

Texas Children's Hospital

Caring for Your Child's Health

Inserting a PICC Line

You've been told your child needs a PICC line. What is a PICC line and what does this mean for your child and your family?

PICC is an acronym for Peripherally Inserted Central Catheter. A PICC line is a long, soft, thin, flexible tube that is inserted into a peripheral vein, typically in the upper arm (above the bend of the elbow). The tip of the catheter is advanced until the tip is positioned in the middle of the chest, in a large vein near the heart. The tip of the PICC line typically rests near the heart in the superior vena cava (the largest vein from above that dumps blood into the heart).

The hole in the middle of the tube is called the lumen. The tube will have one or two lumens, known as a single or double lumen PICC line. A double lumen PICC line allows different intravenous treatments to be given at the same time.

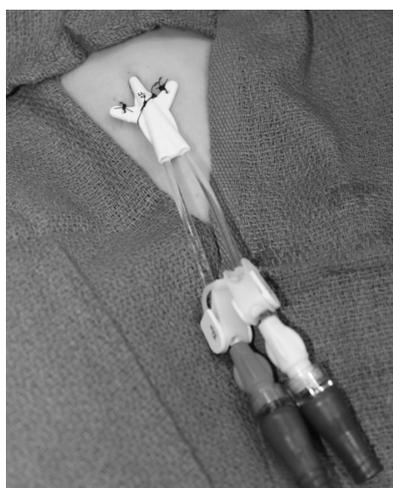


At the end of the tube, outside the body, each lumen has a special cap that can be attached to a syringe. Sometimes there is a clamp to keep

the tube closed when it is not in use. Other times, there is an internal valve that provides the same function.

At Texas Children's Hospital, PICC lines are inserted by doctors, nurse practitioners and radiology physician assistants using ultrasound, fluoroscopy (live X-ray) and/or chest radiographs to aid in their insertion and to confirm placement. A nurse and/or a radiology technologist will assist with the procedure.

PICC line insertion is a sterile procedure and is usually done in an operating room in the Interventional Radiology suites, but some times is done at the bedside of critically ill patients. Visitors are not allowed to be present during PICC line placement, due to the increased risk of infection and unnecessary radiation exposure. During the procedure, all staff members involved will be wearing hats, masks, gloves and lead aprons if X-rays are being used.



Lidocaine, a local anesthetic, will be injected using a very small needle to numb the skin before the PICC line is inserted.

Some children may require the use of sedative medication if they are unable to remain still for the entire procedure. Typically, children over the age of ten

years are prepared by our certified child life specialists and are able to do the procedure without sedative medication. The sedation typically used for PICC line placement is either intravenous moderate sedation, provided by our nursing staff under a doctor's supervision, or general anesthesia provided by an anesthesiologist. When sedation or anesthesia is required, there are important rules for drinking and eating before the procedure that must be followed.

The insertable portion of PICC lines is designed to be trimmed to the desired length immediately before insertion and varies in length based on the patient's individual size. Typically, PICC lines placed in our pediatric population of patients vary from 10 to 45 cm.

The PICC line is typically secured to the skin with two or three sutures, and/or securement device (STAT Lock), then a sterile dressing is applied over the PICC line insertion site. Securing the catheter reduces the risk of post-insertion movement of the line that could place the tip in an unsafe position.



Usually, PICC line placement takes approximately 30 to 60 minutes, but this time can vary depending on many factors.

How long the PICC line stays in your child varies

from a minimum of one week to up to a year, depending on the need. Other forms of intravenous access are considered if the treatment course is protracted. While PICC line placement usually lasts for weeks, a few patients have had the same PICC line in place for several years without complication.

PICC lines can be used to administer intravenous treatments such as chemotherapy, total parenteral nutrition (TPN), blood transfusions, antibiotics and fluids. It also can be used to obtain blood samples for testing.

Your child can go home with a PICC line in place, and it can be left in for weeks or months as long as it is working properly and there is no sign of infection.

When the PICC line is not being used, there is a slight risk that it may become blocked. To prevent this, a small amount of heparin (a blood thinner) is flushed into the line using a syringe. This is done regularly, usually once a week. The dressing also will need to be changed each week to reduce the risk of infection. A family member or caregiver may be taught to care for the PICC line, or a hospital, clinic or home health nurse may care for it.

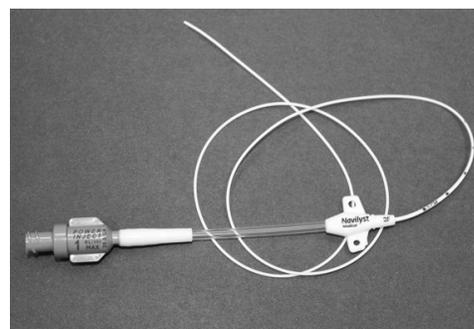
It is safe for your child to shower or bathe with a PICC line in place, but extra caution must be taken to prevent the PICC line insertion site from becoming wet. Your nurse can give you waterproof covers to keep the PICC line from getting wet. If the PICC line insertion site becomes wet, the chance of PICC line infection increases.

PICC line placement is considered a low-risk procedure. However, potential complications may occur, including: bleeding, infection, thrombosis (blood clots), abnormal heart rhythm, phlebitis (irritation of the vein), catheter occlusion (blockage), puncture of adjacent structures (such as other veins or arteries) and contrast reaction (allergic reaction to the X-ray dye).

It is possible for an infection to develop inside the PICC line or at the insertion site. You should notify your doctor or nurse if the PICC line insertion site becomes red, swollen or painful, you notice any discharge or your child develops a fever. If a PICC line infection develops, your child will most likely be given antibiotics in an attempt to clear the infection. In some cases, the PICC line has to be removed.

It is possible for a blood clot, or thrombosis, to form in your child's vein at the tip of the line or along the catheter pathway. If a clot does form, your child will be given medication to try to dissolve the clot and the PICC line may have to be removed. Signs of a blood clot around the PICC line include swelling of the arm, redness or tenderness of the arm, chest area or up into the neck (on the same side as the PICC).

No air can be allowed to get into your child's PICC line. Some PICC lines have clamps and others have internal valves that prevent air from entering the line. If your PICC line has a clamp, it should always be closed when the line is not in use.



It is important that the PICC line is not cut, split or cracked. Do not use scissors near the PICC line. Do not use hemostats on any part of

the PICC line at any time. It is uncommon to get a cut, split or crack in the line, but in case it does happen, contact the hospital or doctor immediately, as the PICC will likely need to be removed or replaced.

After PICC line placement, your child will be able to resume most activities, including day care or school. Your child should be discouraged from contact activities or sports, such as football and rough

playing, that may result in a pull to the PICC line and lead to damage or loss of the catheter. If you have questions about which activities are OK, please ask your doctor.

Removal of the PICC line is a much more simple procedure than placement. Generally, PICC lines can be safely removed by a trained nurse, even in the patient's own home, in a matter of minutes. When it is time for your child's PICC line to be removed, the sutures are clipped and the PICC line is gently pulled out. After removal, the insertion site is covered with a bandage until it begins to heal. This is a painless procedure that only takes a few minutes.

This information may have answered most of your questions or concerns about PICC lines, but if you have others, please feel free to phone 832-824-5565 during normal business hours and one of our nurse practitioners or radiology physician assistants would be happy to speak with you further.

Notes and questions

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