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TREATMENT OPTIONS FOR CHRONIC KIDNEY DISEASE



Questions and Answers
about Ways to Treat Kidney Disease



What is Kidney Disease ?



- **When your kidneys no longer work well enough to keep you healthy, you have Chronic Kidney Disease, or CKD. There are 5 stages of CKD. Stage 1 is the least severe. It may take several months to several years to progress through the different stages. When you reach stage 5, you will need treatment to replace the work of your kidneys.**
- **There are many causes of kidney failure. Some of the most common are:**
 - Diabetes
 - High blood pressure
 - Σ • Chronic kidney infections
 - Σ • Severe injury
 - Σ • Birth defects
 - Σ • Certain drugs

What Do Normal Kidneys Do ?

- **Your kidneys work every day to remove extra water and waste products from your blood. The extra water and waste are carried out of your body in your urine.**
- **Normal working kidneys do many other jobs to help keep you healthy. They make chemicals called hormones. Hormones help your body make red blood cells, build strong bones, and keep your blood pressure under control.**
- **The jobs of normal kidneys include:**
 - Removing extra water
 - Removing waste products
 - Balancing chemicals in the body
 - Σ • Helping to control blood pressure
 - Σ • Helping to make red blood cells
 - Σ • Helping to build strong bones

What Happens When My Kidneys Fail ?

- **When you reach stage 5 of CKD, the kidneys are not able to clean enough waste products and extra water from your blood to keep you healthy. The waste products build up in your blood, which makes you feel sick.**
- **Your damaged kidneys may not be able to make enough red blood cells, causing anemia. This may cause you to feel tired.**
- **Oftentimes, people with late-stage CKD will still be able to urinate, though in lesser amounts. Even though you are still urinating, your damaged kidneys are not able to remove enough waste products to keep you healthy.**
- **Some of the signs of late-stage kidney failure can include:**
 - Decreased amount of urine
 - Σ • Swelling in the hands, face and feet
 - Σ • Shortness of breath
 - Σ • Difficulty sleeping
 - Σ • Difficulty concentrating or thinking clearly
 - Σ • Loss of appetite, nausea or vomiting
 - Σ • Metallic taste in the mouth
 - Σ • High blood pressure
 - Σ • Feeling tired and cold
 - Σ • Dry and itchy skin
 - Overall not feeling well

What Can be Done If My Kidneys Fail ?



- **During the early stages, your doctor will try to slow down your kidney disease with medicines and a special diet.**
- **The medicines will help to remove extra fluid and help control your blood pressure.**
- **Your physician, or a renal dietitian, will discuss a special diet with you. The diet is different for everyone, but is meant to control the amount of protein, potassium and phosphorus in your body from the foods you eat.**
- **When you reach stage 5 CKD, you will need to start treatment to replace the work of your kidneys.**

What Are My Treatment Options ?

- **There are 3 treatment options that you can choose from to replace lost kidney function:**

- Σ • Kidney transplant

- Σ • Peritoneal dialysis

- Σ • Hemodialysis

- **There is no dialysis treatment that is best for everyone.**

Deciding which treatment option is best for you depends on many things, like your lifestyle, personal likes and dislikes, and any medical conditions you may have.

What About A Transplant ?

- **You may be a good candidate for a kidney transplant.**
This is a surgical procedure that places a healthy kidney from another person into your body. A kidney can come from:
 - A living blood relative, such as a parent or sibling
 - A living non-related person, such as a spouse or friend
 - A non-living donor (cadaver)
- **Remember that a transplant is a treatment option, it will not cure your kidney disease.**

Can Anyone Receive A Transplant ?

- **Not everyone is right for a transplant. With some medical conditions, a transplant is not an option. Your physician will send you to a transplant center for testing to decide if a transplant is the best treatment option for you.**
- **If a transplant is a good choice for you, your name will be placed on a waiting list until a kidney is available to match your body. Special blood tests will be done monthly to help determine if you are a match for kidneys that become available. The goal is for a kidney that is as close a match to your body as possible, so there is less chance of it not working, or rejection.**
- **You may have a friend or family member that is interested in donating one of their kidneys to you. They will also be tested to be sure they are healthy and are a good match for you.**
- **Depending on whether there is a living donor available, or if you are on a waiting list, the wait for a transplant can be a short time, or several years.**

How Is A Transplant Done?

- **A transplant is a major surgical procedure, requiring medicine to put you to sleep. The surgery takes about 3 hours. The transplanted kidney is placed in your lower abdomen. Your own kidneys are usually left in place.**
- **The transplanted kidney may start working right away, or it may take several days. You may still need dialysis during this time. While you are in the hospital, you will be given medication to help prevent your body from rejecting the new kidney. Though successful most of the time, the medication cannot always stop a rejection from happening.**
- **There may be some side effects from these medications. The transplant team will review these them with you.**
- **Your doctor will watch you closely while you are in the hospital and after you go home. It is important to take your medications exactly as you are told. Regular blood tests will be done, and your doctor will change your medications as needed.**

Things To Consider About A Transplant

- **A successful transplant may return you to a state of good health without dialysis**
 - You may be able to return to a more normal lifestyle, diet, and/or work schedule
- **A kidney transplant is a treatment, not a cure**
 - A transplant can last for many years, but may not last a lifetime
 - If your transplant fails, you will need to return to dialysis
- **You will need to strictly follow your doctor's orders for taking medication the entire time you have the transplant**
- **Your doctor will watch you closely to make sure the medications are at the right dose.**
- **A transplant may not be available for you when you are ready for treatment**
 - You may need to be on dialysis until a transplant is available.

What If A Kidney Is Not Available When My Kidneys Fail ?

- **It is not unusual for a kidney to be unavailable when you reach a point that you need treatment.**
Though a kidney transplant may be your first choice of treatment, you may need to decide on another type of treatment until a transplant is available.

What Are My Dialysis Options ?



- **Dialysis is a treatment for CKD.**
Dialysis replaces some of the jobs working kidneys do, such as removing extra water and waste products that build up in the blood.
- **There are two types of dialysis:**
 - Peritoneal dialysis
 - Hemodialysis

Peritoneal Dialysis (PD)

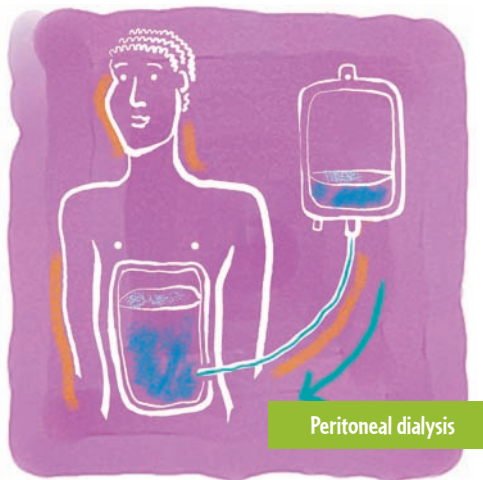
How Does Peritoneal Dialysis Work ?

- **Peritoneal dialysis uses your own peritoneal membrane as a filter for your blood. The peritoneal cavity is a space in your abdomen. A thin lining called the peritoneal membrane covers this space.**
- **A special solution called dialysate is put into the peritoneal cavity through a tube called a peritoneal catheter.**
- **The dialysate remains in the peritoneal cavity for several hours. During this time, waste products and extra water move from your blood, through the peritoneal membrane, and into the dialysate in the peritoneal cavity.**
- **The used dialysate is then drained and replaced with new dialysate.**

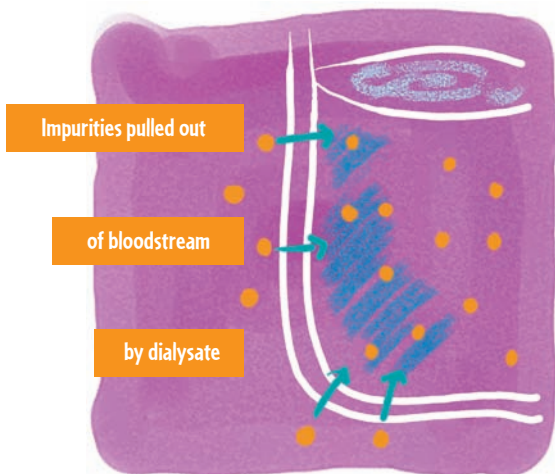
What Is A Peritoneal Dialysis Access ?

- **Dialysate runs in and out your peritoneal cavity through a small, flexible tube called a catheter. The catheter is about the size of a straw, and is put into your lower abdomen during a minor surgery.**
- **The catheter is ready to use in about 2 weeks, and completely healed in about 4 weeks. Your clinic nurse will teach you how to care for your access to prevent infection. Your clothing will cover the catheter when you are not using it.**

How is PD Done ?



- During your treatment, your PD catheter is connected to sterile tubing, which connects to a drain bag and new bag of dialysate. Each set of fill, dwell, and drain is called an exchange.
- **Fill** - New dialysate flows into the peritoneal cavity
- **Dwell** - The new dialysate stays, or dwells in the peritoneal cavity for a period of time
- This is the time dialysis takes place - extra water and waste products are removed from your blood
- **Drain** - Used dialysate is drained out of the peritoneal cavity into the empty drain bag
 - This fluid contains the extra water and waste products that were removed from the blood



What Are The Different Types Of Peritoneal Dialysis ?

- **There are 2 methods of PD to choose from – CAPD and APD. Your choice can depend on your lifestyle, personal likes and dislikes and medical condition. Your healthcare team can help you decide which will work best for you.**
- **Both CAPD and APD are self-care treatments. This means you will manage your treatments and care at home, with the support of your healthcare team.**

CAPD (Continuous Ambulatory Peritoneal Dialysis)

- **CAPD is a manual form of PD. Most people do four exchanges during the day, every 4-6 hours. The exchanges are usually done in the morning after waking, around lunch, around suppertime and just before bedtime. At night, most people leave the fluid in their abdomen while they sleep, but do not wake up to do more exchanges.**
- **Each exchange takes about 30 - 45 minutes to complete, but the time can vary. During the 4 to 6 hours you have between exchanges, you are free to do your normal activities. You are not connected to any tubing between exchanges, but dialysate is always in your peritoneal cavity.**

APD (Automated Peritoneal Dialysis)

- **APD is a form of peritoneal dialysis done with a machine called a cyclor. The cyclor will automatically drain and fill dialysate from your peritoneal cavity for you.**
- **Most of the exchanges are done while you sleep. Depending on your medical condition, you may need to do one or more exchanges during the day. Generally people are on the cyclor for 8 to 10 hours each night.**
- **After disconnecting from the cyclor in the morning, you are free to do your normal activities during the day. There is usually dialysate in your peritoneal cavity during the day.**
- **In order to use the cyclor safely, an electrical outlet in your home may need to be updated.**

How Will I Learn To Do PD At Home ?



- **When you are ready to begin PD, the nurses in your clinic will teach you how to do your exchanges and to troubleshoot. The training takes 1-2 weeks. A partner is not necessary to help you with the treatments, but a significant other is welcome during the training period. If you are not able to do your own treatments, a caregiver can be trained to do the treatments for you. At the end of the training, you will begin doing your treatments at home.**
- **You will need a clean space to do your treatments at home. Supplies are delivered monthly, and need to be kept in a clean, dry area.**

Things To Consider About PD

- **PD is a self-care treatment, done at home**
- **You are in control of your treatment times**
- **Your treatments need to be done every day**
- **The treatments are gentle - most people have no discomfort at all**
- **Your diet may be more flexible**
- **Some people may experience an infection, called peritonitis**
- **You are free to do your usual activities while your dialysis is taking place**
- **You will see your doctor and healthcare team during monthly clinic visits**

What Is Hemodialysis ?

- **Hemodialysis uses an artificial kidney, or dialyzer, and a hemodialysis machine.**
- **A special blood access is created in your arm or leg by a surgeon. At the start of each treatment, two dialysis needles will usually be put into your access. The end of the dialysis needle will then be connected to tubing that will connect to the hemodialysis machine and dialyzer.**
- **One of the dialysis needles takes your blood away from your body, while the other returns your blood to your body.**
- **During the treatment time, blood is continuously pumped from your access, through the tubing to the machine, and through the dialyzer. The dialyzer acts as a filter for your blood, removing waste products and extra fluid. The clean blood is then returned back to your body.**
- **Your blood is flowing through the cleansing and filtering process throughout your treatment time.**
- **At any time during the treatment, there is only about 1 cup of blood outside your body. At the end of your treatment, all your blood is returned to your body.**

What Is Blood Access ?

- **A special blood access is necessary for needle placement so hemodialysis can take place. A minor surgery is done to change a vein in your arm or leg to a fistula or graft.**
- **Your doctor will refer you to a surgeon for the procedure. Depending on the condition of your blood vessels, they will decide if a fistula or graft is best for you. The surgery is usually done in an outpatient facility.**
- **Fistulas and grafts need time to heal before they can be used. Your doctor may recommend having your access surgery 2 to 3 months before you will be expected to start dialysis. By having the access placed early, it is more likely to be healed and ready to use when you need to start dialysis.**
- **A fistula is a connection between an artery and a vein. It should be healed and ready to use in about 6-8 weeks, once the vein has expanded. The larger vein is needed for needle placement.**
- **A graft is artificial tubing that connects an artery to a vein. It is placed under your skin. This is healed and ready to use in about 3-4 weeks.**
- **A temporary catheter is used when dialysis is needed immediately, or if you are having problems with your dialysis access. A tube, or catheter, is placed into a vein near your chest or neck. It is removed once your permanent access is ready to use.**

Where Can Hemodialysis Be Done ?

- **Hemodialysis can be done at home or in a center at a clinic or hospital.**
- **When dialysis is done at home, it is considered a self-care treatment. You and your partner are responsible for preparing, performing and monitoring your treatment.**
- **When dialysis is done in a center, healthcare professionals prepare, perform and monitor your treatment for you.**

Home Hemodialysis

- **Hemodialysis can be done in the comfort of your home. A partner is necessary if you want to do home hemodialysis.**
- **A hemodialysis machine and supplies will be sent to you. The clinic nurse will then provide you and your partner with about 4-8 weeks of training, where you will learn to perform the treatment and troubleshoot.**
- **Once you are on your own, support services are available by phone during your treatment. You will still need to visit your healthcare team regularly to be sure the dialysis is keeping you healthy.**
- **You may need to have electrical and water systems in your home updated for the dialysis equipment. Your clinic staff will review your needs, and guide you through the process if needed.**
- **Dialysis supplies will be sent to your home on a monthly basis. You will need a clean, dry area to store the supplies.**

What Are The Types Of Home Hemodialysis ?

- **There are several options for home hemodialysis. Your physician will prescribe the length of time and number of days you will need dialysis, based on your medical condition. Then, with the help of your healthcare team, you can choose an option that will work best for your lifestyle.**
- **Conventional**
 - Treatments are usually done 3 times each week
 - Treatment usually takes about 4 hours
 - Treatments may be done during the day or early evening
- **Nocturnal**
 - Treatment is usually done 5 to 7 nights each week
 - Treatment may take 5 to 10 hours
 - Internet monitoring can be used to oversee the treatment if available
- **Short Daily Dialysis**
 - Treatments are usually done 5-6 days per week
 - Treatments may take about 2-3 hours
 - A high efficiency dialyzer is used
- **Other**
 - Your doctor may prescribe a dialysis treatment for you that is different from those described here, like every-other-day dialysis, if it fits your lifestyle and medical needs better

Things To Consider About Home Hemodialysis

- **Your treatment times may be more flexible**
- **You will not have to travel to a dialysis center for your treatments**
- **You may feel more independent**
- **You will still need to see your healthcare team on a regular basis**
- **Not all facilities offer home hemodialysis**
- **You and a partner will need to complete a 4-8 week training program**
- **Some people may experience headaches, cramps, or nausea during the treatment**
- **A dialysis machine must be installed in your home**
- **Electrical and water systems may need to be updated**
- **Space is needed for a monthly delivery of supplies**

What Is In-Center Hemodialysis ?

- **In-center hemodialysis is done as an outpatient treatment at a clinic or hospital near you. There are many clinics and hospitals that offer hemodialysis. You would travel to the clinic for your treatment, and leave after the treatment is completed.**
- **Medical staff will perform the treatment and care for you during the time you are at the center.**
- **Your schedule for treatment is set by the clinic. Your doctor will prescribe the number of days and hours needed for your treatments. Most people do 3 treatments each week.**
- **There are 3 forms of in-center hemodialysis:**
 - **Conventional hemodialysis**
 - Treatments are usually 3 times each week
 - Σ • Treatments are typically 3-5 hours
 - Σ • Treatments are done during the day
 - **Nocturnal hemodialysis**
 - Σ • Treatments are done during the night while you sleep at the clinic
 - Σ • Treatments are generally done 3 times each week
 - Σ • Treatments usually take about 8 hours
 - Σ • Ideal for people who work or go to school during the day
 - Σ • Not available at all clinics

Things To Consider About All Types Of In-Center Hemodialysis

- **Many clinics and hospitals offer hemodialysis**
- **Your treatment is completely managed by healthcare professionals**
- **Your schedule is set by the clinic**
- **You will need to travel to and from the clinic**
- **You will have days off from dialysis**
- **Other patients are there for you to talk to**
- **You will need to follow a strict diet**
- **You may experience headaches, cramps or nausea during your treatments**

What If I Don't Want To Be Treated ?

- **Though there are treatments for kidney failure, you may wish not to be treated.**
- **Some people wait until they start dialysis to see how they feel before they make this decision. You can decide to discontinue dialysis once you start.**
- **It is important to understand that if you choose not to have any treatment, you will experience serious complications, including death.**
- **Discuss your choice with your doctor. Your healthcare team will help you make an informed decision. They should support you in whatever decision you make.**
- **Often, a team of experts can be called in for emotional, physical and spiritual comfort for you and your family.**
- **You will be able to stay in the comfort of your home until you die. You may also choose to go to a hospital, hospice or nursing home.**

Your Healthcare Team

No matter which type of treatment you choose, you will have support from your healthcare team. Your team will communicate regularly with each other about your condition.

- **Family doctor - Continues to treat you for your other medical conditions, and follows your care with your nephrologist**
- **Nephrologist - Follows your kidney progress and works closely with your other doctors**
- **Nurses - Oversee your care during your treatments and help educate you about kidney disease and treatment**
- **Patient Care Technicians - Provide your dialysis treatment**
- **Dietitians - Help you to understand the diet you need to follow and why it is important to stay healthy**
- **Social workers- Help you adjust to dialysis and are a resource for other needs**

How Can I Take Care Of Myself ?

- **You cannot reverse your kidney failure, but you can help your overall health and well-being by taking care of yourself.**

Here are some suggestions:

- **Follow instructions from your healthcare team**
- **Follow your diet**
- Σ • **Take your medications as you are told**
- Σ • **Once you start dialysis, complete all your dialysis treatments**
- Σ • **Learn how to recognize problems and who to call for help**
- Σ • **Stay as active as possible**
 - Σ• Make dialysis part of your life, not your whole life
- Σ • **Spend time with your family and friends**
 - Σ• Support of your family and friends is important to your health and happiness

The Choice Is Yours

- **We hope this information has been useful in helping to decide which treatment option is best for you. The same treatment is not best for everyone. The best treatment for you is one that fits your medical condition, lifestyle and personal likes and dislikes.**
- **If you find that your first choice does not suit you, you can change to another option. During the time you are treated for kidney failure, your lifestyle or medical needs may change, which might make another treatment more suitable. Many patients use more than one treatment option throughout their life. Be sure to talk to your healthcare team about any concerns you may have.**
- **It's important to learn all you can. People who educate themselves about their medical conditions and treatments, and take an active role in their care, tend to do better than those who don't.**
- **To help you learn more about kidney disease and its treatment, call toll free 1-866-kidney1
Or go to: www.kidneyoptions.com.**

Glossary

- **Anemia** - A condition in which there is a lower than normal number of red blood cells. Symptoms include feeling tired, weak, and short of breath.
- **Artificial kidney** - A filtering device used with an artificial kidney machine to remove extra fluid and waste from the body. Also known as a dialyzer or hemodialyzer.
- **Blood access** - A way to get into the body. Accesses to the bloodstream for dialysis are fistulas, grafts and catheters.
- **Catheter** - A flexible, hollow tube through which fluids enter or leave the body. Usually used as a temporary access for dialysis.
- **Chronic Kidney Disease (CKD)** - A condition which occurs when the kidneys can not do their job of cleaning blood of extra fluid and waste products.
- **Dialysate** - Solution containing water and chemicals (such as salt and calcium) that passes through the artificial kidney to remove excess fluids and wastes from the blood.
- **Exchange** - The process of changing used dialysate for fresh solution in peritoneal dialysis.
- **Fistula** - The surgical joining of an artery and a vein, making the vein larger for dialysis. A fistula is a type of access.

Glossary & References

- **Graft** - The surgical placement of a material between an artery and vein to create an access for dialysis.
- **Hemodialysis** - Removal of extra fluids and waste by cleaning of blood through an artificial kidney.
- **Peritoneal cavity** - Space surrounding the abdominal organs located under the abdominal muscles.
- **Peritoneal membrane** – Smooth membrane that covers the abdominal organs and lines the abdominal cavity, acts like a filter during peritoneal dialysis.
- **Sterile** - Clean and free of any living microorganisms.

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