

## Introduction

Narrator: This video is about dialysis vascular access – your lifeline for dialysis treatments. We'll explain what it is, why you need it, and what to expect! This information is for people who may need or are already on hemodialysis – either in a clinic or at home.

Patient: Hi, I'm Caroline and I'm a hemodialysis patient. I've been on dialysis for 10 years and I've had a few types of dialysis access. Getting an access probably seems like a really big decision – it did for me, at least. At first, I didn't even want to think about starting dialysis. I was scared and a little lost because I didn't know what was going to happen, or why it was happening. That's why we made this video. It's about 18 minutes long and explains what I wish I had known before I started my dialysis access journey.

## Stop 1: Understanding Dialysis

Narrator: Getting your dialysis access is like going on a journey. It takes time – often months. And, sometimes, there are extra stops along the way. Everybody's journey is a little different but starting early is *always* a great idea!

Patient: Don't worry – getting an access doesn't mean you have to start dialysis right away. Some people get their access *months* before they need dialysis. I got my access early so I had peace of mind that I would be ready for dialysis when the time was right.

Narrator: Let's start at the beginning. A "dialysis vascular access" is often called a "vascular access" or just "access" for short. "Vascular" means blood pathway, and an "access" is a way to get to something. A vascular access is needed so your blood can get from your body to the hemodialysis machine for treatment. The machine cleans your blood a little at a time, removes extra fluid, and then sends the clean blood back to your body. It's like a circle.

## Stop 2: Learning about Dialysis Access

Narrator: There are 3 types of dialysis access. You may need a different type at different points in your access journey.

- A *fistula* is the connection of a vein to an artery. A surgeon sews your vein and artery together under your skin. It's usually in your arm – either near your wrist or between your elbow and shoulder.
- A *graft* is also a connection of a vein to an artery. But, a surgeon uses a small piece of soft tubing to connect your vein and artery. It goes under your skin in the same places as a fistula.
- A *catheter* is a small, soft plastic tube. Usually, one end of the tube goes into a large vein in your chest, and the other end comes out through your skin, below your collarbone. It can also go in your upper leg.

All 3 of these require some sort of surgery. Now, let's talk about their differences.

Two needles are used to connect fistulas and grafts to the dialysis machine tubes. This happens at every dialysis treatment. Catheters don't use needles. They connect directly to the dialysis machine tubes. There are other differences too...



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- *Fistulas* take a while to become strong enough to use for dialysis, sometimes several months. But once they're strong, they usually last the longest. Fistulas generally have fewer problems than other access types. They don't get infected or clot as much, meaning they don't get stopped up with blood as often. Sometimes, they look lumpy or bumpy under your skin, but not always. Everyone's fistula looks different.
- *Grafts* need time to be ready for dialysis too, but not as long as fistulas. Most grafts can be used in a few weeks, but they get infected more easily than fistulas and are more likely to clot.
- Catheters can be used for dialysis the same day they're put in. There's no waiting time! But, catheters and their bandages can't get wet – so you can't shower or swim. They get infected more easily than fistulas and grafts, which can lead to hospitalization and even be life-threatening. That's why catheters *usually* aren't the best choice! But, if unexpected things happen along your access journey – like needing dialysis right away or needing an extra procedure to help your access work better – catheters can be helpful for a little while.

Patient: That was a lot of information. Here's my take. There are 3 types of dialysis access: fistula, graft, and catheter. It's important to understand their differences – so don't be afraid to ask your doctor lots of questions. Over time, you may end up having different access types, and that's okay. It's actually pretty common! I've had two fistulas and a few catheters, because that's what my body needed at the time. Make sure you know which type of access you have so if someone asks – you can tell them!

### Stop 3: Vein Mapping

Narrator: The next stop on the dialysis access journey is taking pictures of the veins and arteries in your arms or legs. This is called *vessel mapping* or *vein mapping*. These pictures help doctors figure out the best access for you and where it should go in your body. Vein mapping doesn't hurt you or your kidneys. No dye or needles are used, and it's not a surgery. An ultrasound machine takes pictures of the size and shape of your veins and arteries through your skin. It's just like looking for a baby in a woman's belly. But instead, it's looking for blood vessels in your arms or legs.

Patient: When I got my vein mapping done, they took pictures of the veins and arteries in *both* my arms. It turned out that the blood vessels in my right arm were better than the ones in my left. So, I got my fistula on the right, even though I'm right-handed.

### Stop 4: Talking about Surgery

Narrator: Meeting with a surgeon is an important stop on your access journey. Don't worry, the actual surgery comes later. During this visit, you'll talk about what access might be right for you and make plans for surgery. Before your appointment, think about what questions or worries you have. It's also helpful to tell your surgeon what's important to you and what you like to do – like go to work, exercise at a gym, or swim in a pool. Your surgeon will explain what they see in your vein mapping pictures and what access they think is best for your body. Sometimes, they'll ask you to get other procedures – like to test how strong your heart is or how well you're breathing. These make sure you're safe for surgery.



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Patient: Extra tests aren't a big deal. You'll just have a few more appointments before surgery. I'll be honest. This was when I started to drag my feet. I didn't really want a dialysis access, and I was overwhelmed. It felt like too much time and effort. If you feel this way, tell your doctor. The journey can be long, but your access will be your lifeline, so try and take it one stop at a time!

### Stop 5: Getting Surgery

Narrator: When you're ready to get your fistula or graft, you'll need to schedule the surgery. We'll talk about the procedure for catheters a little later.

Patient: I was nervous before my first fistula surgery. I was worried about how much it would hurt and I didn't know if I would be able to take care of myself. So, I made sure that I had someone to help me the week after surgery. Everyone's surgery is different, but here are the basics...

Narrator: Follow your surgeon's instructions about eating, drinking, and medicines you should and should not take. You'll need someone to drive you home after surgery, so think about who could help. Right before surgery, you'll get medicines that make you sleepy and numb your arm so you don't feel pain during the surgery. It's normal to hurt or feel uncomfortable afterward. This may last a few days or even weeks, but it *will* get better! Your doctor will explain what medicines might help and what to do if you have swelling, bruising, or tingling. In the beginning, there will be some changes in how you can use your arm – like not lifting heavy things. But you should be able to return to *most* of your activities soon. You'll also have some check-up appointments to make sure your access is healing the way it should.

Patient: After my first surgery, I hurt more than I expected. But, my check-ups made me feel better because I could see that my arm was healing – even if it was slow. It took time to get used to how my fistula looked, but I learned to appreciate it as part of my body *and* my lifeline! I used that fistula for my first 9 years of dialysis. It eventually stopped working, and I needed a new one. But, I didn't have any pain with my second fistula surgery. That's the thing – every surgery is a little different!

### Stop 6: Healing

Narrator: After surgery, your access will need time to heal and become ready to use for dialysis. Don't be afraid to move your arm or use it to do things like brush your teeth or play a guitar. This actually helps you heal! Just follow your surgeon's instructions and remember – everyone heals at a different pace.

- A *fistula* can take 2 to 6 months to be ready to use for dialysis. This is called "maturing," which means the fistula is becoming bigger and stronger. Your doctor may give you exercises – like squeezing a ball – to help it mature faster.
- A *graft* is usually ready for dialysis in 2 to 3 weeks, but some only need a few days to heal! Your surgeon will tell you when yours is ready to be used.

Patient: This stop of my journey felt the longest. After my first surgery, it took 2 weeks to get back to work as a cashier, and 3 more months for my fistula to be ready for dialysis. My second fistula needed some extra procedures, so it took even longer. Healing takes patience, especially because



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some things are out of your control. But, here's what you *can* do to take care of your access after surgery...

Narrator: Wash your access every day so it doesn't get infected. Check every day for a "thrill." A thrill is a buzzing feeling when you touch your fistula or graft. You may also hear about a "bruit". A bruit is a whooshing sound that tells doctors your access is healthy. Feeling a thrill and hearing a bruit is good. It means your blood is flowing like it should. Contact your doctor right away if you notice a change in how your access looks, feels, or sounds. Like if it gets red, swells, or feels warm, or if your hand gets cold, numb, or hurts. Your doctor will also want to know if the "thrill" buzzes less or goes away completely, and if the "bruit" has a different sound.

Patient: The key is to *pay attention* to your access! Right after surgery, I could hear the blood whooshing through my fistula if I listened closely. It was so loud and strong – it was kind of shocking. It took me a while to get used to checking for the thrill every day, but now it's part of my routine. If you notice something is different or feels funny, let your doctor know.

Narrator: To protect your access, use your non-access arm to take blood pressure, have blood drawn, or put an IV in. Be careful when carrying heavy items. Don't put pressure on it. Try to not sleep on it or wear clothes and jewelry that are tight around it.

## Stop 7: Detours

Narrator: While your fistula or graft is healing, you might need extra procedures. This doesn't mean you've done something wrong! Think of extra procedures as detours on your access journey – because you're still moving forward in the right direction. In fact, at least 1 out of 3 fistulas needs extra help to mature. For example, doctors may need to make it bigger to help blood flow better. This is done with a balloon or a little metal tube.

Patient: We've been talking about fistulas and grafts a lot. But, some detours on your journey may lead you to a catheter. I used one while I waited for my second fistula to be ready for dialysis. That was tough since the catheter couldn't get wet, and I love to shower and swim at the beach! But, I needed dialysis and my fistula was too deep in my arm for the needles to reach. So, I had another surgery to raise it up and used a catheter while it healed. Some people need a catheter for a longer time – or even the whole time they're on dialysis. It depends on each person's blood vessels and body.

Narrator: There are fewer steps to get a catheter. There's no vein mapping or extra appointments, and it's usually a pretty quick procedure.

- Follow your doctor's instructions about eating, drinking, and medicines you should and should not take. Right before the procedure, you'll get medicines to make you sleepy and numb where your catheter will go. Most times, you're not put completely to sleep.
- You shouldn't have pain when the catheter is placed, but you'll probably feel some tugging and pressure.
- It's normal to have some discomfort and soreness afterward. Your doctor will tell you what to watch for. But, you usually don't need a follow-up appointment since a catheter can be used for dialysis the same day you get it!

Patient: Catheters serve a purpose. But, they can get clogged up and stop working, just like fistulas and grafts. There is a medicine that unclogs catheters, but if it doesn't work, you might need to get a



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new catheter. Lots of people have challenges with their access, and it's impossible to predict what will happen, so try and be patient.

### Stop 8: Starting Dialysis

**Narrator:** You'll start hemodialysis when you and your doctor decide the time is right. If you have a catheter, it will attach directly to the dialysis machine tubes. If you have a fistula or graft, two needles will be used to connect your access to the tubes. Putting the needles in your fistula or graft is called "cannulation." This happens at every dialysis treatment. One needle takes blood from your body to the dialysis machine, and the other needle returns the cleaned blood back to your body. To make the needles hurt less, some people use numbing cream before dialysis. At the end of treatment, both needles are taken out.

**Patient:** In the beginning, I was afraid of needles. But my body got used to them pretty quickly, and I barely feel pain now. If you choose to get dialysis in a clinic, the people who put the needles in are well-trained. I do dialysis at home, so I stick myself. I feel in control that way, but that's just me. It's important to figure out what *you* need and what makes *you* feel best!

### Stop 9: Conclusion

**Narrator:** That's the dialysis access journey! Everyone's is a little different. Things can take longer or go differently than expected, so it's a good idea to start early – even months before you might need dialysis! Work with your doctors every stop of your journey. They want to support you. Whether you choose dialysis in a clinic or at home, your vascular access will be your lifeline.

**Patient:** Remember, you are *not* alone on this journey. It's okay to feel afraid or unsure along the way. Ask all your questions and get all the information you need. A lot of people want to help you, and they're just a phone call away. You've got this!



Scan this QR code or visit [go.unc.edu/dialysisaccess](https://go.unc.edu/dialysisaccess) to see the animated video and brochure

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