you touch food.
- Wash everything before and after it touches food
- Cutting boards
 - Use only plastic or glass for cutting raw meat and poultry or have a cutting board you use exclusively for meat and poultry
 - Sanitize with solution of 1 tsp. chlorine bleach per quart of water by flooding surface and allowing it to stand for several minutes, then rinse and dry
 - Commercial sanitizers are available – follow directions on product label

- **Fresh fruits and vegetables need to be clean.** Rinse them under warm running water to wash dirt away. Use a produce brush when appropriate.
- Keep raw meat, poultry, seafood and eggs and their juices away from other foods
 - Remember germs can be spread by a dish towel or wash cloth – when wiping up juices, wash towel before using it again or use paper towels and throw them away
- Meat, poultry and seafood need to stay cold while they thaw. Thaw them:
 - In the refrigerator – **1 to 2 days** before you will cook
 - In the microwave – use the defrost setting
- Cook food to safe temperatures

FOOD	TEMP
Ground Meat & Meat Mixtures	
Beef, Veal, Lamb and Pork	160° F
Turkey, Chicken	165° F
Fresh Beef, Veal, Lamb	
Medium Rare	Not safe
Medium	160° F
Well Done	170° F
Poultry	
Chicken and Turkey, whole	180° F
Poultry breasts, roast	170° F
Poultry thighs, wings	180° F
Duck and Goose	180° F
Stuffing (cooked alone or in bird)	165° F
Fresh Pork	
Medium	160° F
Well Done	170° F
Eggs & Egg Dishes	
Eggs	Cook until yolk and white are firm
Egg dishes	160° F
Fish	
	Should be opaque, firm and flake easily with fork
Leftovers & Casseroles	165° F

- Put leftovers in the refrigerator or freezer as soon as you finish eating. Put them in shallow dishes so they cool faster. Germs grow very fast at room temperature.
- Use refrigerated leftovers within **2 days**

Eating Out Safely

- **Always order meat, poultry, and fish well done;** if the food arrives undercooked, it should be sent back.
- Ask how sauces and dressings are prepared; if raw or undercooked eggs or insufficiently cooked meat drippings are used, do not order those dishes. If the server does not know how the food is prepared, ask him or her to check with the kitchen. If still doubtful, order something else.
- **Avoid salad bars** – others may have left germs behind
- Avoid some buffets. If dirty plates are used for second helping, avoid. If holding temperatures are questionable, avoid (is the hot food hot?). Avoid high-risk foods from buffets (e.g., eggs, cream dishes, rare beef).
- At fast food restaurants, ask for food to be prepared freshly
- **Do not eat raw seafood** including oysters on the half shell, raw clams, sushi and sashimi; lightly steamed seafood, such as mussels and snails, should be avoided
- Caesar salad dressing should be avoided since it contains raw eggs

Kidney Transplant Diet Facts

Do I need to be on a special diet after kidney transplant surgery?

Yes. After an organ transplant, your diet still plays a big role in managing your health. If you were on dialysis and had a kidney transplant, you may find this diet easier to follow than the one you were on for dialysis.

Why is diet so important following a transplant?

Proper nutrition will reduce your risk of infection and rejection, although many factors will impact this. A registered dietitian will help you plan a healthy diet that fits your lifestyle and individual health concerns. Immediately following transplant, you may need to follow a kidney diet until your transplanted organ is fully functioning.

What can I eat after transplant?

The diet is a well-balanced one, consisting of lean protein, low-fat dairy products, fruits, vegetables, and a variety of grains. The DASH (Dietary Approaches to Stop Hypertension) Diet is a great resource to help you to follow a healthy diet. A copy of the diet with meal plans is available at www.nhlbi.nih.gov/health/health-topics/topics/dash.

- **Phosphorous and Calcium**

As your new kidney begins to function, your body is able to rebuild bone mass that might have been lost during renal failure. While these “hungry bones” are busy gaining strength, your blood phosphorous levels could drop quite low. Your dietitian and/or doctor will encourage you to eat foods high in phosphorous, such as low-fat dairy products and dried beans. This can be challenging as many kidney patients have been told to limit consumption of high-phosphorous foods for years before transplant. Your doctor might also order phosphorous pills. Some transplant medications may lower your calcium levels, so you may need a calcium supplement.

- **Potassium**

Potassium should be restricted for the first four to six weeks after transplant. Afterwards, as long as your transplant is working well, you should be able to take in normal amounts of potassium. However, some transplant medications might cause your potassium level to dramatically increase or decrease. If your blood potassium levels are too high or too low, your doctor may recommend some changes in your dietary potassium levels. If so, your dietitian will be able to guide you. High potassium food choices include oranges, bananas, tomato sauce, dairy products, nuts and salt substitute.

- **Sodium/Salt**

Many people will require a low sodium diet after transplant. Transplant medications can cause fluid retention and increase blood pressure. Salt makes this condition worse. Controlling blood pressure is very important to your transplant. Your doctor will decide how much sodium is best for you.

- **Fluids**

Once your new kidney starts working, you no longer need a fluid restriction. After the transplant you may develop dehydration, so you need to drink plenty of fluid every day. You should drink at least two quarts of fluid a day, depending upon your individual needs. More fluid intake may be necessary in the first few months after your transplant. Drinks that contain caffeine and/or alcohol may actually cause you to lose fluids, so do not count them in the two quarts of liquid you should be drinking every day. Drinking more fluids will result in more urine. It is important that you do not allow large volumes of urine to collect in your bladder. To avoid this, you need to empty your bladder frequently, at least every two hours, even if you do not feel the urge to do so.

- **Fat**

A low fat diet is important for maintaining a healthy weight and preventing heart disease. The American Heart Association recommends limiting total calories from fat to less than 30%. That's about 65 grams of fat or less a day if you eat 2,000 calories a day.

Will I need more or less protein?

Immediately following your transplant, you will need a high protein diet (8 to 10 oz of protein daily). Good sources of protein include lean meat, fish, poultry and eggs. Dialysis patients will need as much or more protein following transplant than they did during dialysis. Chronic Kidney Disease (CKD) patients not on dialysis will definitely require more protein after transplant. Protein is important for healing and strength. High doses of prednisone can cause muscle breakdown, making adequate protein intake even more crucial. Eventually you will be able to return to a normal protein intake of 6 to 8 oz daily.

What about nutrition supplements?

Some of the anti-rejection medications taken after transplant can cause loss of some needed vitamins and minerals. A daily multivitamin with minerals is recommended. Do not take any vitamins with added herbal additives. Your doctor may prescribe phosphorus supplements if your blood phosphorous level is low. Many patients also will need a calcium supplement to encourage healthy bone growth. If you are prescribed cyclosporine, you may need a magnesium supplement.

What if I have diabetes?

If you have diabetes, you will still need to closely monitor your carbohydrate intake. You will want to work with the doctor and registered dietitian to keep your diet and blood sugars in good control. Some people develop steroid-induced diabetes following a transplant. The transplant dietitian can help you to learn about diabetes and develop an individualized meal plan for you to help control blood sugars. People on steroids should limit their intake of concentrated sugars, such as regular soda or sugary desserts.

What about foods high in carbohydrates?

Carbohydrates come from sugars and starches. They provide fuel and energy for the body. When you take steroid medications, it is difficult for your body to use extra carbohydrates. This can lead to high blood sugars and may cause diabetes. For these reasons it is good to limit "simple" carbohydrates in your diet. Simple carbohydrates include sugar, sweets, juice and soda. "Complex" carbohydrates, such as pasta, bread, unsweetened cereal and grains should be included in the daily diet.

What about weight gain and cholesterol?

Two common long-term problems for transplant patients are weight gain and high cholesterol levels. Because of the new found freedom to indulge in many different foods and an increased feeling of hunger due to medications such as prednisone, it is easy to see why excessive weight gain is a common problem after transplant. Appetite often improves following transplant. You may need to restrict your calories or increase your physical activity if you have gained weight. Restricting calories doesn't necessarily mean that you have to eat less quantity of food. Generally, you will want to limit foods that are high in fat and calories and increase intake of high fiber foods, such as fruits, vegetables, whole grains, and pasta with low-fat sauces in your diet. The average amount of weight gain post-transplant is 20 pounds. Weight gain can be prevented by watching portions and the types of foods that you are eating. Talk to your doctor about types of physical activity that you can include in your daily routine. High levels of cholesterol and triglycerides can cause heart disease. If your cholesterol or triglyceride levels are high, you may need to watch fat, sugar and alcohol intake. Select lean cuts of meat and use soft margarine and oils for cooking. Physical activity and weight loss can also help you control your cholesterol and triglycerides.

How does the transplant diet help?

Although your new kidney means that you no longer need dialysis, it is still susceptible to damage. By controlling the conditions that contributed to your kidney failure, the diet can reduce your chances your kidneys will suffer damage. Also, a balanced diet full of quality foods will keep you healthy and strong, reducing your chances of complications. Your doctor and dietitian will help you make adjustments in your post-transplant diet based on your labs, medications and how your new kidney is functioning. The transplant dietitian can be reached by calling the Transplant Center at **(800) 333-9013**.

How do I know if the transplant diet is working?

You will know the transplant diet is working because your overall health will be good. A healthy diet that is balanced in carbohydrates, protein and fat will lessen the chances of complications and infections to your transplant. By keeping your body strong and full of nutrients, your diet can help protect you and your new kidney.

If I follow the transplant diet will my new kidneys keep working?

If you follow the transplant diet, the chances of infection and rejection are reduced. Keeping your new kidney working depends on a variety of factors, of which food and nutrition are just a small part. You will need to take your prescribed medication, come to all your follow-up appointments, and follow your doctor's advice regarding alcohol, smoking and physical activity.

Goals: How to Define Them

If you have been told to make a lifestyle change, goals will help you achieve what you set out to do. It is a good idea to work with a dietitian to define goals. You should identify what you want to accomplish and how you will carry out your plan. This is important when making positive change and will help you succeed. Before starting this program, set short-term and long-term goals.

Defining Your Goals

Make S-M-A-R-T goals:

S - **Specific**

M - **Measurable**

A - **Attainable**

R - **Relevant**

T - **Time based**

- **Specific.** For example, you may have a specific short-term goal to start strength training, with a long-term goal of easing the symptoms of arthritis, improving your balance or controlling your weight.
- **Measurable.** This goal is easily **measurable**. Have you or have you not begun the program?
- **Attainable.** Indeed, this is an **attainable** goal, as long as your doctor approves.
- **Relevant.** This goal is certainly **relevant** to living a long, healthy life.
- **Time based.** Make a time-based goal. Buy the equipment you need. Set your exercise schedule within the next five days. Start the program within the next two to three days.

The goals and time frame are entirely up to you. Your success depends on setting goals that are truly important to you and possessing a strong desire to achieve them.

Managing Your Goals So That You Can Easily Achieve Them

The following are suggested guidelines only.

- **Daily:** Make sure you maintain and use a “to do” list. This list defines the actions required to achieve each of your goals. As you complete each task, mark it as done on this list.
- **Weekly:** Review your goals list. Mark off the goals you have achieved during the week. Add any new goals for the coming week. Measure your progress toward each goal, so that you are clear as to how far you have come and how far you have to go.
- **Monthly:** Review your progress toward all of your goals. Make sure you examine all of your goals in all areas of your life. You may have many different roles, such as spouse, parent, sibling, manager, tennis player, etc. It is very important to have a healthy balance between your business and personal goals. Review what you have accomplished.
- **Quarterly or midyear:** Review all of your current roles, goals, and tasks, and adjust where necessary.

Goal-Setting Worksheet: Identifying Your Short-term Goals

Identify at least two or three of your own short-term goals. If you have more goals, write them down now. Remember that each goal should be **S-M-A-R-T**—Specific, Measurable, Attainable, Relevant, and Time based. Setting these short-term goals will help motivate you to make the program a regular part of your life.

Short-term goal examples:

- I will clean out my pantry and restock with healthier foods this week
- I will look at my calendar and schedule two or three 45-minute blocks of time for exercise each week
- I will invite my spouse, a friend, or family member to join me in these exercises

My Short-term Goals

1. _____

2. _____

3. _____

4. _____

5. _____

Chronic Kidney Disease and Post-Transplant Nutrition Internet Resources

- **www.kidney.org**
Website sponsored by the National Kidney Foundation that provides extensive educational material for all stages of CKD, including transplant. Also provides handout for exercises for dialysis patients.
- **www.nhlbi.nih.gov**
A government website from the National Institutes of Health (NIH) that provides education for the public on healthy eating, weight management and exercise. It includes recipes, health assessment tools such as a BMI (body mass index) calculator, menu planner, heart attack risk calculator, and health risks associated with being overweight.
- **www.win.niddk.nih.gov**
The Weight-control Information Network, also from NIH, provides resources for exercise and weight control, including the booklets “Active at Any Size” and “Tips to Help You Get Active.”

- **www.heart.org**
 Click on “Getting Healthy” at the top and then “Nutrition Center.” Information on eating out, guidelines for eating at various types of ethnic restaurants, recipes, grocery shopping lists a dictionary of nutrition words, resources on physical activity and a health assessment quiz.
- **www.kidneyfund.org**
 General information on all aspects of kidney disease, GFR, good explanation of the kidney, diet information, and kidney disease prevention tips.
- **www.choosemyplate.gov/weight-management-calories.html**
 Calculates calorie needs; meal plans; food and activity trackers.
- **www.presidentschallenge.org**
 BMI calculator and activity log
- **www.startwalkingnow.org**
 Click on “Tracker.” Log for activities; creates a personalized walking plan. The site has videos that can be viewed online or purchased.
- **www.cdc.gov/healthyweight/calories**
 Great information to help with weight loss; includes BMI calculator and good explanation of calorie balancing.
- **www.davita.com**
 Recipes; overview of treatment options for CKD, including transplant; GFR calculator; kidney disease education videos; and nutrient calculator
- **www.ultracare-dialysis.com**
 Recipes, exercise tips for dialysis patients, nutrition calculator
- **www.nhlbi.nih.gov/health/health-topics/topics/dash**
 Detailed information on DASH (Dietary Approaches to Stop Hypertension); assistance with meal plans for healthy lifestyle post-transplant



Achieving a Healthy Weight Goal

Weight loss and exercise recommendations for individuals on dialysis

Renal Dietitians

a dietetic practice group of the
eat right. Academy of Nutrition and Dietetics



Introduction

Losing weight is one of the first steps you can take to a better and longer life. It takes dedication and a positive attitude to lose weight because you must make lifestyle changes. Once you achieve your weight-loss goal, you can expect to feel better, to have more energy, and to be more confident in reaching your other goals in life.

Several changes in behavior are needed for weight loss to occur. The way you plan meals, grocery shop, and prepare meals can go a long way to losing unwanted pounds.

You will also want to increase your activity to make sure the weight comes off and stays off.

Meal Planning

Try these meal-planning tips to help you change the way you eat your meals and snacks:

Try to eat 3 meals each day, no less. Eating one or two large meals a day may cause weight gain.

Avoid delaying or skipping meals. Spacing meals evenly throughout the day will help you to avoid overeating.

If you get hungry late at night, either **plan a bedtime snack** or go to bed earlier to resist the temptation to eat.

Keep foods only in the kitchen, out of sight. Avoid putting dishes filled with candy, nuts, and other snacks in other rooms in the house.

Try to dine out only 2-3 times each week. Researchers have found that those dining out more often gain weight more easily.

Grocery Shopping

Many of the following tips for grocery shopping will help with your weight-loss goal:

Never go to the grocery store when hungry! Always try to eat your scheduled meal or snack before heading to the store.

Always have a grocery list ready and avoid buying foods not on your list. You will not only stick to your diet better, but also spend less money!

Choose more fresh foods like meat, produce, and dairy products. Foods that are ready-to-eat such as lunch meats, casseroles, desserts, and snack items often have the most fat and calories.

Try to grocery shop once a week instead of more often.



Preparing Meals

Cut out extra calories when you prepare meals at home with these helpful hints. Try the following:

Cut Down on Fat Calories

- Use a **non-stick oil spray** instead of frying in oil.
- Try using crumb mixtures and **baking meat** in the oven instead of deep-fat frying.
- Trim the fat from meats, remove the skin from poultry, and drain the grease from hamburger.
- Use herbs, spices, and imitation butter flavoring to season foods.
- Use skim milk or non-fat dry milk for recipes that call for milk.
- Use fat-free or **reduced-fat dairy products**.



Cut Down on Empty Calories

- Instead of sugar, **use sugar substitute** in recipes and to sweeten foods. Many new sugar substitutes can be used measure for measure and cooked at a high temperature.
- **Avoid alcohol.** Alcohol such as wine, beer, and other liquors contain extra calories that are more easily stored as fat in the body.

Eating Meals

The following pointers will help you enjoy your food without overeating.

Eat slowly. The brain needs about 20 minutes for the body to register that it has had enough food.

Take small bites and chew them well. Savor and enjoy every bite of food. This will help you eat slowly.

Always sit down to eat and eat only in one place, preferably at the kitchen table.

Serve meals from the kitchen, not family style at the table.

Exercise

There are many benefits to daily exercise. Walking, bicycling, water aerobics, yoga, or playing sports will help with both physical and mental health:

Mental Health

- Reduce levels of stress
- Improve your self-confidence
- Improve your ability to cope with personal problems
- Decrease feelings of depression and anxiety
 - Increase blood supply to the brain to help with memory and concentration



Physical Health

- Reduce body weight, especially fat
- Prevent constipation
- Help improve sleep
- Strengthen bones
- Improve blood pressure control
- Increase blood count (hematocrit)
- Reduce blood fat levels: cholesterol & triglycerides
- Improve blood sugar levels
- Improve the immune system so you can resist infections

