



Chronic Kidney Disease: A General Overview and Keys for Successful Management

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Thank you to our speaker!



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- Chair of Medical Affairs, American Kidney Fund Board of Trustees

What do the kidneys do?

- Filter (clean) the blood of waste products that are normally produced every day
- Control levels of fluid, salt, and other minerals (like calcium) in the body
- Produce important hormones, including those necessary for making new red blood cells in the bone marrow

Components of the Urinary System

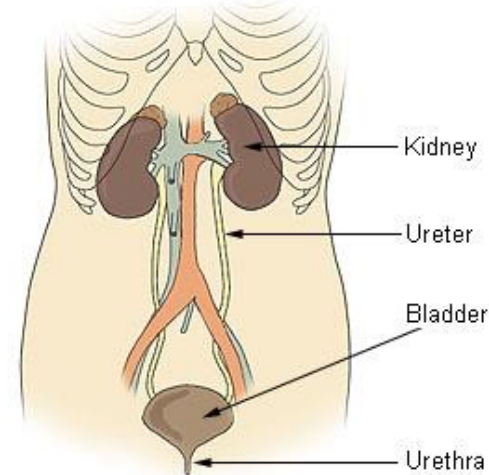


Image credit: National Cancer Institute



Image credit: National Kidney Federation, United Kingdom

What is chronic kidney disease (CKD)?

- CKD refers to a decrease in the function of your kidneys based on blood or urine tests for ≥ 3 months

Ways to assess kidney function

- Direct measurement of glomerular filtration rate (**GFR**): isotope tests
 - Iothalamate, iohexol
- Measurement of surrogate markers of GFR in blood
 - **creatinine**, a muscle protein—can be used to estimate GFR
 - **Blood urea nitrogen (BUN)**, a waste product
- Urine tests:
 - 24-hour urine creatinine clearance
 - Urine protein (albumin)
 - Urine blood cells (red and white blood cells)

How is CKD classified?

Stage	Description	GFR, mL/min/1.73m ²	Actions
–	At increased risk	≥60 (with chronic kidney disease risk factors)	Screening; chronic kidney disease risk reduction
1	Kidney damage with normal or increased GFR	≥90	Diagnosis and treatment; treatment of co-morbid conditions; slowing progression; CVD risk reduction
2	Kidney damage with mild or decreased GFR	60-89	Eliminating progression
3	Moderately decreased GFR	30-59	Evaluating and treating complications
4	Severely decreased GFR	15-29	Preparation for kidney replacement therapy
5	Kidney Failure	<15 (or dialysis)	Kidney replacement (if uremia present)

Who is at risk for CKD?

- People with:
 - Heart and blood vessel disease
 - Hypertension (high blood pressure)
 - Diabetes
 - Obesity
 - Family history of kidney disease
- People over age 60
- African-Americans, Asians, Pacific Islanders, Native Americans, and Hispanics
- People who smoke or use any kind of tobacco
- Overuse of certain medications, especially anti-inflammatory medications (Advil, Motrin, ibuprofen, naproxen, Naprosyn, Aleve, etc.)

How can CKD be treated?

- Blood pressure control
- Blood sugar control for people with diabetes
- Smoking cessation
- Healthy diet
- Weight loss if needed
- Keep track of your medications— what you're taking now and what you're given!
- Education, education, education...don't be afraid to ask questions about what's being done.

How do I know if my kidney disease is getting worse?

- Often difficult to tell without getting regular blood tests – the kidneys are like garbage men...no one notices them until they stop doing their job
- Only when kidney disease gets particularly severe do most people develop symptoms:
 - fatigue, malaise
 - loss of appetite; nauseated
 - food tastes funny (metallic)
 - itchiness all the time
 - fluid retention
 - confusion

What about dialysis?

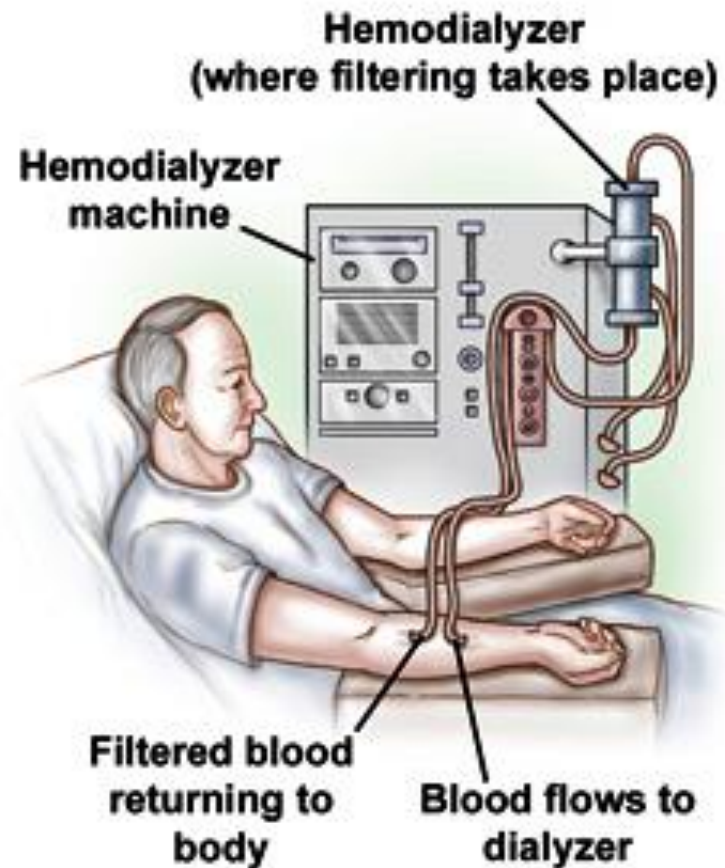
- Generally, when kidney function declines to less than 15% of the original capacity, people develop severe symptoms, and need to start making preparations for dialysis.
- Your kidney doctor (nephrologist) will determine when it is time to start dialysis to treat your kidney failure based on:
 - your symptoms (most important)
 - your blood tests

What is dialysis?

- A special technique for filtering (cleaning) your blood of toxic waste products
- Two general types of dialysis: **Hemodialysis** and **Peritoneal** dialysis

Hemodialysis

- A form of dialysis where blood is taken out of your body, cleaned in a machine, and then returned to you.
- Access to your blood is the **key** component—requires **preparation** months in advance.



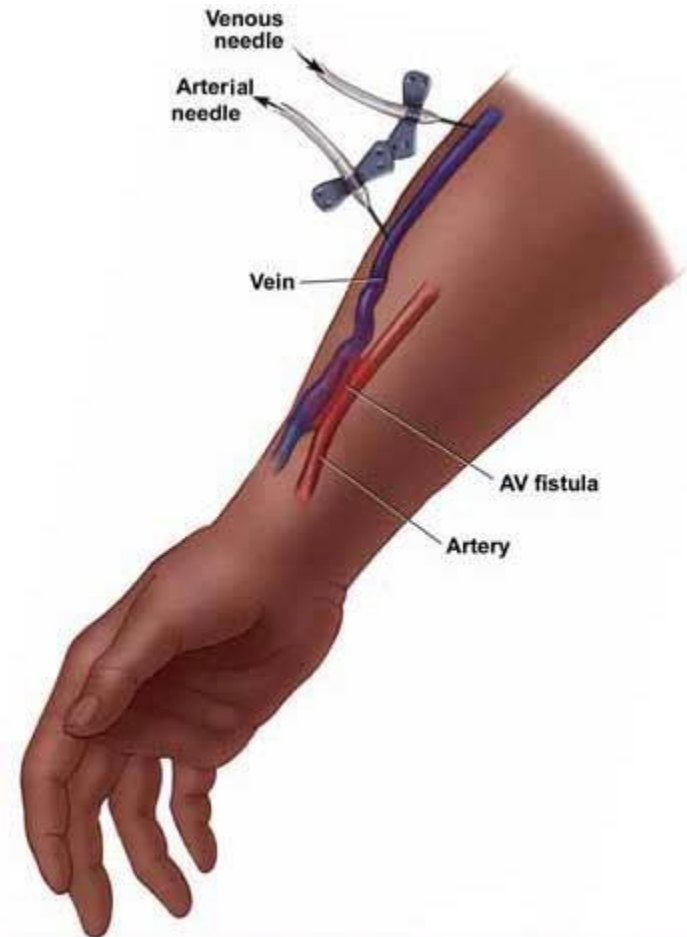
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What is Vascular Access?

- In order to perform hemodialysis, there needs to be some way for blood to safely and efficiently flow from your body to the machine and back.
- Generally, there are 3 types of vascular access options:
 - Arterio-venous fistula (AVF): preferred
 - Arterio-venous graft (AVG): like an AVF, only requires synthetic material
 - Tunneled catheter (TC): option of last resort

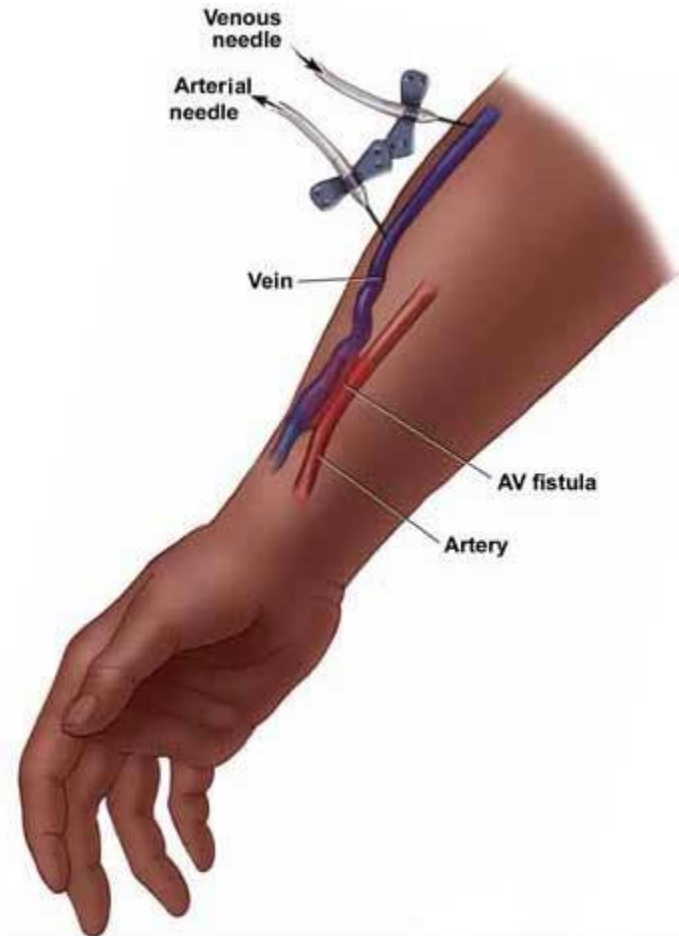
Arterio-venous Fistula

- A surgically constructed **direct** connection between one of the arteries and an adjacent vein in your arm
- Generally, a same-day procedure with local anesthetic
- Normally takes 3-6 months for AVF to mature prior to being ready for use— must prepare far in advance of starting HD



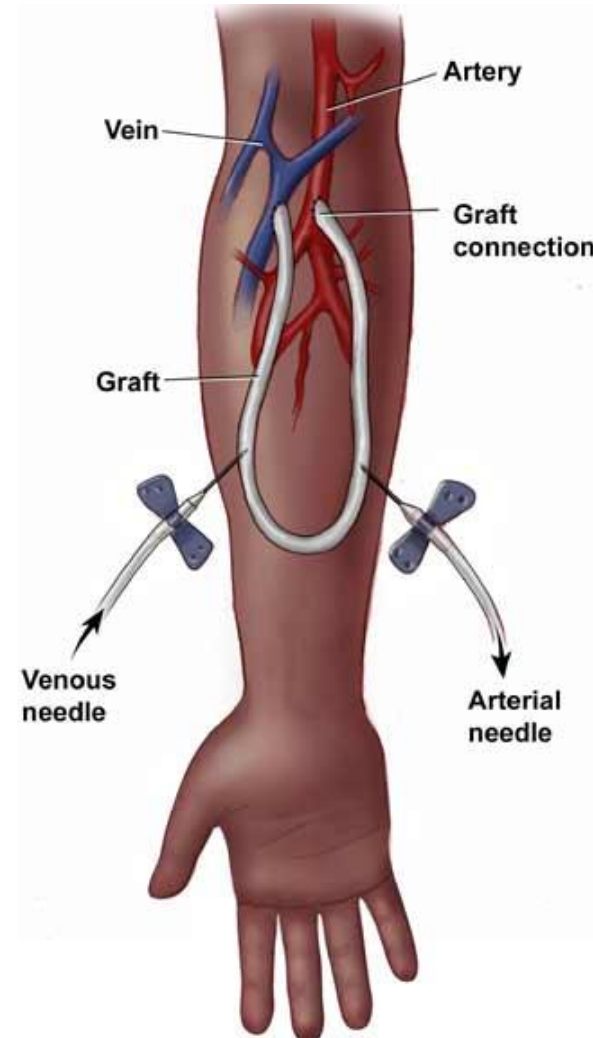
Arterio-venous Fistula

- Complications:
 - loss of blood flow to fingers (pain)
 - swelling of arm
 - infection
- By far and away the best and safest way to start HD
- **DO NOT LET ANYONE DRAW BLOOD OR TAKE A BLOOD PRESSURE IN THE ARM WITH AN AVF**



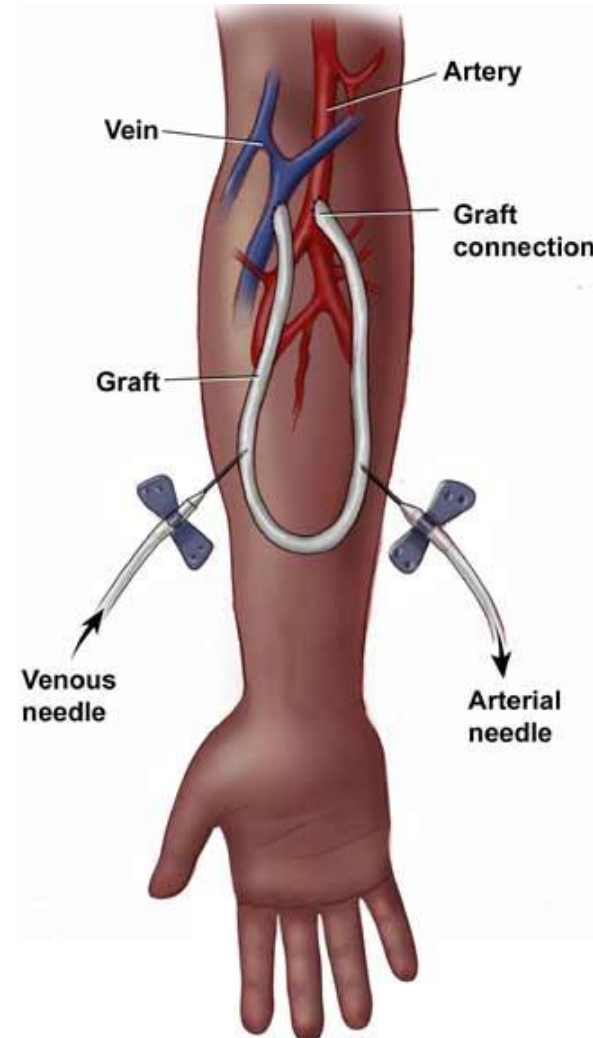
Arterio-venous Graft

- Surgically constructed connection between an artery and vein using a synthetic piece of material.
- Same-day procedure with local anesthetic.
- Usually 1-3 months prior to maturity, though can be ready for use within 2 weeks of getting placed.



Arterio-venous Graft

- Complications:
 - Pain, swelling, infection
 - clotting
- Does not last as long as an AVF
- Not a bad second option, but not ideal



Tunneled Catheter

- Large catheter (tube) placed in a major vein in your neck and tunneled under your skin on your chest— does not require surgery, normally a procedure performed by radiologists
- Can be used immediately after being placed

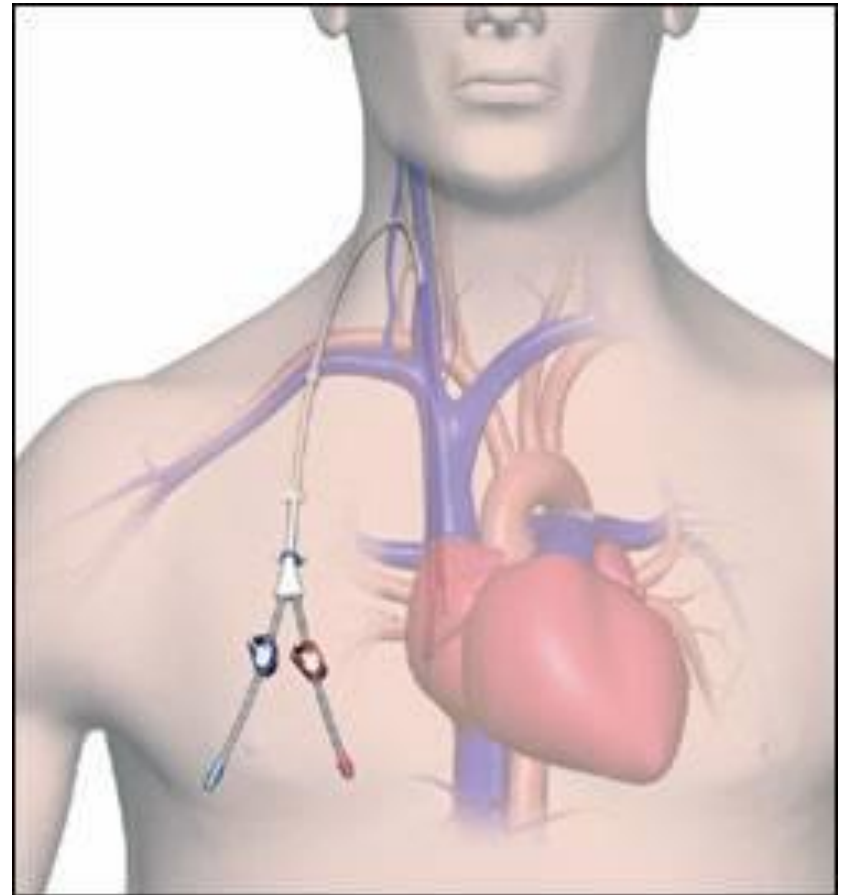


Image credit: Seattle Cancer Care Alliance

Tunneled Catheter

- Complications:
 - Infection: major and common
 - malfunction: often needs to be changed
 - damage to veins leading to heart which may make HD more difficult
- The least best option, and should avoid being a long-term option

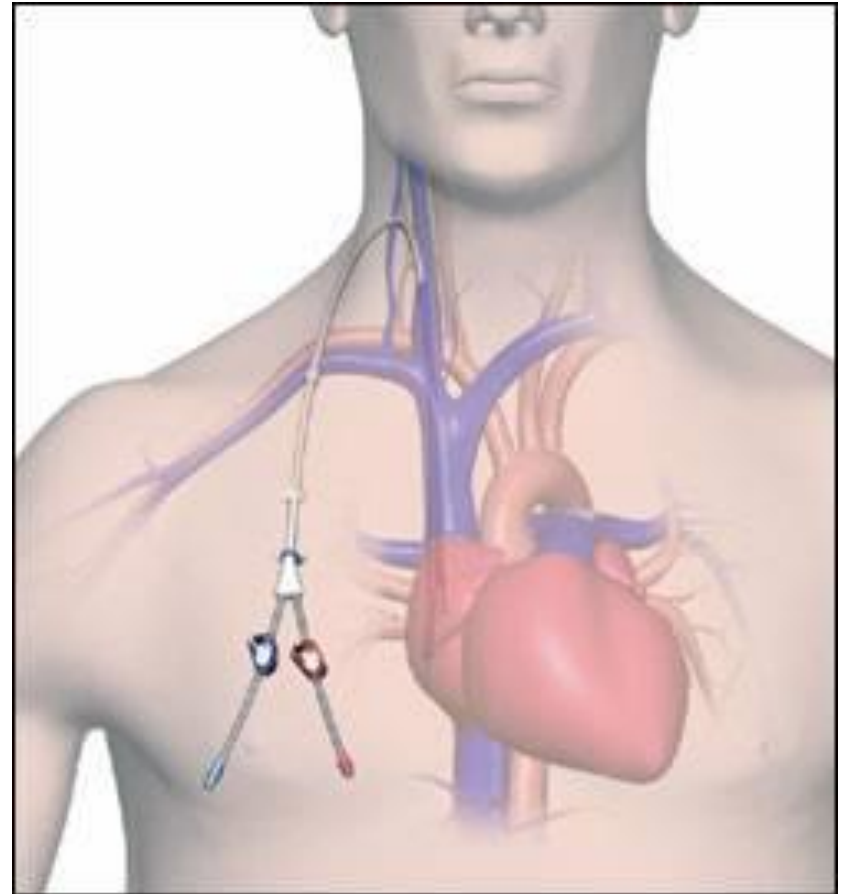


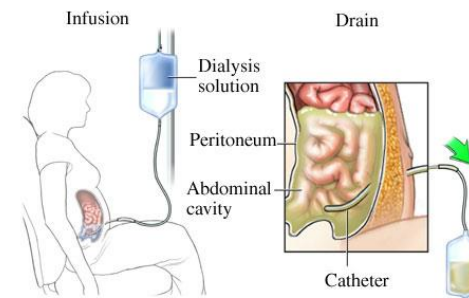
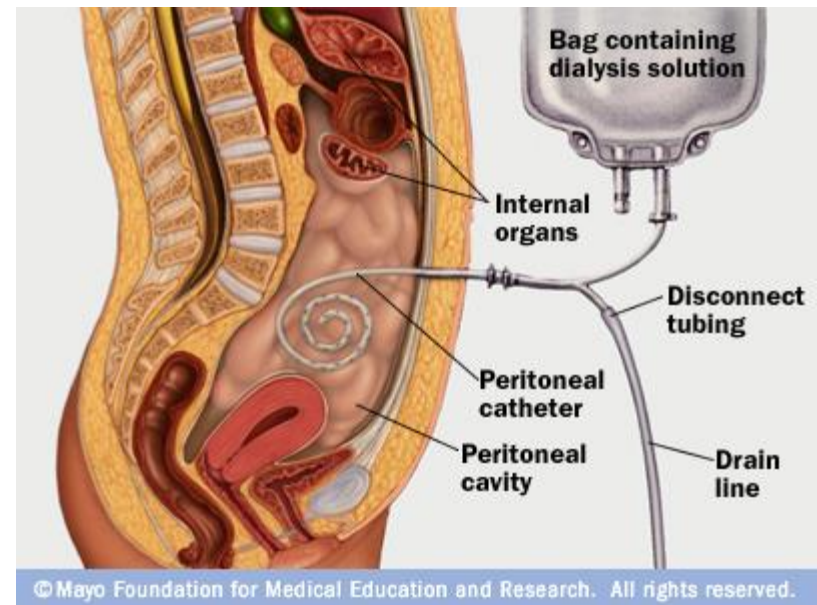
Image credit: Seattle Cancer Care Alliance

What can I expect on HD?

- Generally, you will get hemodialysis treatments three times a week, 3-4 hours at a time
- Your kidney doctor will monitor your blood tests to see how well the dialysis is cleaning your blood and make adjustments to your treatment accordingly

Peritoneal Dialysis

- A form of dialysis in which fluid is instilled in your abdomen and waste products diffuse from your blood to the fluid (across the peritoneum) over several hours— the fluid is then drained from your abdomen, and the procedure is repeated
- Access to your abdominal cavity is key



How do you get access to the abdominal cavity?

- Surgically placed peritoneal catheter (tube) is required
- Surgery is same-day procedure under local anesthetic
- Normally takes 2-3 weeks for exit site to heal prior to being ready for use



Image credit: Kidney Health Australia

What can I expect from PD?

- In general, two different types of PD:
 - Continuous ambulatory PD (CAPD)
 - Continuous cycling PD (CCPD)
- Your kidney doctor and nurses will help decide which method is best for you based on the quality of your peritoneal membrane

CAPD

- Patient performs 4-5 exchanges through the course of the day
- An exchange consists of instilling dialysis solution in the abdomen, and letting it sit there for 4-6 hours-- then the solution is drained out, new solution is drained back in, and the process starts over

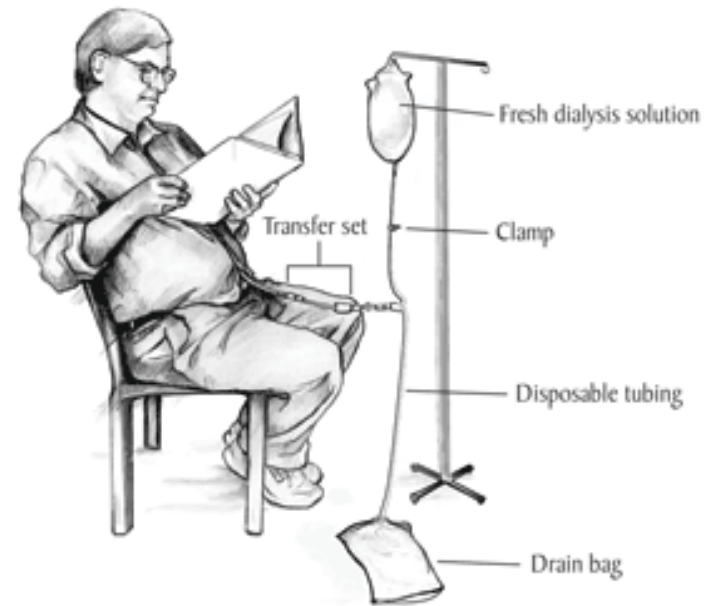


Image credit: National Institutes of Health

CCPD

- A form of PD in which the exchanges are performed by a machine at night while you are sleeping
- During the day, dialysis solution sits in your abdomen, but no exchanges are taking place
- Offers more freedom for people during the day—however, not for everyone

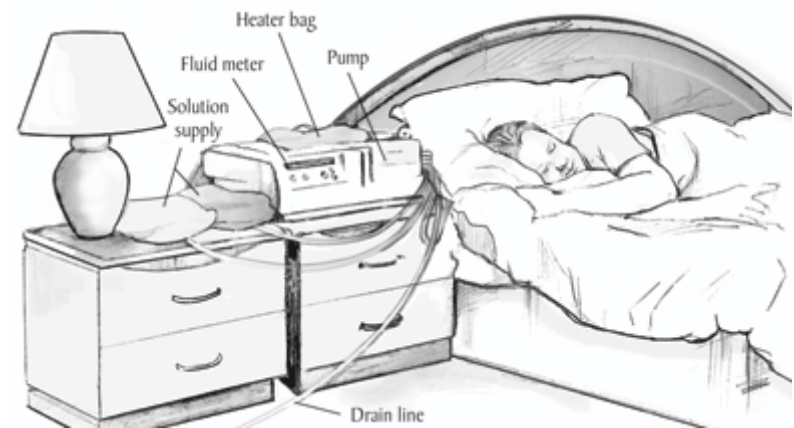


Image credit: National Institutes of Health

Comparison of HD and PD advantages

- **Peritoneal Dialysis**
 - more freedom, especially for travel
 - more direct involvement in your own health care
 - fewer dietary restrictions than HD
 - less “stressful” on body than HD in some cases
- **Hemodialysis**
 - Less technical involvement necessary
 - Seen by health care professionals at least 2-3 times per week
 - Easier to control levels of water and salt in the body in many cases

Comparison of HD and PD disadvantages

- **Peritoneal Dialysis**
 - Time consuming exchanges throughout the day
 - risk of infection of peritoneum or exit site for catheter
 - can make blood sugar control harder for people with diabetes
 - peritoneum can “burn out” overtime
- **Hemodialysis**
 - Less freedom, especially for traveling
 - can cause rapid changes in blood pressure that may be uncomfortable
 - problems with vascular access; frequent hospitalization
 - dietary restrictions more burdensome

Take Home Messages

- Ask questions
- Know your options
- Educate yourself about your own disease
- **No one can be a more ardent advocate for your own healthcare than you!**

Join us for next month's webinar!

I need a kidney transplant. Am I covered now? What about in the future?



Cindy Samoray,
Transplant Financial
Coordinator

**Tuesday, April 26, 2016
1:00-2:00 p.m. (ET)**



Colleen Satarino,
LMSW, CCTSW,
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