

Peritoneal Dialysis (patient's education)

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Introduction

With peritoneal dialysis (PD), you have some choices in treating advanced and permanent kidney failure. Since the 1980s, when PD first became a practical and widespread treatment for kidney failure, much has been learned about how to make PD more effective and minimize side effects. Since you don't have to schedule dialysis sessions at a center, PD gives you more control. You can give yourself treatments at home, at work, or on trips. But this independence makes it especially important that you work closely with your health care team: your nephrologist, dialysis nurse, dialysis technician, dietitian, and social worker. But the most important members of your health care team are you and your family. By learning about your treatment, you can work with your health care team to give yourself the best possible results, and you can lead a full, active life.

When Your Kidneys Fail

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

How PD Works

In PD, a soft tube called a catheter is used to fill your abdomen with a cleansing liquid called dialysis solution. The walls of your abdominal cavity are lined with a membrane called the peritoneum, which allows waste products and extra fluid to pass from your blood into the dialysis solution. The solution contains a sugar called dextrose that will pull wastes and extra fluid into the abdominal cavity. These wastes and fluid then leave your body when the dialysis solution is drained. The used solution, containing wastes and extra fluid, is then thrown away. The process of draining and filling is called an exchange and takes about 30 to 40 minutes. The period the dialysis solution is in your abdomen is called the dwell time. A typical schedule calls for four exchanges a day, each with a dwell time of 4 to 6 hours. Different types of PD have different schedules of daily exchanges.

One form of PD, continuous ambulatory peritoneal dialysis (CAPD), doesn't require a machine. As the word ambulatory suggests, you can walk around with the dialysis solution in your abdomen. Another form of PD, continuous cycler-assisted peritoneal dialysis (CCPD), requires a machine called a cycler to fill and drain your abdomen, usually while you sleep. CCPD is also sometimes called automated peritoneal dialysis (APD).

Getting Ready for PD

Whether you choose an ambulatory or automated form of PD, you'll need to have a soft catheter placed in your abdomen. The catheter is the tube that carries the dialysis solution into and out of your abdomen. If your doctor uses open surgery to insert your catheter, you will be placed under general anesthesia. Another technique requires only local anesthetic. Your doctor will make a small cut, often below and a little to the side of your navel (belly button), and then guide the catheter through the slit into the peritoneal cavity. As soon as the catheter is in place, you can start to receive solution through it, although you probably won't begin a full schedule of exchanges for 2 to 3 weeks. This break-in period lets you build up scar tissue that will hold the catheter in place.

The standard catheter for PD is made of soft tubing for comfort. It has cuffs made of a polyester material, called Dacron, that merge with your scar tissue to keep it in place. The end of the tubing that is inside your abdomen has many holes to allow the free flow of solution in and out.

Types of PD

The type of PD you choose will depend on the schedule of exchanges you would like to follow, as well as other factors. You may start with one type of PD and switch to another, or you may find that a combination of automated and nonautomated exchanges suits you best. Work with your health care team to find the best schedule and techniques to meet your lifestyle and health needs.

Continuous Ambulatory Peritoneal Dialysis (CAPD)

If you choose CAPD, you'll drain a fresh bag of dialysis solution into your abdomen. After 4 to 6 or more hours of dwell time, you'll drain the solution, which now contains wastes, into the bag. You then repeat the cycle with a fresh bag of solution. You don't need a machine for CAPD; all you need is gravity to fill and empty your abdomen. 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.

Continuous Cycler-Assisted Peritoneal Dialysis (CCPD)

CCPD uses an automated cycler to perform three to five exchanges during the night while you sleep. In the morning, you begin one exchange with a dwell time that lasts the entire day.

Preventing Problems

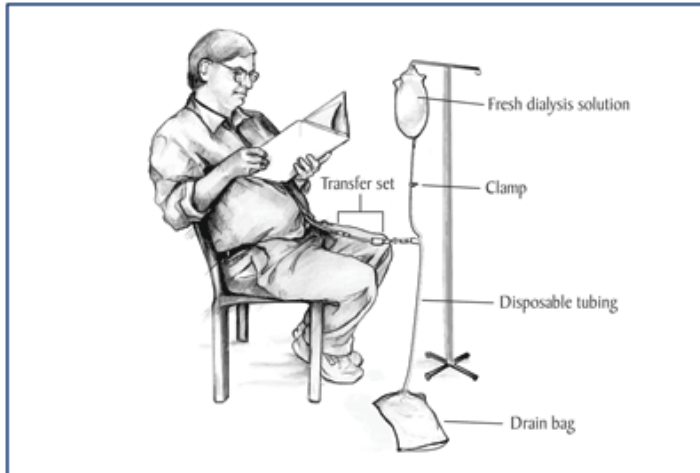
Infection is the most common problem for people on PD. Your health care team will show you how to keep your catheter bacteria-free to avoid peritonitis, which is an infection of the peritoneum.

Improved catheter designs protect against the spread of bacteria, but peritonitis is still a common problem that sometimes makes continuing PD impossible. You should follow your health care team's instructions carefully, but here are some general rules:

- Store supplies in a cool, clean, dry place.
- Inspect each bag of solution for signs of contamination before you use it.
- Find a clean, dry, well-lit space to perform your exchanges.
- Wash your hands every time you need to handle your catheter.
- Clean the exit site with antiseptic every day.
- Wear a surgical mask when performing exchanges.

Keep a close watch for any signs of infection and report them so they can be treated promptly. Here are some signs to watch for:

- Fever
- Nausea or vomiting
- Redness or pain around the catheter
- Unusual color or cloudiness in used dialysis solution
- A catheter cuff that has been pushed out



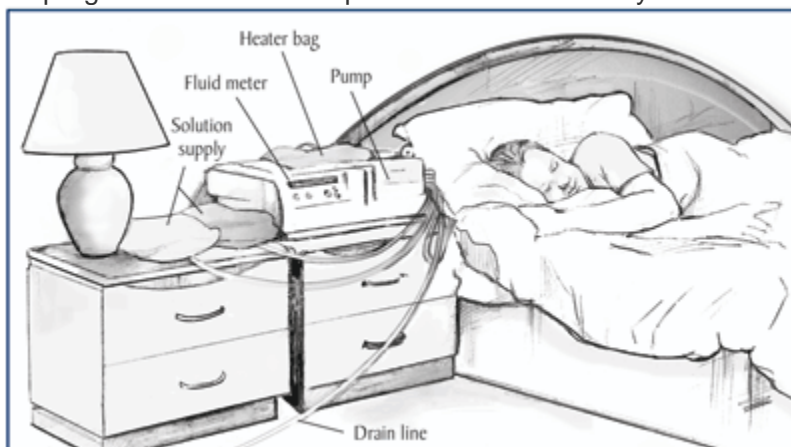
During an exchange, you can read, talk, watch television, or sleep.

Dialysis Solution

Dialysis solution comes in 1.5-, 2-, 2.5-, or 3-liter bags. A liter is slightly more than 1 quart. The dialysis dose can be increased by using a larger bag, but only within the limit of the amount your abdomen can hold. The solution contains a sugar called dextrose, which pulls extra fluid from your blood. Your doctor will prescribe a formula that fits your needs. You'll need a clean space to store your bags of solution and other supplies. You may also need a special heating device to warm each bag of solution to body temperature before use.

Cycler

The cycler-which automatically fills and drains your abdomen, usually at night while you sleep-can be programmed to deliver specified volumes of dialysis solution on a specified schedule.



Cycler. A cycler performs four or five exchanges overnight, while you sleep.