

Dialysis Access Options

Hemodialysis and Peritoneal Access

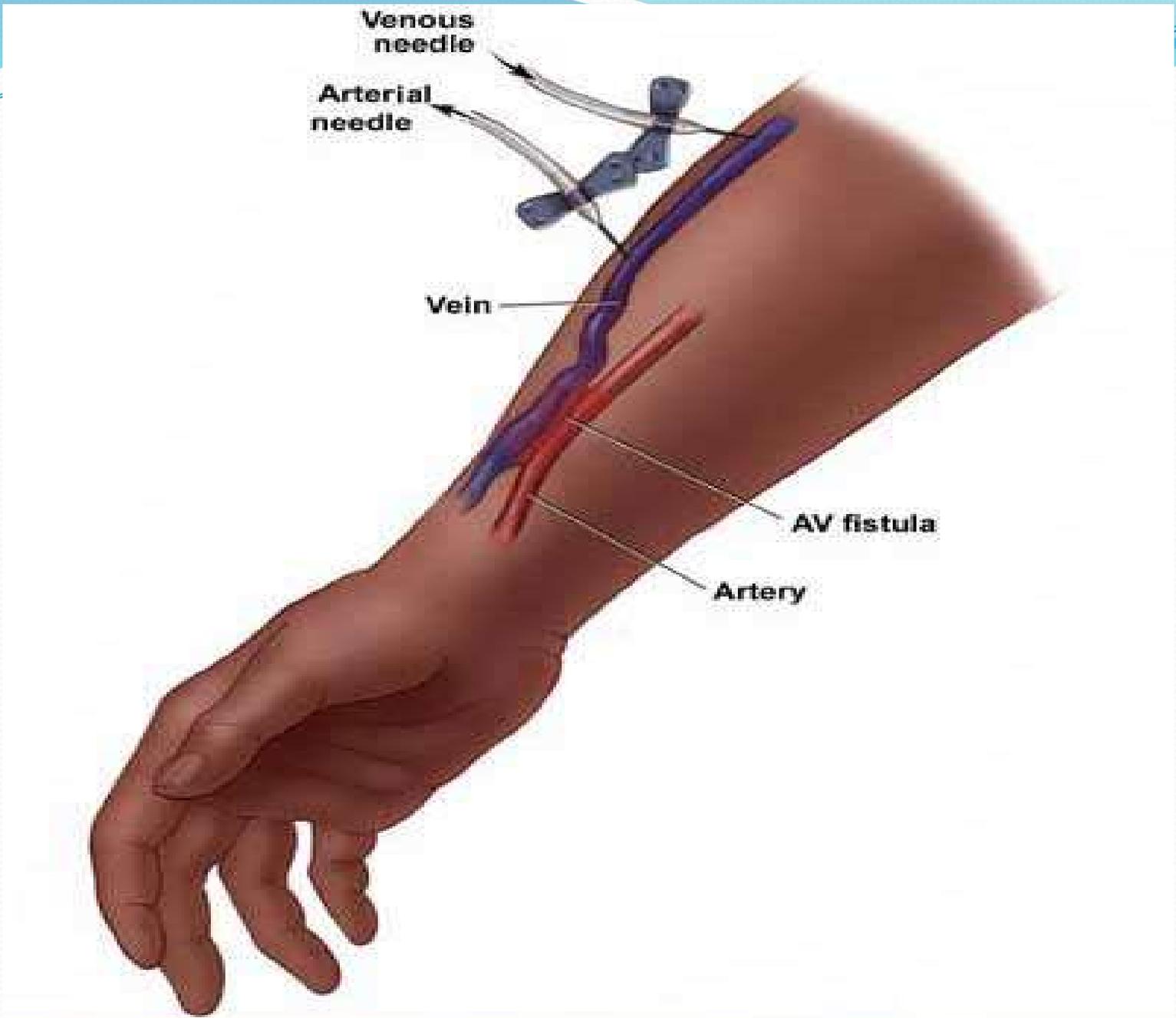
Education #4

Permanent Access

Arteriovenous fistula

- Known as an AV fistula
- Direct connection between an artery and a vein
- Connection is made underneath the skin with a surgical procedure performed on an outpatient basis
- The connection between a vein and artery allows for adequate blood flow during dialysis

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- This increased blood flow leads to larger and stronger veins and makes repeated needle insertions easier
 - Fistulas are the preferred vascular access for long-term dialysis patients because they last longer
 - They less prone to infection and clotting
 - Usually takes 2-3 months to heal before it can be used for dialysis

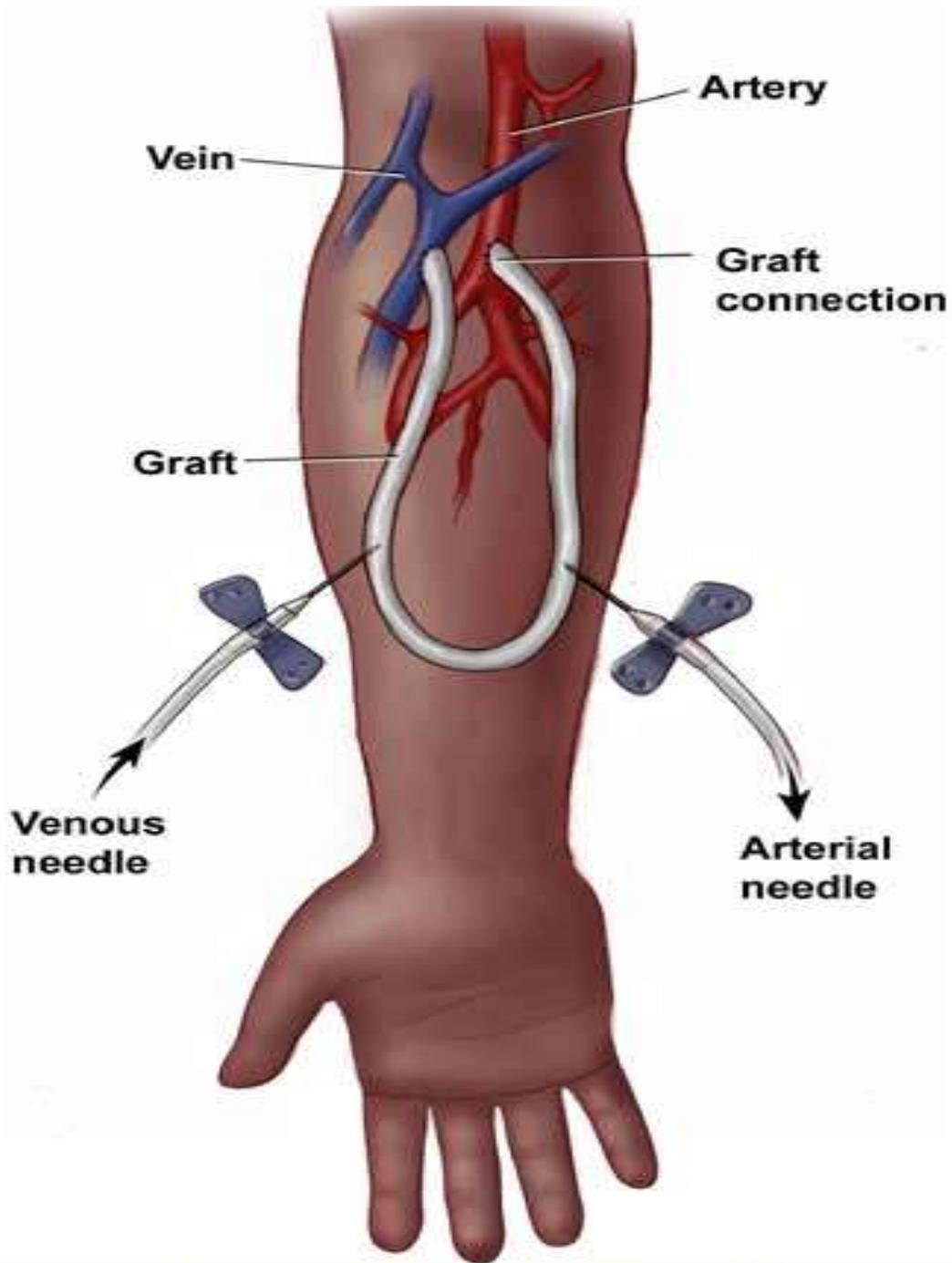


Permanent Access

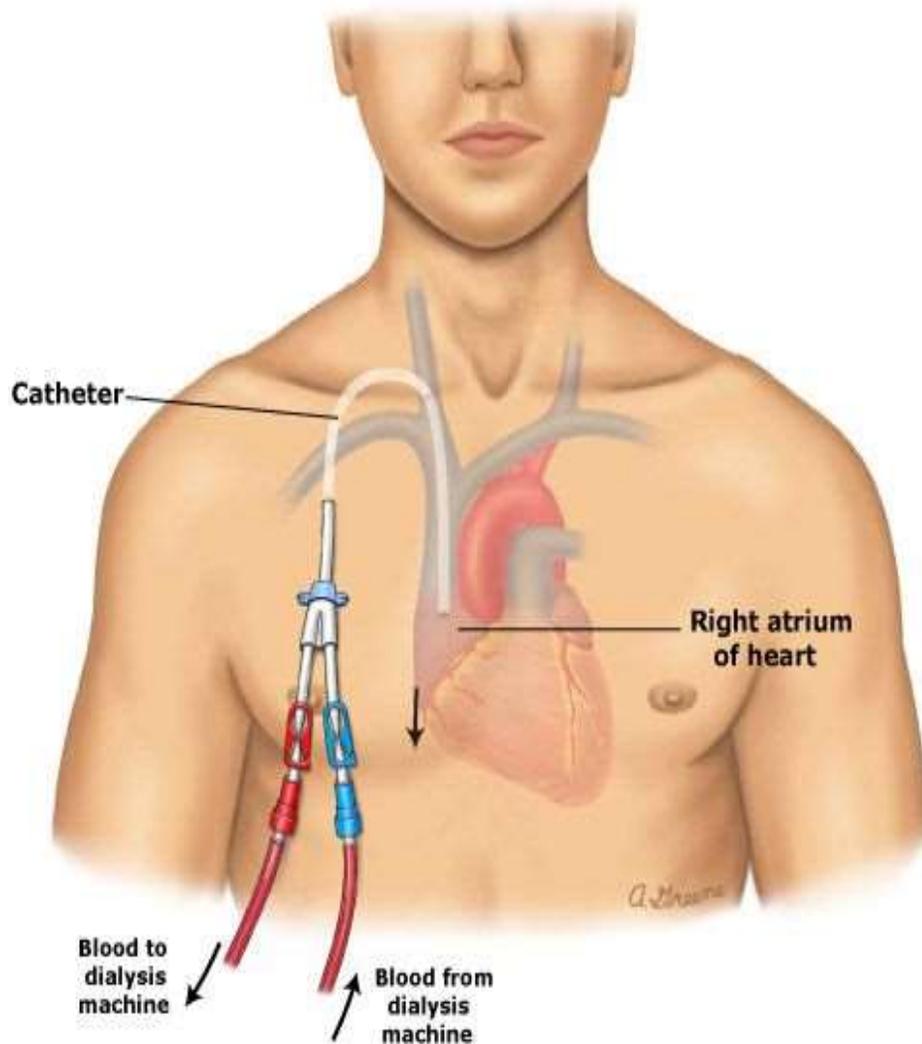
Arteriovenous graft

- Grafts are similar to AV fistulas
- The graft is formed through the indirect connection of the artery to a vein by a synthetic tube.
- Grafts are typically used when patients have small or weak veins that will not properly develop into a suitable fistula
- Like a fistula, this type of access is implanted under the skin in your arm

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- The graft is usually a soft, synthetic tube that connects to an artery at one end and a vein at the other
 - The tube acts like a natural vein allowing blood to flow through
 - AV graft usually take 4-6 weeks to heal and be ready for dialysis



Catheter



- A plastic tube placed into a vein in your neck or chest. Choice of last resort. Highest infection rate for any type of dialysis. Can be use in emergency situations.

Peritoneal dialysis

PD

- Uses your own peritoneum—a natural membrane that covers the abdominal organs and abdominal wall
- Membrane acts as a filter to allow toxins to be filtered out of the blood
- Requires a PD catheter into the peritoneal cavity
- Dialysate flows into your abdomen and sits, this is called dwell time
- Fluid is then drained from your abdomen and the process begins again

Peritoneal dialysis (PD)

Pros

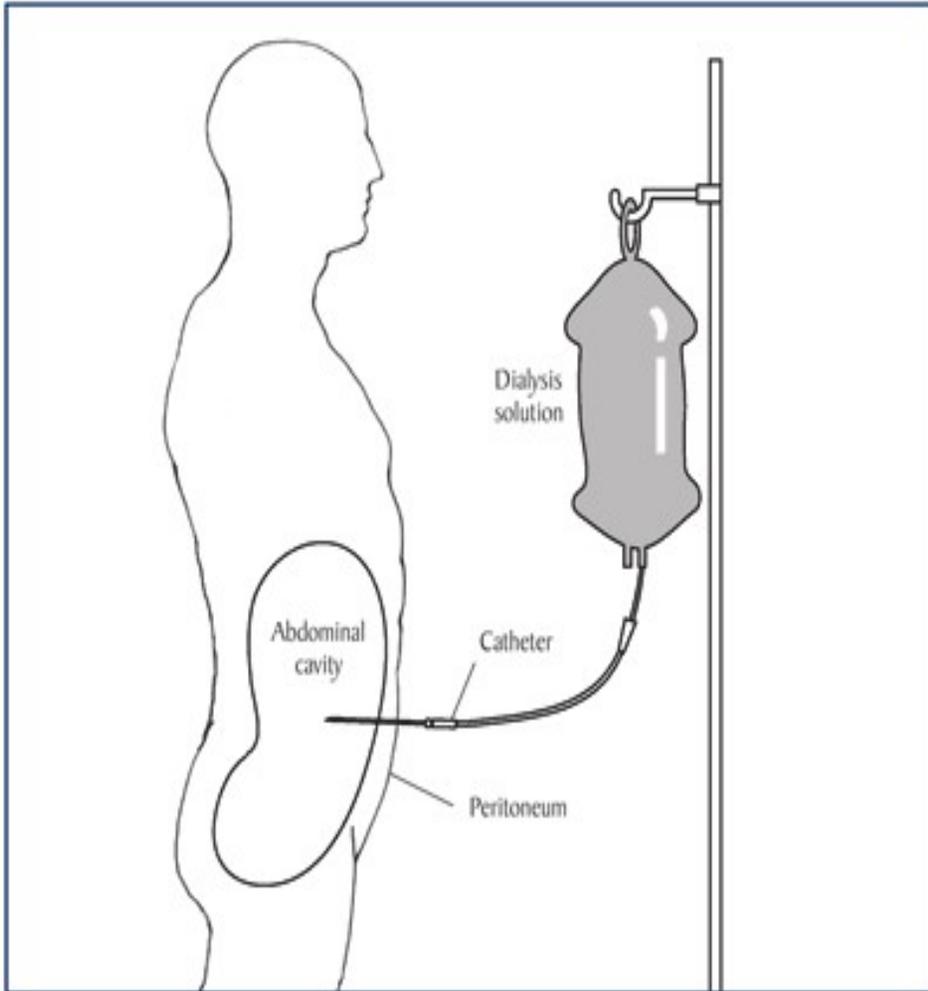
- Flexible schedule and independence
- NO partner needed
- Usually done while asleep
- No needles
- Easy to travel with
- Simulates normal kidney function
- Better blood pressure control
- Less restrictive diet and fluid
- Prolongs remaining kidney function

Cons

- Not indicated with history of hernias or multiple abdominal muscles
- Will increase insulin needs
- May need to do an extra exchange during the day
- Requires insertion of permanent catheter
- Must be very clean and careful to reduce the risk of infection
- Storage space is needed for home supplies

Peritoneal Dialysis (PD) Catheter

- Soft, flexible, plastic tube tunneled under skin of the abdomen
- Inserted just above or below waistline to side of umbilicus
- End of tube rests in pelvic area
- Day surgery, requires general anesthesia for insertion
- Can be buried under the skin for up to 6 months before needing dialysis
- Can be used as soon as 2-3 weeks after insertion
- Requires daily care to prevent infection



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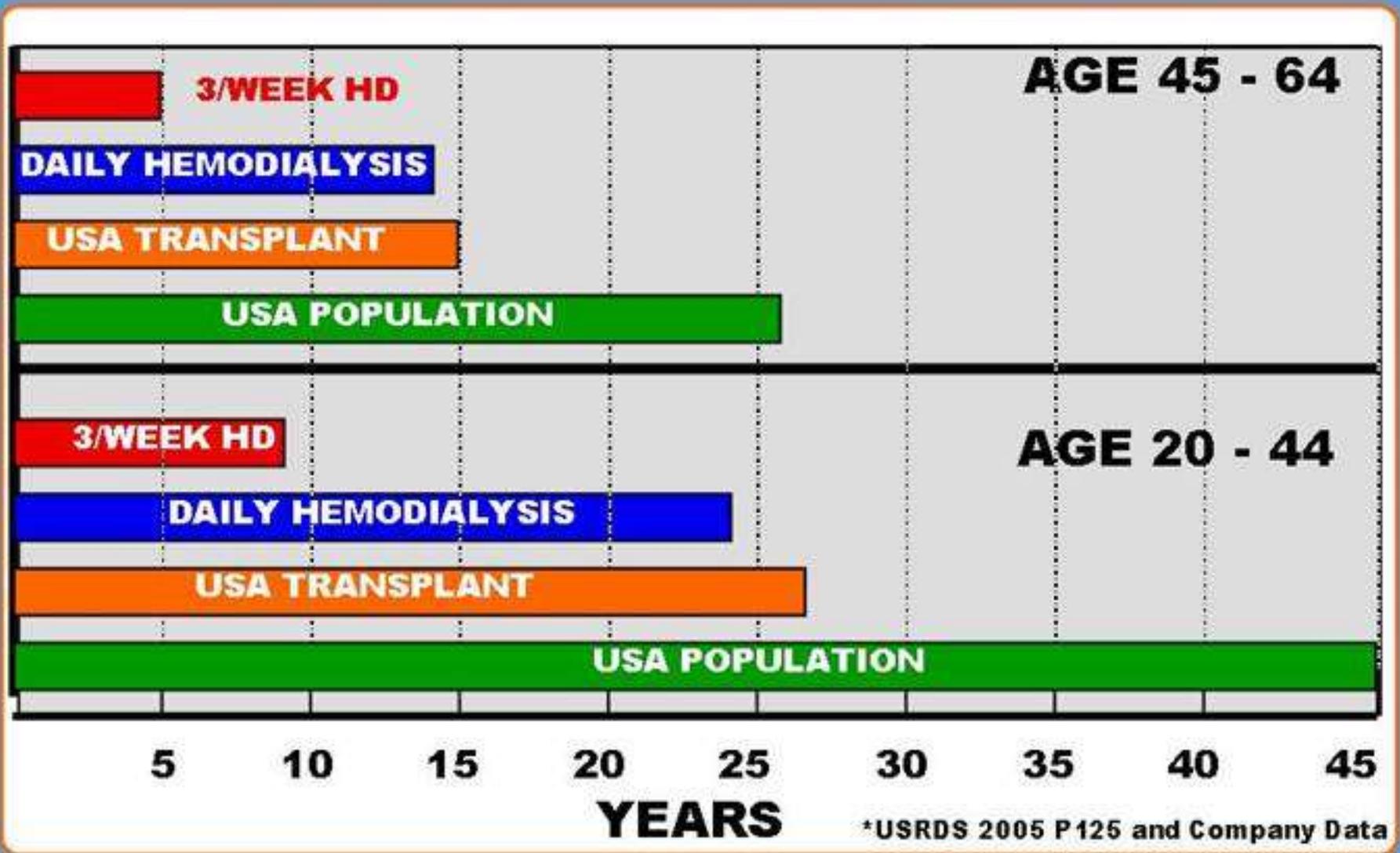
The catheter is usually placed about 1 inch below and to the side of the navel. It is about 1/4 - inch in diameter. Only 4 – 6 inches of it are outside of your body. You and your doctor can plan where to place the catheter so that it is comfortable and hidden by clothing.



Dialysis expected remaining lifetimes

Dialysis 2009	All races			White			African American			Native American			Asian		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
0-14	21	21.7	20	21.3	22	20.3	18.7	19.6	17.6	19.4	19.8	19.2	32.7	32.8	32.6
15-19	18.9	19.8	18	18.9	19.5	18.1	18.1	19.3	16.9	18.8	19.2	18.5	26.8	27	26.5
20-24	15.7	16.5	14.8	15.6	16.2	14.8	15.1	16.2	14	15.5	15.9	15.1	23	23.2	22.8
25-29	13.7	14.4	13	13.3	13.8	12.7	13.6	14.5	12.7	13.5	13.9	13.1	20.2	20.3	20.2
30-34	12.1	12.5	11.6	11.5	11.7	11.1	12.4	13.1	11.6	11.8	11.8	11.8	17.6	17.5	17.8
35-39	10.7	11	10.4	10	10.1	9.9	11.2	11.7	10.5	10.4	10.3	10.6	15.3	15.1	15.5
40-44	9.2	9.4	9	8.6	8.7	8.4	9.8	10.1	9.4	9.1	8.9	9.2	13	12.7	13.3
45-49	8	8.1	7.9	7.4	7.4	7.3	8.5	8.8	8.2	7.8	7.6	8.1	11	10.8	11.4
50-54	6.9	6.9	6.9	6.3	6.3	6.3	7.5	7.6	7.4	6.9	6.8	7.1	9.4	9.1	9.8
55-59	5.9	5.9	6	5.5	5.4	5.5	6.5	6.5	6.5	6.1	6	6.3	8	7.8	8.3
60-64	5.1	5	5.2	4.7	4.6	4.8	5.7	5.6	5.7	5.2	5	5.5	6.8	6.5	7.1
65-69	4.3	4.2	4.4	4	3.9	4.1	4.8	4.8	4.9	4.6	4.4	4.8	5.7	5.5	5.9
70-74	3.6	3.5	3.7	3.3	3.3	3.4	4.1	4.1	4.1	3.8	3.6	4	4.8	4.6	5.1
75-79	3.1	3	3.2	2.9	2.8	2.9	3.5	3.4	3.5	3.3	3.1	3.5	4.1	3.8	4.4
80-84	2.6	2.5	2.6	2.4	2.4	2.5	2.9	2.8	2.9	2.7	2.5	3	3.3	3.2	3.3
85+	2.1	2	2.2	2	1.9	2.1	2.3	2.3	2.4	2.3	2	2.4	2.5	2.5	2.6
Overall	6.2	6.3	6.2	5.8	5.8	5.8	6.7	6.8	6.6	6.3	6.2	6.5	8.6	8.4	8.9

Daily Hemodialysis Life Expectancy



Transplant expected remaining lifetimes

Transplant 2009	All races			White			African American			Native American			Asian		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
0-14	55.7	55.2	56.4	55.9	55.5	56.4	52.2	51.7	53.1	48.8	47	51.3	67	65.5	69.2
15-19	43.4	43	44.1	43.5	43.1	44	41.3	40.9	41.8	37.2	35.5	39.3	53.2	51.8	55.4
20-24	39.3	38.9	40	39.3	39	39.8	37.5	37.2	38	33.3	31.7	35.4	48.7	47.2	50.8
25-29	36.2	35.8	36.8	36.1	35.8	36.6	35	34.7	35.5	30.6	29.3	32.5	44.6	43.2	46.6
30-34	32.3	31.9	32.9	32.1	31.8	32.6	31.4	31	32	27	25.7	29.1	40.1	38.7	42.2
35-39	28.7	28.2	29.4	28.5	28.1	29.1	28.1	27.6	28.8	23.8	22.7	25.6	35.8	34.4	37.9
40-44	25.1	24.5	25.9	24.9	24.4	25.6	24.6	24.2	25.4	20.5	19.3	22.3	31.6	30.2	33.6
45-49	21.8	21.2	22.6	21.6	21.1	22.4	21.4	20.9	22.1	17.5	16.4	19.2	27.5	26.2	29.4
50-54	18.8	18.3	19.7	18.7	18.2	19.5	18.5	18	19.2	15	14	16.6	23.7	22.5	25.6
55-59	16.1	15.6	17	16	15.6	16.8	15.9	15.4	16.6	12.8	12	14.1	20.2	19	22
60-64	13.5	13.1	14.2	13.4	13	14.1	13.5	13.1	14	10.7	9.9	11.9	16.9	15.8	18.6
65-69	11.2	10.8	11.9	11.1	10.7	11.7	11.3	11	11.8	9	8.2	10.1	13.9	13	15.5
70-74	9.2	8.9	9.8	9.1	8.8	9.6	9.4	9.1	9.9	7.5	6.7	8.7	11.5	10.6	13
75-79	7.7	7.5	8.1	7.6	7.4	7.9	8	7.6	8.5	6.3	5.8	7.4	9.6	8.8	11
Overall	16.7	16.3	17.4	16.6	16.2	17.2	16.6	16.1	17.2	13.6	12.7	15.0	20.9	19.8	22.7

Transplant versus Dialysis

- There are more than 100,000 people in the U.S. waiting for a kidney transplant
- 17,000 transplants are done a year
- There are 468,000 people currently on dialysis
- A living donor kidney can last usually 12-20 years
- A deceased donor kidney can last usually 8-12 years
- Preemptive kidney transplant people live an average of 10-15 years longer, than if they had stayed on dialysis

If you choose not to start dialysis

- For most people with ESRD, dialysis improves your quality of life
- But for some people, dialysis may not improve your life, in fact may prolong suffering for those with multiple serious health problems
- You **DO** have the right to decide not to start treatment if you feel the burdens of dialysis outweigh the benefits to you

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- Discuss this with your family and healthcare providers
 - How much longer you may have to live varies according to your overall health
 - People with ESRD can live anywhere from days to weeks without dialysis, depending on how much kidney function you have left