

Resources

Understanding your Hemodialysis Access Options This is a publication for patients detailing various hemodialysis options. To obtain more information contact the American Association of Kidney Patients at (800) 749-2257. <http://aakp.org/brochures/access-options/>

Home Dialysis Central This is a Website about home dialysis options. www.homedialysis.org

Kidney School This is an interactive Web-based learning program to teach others about kidney disease and its treatment. www.kidneyschool.org

Life Options This is a Website with information about renal rehabilitation and how to live well with kidney disease. www.lifeoptions.org

Be Wise – Immunize!

Immunization is one of the most important things you can do to protect yourself from serious diseases such as pneumonia, hepatitis B, and influenza. The Centers for Disease Control and Prevention recommends that all chronic dialysis patients be immunized for these diseases. Talk to your dialysis staff about your immunization options. BE WISE – IMMUNIZE!



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From the Committee Chair

Judith M. McLaughlin, Chair, Consumer Committee

Spring is finally here in the Upper Midwest, and I hope this issue of Common Concerns finds you well. In the next several issues, we will be focusing on the different modalities of renal replacement therapy. Hemodialysis is the theme for this issue. Why this option? Personally, it worked best for me because I was active in swimming and water skiing. For some, it may have been their Doctor's recommendation. We hope you find this newsletter informative and look forward to our next issue on Peritoneal Dialysis.

Hemodialysis

Jan Deane, RN, CNN, Director of Quality Improvement, Renal Network 11

Hemodialysis

Hemodialysis is the most common type of dialysis in use today. Hemodialysis can be done at a dialysis center during the day, usually 3 times a week, or at night at a dialysis center, usually 5-6 nights per week, or at home. No matter what type of hemodialysis you choose, the principles remain the same. There are three parts to the hemodialysis process: a filter, called a dialyzer; cleaning solution, called dialysate; and a means to take blood out of your body to pass through the filter. This is called a dialysis access.

Dialyzer

The filter, or dialyzer, used for hemodialysis, looks much like a clear plastic flashlight. This dialyzer contains thousands of very small tubes made out of a cellophane-type material. The tiny tubes contain microscopic pores that allow poisons, excess chemicals, and water to leave your bloodstream. At any given time, the dialyzer contains about ¼ cup of blood. During a typical dialysis treatment, all of your blood passes through the filter every 15 minutes.

Dialysate

While your blood is passing through the center of the tiny tubes in the dialyzer, a chemical solution, much like the normal chemical make-

up of your blood, is pumped through the dialyzer on the outside of the tiny tubes. This solution, known as dialysate, is used to pull poisons, excess amounts of chemicals, and water through the pores of the tiny tubes and into the waste solution. This process has two parts, diffusion and osmosis. The filtration of poisons and chemicals is known as diffusion. The removal of excess water is known as osmosis. The dialysis machine regulates the amount of water and poisons that are removed from your blood.

Dialysis Access

Special tubing carries blood from your body to the dialyzer and back to your body again, forming a complete circuit. In order to get the blood into this circuit, it is necessary to have some sort of access to your blood stream. Two needles are inserted into the access, one to bring blood out of your body (arterial needle) and one to let the filtered blood back into your body (venous needle). There are 2 types of permanent access for hemodialysis. The most common is the arterio-venous (AV) fistula. Because it uses your own veins, this access is the safest and has the fewest complications. The second type of permanent access is the arterio-venous graft. A graft is a synthetic soft plastic tube that is inserted under your skin and

connects an artery and a vein. If your surgeon is unable to create an AV fistula with your own veins, a graft may be used instead. If you require a temporary access to begin dialysis right away, a hard plastic tube (catheter) may be placed in the large vein in your neck. This catheter will allow dialysis to occur. Catheters should usually only be used while a permanent access is being created.

In-center Hemodialysis

Hemodialysis performed in a dialysis clinic during the day is referred to as in-center hemodialysis. Patients come to the center at a specific time, are started on dialysis by a nurse or dialysis technician, and stay on dialysis for 3-4 hours (although some patients need longer dialysis) three times per week. The advantages of in-center hemodialysis are that there are staff to assess and care for you during the treatment, and, for some patients, it may be easier to deal with transportation needs during the day. The disadvantages of in-center hemodialysis are that many patients require more dialysis than can be accommodated by in-center scheduling, and the center's treatment schedule could interfere with your work schedule.

Nocturnal Hemodialysis

For many patients, nocturnal dialysis is a good option. In this type of treatment, patients come to a dialysis center 5-6 evenings per week where they are dialyzed for about 8 hours overnight. There are two distinct advantages to nocturnal dialysis. The dialysis machine is set somewhat slower than in standard in-center hemodialysis. This allows the dialysis to occur at a slower pace, eliminating many of the problems (e.g., low blood pressure) that can occur with standard dialysis. In addition, nocturnal dialysis allows patients to have time freed up during the day so they can work or volunteer and not have dialysis interfere with their daily activities. A disadvantage to nocturnal therapy is having to be away from home over night for 5-6 nights a week. Most patients on nocturnal hemodialysis report that they feel better than on standard in-center hemodialysis.

Home Hemodialysis

Hemodialysis may be done at home as well as in the dialysis center. Patients and their helper (parent, spouse, sibling or other) are trained to do the hemodialysis procedure by the

dialysis center staff. The dialysis center provides a machine and all supplies necessary for the treatment. There are two types of machines used for home hemodialysis. One is a smaller version of the same type of dialysis machine used in the center. The other is a specially designed machine that does not require the same kind of water hook-up as a standard dialysis machine. The type of machine used is selected by the center based on your specific needs.

Home hemodialysis is usually done one of two ways – either 3-4 hours every other day or 2-3 hours 6-7 days per week. The frequency and length of treatment depends on your specific needs and will be determined by your interdisciplinary team. If you are on home hemodialysis you will still need to be seen at the dialysis center monthly to check your lab results and assess how you are doing on treatment. The advantages of home hemodialysis are that you are able to have control of your treatment and your time. Dialysis can be scheduled around your time, not around the center's schedule. Most patients on home hemodialysis report that they feel better and have to take fewer medications. The main disadvantage of home hemodialysis is that you need to have someone at your home to assist you with your treatment.

The type of hemodialysis you select is a choice that you can make with your interdisciplinary care team. If you are interested in one of these types of treatment, talk to your team. Ask questions. You are a very important member of your health care team. The more you learn about the different types of dialysis and transplant, the more likely you are to make an well informed decision.

Dialysis Facility Compare

www.medicare.gov/dialysis is a Website that provides important information and resources for patients and family members who want to learn more about chronic kidney disease and dialysis. Look at the information on Dialysis Facility Compare carefully. Use it with other information as you compare facilities and decide where to get dialysis. You can find and compare information about the services and quality of care provided at dialysis facilities in any state. You can also find addresses and phone numbers for each facility.

A Dietitian's Perspective

Jean Olson, RD,LD,MS

Q: How healthy is the hemodialysis diet?

A: The food plan is healthy for you. Kinds and amounts of food are specified to help keep your blood chemistries as normal as possible. Protein, starches, and fats are allowed in the largest amounts, with fruits and vegetables next; dairy is strictly limited. Salt and higher sodium foods are strictly limited to help control blood pressure, thirst, and fluid retention. Numerous salt-free herbs and spices can be used, but do not use salt substitutes such as *Nu-Salt*, *Lite-Salt* or *No-Salt* as they are very high in potassium. High fiber whole grains are limited primarily due to high phosphorus content, but fiber can be gotten from smart choices of lower potassium fruits and vegetables.

Q: Why does the diet require so much adjustment when kidneys fail?

A: Your kidneys no longer filter out wastes, some minerals, and electrolytes from the blood. The artificial kidney does what your healthy kidneys did, but only for a very short treatment time when compared to twenty-four hours a day, seven days a week. Foods that cause the waste products to build up again between dialysis treatments are restricted to prevent serious health consequences. There is flexibility in your food plan, however, and you can learn over time how to balance each day's food choices and, along with dialysis, keep your blood levels acceptable.

Q: Does every hemodialysis patient have to eat exactly the same way?

A: Absolutely not. Your dietitian calculates your meal plan just for you with consideration for your usual diet and food preferences as much as possible. Other medical conditions, your age, body size, physical activity, recent blood values are all important in determining your diet prescription. There are as many ways to follow the food plan as there are people on dialysis. Adjustments are frequently made depending upon things such as changes in medical status and blood values. In other words, your food plan is not carved in stone.

Q: Will I be able to cook my favorite recipes and enjoy holiday meals with my family?

A: You will learn to make your recipes "kidney friendly" by limiting the amount of a restricted

food and/or substituting an allowed food in its place. There are numerous recipe books and recipes on the Internet. Eating in moderation, i.e., portion control is key.

Q: How serious is it that I watch the hemodialysis diet?

A: Non-adherence with the diet can have very serious both immediate and long term consequences. An immediate, dire consequence of eating too much potassium is that your heart could stop. Another example is that high phosphorus intake over time can cause weak, painful and easily fractured bones. No one wants these problems.

Q: Will following my kidney diet help me stay out of the hospital?

A: Eating adequate protein such as meat, poultry, fish, eggs, and soy will keep your blood protein, called serum albumin, normal. People with good albumin levels live longer and are not hospitalized as frequently. Also keeping within liquid limitations avoids costly admissions to a hospital for emergency dialysis.

Q: What is this business about limiting my intake of fluids?

A: After weeks and months of dialysis treatments your kidneys gradually lose their ability to make urine. Excess fluid intake between dialysis treatments can cause high blood pressure and serious problems with fluid build-up in the body. Discontinuing table salt and other sources of sodium will help control thirst and fluid retention as well. Luckily, after a period of time without salt, salty foods generally taste terrible and are easily eliminated from your diet!

Q: Will I ever be able to eat out at my favorite restaurants again?

A: Yes. Your dietitian will give you information on how to comply while eating out, including ethnic cuisine. By avoiding restricted foods and fluids during the rest of the day, you can be more liberal with choices when out. Be assertive when making special requests and call ahead to evaluate menu options.

Q: Someone said I will have to read every food label when grocery shopping and a calculator is a must.

A: No. It is a good idea to watch the sodium content, but potassium and phosphorus are often not listed on labels even if the content is high; present laws do not require that they be listed. Obtain lists of allowed foods from your dietitian and follow them closely while grocery shopping.