

UNDERSTANDING YOUR PERITONEAL DIALYSIS OPTIONS





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Healthy kidneys clean your blood by removing excess fluid, minerals and toxins. They also make hormones that keep your bones strong and your blood healthy. As your kidneys fail, harmful toxins build up in your body, your blood pressure may rise, and your body may not make enough red blood cells. When this happens, you need treatment to replace the work of your failed kidneys.

Peritoneal dialysis (PD) is one of the available treatment options to remove waste products and excess fluid from the blood when the kidneys are no longer properly functioning. There are many forms of **dialysis** available to patients. PD uses your own **peritoneum** – a natural membrane that covers the abdominal organs and lines the abdominal wall. This membrane acts as a filter. The peritoneum is a porous membrane that allows toxins and fluid to be filtered from the blood.

In order to perform this treatment, a permanent PD access to the **peritoneal cavity** will need to be created. In general, this will require a surgical procedure to insert a small, soft tube, known

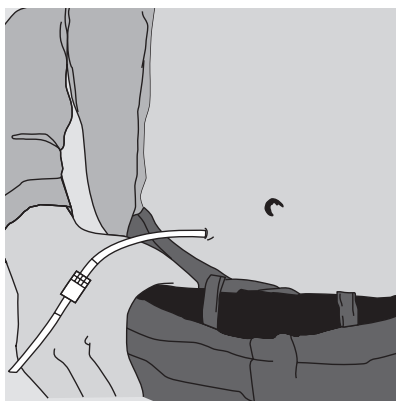


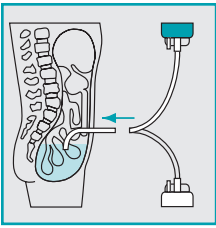
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as a **catheter**. Usually, this will be an outpatient procedure that will include local anesthesia and an intravenous (IV) sedative. A sterile dressing will remain in place about five to seven days. Your PD nurse will change your dressing throughout your PD training program. The healing process will take approximately two to three weeks.

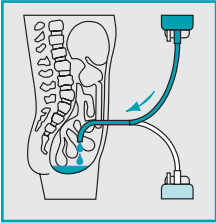
“
When
my father
went
on PD,
it gave him
his life back.

”

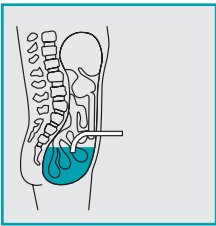
Mrs. S. Reilly



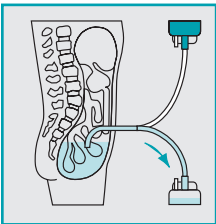
CONNECT



FILL



DWELL



DRAIN

During your procedure, a catheter is inserted through the abdominal wall and into the peritoneal cavity. The area where the catheter extends from the abdomen is called the exit site. A portion of the catheter remains outside the abdomen and under your clothing, providing a means for attaching the bags of dialysis fluid (dialysate). Your PD nurse will teach you a simple routine for cleaning and looking after the catheter exit site.

When receiving a PD treatment, dialysate will flow into the peritoneal cavity through the catheter. The solution will remain in the cavity for several hours. During this time, waste products and excess fluid pass from the blood into the peritoneal cavity. After the completed dwell time (period the dialysis solution is in your abdomen), the solution will be drained from the cavity. You will then fill the cavity with fresh solution and the process begins again. This process is called an **exchange**. Each time you perform a treatment you will use a new disposable set. Keep in mind, there is potential for infection with any surgical or invasive procedure; therefore you will need to follow proper techniques for performing your treatments. Different types of PD have different schedules of exchanges. Some PD treatments are done during the day while others are at night.

Your doctor will prescribe how many exchanges you will do each day, as well as the amount and type of dialysis fluid you will use. It is important to follow your PD prescription and do all of the exchanges as instructed.

Storage space is needed at home for PD supplies. Delivery of solution bags is typically scheduled once each month. These supplies must be stored in a clean, dry area.

Since you don't have to go to a dialysis center for treatment, PD gives you more control. You can do treatments at home, at work or on trips. This independence makes it especially important that you

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work closely with your health care team: your nephrologist, dialysis nurse, dietitian and social worker. The most important member of your health care team is you.

There are two types of PD. One is **continuous ambulatory peritoneal dialysis (CAPD)** and the other is **continuous cycling peritoneal dialysis (CCPD)**. The type of PD you choose will depend on the schedule of exchanges you would like to follow, as well as other medical factors particular to you. You may start with one type of PD and switch to another, or a combination of automated and manual exchanges may work best for you. Work with your health care team to find the best schedule and techniques to meet your lifestyle and health needs. Your doctor will look at your body size, lifestyle, lab tests, and your ability to do the dialysis steps. Both types of PD are continuous, meaning you receive around-the-clock treatment, usually with PD fluid in your abdomen 24 hours a day, seven days a week – similar to the way healthy kidneys work.

Most people with kidney failure can be treated by PD, but there are exceptions. Some people who have had major abdominal operations or scarring of the **peritoneal membrane** may not be good candidates. However, it is important to consult with your health care professional as even some of these cases may allow you to be treated with PD.

CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD)

CAPD does not require a machine. It can be done in any place that is clean and well lit. The only equipment you need is a bag full of dialysate fluid and the plastic tubing that comes attached to the

“
I was fascinated by the possibilities. I could control everything myself, make myself more or less dependent, travel for several days, and continue to work. My nurse was never more than a telephone call away. I like the thought of being able to live as normal a life as possible, and went for CAPD.
”

Ms. A. Norway

bag. A mask is also recommended to prevent the risk of infection. As the word ambulatory suggests, you can walk around with the dialysis solution in your abdomen. CAPD is performed manually and can be done almost anywhere.

With CAPD, dialysis takes place 24 hours a day, seven days a week. The peritoneal membrane acts as a filter, removing toxins and excess fluid from the blood. The toxins and excess fluid cross the membrane into the dialysis solution. They are removed from the body when the dialysis solution is drained during an exchange into a pre-attached drainage bag.

CAPD requires that you have dialysis solution in your abdomen. The amount of dialysate will vary depending on your specific needs. Exchanges are usually performed every four to six hours during the day. After a specified time, the solution, which now contains toxins, is drained into the drainage bag. You then repeat the cycle with a fresh bag of solution.

An exchange of dialysis fluid in CAPD is simple. You will be able to do it yourself once you have been trained by a specialized CAPD nurse. This training usually takes one to two weeks.

The solution bag is hung on an IV pole, using gravity to allow dialysate to flow into the peritoneal cavity. First, empty the abdomen of the fluid, then add fresh solution. Once you have filled your peritoneal cavity with the clean dialysate solution, you can detach the tubing and empty the used dialysate into the toilet. The clean fluid then sits in the peritoneal cavity until your next exchange. During this time, you are free to go about your regular activities. Each exchange takes about 30 minutes to complete. Your doctor will prescribe the number of exchanges you'll need, typically three or four exchanges during the day and one evening exchange with a long overnight dwell time while you sleep.

PROS

- CAN BE DONE IN MANY LOCATIONS, MAKING IT EASIER TO TRAVEL AND WORK.
- NO NEEDLES.
- FLEXIBLE SCHEDULE AND INCREASED INDEPENDENCE.
- FEWER FLUID AND DIET RESTRICTIONS THAN HEMODIALYSIS.
- NO MACHINE IS NECESSARY.
- TRAINING IS EASIER THAN HOME HEMODIALYSIS.
- ONGOING (CONTINUOUS) DIALYSIS SIMULATES NORMAL KIDNEY FUNCTION.
- OFTEN PROVIDES BETTER BLOOD PRESSURE CONTROL.
- PROLONGS REMAINING KIDNEY FUNCTION.

CONS

- TREATMENTS ARE USUALLY PERFORMED FOUR TIMES PER DAY.
- NOT ALL DIALYSIS FACILITIES OFFER CAPD.
- YOUR ABDOMEN IS ALWAYS FULL OF FLUID, WHICH MAY INCREASE THE SIZE OF YOUR WAIST.
- REQUIRES THE INSERTION OF A PERMANENT CATHETER.
- PROCEDURES MUST BE CLOSELY FOLLOWED TO REDUCE THE RISK OF INFECTION IN THE PERITONEAL CAVITY OR AT THE EXIT SITE.
- STORAGE SPACE NEEDED IN YOUR HOME FOR SUPPLIES.

CONTINUOUS CYCLING PERITONEAL DIALYSIS (CCPD)

The other form of PD requires a machine, called a **cycler**. This type of cycler-assisted PD is called CCPD. Sometimes called **automated peritoneal dialysis (APD)**, this treatment is done at home with your catheter connected to the cycler machine.

CCPD is a simple procedure. The machine automatically controls the timing of exchanges, drains the used solution, and fills the peritoneal cavity with new solution. The machines are easy to operate and have built-in safety devices. They are portable and

“
I'm not
scared;
I'm not
concerned
about what
I might
look like. If
I can feel
better than
that's the
main thing.
It's not
the end of
the world,
it's the
beginning
of feeling
better
- being
'cleaner'
inside, and
getting on
with your
life.”

Mr. C. Ehrlich

about the size of a small suitcase. They can be used wherever there is an electricity supply.

PROS

- FLEXIBLE SCHEDULE AND INCREASED INDEPENDENCE.
- UNLIKE HOME HEMODIALYSIS, YOU DON'T NEED A PARTNER AND TRAINING IS EASY.
- USUALLY DONE WHILE YOU SLEEP.
- FEWER FLUID AND DIET RESTRICTIONS THAN HEMODIALYSIS.
- NO NEEDLES.
- YOU CAN EASILY TRAVEL WITH YOUR CYCLER AND HAVE SUPPLIES SHIPPED TO YOUR DESTINATION, OR YOU CAN SWITCH TO CAPD WHEN YOU'RE TRAVELING.
- ONGOING (CONTINUOUS) DIALYSIS SIMULATES NORMAL KIDNEY FUNCTION.
- OFTEN PROVIDES BETTER BLOOD PRESSURE CONTROL.
- PROLONGS REMAINING KIDNEY FUNCTION.

CONS

- A MACHINE IS NEEDED.
- YOU MAY HAVE TO DO AN EXTRA EXCHANGE DURING THE DAY.
- YOU MAY BE AWAKENED DURING THE NIGHT BY THE CYCLER MACHINE'S NOISES.
- REQUIRES THE INSERTION OF A PERMANENT CATHETER.
- PROCEDURES MUST BE CLOSELY FOLLOWED TO REDUCE THE RISK OF INFECTION IN THE PERITONEAL CAVITY OR AT THE EXIT SITE.
- STORAGE SPACE NEEDED IN YOUR HOME FOR SUPPLIES.

Patients on either type of PD are relatively independent and can manage their own care at home. However, PD is not always trouble free. The following are some things to consider when making a treatment choice.

Responsibility: Some patients get tired of doing dialysis every day. If this is a problem, talk to your PD nurse who may be able to help you incorporate more flexibility into your routine, including a “holiday from PD” using hemodialysis.

Body Image: Some PD patients find it difficult to accept a permanent PD catheter. They worry the catheter may affect their sexual activity and their relationship with their partner. PD nurses and social workers can help with tips on how to disguise the PD catheter. PD also tends to stretch the abdomen, giving it a rounded appearance. Keeping fit and doing exercises will help.

Fluid Overload: When there is too much fluid in the body, it can cause a sudden increase in body weight, swollen ankles and/or shortness of breath. Generally, dialysis patients need to restrict their fluid intake to prevent fluid overload. PD patients, however, have more flexible fluid allowances than hemodialysis patients.

Discomfort: Some PD patients find having dialysis fluid in their abdomen uncomfortable. They feel full, bloated or experience back pain.

Peritonitis: This is an infection of the peritoneum, usually caused by bacteria entering through or around the catheter. This can happen when patients touch the open ends of the connections between the bag of dialysis fluid and the catheter. Sometimes, contamination around the catheter at the exit site can lead to peritonitis. Peritonitis is greatly reduced by following correct dialysis techniques. On average, patients can expect to get less than one episode of peritonitis every year. Some patients never get one. Peritonitis is easy to recognize because it makes your dialysis fluid cloudy. Some patients also experience abdominal pain and fever. Most germs and infections can be treated with antibiotics, but some are very hard to treat. Prompt medical attention is necessary. For more information on peritonitis, please speak with your physician.

IN CONCLUSION

This brochure was developed by the American Association of Kidney Patients (AAKP) to help patients make educated and informed decisions about the type of treatment available. If you are interested in changing your present treatment, talk to your nephrologist.

In evaluating the different PD options, please keep in mind:

- 1. EVERY PATIENT IS UNIQUE.**
- 2. EACH WILL HAVE DIFFERENT OUTCOMES AND EXPERIENCES WITH TREATMENTS.**
- 3. NOT ALL TREATMENT TYPES MAY BE AVAILABLE IN ALL AREAS.**
- 4. SOME TREATMENT TYPES MAY NOT BE AN OPTION FOR YOU.**

To assess whether you may be a good candidate for PD, see the Self-Assessment Tool on page 11.

We hope you found this brochure helpful in explaining your PD options. Remember to talk with your physician if you have additional questions.

GLOSSARY

Adequacy: This is a general term that refers to how well dialysis is working. It measures the amount of toxins removed from the blood. Your doctor will test for adequacy. The results of the adequacy test determine the amount of dialysis needed. As a result of this test, patients may need a change in their dialysis prescription. For more information, refer to the “AAKP Peritoneal Dialysis Advisory” available by calling AAKP at (800) 749-2257.

Automated Peritoneal Dialysis (APD): *See Continuous Cycling Peritoneal Dialysis (CCPD).*

Catheter: Sterile tubing surgically placed in the abdomen that allows for the exchanges in peritoneal dialysis.

Continuous Ambulatory Peritoneal Dialysis (CAPD): A form of peritoneal dialysis in which the blood is always being cleaned using a system of bags and tubing. No machine is required.

Continuous Cycling Peritoneal Dialysis (CCPD): A form of peritoneal dialysis that uses a machine. The machine automatically performs the exchanges while the person sleeps. This is sometimes called APD.

Cycler: Machine used to perform CCPD.

Dialysis: The process of artificially cleaning toxins from the blood through a medical procedure. *See also CAPD and CCPD.*

Exchange: Term used to describe each time the dialysis fluid (dialysate) used in peritoneal dialysis is drained and refilled.

Peritoneal Cavity: The space in the abdomen that holds the major organs. The inside of this space is lined with the peritoneum.

Peritoneal Dialysis: Cleaning the blood by using the lining of the abdomen as a filter.

Peritoneal Membrane: A sac, resembling cellophane with tiny holes, which serves as a lining of the abdominal cavity and holds organs in place within the peritoneal cavity.

Peritoneum: The lining of the peritoneal cavity.

Peritonitis: An inflammation of the peritoneal membrane. This inflammation causes an infection in the peritoneal membrane. Peritonitis is treated with antibiotics that are included in a special type of peritoneal dialysate.

Urea: A toxin the body makes when protein is broken down. Levels of urea in the blood are a measure of how well the dialysis treatment is working.

Uremia: When toxins that are normally removed by the kidneys build up in the blood, leading to symptoms such as poor appetite, nausea, vomiting, fatigue and inability to concentrate.

SELF-ASSESSMENT TOOL

If you think peritoneal dialysis (PD) may be a good treatment option for you, take a look at the questions below. Your answers to these questions can help your physician assess how PD may fit your health and lifestyle needs.

1. Do you work outside of the home? If you do, PD may be an ideal option since you are able to maintain your normal work balance with minimal interruption from your therapy.
2. Do you live in a rural area making traveling to a dialysis center difficult? PD may be appropriate for you since it gives you the freedom to dialyze and manage your disease primarily from home.
3. Do you have impaired vision? Since you are managing your own treatments, you may need assist devices or family support to allow you to perform PD at home.
4. Is your hand strength or dexterity impaired? If you live alone, you will need to see if assist devices can allow you to perform PD at home.
5. If you are diabetic, is your diabetes well-controlled? Many diabetic patients do very well on PD, but it is important that you work with your physician to find the best treatment for you.
6. Do you have adequate storage space for dialysis supplies? Each month, you will have many boxes (approximately 30-40) that will be stored. The supply company can sometimes deliver more frequently if space is limited.
7. Have you had multiple abdominal surgeries? Some people with major abdominal surgeries or scarring of the peritoneal membrane may not be good candidates for PD.
8. Will you and a possible support person be able to devote time for proper training? A support person is not required, but may prove to be very helpful in administering treatment.
9. Do you have a phone? This is essential for contact between the patient and a designated nearby dialysis unit, as well as ordering supplies.
10. Do you think you would be comfortable accepting the responsibilities associated with PD? With the independence PD offers, it also requires responsibility on the patient's part.

Now that you have answered these questions, take them to your physician and discuss whether PD may be right for you.

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Membership Benefits

- A subscription to AAKP's magazines, *aakpRENALIFE* and *Kidney Beginnings: The Magazine*.
- An opportunity to subscribe to AAKP's electronic newsletters; *AAKP Renal Flash*, *Kidney Beginnings: The Electronic Newsletter*, *Kidney Transplant Today* and *AAKP Public Policy Briefing*.
- Access to the AAKP Web site (www.aakp.org), which displays useful health care information and provides links to other renal-related sites.
- A membership packet filled with an array of informational brochures on issues affecting the care and treatment of kidney patients.
- Access to special interest brochures that address changing medical technology.
- Local AAKP chapters in your community (where available) that provide social and educational support to you and your family with meetings, newsletters and group activities.
- An opportunity to attend our Annual Convention, a four-day event featuring seminars addressing treatment options, rehabilitation, and psychological and social concerns of kidney disease patients.

How AAKP Helps You and Your Family

- Assuring your voice is heard and your interests are represented through actively defending the rights of kidney patients in Washington, D.C., and the renal community.
- Focusing on issues such as treatment options, adequacy of care, access to rehabilitation, employment and many other issues that address the needs of patients and their families.
- Encouraging the development of local patient and family support groups.
- Conducting patient conferences and seminars that help patients and their families deal with the medical, psychological and social concerns associated with kidney disease.

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