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Combined Federal Campaign #0508

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## Healthy Eating for Hemodialysis



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## Healthy Eating for Hemodialysis

**A** healthy diet is needed when you are on hemodialysis. Watching the foods you eat and the liquids you drink will keep you healthier. This booklet will describe the importance of healthy eating for hemodialysis.

### **What Is Hemodialysis?**

Hemodialysis is a way of cleaning wastes from the blood artificially. The kidneys normally do this job. If the kidneys fail, the blood must be cleaned artificially with special machines. In hemodialysis, blood slowly flows out of the body, is cleaned by the dialysis machine, and sent back into the body. This is usually done for a few hours, several times a week.

### **Why Is a Diet Needed If I am on Dialysis?**

When your kidneys are not working normally, you lose the ability to get rid of wastes in your urine. Some wastes are sodium, potassium, phosphorus, and urea. By watching what you eat and drink, you can reduce the amount of waste that builds up in your body.

People have different diet needs based on their size, kidney function, and age. Following a meal plan can help you manage the amount of waste in your body. A renal (kidney) dietitian can help you find foods that you like and are healthy for you. Your dialysis clinic has a renal dietitian on staff. The dietitian can help you learn about the kinds of foods you can eat and the liquid you can drink.

*Read this publication carefully. Ask your renal dietitian any questions you may have.* The brochure will teach you about:

- why you need a special diet
- tools for healthy eating
- calories, protein, carbohydrates, and fats
- vitamins and minerals
- your risk for anemia
- special steps for diabetics

## Why Do I Have to Limit My Fluids?

**W**hen your kidneys fail, they make less urine. The less urine you make, the less liquid or fluid you can drink. Too much fluid in the body can be dangerous. This can cause high blood pressure, swelling in the tissues, and heart failure. Fluid can build up in the lungs, causing shortness of breath. Many foods contain water. Fruits and vegetables are 90% water. Foods that are liquid at room temperature are considered fluids. These include soups, ice cream, and Jell-o.®



## What Is Sodium?

**S**odium is a mineral found naturally in almost all foods. Healthy kidneys get rid of extra sodium in the urine to keep the right balance in your body. The renal diet consists of about 2000 milligrams of sodium per day. Table salt is a kind of sodium, called sodium chloride. One teaspoon of salt has 2300 milligrams of sodium.

Too much sodium in your diet will make you thirsty. Your diet needs to be limited in sodium to stop thirst. Sodium is hidden in most store-bought foods because salt is a good preservative. Your foods should read "low in sodium," or instead, should be fresh foods that are naturally low in sodium.

Here are some examples of foods that are high in sodium and *should be limited* in your diet:

- 
- **table salt**
  - **ham**
  - **lunchmeats**
  - **cheese**
  - **potato chips**
  - **Chinese food**
  - **bacon**
  - **sausage**
  - **pizza**
  - **pickles**
  - **fast food**

## What Is Potassium?

**P**otassium is a mineral found in almost all foods. Healthy kidneys get rid of potassium in the urine. Sick kidneys do not. Potassium needs to be limited in your diet. Too much potassium can cause an irregular heartbeat, which is very dangerous. The renal diet is usually limited to about 2000 milligrams of potassium a day.

Here are some examples of foods that are high in potassium and *should be limited* in your diet:

- 
- **milk (skim, low fat, whole, or canned)**
  - **beans (black, white or red)**
  - **split peas**
  - **kiwis**
  - **yogurt**
  - **bananas**
  - **tomatoes**
  - **nuts**
  - **oranges**
  - **avocados**
  - **dried fruit**
  - **lima beans**
  - **potatoes**
  - **tomato paste**
  - **chocolate**
  - **orange juice**



## What Is Phosphorus?

**P**hosphorus is a mineral found in many foods. Healthy kidneys will balance phosphorus in the body. Phosphorus will build up in the blood of a person with kidneys that are not working properly. Phosphorus needs to be limited in your diet.

Too much phosphorus in your blood causes a loss of calcium in your bones. A lack of calcium will make your bones frail and break more easily. Phosphorus can also cause a hardening of plaque build-up in the heart and blood vessels. People often complain of itching and bone pain from having too much phosphorus in the body.

Usually the doctor will prescribe a medication called a "phosphate binder." This will collect the phosphorus from the food you eat and eliminate it in your stool instead of being absorbed into your blood. Some phosphate binders are Renagel®, Fosrenol® (non-calcium binders), PhosLo® and Tums® (calcium binders). The renal diet is usually limited to about 1000 milligrams of phosphorus per day.



Your doctor may also give you a medicine called Sensipar® to help you avoid bone disease.

Here are some examples of foods that are high in phosphorus and *should be limited* in your diet:

- 
- **milk (skim, low fat, whole, or canned)**
  - **cola drinks**
  - **beans and legumes**
  - **cheese (except cream cheese)**
  - **nuts (especially peanuts)**
  - **peanut butter**
  - **chocolate**
  - **yogurt**

Here are some examples of the phosphorus content in foods:

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<b>1 cup milk, skim or whole</b>	<b>= 230 mg.</b>
<b>3 oz. steak, cooked, without bone</b>	<b>= 162 mg.</b>
<b>8 oz. steak, cooked, without bone</b>	<b>= 432 mg.</b>
<b>3 oz. American cheese</b>	<b>= 624 mg.</b>
<b>3 oz. fish, cooked</b>	<b>= 344 mg.</b>
<b>8 oz. fish, cooked</b>	<b>= 917 mg.</b>
<b>1 cup beans, red, white or black</b>	<b>= 470 mg.</b>
<b>1/2 cup peanuts</b>	<b>= 288 mg.</b>

***Remember, a kidney diet is usually limited to about 1000 milligrams of phosphorus per day!***

## What Is Urea?

**U**rea is a waste product that comes from eating protein. Urea is normally filtered from the blood by your kidneys and then removed through your urine. Urea will build up if your kidneys are not working. Too much protein in your diet will make a large amount of urea in your body. Too much urea in your blood can make you feel sick and nauseated.

There is a limit on how much protein you should have in your diet. The amount of protein depends on how well your kidneys are working and your body size. For example, a tall man needs more protein than a small woman does. A kidney diet usually consists of about 1.2 grams of protein per kilogram of ideal body weight per day.

Here is an example of how this would be figured:

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**A man 5'7" and 150 pounds  
(70 kilograms) needs:**

**1.2 grams protein x 70 kilograms =  
84 grams protein per day**

Here is a list of common foods and the average amount of protein in each:

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<b>1 egg</b>	<b>= 7 grams protein</b>
<b>1 chicken thigh</b>	<b>= 14 grams protein</b>
<b>8 ounces milk</b>	<b>= 8 grams protein</b>
<b>1 slice bread</b>	<b>= 2 grams protein</b>
<b>1/2 cup corn</b>	<b>= 4 grams protein</b>
<b>1 cup cooked rice</b>	<b>= 4 grams protein</b>

## How Many Calories Can I Eat While on Hemodialysis?

**C**alories provide energy for your body. Calories are found in carbohydrates, protein, fat, and alcohol. Because protein in a kidney diet is limited, there must be enough calories in the diet from carbohydrates and fats. Alcohol is not a necessary nutrient and not suggested as part of a healthy diet. Each person is different and his or her daily calorie amount will vary. Some people will need to cut down on their calories while others will need to gain weight. The renal dietitian can help plan a diet for you. You should keep close contact with your dietitian for advice and follow-up.



## What Do I Need to Know about Carbohydrates and Fats?

**C**arbohydrates are the easiest source of energy for your body. Good sources of carbohydrates include breads, cereals, rice, potatoes, fruits, and vegetables, as well as sugar, honey, hard candies, and sugared drinks. If you have diabetes, you will need to watch your carbohydrate intake.

Fat is an essential nutrient. Fat provides a concentrated source of energy for your body. Fats include foods like margarine, mayonnaise, and oil. Fats contain twice the calories as carbohydrates or proteins – therefore fats may need to be limited. Too much fat can lead to weight gain and heart disease.

Polyunsaturated fat, also known as “good” fat, can help reduce cholesterol. If you need to gain weight, eat more polyunsaturated fat. If you need to lose weight, eat less polyunsaturated fat.

Saturated fat, also known as “bad” fat, can raise your cholesterol and increase your risk of heart disease. Margarine is a polyunsaturated fat, while butter is a saturated fat. Try to avoid margarines that have “partially hydrogenated” on the label; they can be just as bad as butter. It is a good idea to use olive oil instead of lard.

You may also want to trim the fat on meat and remove the skin on chicken and turkey. This may be a good way to reduce unwanted saturated fat.

## What Do I Need to Know about Vitamins and Minerals?

**A** kidney diet limits the foods that have vitamins. Vitamins need to be replaced with a special supplement made for dialysis patients. A water-soluble vitamin with folic acid is usually prescribed. These are removed during a dialysis treatment. For example, Nephrovite® or Nephrocaps® are special water-soluble vitamins for kidney patients. Regular multi-vitamin supplements may not be good for you when you have kidney disease. Vitamin A is not recommended. It is very important to talk to your renal dietitian about your vitamin intake to make sure you are getting the vitamins you need.

In addition to the water-soluble vitamins, a special type of vitamin D may be given. This vitamin D will be given to you intravenously (by an IV) during your hemodialysis treatment if you need it. Some examples are Zemplar®, Calcijex®, or Hectorol®.

## What Is Anemia?

**W**hen your kidneys are not functioning well, they stop making a hormone called erythropoietin or EPO. This is a crucial hormone that signals your bone marrow to make red blood cells. Diseased kidneys will not make enough EPO, so you will not have enough red blood cells. A lack of red blood cells is also known as anemia. There is a medicine called EPO that will help you if you suffer from anemia. If you need it, both EPO and iron may be given to you intravenously (by an IV) during dialysis. You do not need to take iron pills by mouth.

Other causes of anemia include loss of blood from hemodialysis and low levels of folic acid and iron.



## What Do I Need to Know about Diabetes and Dialysis?

**D**iabetes is the leading cause of kidney failure. Poor blood sugar control can cause other parts of your body to become diseased. These include your eyes (blindness), your legs (amputations), and your heart (heart attacks).

### How will you know if your blood sugar is well controlled?

The best test is called a "hemoglobin A 1C." It is a special blood test that is like a "report card" of your average blood sugar over the past 2 to 3 months. The result should be about 4.5% to 7.0%. *Do you know what your percentage is?*

### High Blood Sugar and Thirst

High blood sugar causes thirst. If you no longer urinate and drink too much, extra fluid will build up in your body and cause extra work for your heart. Your dialysis treatment can be very uncomfortable if you build up too much fluid in your body between dialysis treatments.

If you are overweight, consider eating fewer calories. Ask your doctor if it would be a good idea to start walking for exercise. You may also want to talk to a Certified Diabetes Educator to learn how to control your blood sugar level.



**Sample Menu for a Man  
Weighing 150 Pounds  
About 85 Grams Protein  
Hemodialysis  
Non-Diabetic**

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**BREAKFAST**

4 ounces cranapple juice  
1 fried egg  
3/4 cup corn flakes  
2-3 ounces liquid non dairy creamer and sugar  
1 toasted bagel/ cream cheese or 2 slices toast/ margarine, jelly  
6 ounces coffee or tea, non-dairy creamer and sugar

**LUNCH**

2 slices rye or white bread  
1/4 pound beef or sliced turkey  
Mayonnaise, lettuce, 2 small tomato  
1/8 apple or cherry pie  
6 ounces ginger ale or iced tea with sugar and lemon

**SNACK**

10 vanilla wafers and 6 ounces lemonade

**DINNER**

1 chicken breast roasted, grilled, or fried  
1 cup white rice with margarine  
1/2 cup green beans or fresh corn on the cob, margarine  
Mixed green salad with lettuce, onion, green pepper, cucumber  
Oil and vinegar  
1/2 cup coffee ice cream or pudding with  
4 butter or sugar cookies  
6 ounces lemon-lime soda

**SNACK**

4-5 strawberries or 2 peach halves in syrup  
1" slice pound cake

**If you need to gain weight, use extra oil or margarine. If you need to lose weight, use less oil or margarine.**



## Summary

**N**ow that you are on hemodialysis, you know the importance of a well-balanced diet. A renal dietitian will help you determine a meal plan that will work for you. Remember to keep this information in mind when you select the kinds of foods you eat and the amount of fluids you drink.

1. When your kidneys are not working properly, you lose the ability to get rid of wastes in your urine. By watching what you eat and drink, you can reduce the amount of wastes in your blood.
2. Too much fluid in your body can be dangerous. It can cause high blood pressure, swelling in the tissues, and heart failure. Many foods contain water.
3. Salty foods contain sodium and sodium makes you thirsty. Try to limit the amount of salty foods you eat so you don't have to drink a lot of fluids to quench your thirst.
4. Potassium is a mineral found in almost all foods. Most potassium is processed by your kidneys and flushed from your body. When your kidneys are damaged, potassium can build up and cause an irregular heartbeat.

5. Phosphorus is a mineral found in many foods. When your kidneys are not working properly, you can have too much phosphorus in your body. Too much phosphorus can cause bone, heart and blood vessel problems. A phosphate binder can be prescribed to remove the phosphorus in your system as stool instead of being absorbed into your bloodstream.
6. Urea is caused from the breakdown of protein in your body. Too much urea will cause you to feel sick and nauseated.
7. It is important to take a water-soluble vitamin prescribed by your doctor to make sure you get your daily nutrients.
8. Diabetes is a leading cause of kidney disease. If you are on dialysis and have diabetes, you must control your blood sugar. Ask your doctor for a referral to a Certified Diabetes Educator to learn more about good blood sugar control.
9. Remember to work with a renal dietitian. The dietitian can help you learn what and how much you can eat. While there are foods that you should avoid, there are other foods you can substitute. A dietitian will work with you to find a meal plan you can live with.

## Resources

*AAKP Nutrition Counter: A Reference for the Kidney Patient* American Association of Kidney Patients. 3505 E. Frontage Road, Suite 315. Tampa, FL 33607. Phone: (800) 749-2257. Fax: (813) 636-8122. <http://www.aakp.org>

*Bowes and Church's Food Values of Portions Commonly Used*. Seventeenth Edition. Jean A. T. Pennington. J.P. Lippincott Co. 1997. ISBN: 0-397-55435-4.

*Creative Cooking for Renal Diets*. Cleveland Clinic Foundation. Senay Publishing, P.O. Box 397, Chesterland, OH 44026. ISBN: 0-941511-00-6. Phone: (800) 850-6987.

*Creative Cooking for Renal Diabetic Diets*. Cleveland Clinic Foundation. Senay Publishing, P.O. Box 397, Chesterland, OH 44026. ISBN: 0-941511-01-4. Phone: (800) 850-6987.



*Eat Right to Feel Right on Hemodialysis*. National Kidney and Urologic Diseases Information Clearinghouse. 3 Information Way. Bethesda, MD 20852. NIH Publication No. 03-4274. Phone: (800) 891-5390 or (301) 654-4415. <http://kidney.niddk.nih.gov>

*How To Increase Calories in Your Renal Diet*. National Kidney Foundation. 30 East 33rd Street, New York, NY 10016. Phone: (800) 622-9010 or (212) 889-2210. <http://www.kidney.org>

*Kidney HELPER Potassium Guide*. (Chart or poster). Available from Consumer Med Help, Inc. 2437 Bay Area Blvd., #128, Houston, TX 77058. Phone: (800) 556-7117 or (617) 246-7700. Fax: (281) 486-9260.

*Kidney HELPER Phosphorus Guide*. (Chart or poster). Available from Consumer Med Help, Inc. 2437 Bay Area Blvd., #128, Houston, TX 77058. Phone: (800) 556-7117 or (617) 246-7700. Fax: (281) 486-9260.

*Nutrition and Hemodialysis.* National Kidney Foundation. 30 East 33rd Street, New York, NY 10016. Phone: (800) 622-9010 or (212) 889-2210. <http://www.kidney.org>

*The Complete Book of Food Counts.* Fourth Edition. Corinne T. Netzer. Dell Publishing Co. 1997. ISBN: 0-440-22110-2.

*The Renal Gourmet.* Mardy Peters. Ememar Inc. 13n625 Coombs Road, Elgin, IL 60123. ISBN: 0-9641730-0-X. Phone: (800) 445-5653.



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The American Kidney Fund is the leading national voluntary health organization serving people with and at risk for kidney disease through direct financial assistance, comprehensive education, clinical research, and community service programs.

Combined Federal Campaign #0508

For more information on the Fund's programs, or to find more information on kidney disease and its treatment, contact us at:

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