

# Renal Access Clinic of Houston

## Our Procedures

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**The Renal Access Clinic of Houston** specializes in preparing temporary and permanent access options for patients who suffer from End Stage Renal Disease (ESRD), or kidney failure. These patients are unable to filter waste from their blood and must have their blood filtered mechanically in a process called hemodialysis. To begin regular hemodialysis sessions, a surgeon must prepare a vascular access—the site of your body where blood is removed and returned during dialysis.



A vascular access should be prepared weeks or months before you start dialysis. Early preparation of the vascular access will allow easier and more efficient removal and replacement of your blood with fewer complications. To maximize the amount of blood cleansed during hemodialysis treatments, the vascular access should allow continuous high volumes of blood flow.

In the past, access procedures required hospitalization. But, thanks to technological advances, we can now provide cutting-edge access care in an outpatient setting. Our patients enjoy greater convenience while avoiding the risks of open surgery, added expense and prolonged hospital stays.

We understand that this access is your lifeline to hemodialysis, and we take great care in preserving these sites.

There are three kinds of vascular access for hemodialysis. Hemodialysis Catheter, an Arteriovenous (AV) Fistula, and an AV Graft.

## Hemodialysis Catheter

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The hemodialysis catheter is a short-term dialysis access and is usually placed in emergency situations or as a temporary access while a permanent access develops. A catheter is a tube inserted into a vein in your neck, chest or leg near the groin. It has two chambers to allow a two-way flow of blood. Problems with catheters can include clotting, infection and a narrowing of the veins in which they are placed.

At the Renal Access Clinic, we can remove, repair, reposition, exchange and insert these catheters as needed. These catheter procedures are very simple and require only a local anesthetic.

### Removal

The removal of a catheter is accomplished by giving a local anesthetic; the skin is then pulled away from where the catheter exits and it is removed. A suture (stitch) may be used to stop any bleeding and it may be removed the following day. The procedure usually requires less than 15 minutes.

### Insertion

Inserting a catheter starts when the doctor locates a vein, in the neck or groin large enough for the placement of the catheter. Local anesthetic is given and the catheter is inserted. The doctor will then take an x-ray to ensure that the catheter is in the proper position. At the end of the procedure, the catheter is secured into position with two sutures (stitches) which will not be removed. This procedure is completed in less than 30 minutes.

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## **Repair, Reposition or Exchange**

Catheters that are not properly functioning may be fixed by repairing, repositioning, or exchanging the old catheter with a new one. The amount of time needed for these procedures varies but all should require less than 30 minutes. A local anesthetic will be given as needed and an x-ray will be taken for repositions and exchanges.

## **AV and Fistulas**

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The AV fistula is considered the best long-term vascular access for hemodialysis because it provides adequate blood flow, lasts a long time and has a lower complication rate than other types of access. A surgeon creates the fistula by connecting an artery directly to a vein, usually in the forearm. The fistula can take several months after surgery to develop before hemodialysis treatments can begin.

Patients with small veins that fail to develop properly into a fistula may need a vascular access that connects an artery to a vein using a synthetic tube, or graft, implanted under the skin. The graft becomes an artificial vein that can be used repeatedly for needle placement and blood access during hemodialysis.

### **What problems can fistulas and grafts have?**

Fistulas and synthetic grafts are not perfect. The most common problem encountered is stenosis (narrowing) of the blood vessels. If stenosis is left untreated it can result in the access becoming clotted, ineffective, and unusable.

### **Can these problems be fixed?**

Yes, narrowing of the veins and arteries near the access can be fixed using a very small balloon. These narrowed blood vessels are stretched using a procedure called balloon angioplasty. This procedure reduces the chance that the access becomes clotted and increases the efficiency of dialysis.

### **What if the access is already clotted?**

Grafts and fistulas that are already clotted can also be fixed. A procedure called a thrombectomy is performed where the clot is removed through a small needle. This procedure has been very successful at returning excellent flow to the access and patients are usually able to return to dialysis the same day.

### **How is the procedure performed?**

The procedures performed at The Renal Access Clinic of Houston are percutaneous. This means that they are done using very small needles (smaller than dialysis needles) which are placed into the access. A local anesthetic will be given to numb the area into which the needles are placed.

Dye is injected into the access and an X-ray is used to view the blood flow through the access and surrounding blood vessels, this is known as venogram. This X-ray is used by the doctor to determine which areas are narrowed and

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require angioplasty. The angioplasty balloon is also inserted through the needle and placed at the location of narrowing. The balloon is then inflated, this will cause the vessel to stretch and widen, allowing better blood flow and helps prevent future clots. In the event that a clot is found, or the patient was referred because of a clotted access, a thrombectomy will be performed. After inserting a second needle into the access, a thrombectomy catheter is inserted and inflated. The clot is removed through a sheath and you should feel no discomfort.

## Why is this procedure better?

In the past, the failure of an access required a trip to the hospital, surgery, blood loss, and several days in the hospital. Surgical repair of a dysfunctional access also often resulted in the loss of future sites for access placement. Since there are only a few places for access placement the Renal Access Clinic takes great care in preserving these sites.

Access Options	Procedure	What's Involved	Time Required
Hemodialysis Catheters	Removal	<ul style="list-style-type: none"> <li>Local anesthetic</li> <li>Suture(s), as needed</li> </ul>	< 15 minutes
	Insertion	<ul style="list-style-type: none"> <li>Local anesthetic</li> <li>X-ray</li> <li>Two permanent sutures</li> </ul>	< 30 minutes
	Repair, Reposition or Exchange	<ul style="list-style-type: none"> <li>Local anesthetic</li> <li>X-ray (for reposition and exchange)</li> <li>Suture(s), as needed</li> </ul>	< 15 minutes
AV Grafts and Fistulas	Angioplasty to enlarge narrowed blood vessels (stenosis)	<ul style="list-style-type: none"> <li>Local anesthetic</li> <li>Insertion of small needles</li> <li>Venogram (dye injection)</li> <li>X-ray</li> <li>Suture(s), as needed</li> </ul>	< 1 hour
	Thrombectomy to remove blood clots	<ul style="list-style-type: none"> <li>Local anesthetic</li> <li>Conscious sedation (as needed)</li> <li>Insertion of small needles</li> <li>Venogram (dye injection)</li> <li>X-ray</li> <li>Sutures(s), as needed</li> </ul>	< 1 hour