

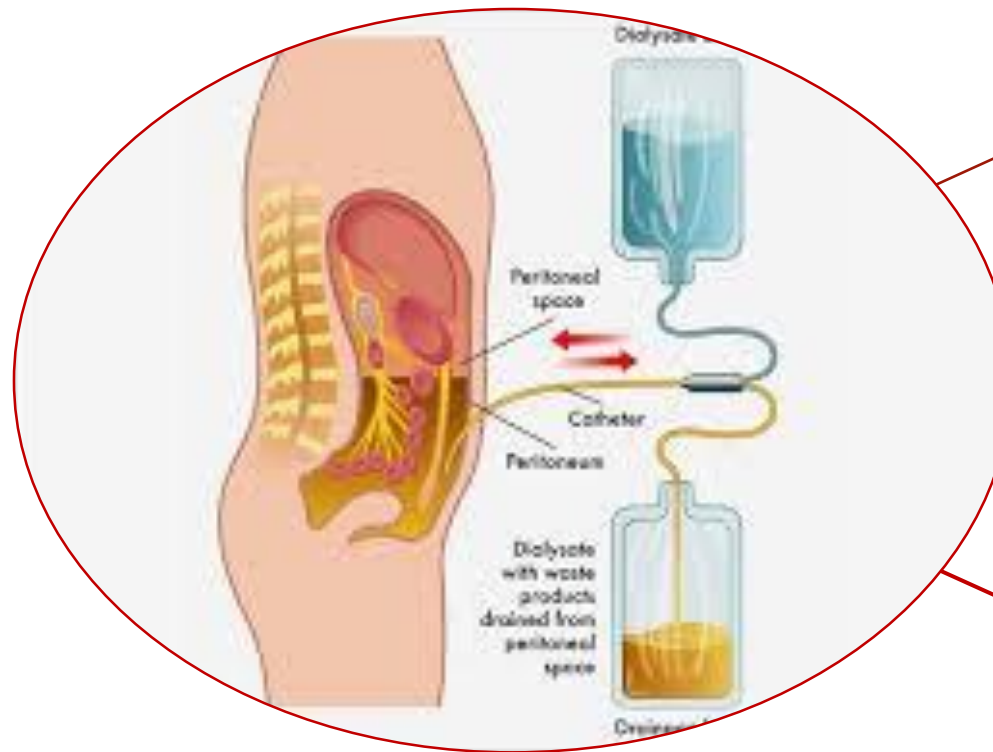
# Peritoneal Dialysis Patient Selection

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**1402/4/22 - 7/13/2023**  
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# Peritoneal Dialysis Patient Selection

Three types  
of PD  
patients



1- New patient

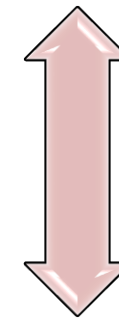
2- Previous HD

3- Previous transplant

# PERITONEAL DIALYSIS PATIENT SELECTION

Estimated **3.8 million** people **worldwide** currently rely on some form of **dialysis**

PD~11%



HD ~89%

# CHARACTERISTICS FOR SUCCESS

1. Center Effect
2. Knowledge and experience of nephrologic team (physician and nurse; **the most important factor**)
3. Comorbidity, Body Size, and Peritoneal Membrane Transport Status
4. Psychosocial Relevance of Patient Selection
5. Social support
6. Compliance
7. Financial factors



# Patient Education



# PATIENT EDUCATION AND PERITONEAL DIALYSIS SELECTION

## Patient-targeted modality education:

- **2.1 to 4.6-fold** increase in the odds of **choosing PD** and **3.5-fold** increase in **receiving PD** as their initial dialysis therapy.



AJKD, Volume 68, Issue 3, September 2016, Pages 422-433

# PATIENT EDUCATION AND PERITONEAL DIALYSIS SELECTION

## Modality education:

- Physician and nurse educators,
- Over more than 2 days,
- Detailed dietary information
- 1-on-1 and group discussions,
- Video and printed material, and
- Included family



# THE IDEAL CANDIDATE

## 1- Perform his or her own care



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# THE IDEAL CANDIDATE...

9

## 2- Significant residual kidney function

- **Provides adequate peritoneal dialysis**
- **Clearance of kidney function added to the dialysis**
- **A flexible dialysis schedule more acceptable to patients**

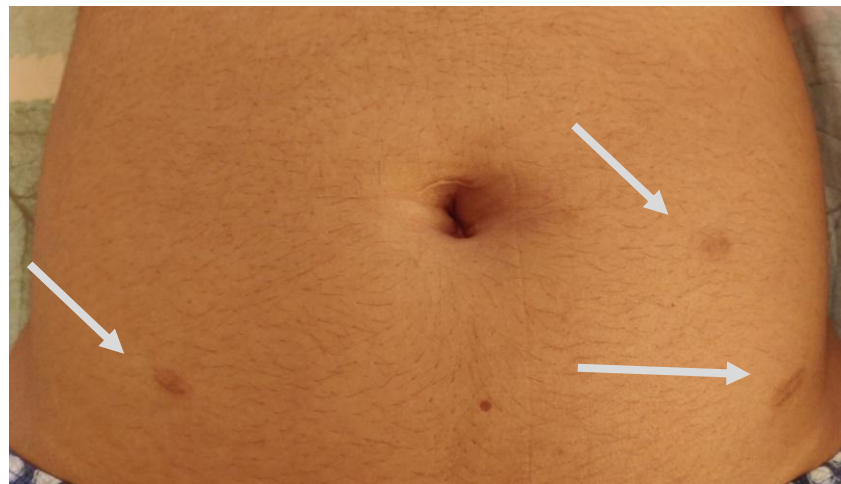


# THE IDEAL CANDIDATE...

10

## 3- Minimal or no abdominal surgery

Adhesions resulting from surgery decrease the effective peritoneal membrane surface area, which may limit dialysis.



# THE IDEAL CANDIDATE...

## 4- Understands instructions and able to communicate

**A minimum threshold cognitive ability is required to understand how peritoneal dialysis works and to communicate when complications arise.**



# THE IDEAL CANDIDATE...

12

## 5- Sufficient eyesight, manual strength, and dexterity

**Older adults and patients with comorbidities (such as diabetic retinopathy or rheumatoid arthritis) may have difficulty physically performing the procedure.**

**A caregiver may perform "assisted" peritoneal dialysis.**



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# THE IDEAL CANDIDATE...

13

## 6- Suitable environment to store supplies and perform exchanges

- Ideally, the patient should have a room that may be closed off (ie, a bedroom) in order to perform tubing connections in a sterile fashion.



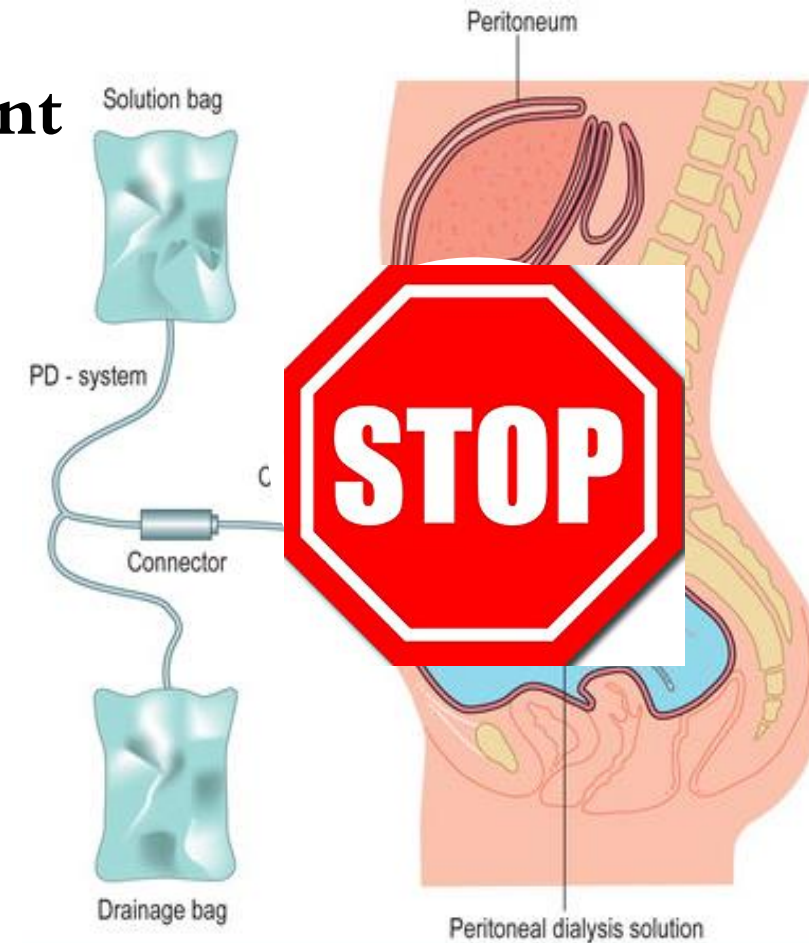
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# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

1. Peritoneal scarring
2. Physical, cognitive, or psychological impairment
3. Lack of appropriate environment
4. Anuria or large patient size
5. Active inflammatory process or cancer
6. Surgical ostomies
7. Large abdominal wall hernia
8. Ventriculoperitoneal shunts
9. Morbid obesity
10. Polycystic kidney disease



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

**The only absolute contraindication:**

***Lack of a functional peritoneal membrane***

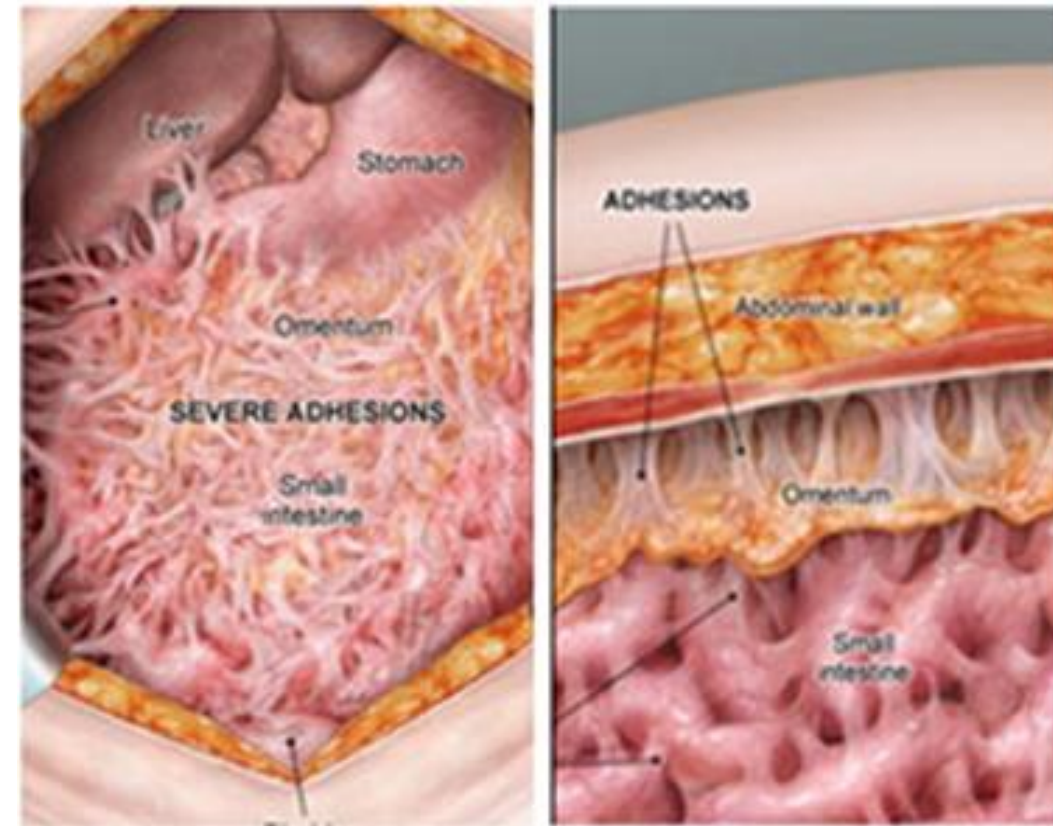


# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

## 1. Peritoneal scarring:

Advanced peritoneal scarring and adhesions resulting from prior surgeries, cannot be corrected with surgical adhesiolysis.

Adhesions limit the free flow of peritoneal dialysate and cause problems with filling, draining, solute clearance, and ultrafiltration.





# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

## 1. Peritoneal scarring...

- Prediction of the severity of adhesions **without laparoscopy** is difficult.

### Significant risk factors:

1. Multiple **abdominal procedures**,
  2. A history of a **gallbladder or bowel perforation**,
  3. **Small bowel obstruction** related to adhesions.
- **Not pursuing peritoneal dialysis**

If the patient wishes to try :

- Laparoscopy with simultaneous **adhesiolysis** and catheter placement.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

## 1. Peritoneal scarring...

- Allow the **surgeon** to make the **decision during the operation** as to whether a catheter will or will not function in the abdomen.
- He/she aborts the surgery without placing the catheter.
- The patient be carefully advised prior to surgery that peritoneal dialysis may not be possible.
- A **surgeon with significant experience** in the placement of dialysis catheters.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

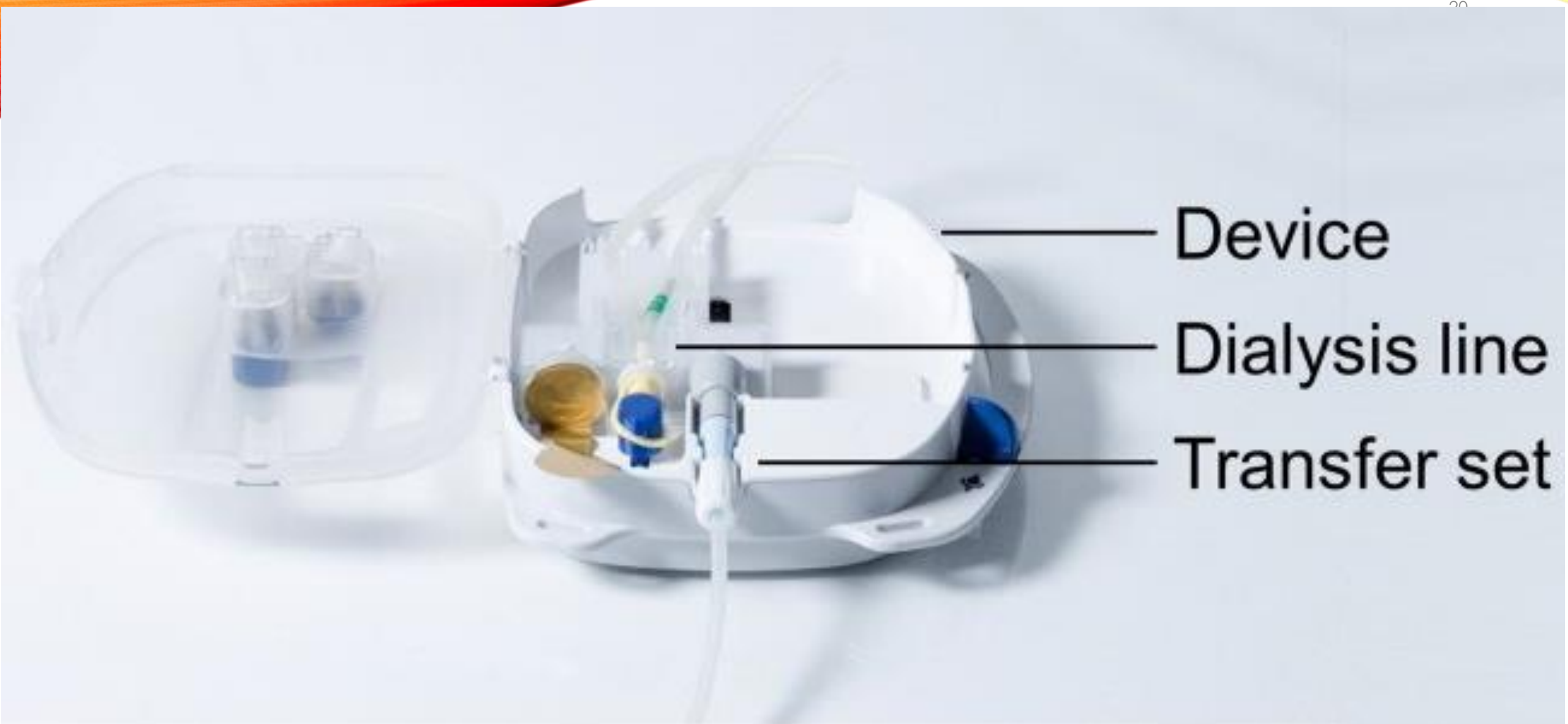
## 2. Physical, cognitive, or psychological impairment:

- Physical impairment (**amputations, physical debility**, etc), and no another caregiver.

**a) Lack of vision is not a contraindication.**

Using **connection assist devices**.

Use of a touch technique with the **use of procedural audio instructions** for home reference allowed three patients to perform peritoneal dialysis in their homes without increased risk of peritonitis



Device

Dialysis line

Transfer set



patient selection in





Place mini cast. Move hand to position 'click'

# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

## 2. Physical, cognitive, or psychological impairment..

- b) **Severe developmental delay**, difficult to understand and cooperate PD procedure, allow PD with a caregiver.

**CAPD is the preferred KRT.**

Manual exchange: 15 to 30 minutes the caregiver can sit with the patient.

APD: an **overnight** cyclor, patient **agitation** and cause to disrupt the system.

HD: long time on it



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS

## 2. Physical, cognitive, or psychological impairment..

- **Concern about lack of ability:** home training staff prior to catheter placement using an artificial catheter/apron setup that mimics the true system.
- **Patient and caregiver unable: "assisted peritoneal dialysis"** may be possible in some areas.
- **Assisted peritoneal dialysis:** a health care professional comes to start a nocturnal cycler treatment at night and returns in the morning to take the patient of the machine.





# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 3. Lack of appropriate environment

- A clean, dry, temperature-controlled location for storage of peritoneal fluids and for performing dialysis.
- The storage of multiple bags of fluid with varying osmolar strengths.
- A very small dwelling or is homeless, the lack of storage space may be limiting factor.
- Many skilled nursing facilities do not permit peritoneal dialysis.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 4. Anuria or large patient size

- Anuria (no residual kidney function)

High dialysis volume requirement (numerous exchanges or relatively larger volume per exchange).

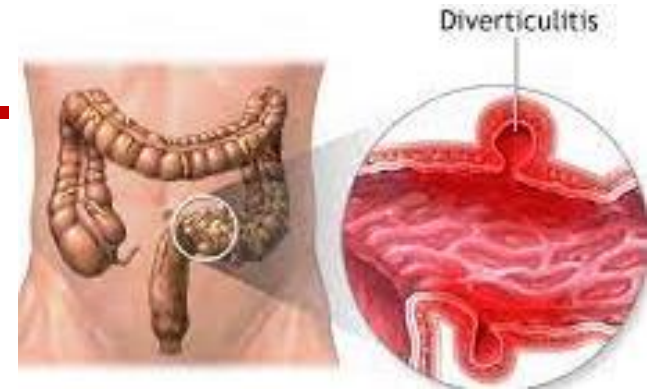
- Large patient size: related to the dialysis volume requirement.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 5. Active inflammatory process or cancer.

- Active diverticulitis,
- Inflammatory bowel disease
- Abdominal cancer



Develop peritonitis or mechanical catheter problems.

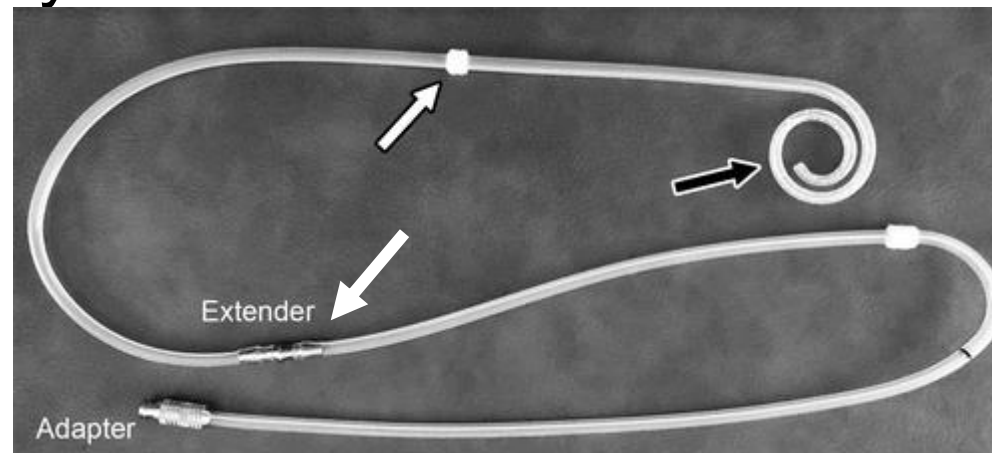
The decision to peritoneal dialysis must be individualized consideration of the risks and benefits.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 6. Surgical ostomies..

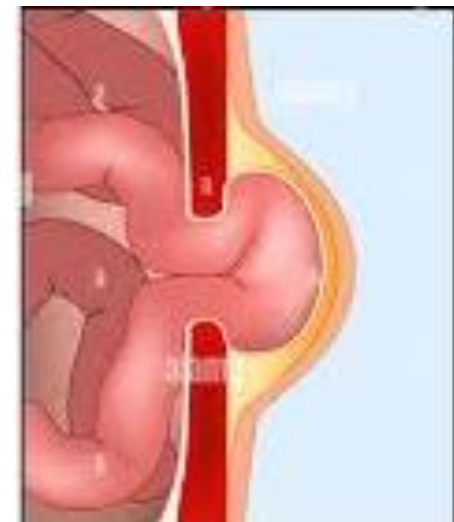
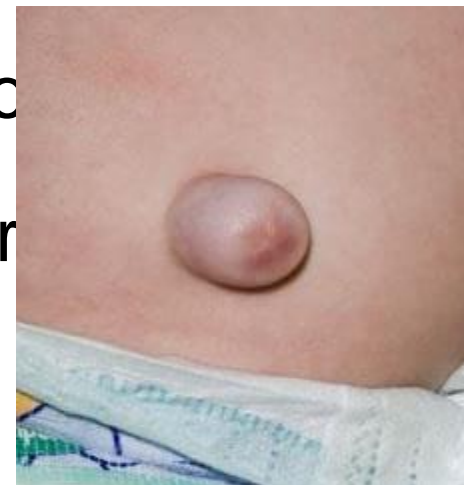
- Risk of exit-site infection.
- A presternal catheter for all patients with ostomies.
- The exit site can be easily cleaned.
- Any ostomy leakage will flow in a caudal direction, away from the peritoneal dialysis catheter.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 7. Large abdominal wall hernia

- Peritoneal dialysis may worsen the hernia.
- Cosmetically displeasing to patients.
- Unlikely to become incarcerated and not absolute contraindications for PD.
- Evaluated by surgery prior to placement of the catheter.
- Most hernias can be repaired at the time of catheter placement (if the catheter placed surgically) or with a separate surgery prior to catheter placement.

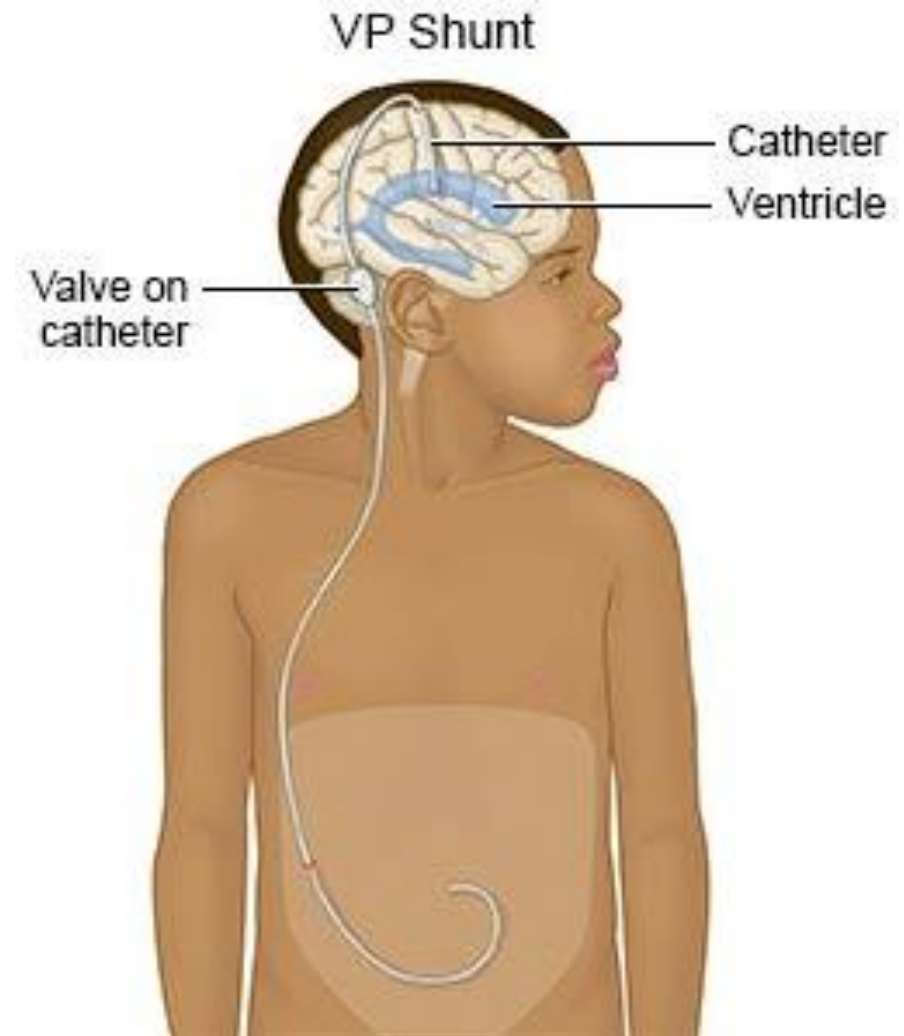


# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 8. Ventriculoperitoneal (VP) shunts

Do not offer peritoneal dialysis to most patients who have a VP shunt, exceptions if no alternative (such as hemodialysis) is available.

VP shunts theoretically increase the risk of peritonitis, shunt malfunction, and ascending infection (ie, meningitis).



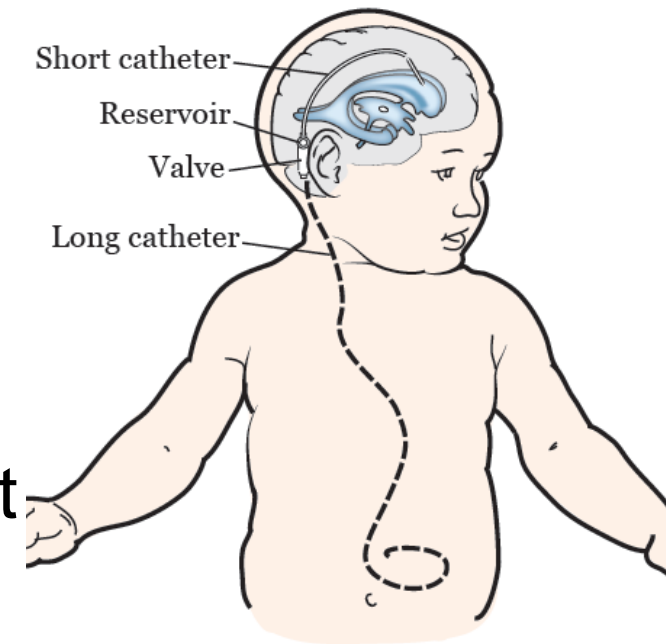
# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 8. Ventriculoperitoneal (VP) shunts..

The potentially devastating outcomes outweigh the benefits of peritoneal dialysis.

A small study including 18 children a peritonitis rate of 1 in 19.6 months with no report of meningitis subsequent to peritonitis and no reports of VP shunt dysfunction.

The one-way valve in shunt devices coupled with pressure gradients prevent the IP exceeds the CSF pressure.



# POTENTIAL BARRIERS TO PERITONEAL DIALYSIS..

## 9. Morbid obesity

- Use of a presternal catheter

## 10. Polycystic kidney disease

- Use of frequent low-volume exchanges (e.g., with APD)





**TABLE 4** Examples of perceived obstacles to peritoneal dialysis and possible solutions to overcome them

<b>Obstacle</b>	<b>Possible solution</b>
Dementia, physical barrier	Assisted peritoneal dialysis (changes by health care professional or trained caregiver/patient relative) Instrumental peritoneal dialysis modality (reducing the number of changes)
Swimmers	Use of special covers, chlorinated pool use
Obesity	Presternal peritoneal dialysis catheter use
Patients with ileostomy or colostomy	Presternal peritoneal dialysis catheter use
Polycystic kidney disease	Use of low volume dialysate during the day/automated peritoneal dialysis
Owning a pet	At least keep it out of the room during exchanges
Hearing loss	Use of vibrating/lightning alarms



## Indications of peritoneal dialysis

- ✓ Patient preference
- ✓ Patients who cannot tolerate hemodialysis (e.g., congestive heart failure or ischemic heart disease, vascular access problem, children)
- ✓ Those who want home hemodialysis but do not have assistants for HD or have no educational opportunities for home HD
- ✓ Refractory heart failure without renal failure

## Contraindications of peritoneal dialysis

### Absolute

- Loss of peritoneal function or intra-abdominal adhesions that limit the dialysate flow
- Those who have physical or mental disabilities in the absence of assistance
- Patients with uncorrectable mechanical defects that can prevent PD (e.g., surgically irreparable hernia, omphalocele, gastroschisis, diaphragmatic hernia, and bladder extrophy)

### Relative

- Fresh intra-abdominal foreign bodies (e.g., 4-month wait after abdominal vascular prostheses, recent ventricular-peritoneal shunt)
- Peritoneal leaks
- Body size limitations
- Intolerance to PD volumes necessary to achieve adequate PD dose
- Active inflammatory or ischemic bowel disease
- Abdominal wall or skin infection
- Morbid obesity (in short individuals)
- Severe malnutrition
- Frequent episodes of diverticulitis



***Hope have  
a nice and  
comfortable  
PD***