



Nephrology

320.240.2206

1200 Sixth Avenue North, St. Cloud, MN 56303

Agenda

Quick Review Of Part I

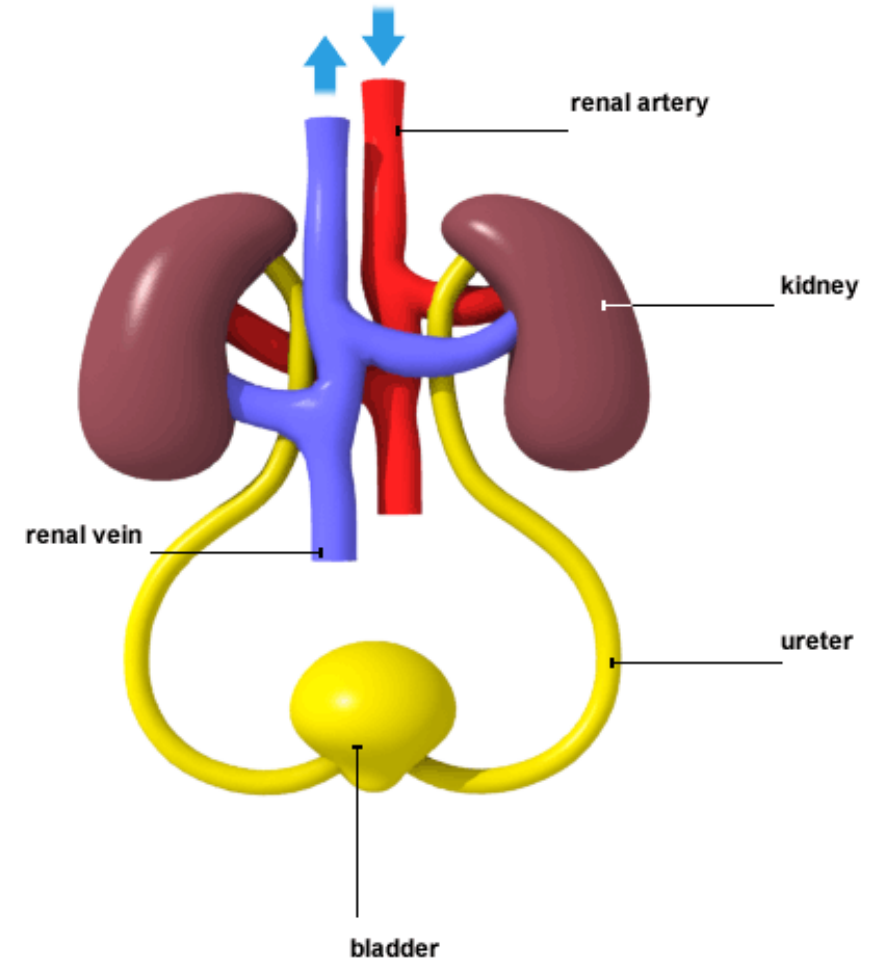
- Kidneys do more than filter your blood
- Stages of Chronic Kidney Disease (CKD)
- How we measure the progression of CKD (eGFR)
- Living with CKD
- How there is no cure for kidney failure but...there are treatment options

Ask Questions – Take Action

Stage	Description	GFR
1	Potential kidney damage with normal kidney function	> 90
2	Kidney damage with mild loss of kidney function	60-89
3a	Mild to moderate loss of kidney function	45-59
3b	Moderate to severe loss of kidney function	30-44
4	Severe loss of kidney function	15-29
5	Kidney failure	< 15

Educate you about kidney replacement options

Providing you with information that helps you **take an active role in your treatment**



Dialysis

What is dialysis?

Peritoneal Dialysis

Hemodialysis

PD vs HD

Living with dialysis



Does **some** of the work of healthy kidneys

Does **not** cure kidney disease

Filters your blood

- Removes waste and excess fluid from your blood
- Helps control your blood pressure
- Maintains chemical balance in your body
- It can be done at home or in-center

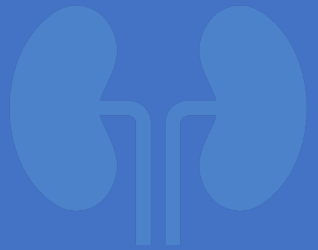
What is dialysis?

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How do I know if I need dialysis?

Dialysis is required when the kidneys are **unable** to maintain chemical balance and clean your blood

- Started when you begin experiencing confusion, severe nausea, vomiting, or difficulty breathing
- Recommendations based on your age, overall health, lab results, and your goals
- As long as you don't have severe symptoms, you can use this time to prepare for it

Dialysis

What is dialysis?

Peritoneal Dialysis

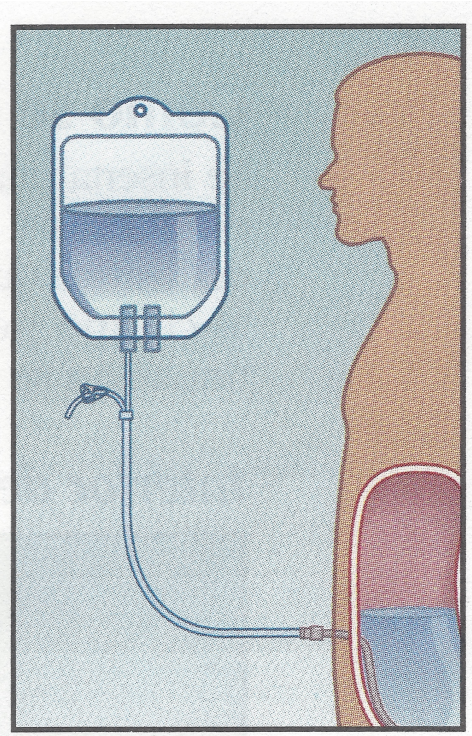
Hemodialysis

PD vs HD

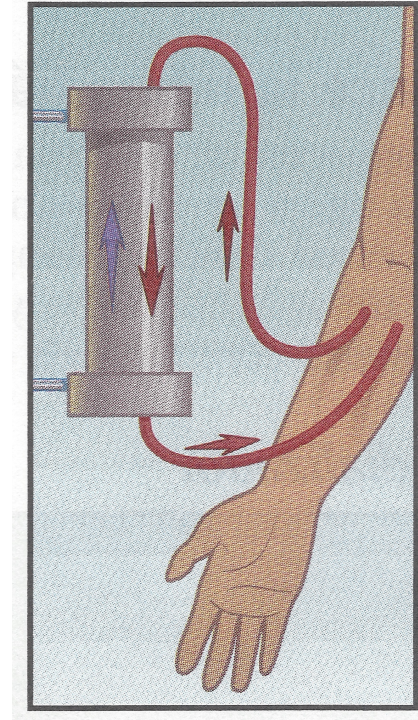
Living with dialysis



Two Types of Dialysis



Peritoneal Dialysis
(PD)



Hemodialysis
(HD)

Dialysis

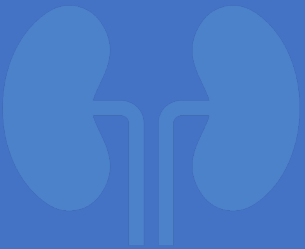
What is dialysis?

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PD vs HD

Living with dialysis



Uses the peritoneal lining
as a filter

Peritoneal lining covers all of
your abdominal organs

Requires peritoneal catheter
for access

- Exchange is done inside of your body
- Usually done at home
- Similar to how kidneys function
- Two types
Continuous Ambulatory (CAPD)
Continuous Cycling (CCPD)

Dialysis

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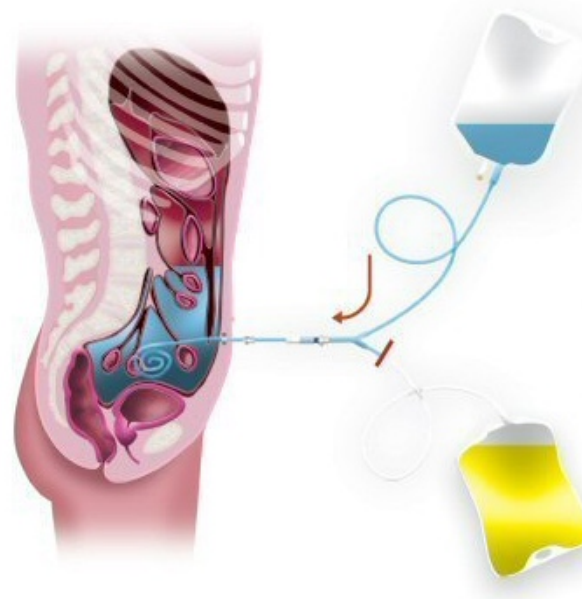
Living with dialysis



Peritoneal Dialysis Exchange



Drain



Fill



Dwell

Dialysis

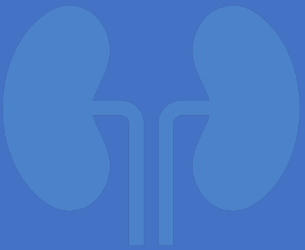
What is dialysis?

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Continuous **Ambulatory** Peritoneal Dialysis (CAPD)

Exchanges are performed
using gravity

Dialysis fluid remains in
abdomen 24/7 (Dwelling)

You are able to perform
activities of daily living while
dwelling

Continuous **Cycling** Peritoneal Dialysis (CCPD)

Exchanges are performed using
a “Cycler” machine

Some dialysis fluid may remain
in the abdomen

You can perform stationary
activities during treatment

Dialysis

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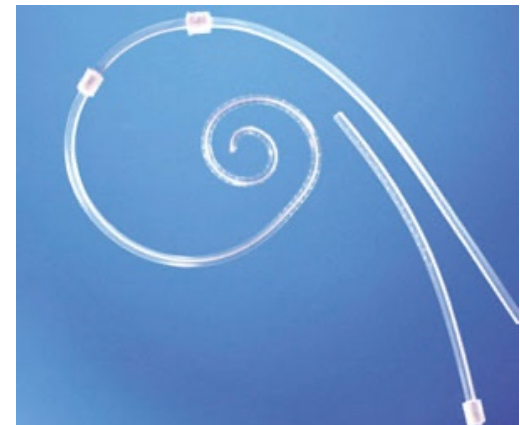
Living with dialysis



PD Catheter is used to provide access

Soft, small tube is placed through the wall of your abdomen into the peritoneal cavity

- Minor outpatient surgery
- Typically heals within 2-4 weeks
- Usually not painful & remains in place permanently while PD is required
- PD training at the St. Cloud & Willmar Dialysis Centers



Dialysis

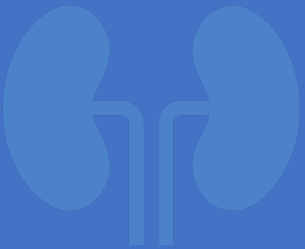
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Living with dialysis



CAPD

- Usually 4 exchanges per day
- Exchanges take approximately 30 mins
- You are able to perform activities of daily living while dwelling
- Can be performed in any clean environment

CCPD

- Usually done overnight while sleeping
- Treatment takes 8-10 hours
- Allows much more freedom during the day
- You can perform stationary activities during treatment

Dialysis

What is dialysis?

Peritoneal Dialysis

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PD vs HD

Living with dialysis



Pros

- Continuous therapy so you typically feel better
- Fewer diet restrictions
- Independence and flexibility
- No needles required
- Generally painless
- Can be done while sleeping
- Supplies shipped to home or travel location
- More gentle on your heart

Cons

- Daily treatments
- Permanent catheter tube in abdomen
- Risk of infection (peritonitis)
- Requires storage area for supplies

Dialysis

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PD vs HD

Living with dialysis

Uses an external machine
with a dialyzer to filter

Requires vascular access and
use of needles for each
treatment

- Exchange is done outside of your body using a dialysis machine (dialyzer, blood pump, & lines)
- It can be done at home or in-center
- Home hemodialysis training at the St. Cloud Dialysis Center



Dialysis

What is dialysis?

Peritoneal Dialysis

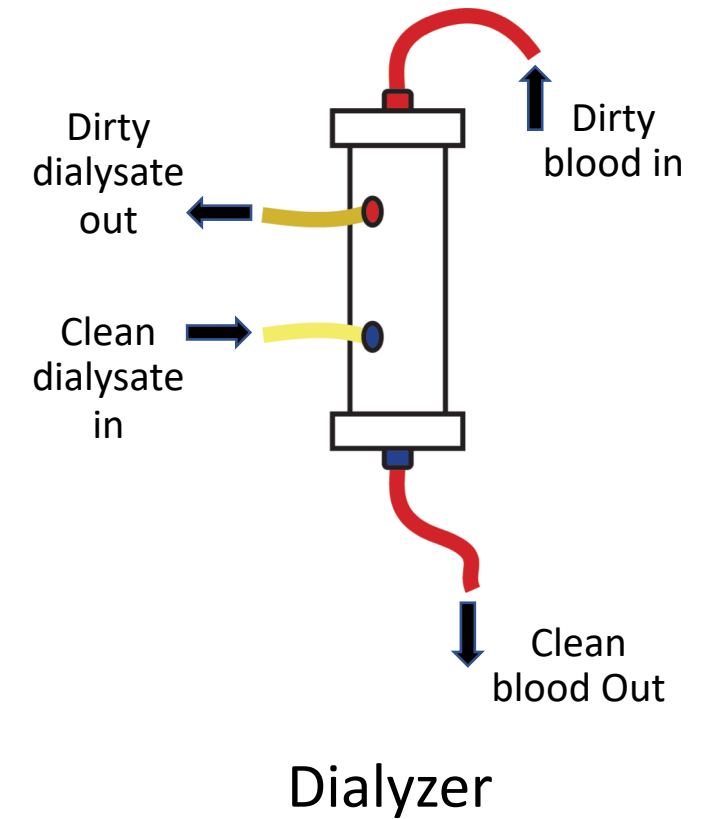
Hemodialysis

PD vs HD

Living with dialysis



Hemodialysis



Dialysis

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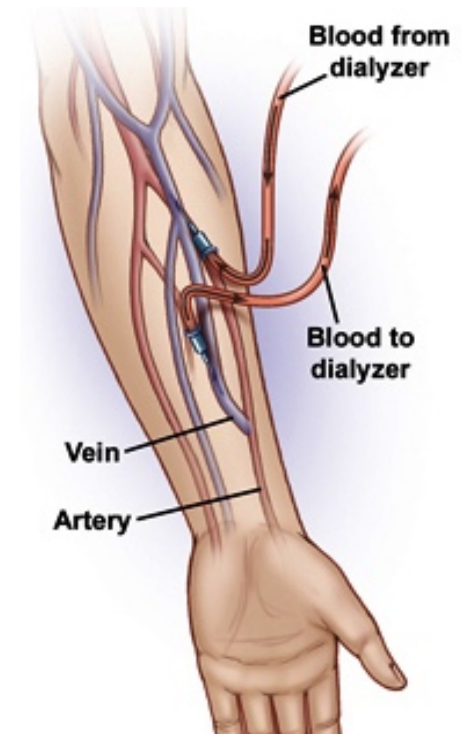


Arteriovenous fistula access (AV Fistula)

Connects an artery and
vein in the arm

Preferred option and lasts
longer

- Requires imaging to visualize your blood vessels and surgery
- Typically heals within 6-8 weeks

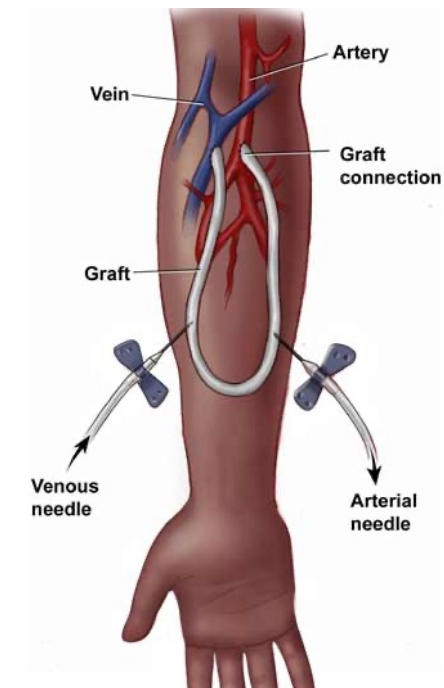


Arteriovenous graft access (AV Graft)

Connects an artery and vein in the arm with man-made material (soft tubing)

Less preferable option

- Used only if no viable options for AV Fistula
- Requires surgery
- Typically heals within 3-5 weeks



Dialysis

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Living with dialysis



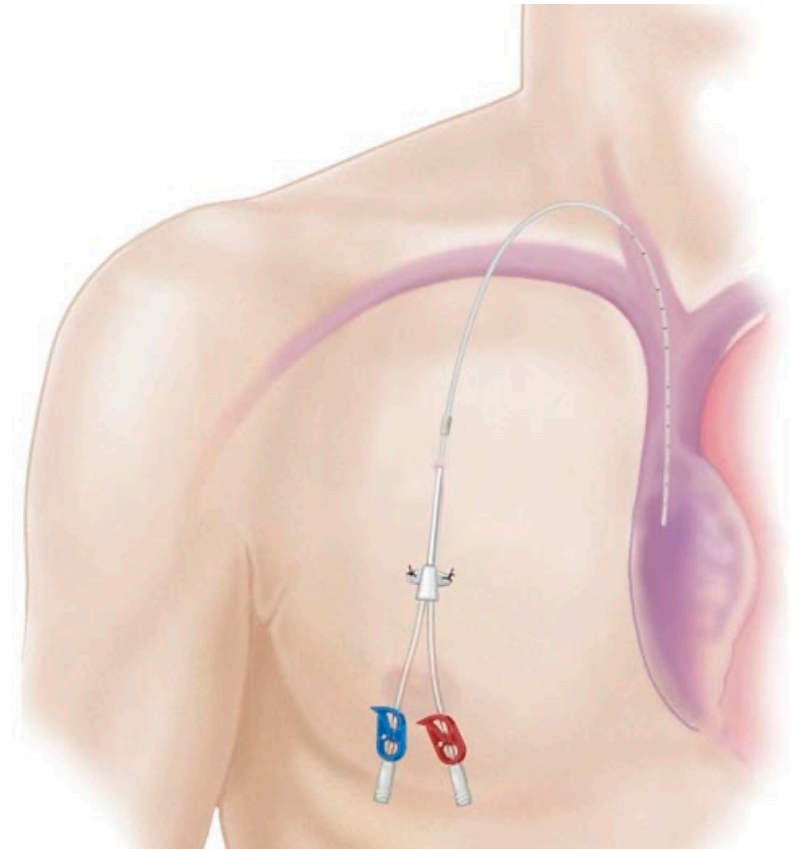
Intrajugular catheter access (IJ Catheter)

Plastic tube is placed into a
vein in your upper chest

Choice of last resort
AKA Emergency access

Can be used **immediately**
It is only **temporary**

- Highest risk of infection
- High mortality risk



Dialysis

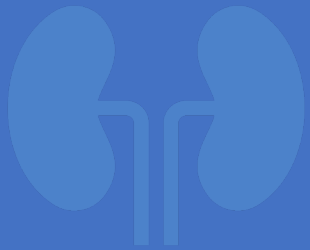
What is dialysis?

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PD vs HD

Living with dialysis



In-Center

- 3 times per week, 3-5 hours each time
- Facility staff provides treatment for you
- No training required

Home

- 5-6 times per week, 2-3 hours each time
- Must have someone with you at all times while dialyzing
- Training provided
- More comfortable
- 24/7 help line available



In-Center Hemodialysis

Pros

- Trained staff manages treatment for you
- Prompt adjustments to treatment
- Regular contact with trained staff and other patients
- Medical staff immediately available for emergencies

Cons

- Limited control of your schedule
- Must travel to facility
- Increased side effects of treatment
- More diet restrictions
- Sitting for 3-5 hours at a time is tedious



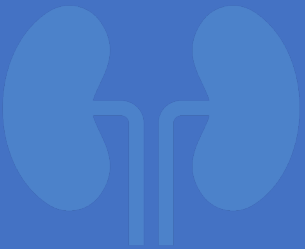
Home Hemodialysis

Pros

- More control and flexibility of your schedule
- More frequent treatments improve quality of life
- Fewer diet restrictions
- Decreased side effects of treatment
- Increased privacy

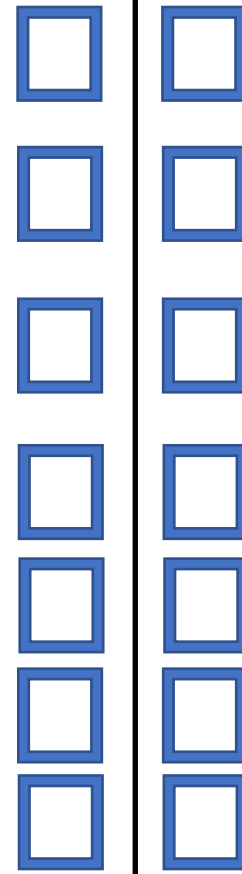
Cons

- Must have trained partner / helper with you while dialyzing
- Need storage area for home supplies
- Training takes 2-3 weeks at a dialysis facility



Peritoneal Dialysis

- No needles but permanent access
- More treatment days
- You control your schedule and travel
- Fewer diet restrictions
- Fewer side effects
- Not available to everyone
- You provide treatment



Hemodialysis

- 2 needles inserted each treatment
- Fewer treatment days
- Less control of your schedule and travel
- More diet restrictions
- More side effects
- Available to anyone
- Treatment provided for you

Dialysis **will** impact your life

Requires lifestyle changes
and positive outlook

It is important to complete
each and **every** treatment

It is important to **follow**
your treatment plan

- Healthy kidneys work 24/7...168 hours a week
- Limited hours of treatment
HD ~12-15 hours/week
PD ~56-70 hours/week
- HD provides less than 10%...
PD provides 30-40%...
that healthy kidneys do
- Consistent treatments,
medication adherence, and
diet changes can lessen side
effects



Dialysis

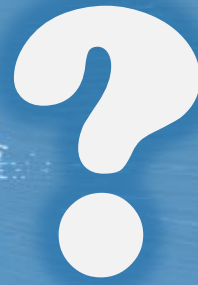
What is dialysis?

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Living with dialysis



What are your
thoughts about
dialysis?

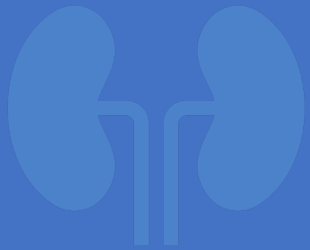
Transplantation

What is transplantation?

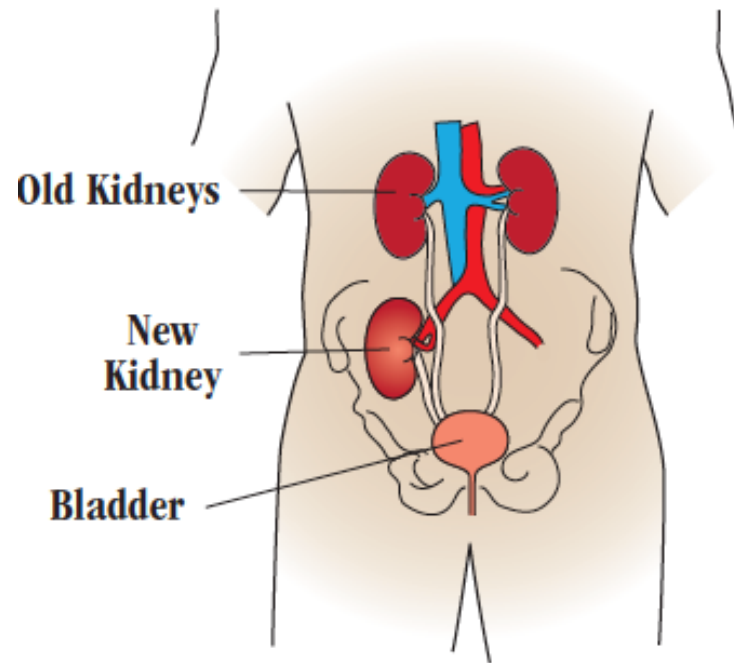
Where do kidneys come from?

Who can receive a transplant?

Pros & Cons



A healthy kidney is surgically placed in your body and begins doing the job of your old kidneys



- Transplantation is a treatment, NOT a cure
- Requires compatible donor
- Requires in-depth evaluation
- Average wait time for kidney from deceased donor is 3-5 years and lasts 8-12 years
- Wait time for kidney from living donor varies and lasts 12-20 years

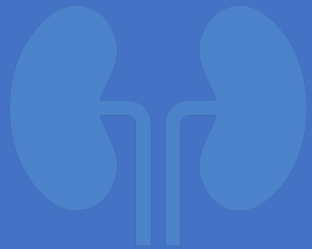
Transplantation

What is transplantation?

Where do kidneys come from?

Who can receive a transplant?

Pros & Cons



Transplant centers in MN

- Abbott Northwestern Hospital
- Hennepin County Medical Center
- University of MN Medical Center
- Mayo Clinic Hospital

Living donors

- Typically planned
- Could be done before starting dialysis
- Requires healthy donor
- Possibility of a paired exchange

Deceased donors

- Organ comes from person suffering brain/cardiac death
- Less may be known about donor
- Waiting List is significant

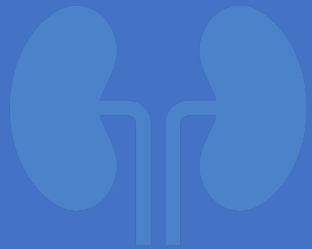
Transplantation

What is transplantation?

Where do kidneys come from?

Who can receive a transplant?

Pros & Cons



You do not need to be in perfect health

Request a referral

Each transplant center sets their own criteria

Transplant centers require

- Less than 80 years of age
- Healthy weight
- No active cancer or infections
- Healthy enough to endure surgery
- Free from substance abuse

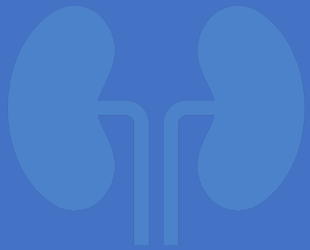
Transplantation

What is transplantation?

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Who can receive a transplant?

Pros & Cons



Pros

- If donor kidney works well, you might not need dialysis
- No need for access points
- No fluid restrictions
- May be able to return to work
- Transplantation improves your quality of life and you generally feel better

Cons

- Daily anti-rejection medications are required
- Must work on controlling diabetes and hypertension
- Some diet restrictions remain
- Frequent lab testing
- Increased risk of infections from immunosuppression

Comfort Care

What is comfort care?

Hospice

Focuses health care on symptom control, pain relief, and quality of life instead of focusing on procedures that may or may not extend your life

Dialysis and transplantation are life-saving / life-extending treatments for most people who qualify

- Decision should be based on your current medical condition and quality of life
- Discontinuing treatments that do not aid comfort
- Providing medications to relieve nausea, itchiness, and air hunger
- Providing emotional and spiritual support
- Hospice team

Comfort Care

What is comfort care?

Hospice

Focus on comfort
NOT cure

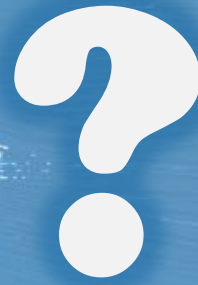
Centered on the patient and family, optimizing quality of life by anticipating, preventing, and treating suffering

- Gives the patient autonomy, access to information, and choice
- Can be performed at home, in a hospital, or in a nursing facility
- Help avoid unnecessary visits to hospital

Comfort Care

What is comfort care?

Hospice vs
palliative care



Have you
considered
comfort care?

Knowing your
options

Choosing to NOT
start dialysis

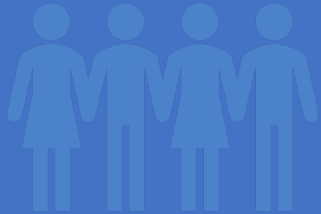
Advance care
planning

Financial Help

There is no cure for chronic
kidney disease (CKD)

Providing you with
information that helps you
**take an active role in your
treatment**

- **Educate** yourself about kidney disease
- **Understand** what your options are
- **Regularly visit** with your health care team
- **Follow** your established treatment plan



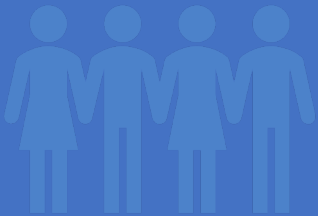
Living With CKD

Knowing your options

Choosing to NOT start dialysis

Advance care planning

Financial Help



Your CentraCare team educates you on what options you have going forward

Ask Questions – Take Action



NATIONAL KIDNEY FOUNDATION®

<https://www.kidney.org>



<https://kidneyschool.org>



National Institute of Diabetes and Digestive and Kidney Diseases

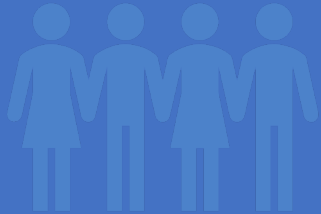
<https://www.niddk.nih.gov/health-information/kidney-disease>

Knowing your
options

Choosing to NOT
start dialysis

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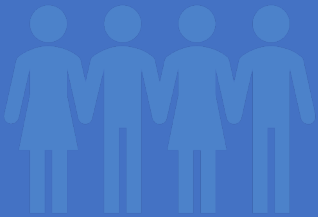
Dialysis is a life sustaining
procedure that may not
improve quality of life

You have the right to decide
NOT to start dialysis

Aim for comfort care and
Hospice

Ask Questions – Take Action

- How long will I live if I choose not to start dialysis?
- Can I change my mind?
- Is death from kidney failure painful?
- Can I stay at home?



Taking the time to review
your preferences and wishes,
then...

Organize the information in a
document called
Health Care Directive

Legal document
Update any time

Ask Questions – Take Action

- It communicates your wishes when you are not able to
- Appoints an individual to make health care decisions on your behalf
- Relieve your family from the burden of making difficult decisions
- Clarifies the medical care you want

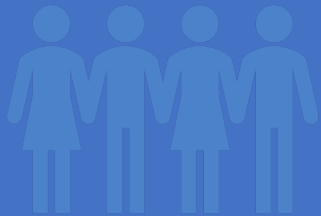
[https://www.centracare.com/
about-us/
advance-care-planning-acp-](https://www.centracare.com/about-us/advance-care-planning-acp-)

Knowing your
options

Choosing to NOT
start dialysis

Advance care
planning

Financial Help



Financial impacts of CKD are
significant

Generally, costs are covered
by various insurance and
government programs

Ask Questions – Take Action

- Medicare guaranteed for most people with kidney failure – even those under age 65
- Medicaid
- Social Security
- Private Health Insurance
- Private Organizations
- Medication Assistance Programs

<https://www.niddk.nih.gov/health-information/kidney-disease/kidney-failure/financial-help-treatment>

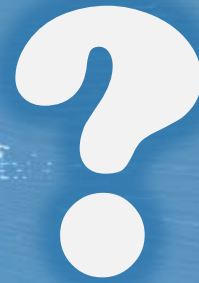
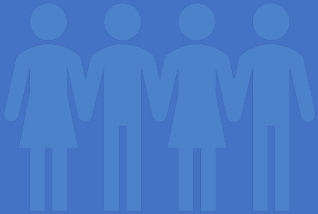
Living With CKD

Knowing your
options

Choosing to NOT
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Financial Help



How will you
take an active
role in
managing your
kidney disease?

A large, light blue graphic of two kidneys with connecting ureters, centered on the page. The text "KIDNEY DISEASE & YOU" is overlaid in green.

KIDNEY DISEASE
&
YOU



Nephrology

320.240.2206

1200 Sixth Avenue North, St. Cloud, MN 56303

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Organ Procurement & Transplantation Network. (n.d.). *Questions and answers for transplant candidates about the kidney allocation system*. Retrieved March 9, 2024, from <https://optn.transplant.hrsa.gov/patients/by-organ/kidney/questions-and-answers-for-transplant-candidates-about-the-kidney-allocation-system/>

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The StayWell Company. (1999). Opciones de tratamiento para la insuficiencia renal.