

# Treatment Options for End Stage Kidney Disease

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What Happens When Kidneys Fail?



# Educational Goals

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1

Understand who develops End Stage Kidney Disease (ESKD)

2

Understand the causes of ESKD

3

Recognize the different treatment choices

4

Understand the benefits and drawbacks of different treatment choices

5

Know the advantages of transplant over dialysis

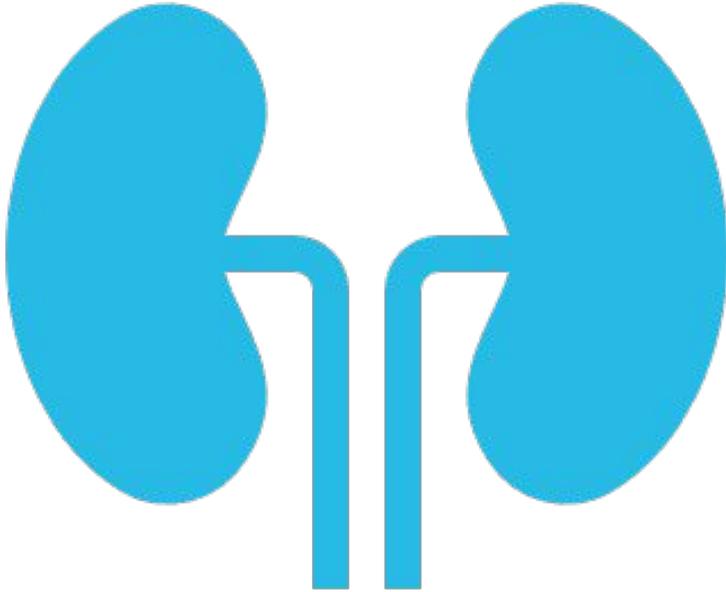
# What is ESKD?

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- End Stage Kidney Disease (ESKD) is also known as Stage 5 Chronic Kidney Disease
- Chronic Kidney Disease (CKD) includes any condition that damages the kidneys and causes them to not function properly over time. There are 5 stages of CKD.



# What is ESKD?



- Normally the kidneys filter blood to remove waste products and extra fluids in the form of urine.
- As kidney function decreases, they are unable to filter the blood as well as they should
  - This leads to the build-up of waste products in the body and can cause symptoms such as extreme fatigue, nausea, vomiting, and decreased ability to urinate as much as usual. These are all symptoms you should let your doctor know about.

# Causes of ESKD

Diabetes 52%

Hypertension 30%

Glomerulonephritis 9%

PDK/Alport's 3%

Other 5%

# Who Develops ESKD

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Average age of onset of  
ESKD: 64 Years

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About 500,000 patients are on  
dialysis in the U.S.

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Risk of ESKD is about 4 times  
higher in African Americans

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Risk of ESKD is 2 times  
higher in Hispanic Americans

Treatment  
Option One

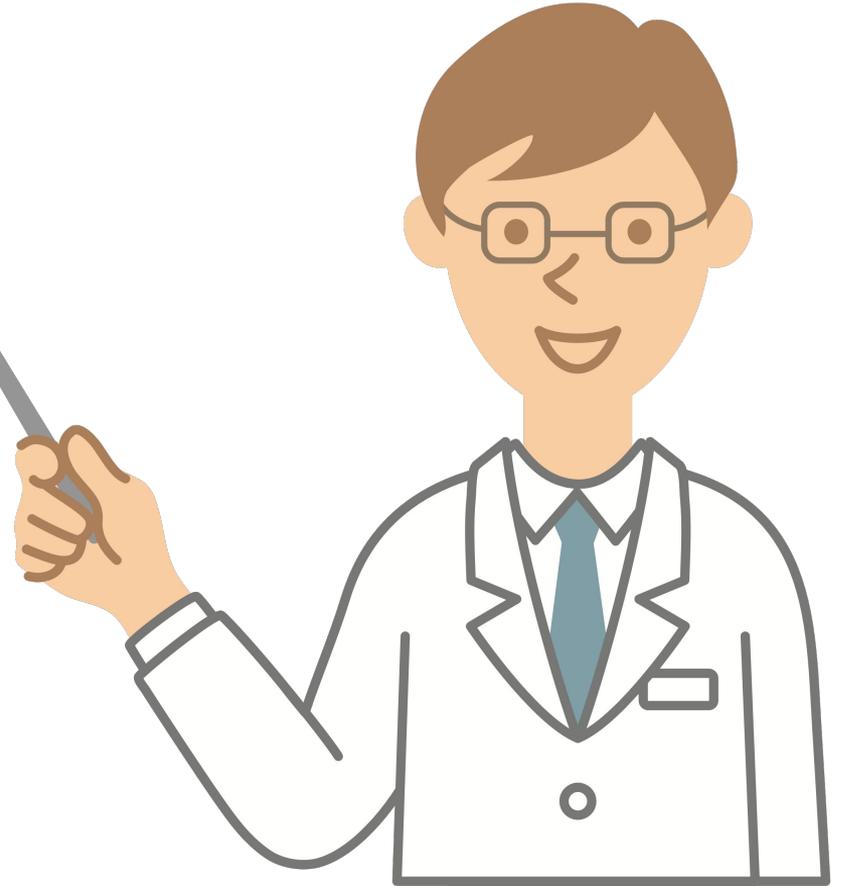
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Transplant

# Transplantation

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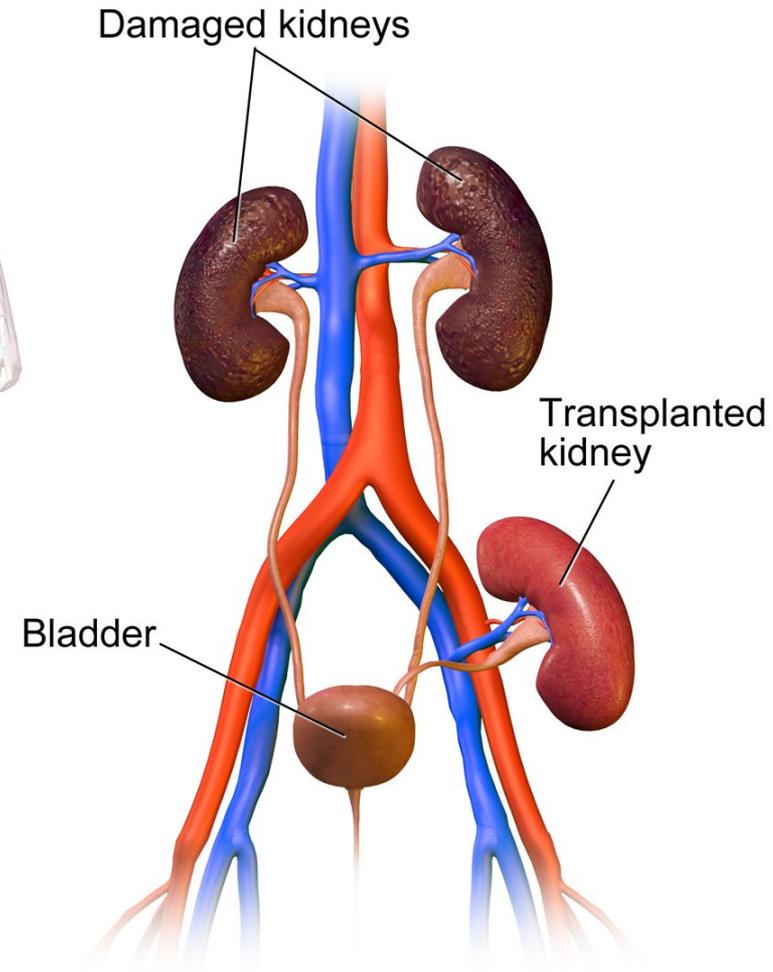
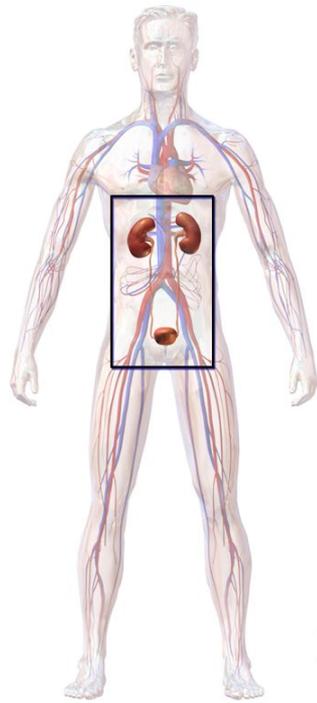
- A kidney transplant involves using a healthy kidney from another person and having it placed into your body to function in place of you diseased kidneys
- A transplant is NOT a cure, but rather a treatment
- You can expect to follow up with many different providers, including a nephrologist (kidney doctor).
- There are medications that will need to be taken daily to prevent your body from rejecting the new kidney. These medications require close monitoring by a doctor.



# Transplantation

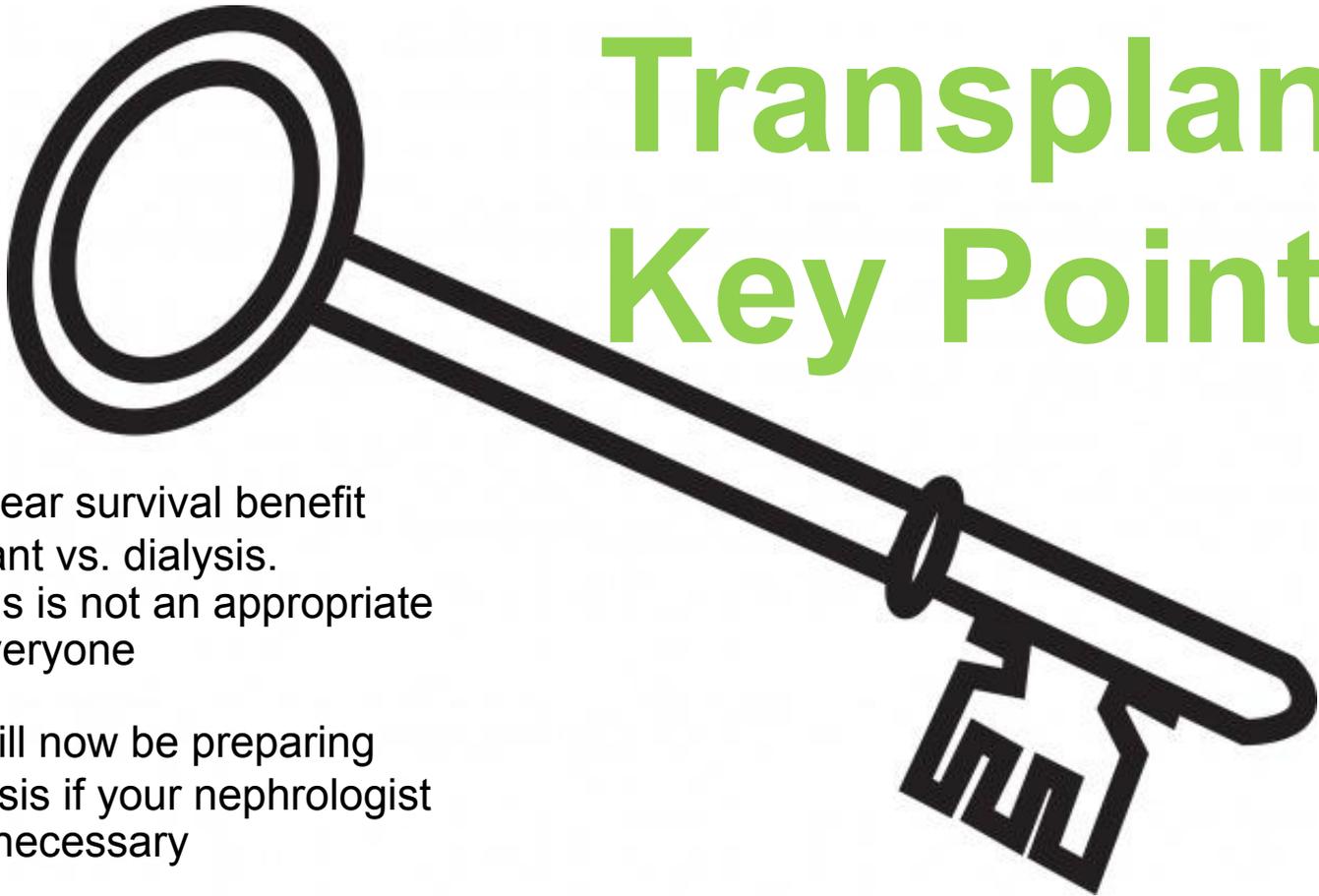


- There is a specific set of criteria you will need to meet for a transplant. A transplant center/team will help evaluate you to determine your eligibility for a transplant (such as age or other health risks).
- If you meet the criteria, a transplant is often the best treatment for ESKD.
- A transplant can come from a living or deceased donor.
- There may be a 5 - 7 year wait for a deceased kidney donor.
- If transplant is an option for you, your nephrologist will refer you to a transplant center to begin the evaluation process.



**Kidney Transplant**

# Transplant Key Points



- There is a clear survival benefit with transplant vs. dialysis. However, this is not an appropriate option for everyone
- The focus will now be preparing you for dialysis if your nephrologist feels this is necessary

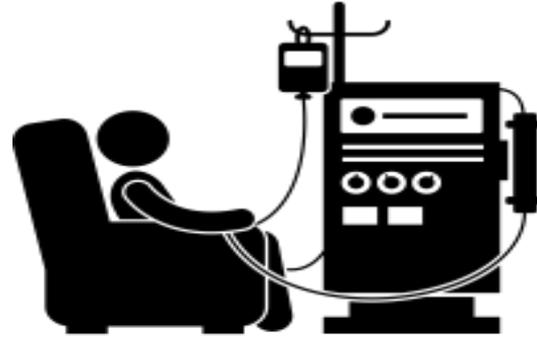
# Treatment Option Two

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Dialysis

# Hemodialysis (HD)

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- Hemodialysis is a type of dialysis where blood is pumped directly out of your body and into a filter that cleans your blood and removes excess fluid from your body.
  - This can be done in a dialysis clinic or at home.
  - If done in a dialysis clinic, this takes about 4 hours per treatment and is done 3 times per week.
  - Home hemodialysis is done more frequently (acts more like your kidneys) but is done for less time in the convenience of your home.
- In order to do hemodialysis, we need “access” to your bloodstream.
  - This is done with either a catheter or a shunt (fistula) in your arm. A permanent catheter in your vein comes with significant risk of serious infection. For this reason, a fistula is strongly recommended.

# Fistula Creation

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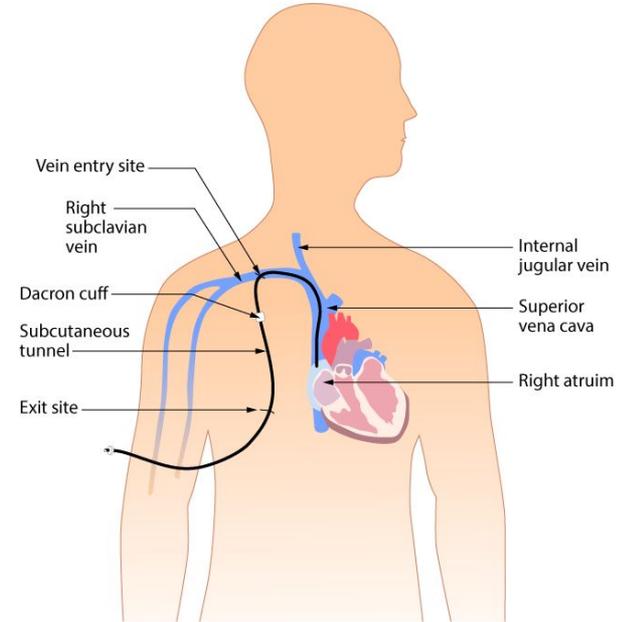
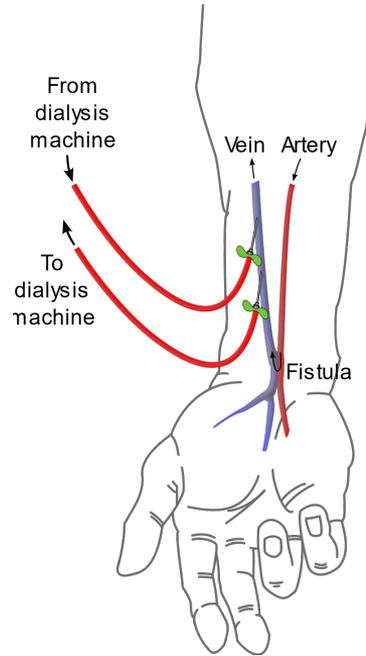
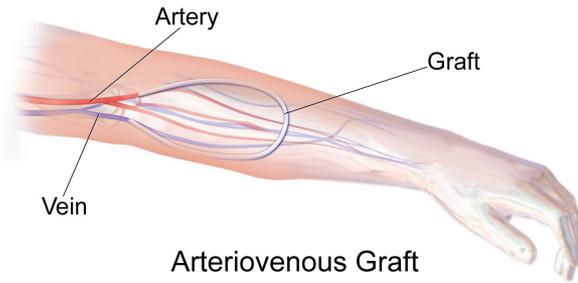
The physician will recommend a patient has their fistula created months prior to starting dialysis. This is because a fistula needs time to mature (or become ready) before it can be used for dialysis.

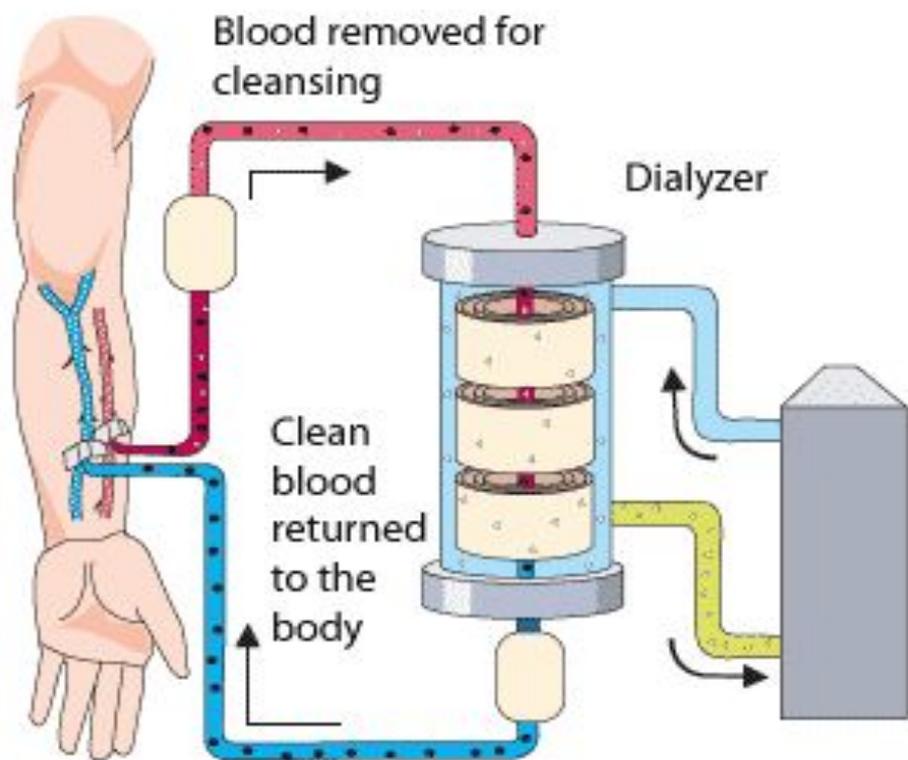
Typically, this process starts with a referral to a vascular surgery center for an initial vein map and consult. After the patient has met with the vascular surgeon, they will be scheduled for the actual procedure.

Once the procedure is completed the patient will follow up with the vascular surgeon about 6-8 weeks later to ensure there are no complications.

# HD Access Options

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## In Center Hemodialysis

Placed at a dialysis center near your home

Dialysis would be done 3 times a week

- Monday, Wednesday and Friday
- Tuesday, Thursday and Saturday

Common dialysis centers include:

- Fresenius
- DaVita

# Advantages and Disadvantages of In-Center HD

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## Advantages

- Nurses provide treatment
- Regular contact with other patients and staff
- 3 days on 4 days off
- Medical help available immediately

## Disadvantages

- Travel to center 3 times per week
- Fixed schedule
- Needles
- Many diet restrictions
- Cramps, fatigue, nausea, headaches are more likely on this therapy



# Home Hemodialysis (HHD)

- Most common machine used for HHD is a NXStage
- Training
  - Training is done at a dialysis center
  - Usually four-six weeks
    - Last week is done at your home
- Able to do without a partner during the day. Would need a partner for nocturnal runs
- Example of Schedule:
  - Run on Mondays and Tuesdays, off Wednesday, run Thursday and Friday, off Saturday and run Sunday
  - Run times usually are about 2-2.5 hours each time

# Home Hemodi alysis

One monthly clinic visit to  
see nephrologist at a  
dialysis center

Benefit includes not having to  
travel to a center 3x a week to  
complete dialysis therefore  
less time away from family.

Can travel with a portable  
machine and used  
bagged dialysate

# Home Hemodialysis

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- NXStage Machine:
  - Used for more frequent dialysis
  - Does not take up a lot of space
  - No extra plumbing required
    - Dialysis company will do a home visit to make sure correct fitting
  - PAK
    - Box on base of machine which purifies water to make dialysate. This is called Pureflow
  - Home dialysis team will calculate how long treatments should be
    - Patient weight is a factor
  - Can be deemed appropriate to do solo (no partner required)



About 1 foot tall (about the height of a two-liter soda bottle). Weighs about 75 pounds.

# Advantages and Disadvantages of HHD

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## Advantages

- More control during treatment
- Less travel to clinics
- Easier to travel (if using NxStage)
- Lower risk for cardiac events
- Take less blood pressure medications
- Pts report better sleep
- Independence

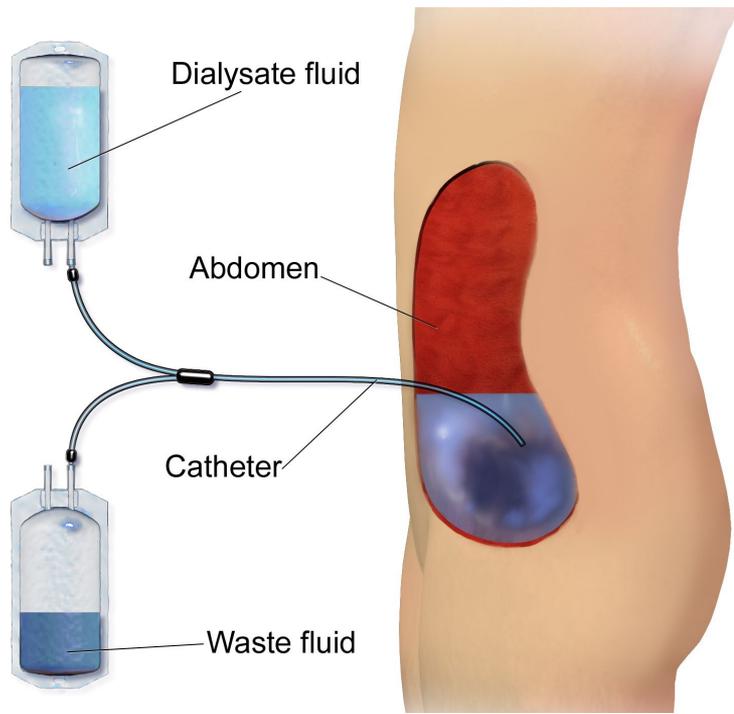
## Disadvantages

- Need a trained partner (if running at night)
- Requires weeks of training
- Needles
- Potential for increased risk for infection
- The burden of treatment falls on patient and their family, which can lead to burnout
- Space needed to store equipment

# Peritoneal Dialysis (PD)

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- **Peritoneal dialysis is a type of dialysis that uses the lining of your abdomen to filter toxins and excess fluid out of your body when your kidneys have failed.**
- **A soft tube (catheter) is placed in your abdomen a few weeks before starting PD.**
- **To perform PD, fluid is inserted into the abdomen through the catheter and drained out through the catheter along with waste products from the blood.**
- **Unlike HD, PD is done every day. Most patients do the treatment at home while they are asleep. PD allows patients to have more freedom for daily activities during the waking hours.**
- **Typically, patients are seen by the doctor once a month at the dialysis clinic.**
- **It is not uncommon to have a hemodialysis fistula created in the arm even if you plan to do PD. Your nephrologist will talk to you about this if necessary.**



# Advantages and Disadvantages of PD

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## Advantages

- Independence
- 1-2 clinic visits per month
- No needles
- Daily treatments are gentler, which causes some patients experience less fatigue compared to in-center treatment
- Materials are portable so travel may be easier
- Therapy while you sleep

## Disadvantages

- Scheduled exchanges
- Permanent catheter
- Risk of infection
- May gain weight
- Larger waistline
- Space needed to store equipment
- The dialysis solution contains dextrose so blood sugar control may be more challenging for diabetics



## Important Info About Home Dialysis



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- Both PD and HD can be done at home
  - PD care has improved over time
  - Diabetics can do PD
  - Survival outcomes between patients on PD vs. HD are very similar
  - Improved heart with home HD
  - Fewer medications with home HD
  - Home HD patients may have better blood pressure control and less thickening of the heart called left ventricular hypertrophy
  - Patients with congestive heart failure can do PD or HHD
  - Many patients who do dialysis at home report better quality of life and less fatigue

# Treatment Option three

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Palliative/ Hospice Care

Palliative/  
Hospice  
Care

Some patients choose to not proceed with dialysis or transplantation.

Some patients elect to focus on comfort care instead of aggressive medical care (including dialysis) when their kidneys fail.

# Take home points

- You have choices!
- This is not a “one size fits all”
- Many people develop ESKD
- **You are not alone!**