

**Amy Holland**

A Port-a-Cath or Mediport (port) is a device for intravenous access in patients who require frequent or continuous administration of intravenous substances such as Enzyme Replacement Therapy (ERT). The Port-a-Cath is a combination of a port and an intravascular device. The intravascular device is inserted in a vein (usually the jugular vein or subclavian vein) and tunneled under the skin of the chest wall. There, a small device is inserted and connected to the venous line. The procedure is usually performed under sedation or general anesthetic.

The subcutaneous device has a chamber with a silicone membrane that can be accessed by puncturing the overlying skin with a Huber point needle, and fluids can be injected. As the puncture is very small, this can be repeated many times without compromising either the skin or the device.

Due to its design, there is a very low infection risk, as the breach of skin integrity is never larger than the caliber of the needle. This gives it an advantage over indwelling lines such as the Hickman line.

## **Location of the Port**

Ports are traditionally placed in either the arm or chest. Arm ports are typically lower profile and smaller. Because of their smaller size, arm ports are usually good for approximately 1,000 punctures while chest ports roughly 2,000. The strongest argument for use of an arm port is appearance. It is smaller in profile requiring less of an incision and can be hidden beneath a shirt sleeve or on the inside of the arm.

Arm port advocates site a forearm skin bacteria count 100 - 1000 times less than the chest. These bacteria are also supposedly less virulent. Based on these factors, arm port advocates suggest an extremity port would have a lower infection rate.

There are also benefits to having the port placed in the chest. It is closer to the jugular and subclavian veins and therefore be less tubing to tunnel during surgical placement. It is good for twice as many punctures as an arm port.

## **Benefits of Having a Port**

1. Good aesthetics and intact body image
2. Patients can resume regular activities after the pocket is healed, including swimming, exercise and sports (contact sports, however, should be avoided).

3. Ports require less maintenance, flushing and dressing changes. When a port is not in use it only needs heparin flushing every 4 - 6 weeks.
4. Ports are not exposed to environmental or cutaneous contamination, therefore, it is theorized that the subcutaneous position prevents infection from skin bacteria leading to a lower risk of infection. Many articles have been written to support this.

## Questions about Port-a-Cath

1. What should I do if my child 's Port-a-Cath won't flush?  
Because there are medications available to treat occlusions that can occur, it is important to call your child's care provider as soon as you realize the port is not working properly.

Resistance to flushing. Feeling resistance may mean you've got a clot, which often can be treated at home or in the clinic using clot-busting drugs called thrombolytics.

2. What if the port will not draw?  
If there is no blood return when the port is accessed the intravascular portion of the port can be up against a flap in the vein. This makes it more difficult to get a blood return. It is sometimes helpful to have the patient move the arm closest to the port, lie on their side, or bear down. One nurse reported that her patient drank soda before his accessing procedure. "The only way to get a blood return for this particular patient was to have him belch," the nurse remarked.
3. What should I do if my child's port site looks different?  
If your child's site is red and irritated, wash the site with warm soapy water. It may be a reaction to the adhesive used during the infusion. If hives or welts appear, call your doctor and consider using oral Benadryl. If the port site looks puffy, swollen, or has red streaks, call your care provider.
4. What are some ways I can numb my child's port site before a needle access?  
You can ask your doctor or nurse for EMLA cream and apply it on the site 45 minutes to an hour before the access. L-M-AX is another topical cream that can be applied to the port site. It needs to be applied 15-20 minutes prior to access.

Another way to anesthetize the accessing site is to use Ethol Chloride spray, or cold spray. It should be sprayed as the needle is being placed or immediately before the needle is placed. Some children like this, others think this makes the pain of the needle stick worse. Many children stop needing any creams or spray after a few months of accesses because scar tissue will cause the site to lose sensation.

5. What is the port surgery recovery time?

Many doctors place ports in patients who need to use them the very next day. This surgery is sometimes more difficult for patients with MPS and ML because tunneling the intravascular tubing is more involved. Most patients are sore for four to seven days following surgery and it is best to wait five to seven days before accessing the new port.

6. How long will a Port-a-Cath last?

Most surgeons say most ports will last anywhere from two to six years.