



## Peritoneal Ports

A peritoneal port is a small reservoir that is surgically implanted under the skin to allow excess fluid to be withdrawn from or medication delivered into the peritoneal (abdominal) cavity. These ports spare patients the pain of repeated needle sticks and have a much lower rate of infection compared to other access devices. Your doctor may use a peritoneal port to help treat ovarian cancer or intractable ascites, a condition in which excess fluid builds up in the abdominal cavity.



Your doctor will tell you how to prepare and whether you will be admitted to the hospital.

Inform your doctor if there's a possibility you are pregnant and discuss any recent illnesses, medical conditions, allergies and medications you're taking, including herbal supplements and aspirin. You may be advised to stop taking aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs) or blood thinners several days prior to your procedure. You also may be told to have nothing to eat or drink several hours beforehand. Leave jewelry at home and wear loose, comfortable clothing. You may be asked to wear a gown. If you are not to be admitted, plan to have someone drive you home afterward.

## What is a Peritoneal Port?

A peritoneal port is a small reservoir or chamber that is surgically implanted under the skin to provide a painless way of withdrawing excess fluid from or delivering anti-cancer drugs into the abdominal or peritoneal cavity over a period of weeks, months or even years. The port has a silicone rubber top that can be penetrated by a needle and an attached catheter that is designed to hang down into the abdominal cavity once it is placed inside the body.

The peritoneal port is implanted during a minimally invasive procedure so that patients may undergo treatments such as:

- serial paracentesis, in which excess fluids in the abdomen are repeatedly withdrawn through a catheter connected to the port.
- intraperitoneal therapy, in which anti-cancer drugs are delivered into the peritoneal cavity through a catheter connected to the port.

## What are some common uses of the procedure?

Physicians use peritoneal ports to help treat:

- intractable ascites, a condition in which excess fluid continually builds up in the abdominal, or peritoneal cavity. Ascites may be caused by cirrhosis (chronic liver disease), cancer, heart failure, kidney failure, tuberculosis or pancreatic disease.
- ovarian cancer.

## How should I prepare?

You might have blood drawn prior to your procedure.

Prior to your procedure, your blood may be tested to determine how well your kidneys are functioning and whether your blood clots normally.

You should report to your doctor all medications that you are taking, including herbal supplements, and if you have any allergies, especially to local anesthetic medications, general anesthesia or to contrast materials containing iodine (sometimes referred to as "dye" or "x-ray dye"). Your physician may advise you to stop taking aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs) or blood thinners for a specified period of time before your procedure.

Also inform your doctor about recent illnesses or other medical conditions.

Women should always inform their physician and x-ray technologist if there is any possibility that they are pregnant. Many imaging tests are not performed during pregnancy so as not to expose the fetus to radiation. If an x-ray is necessary, precautions will be taken to minimize radiation exposure to the baby. See the Safety page for more information about pregnancy and x-rays.

You will receive specific instructions on how to prepare, including any changes that need to be made to your regular medication schedule.

Other than medications, you may be instructed to not eat or drink anything for several hours before your procedure.

You may be asked to remove some or all of your clothes and to wear a gown during the exam. You may also be asked to remove jewelry, eye glasses and any metal objects or clothing that might interfere with the x-ray images.

You should plan to have a relative or friend drive you home after your procedure.

## What does the equipment look like?

In this procedure, x-ray or ultrasound equipment, a peritoneal port, catheter and guide wire are used.

The equipment typically used for this examination consists of a radiographic table, one or two x-ray tubes and a television-like monitor that is located in the examining room. Fluoroscopy, which converts x-rays into video images, is used to watch and guide progress of the procedure. The video is produced by the x-ray machine and a detector that is suspended over a table on which the patient lies.

The peritoneal port is a round chamber about the size of a quarter. It has a silicone rubber top that can be penetrated by a needle and an attached catheter that is designed to hang down into the abdominal cavity.

A long thin wire called a guide wire helps the physician position the port.

Other equipment that may be used during the procedure includes an intravenous line (IV), ultrasound machine and devices that monitor your heart beat and blood pressure.

## How is the procedure performed?

Image-guided, minimally invasive procedures such as the placement of peritoneal ports are most often performed by a specially trained interventional radiologist in an interventional radiology suite or occasionally in the operating room.

This procedure is often done on an outpatient basis. However, some patients may require admission following the procedure. Please consult with your physician as to whether or not you will be admitted.

You may be given medications to help prevent nausea and pain, and antibiotics to help prevent infection.

You will be positioned on the examining table.

You may be connected to monitors that track your heart rate, blood pressure and pulse during the procedure.

A nurse or technologist will insert an intravenous (IV) line into a vein in your hand or arm so that sedative medication can be given intravenously. Moderate sedation may be used. As an alternative, you may receive general anesthesia.

If you receive a general anesthetic, you will be unconscious for the entire procedure, and you will be monitored by an anesthesiologist. If you receive conscious sedation, you will be monitored by a nurse who will administer medications to make you drowsy and comfortable for the procedure.

The area of your body where the port is to be inserted will be shaved, sterilized and covered with a surgical drape.

Your physician will numb the area with a local anesthetic.

A very small skin incision is made at the site.

The catheter is inserted through the skin and into the abdominal cavity. A few inches away, a second incision is made where the peritoneal port is implanted in a small pocket under the skin. One end of the catheter is then connected to the port through a tunnel just under the skin. When the procedure is

complete, the port and catheter will be completely underneath your skin.

A small, elevated area remains at the site of the port. The reservoir has a silicone covering that can be punctured with a special needle. Stitches, surgical glue or tape will be used to help keep the port firmly in place.

An x-ray may be performed after the procedure to ensure the port is correctly positioned.

Your intravenous line will be removed.

This procedure is usually completed within two hours.

## What will I experience during and after the procedure?

Devices to monitor your heart rate and blood pressure will be attached to your body.

You will feel a slight pin prick when the needle is inserted into your vein for the intravenous line (IV) and when the local anesthetic is injected. Most of the sensation is at the skin incision site, which is numbed using local anesthetic. You may feel pressure when the catheter is inserted into the vein or artery.

If you receive a general anesthetic, you will be unconscious for the entire procedure, and you will be monitored by an anesthesiologist.

If the procedure is done with sedation, the intravenous (IV) sedative will make you feel relaxed, sleepy and comfortable for the procedure. You may or may not remain awake, depending on how deeply you are sedated.

You will have to lay flat for about 30 to 45 minutes during port placement.

If you are not staying overnight at the hospital, you should rest at home for the remainder of the day following the procedure. You may resume your usual activities the next day, but should avoid lifting heavy objects for the next few days. Ask your physician when you may resume lifting heavy objects.

You will receive instructions on how to care for your incision(s) and your particular vascular access device. For the first week, it is especially important to keep the catheter site clean and dry. Some, but not all, physicians will recommend sponge bathing around the port site, then cleaning the area with peroxide, applying an anesthetic ointment that contains an antibiotic and bandaging the area.

Incisions are held together by stitches, surgical glue and/or a special tape.

Having the port in place should not restrict your activities. Once the incision heals, reasonable exercise is allowed and since the port is located under your skin, you may bathe or shower as usual. You may continue with your normal diet.

You should inspect the skin around your port daily and call your doctor if you:

- develop redness, swelling or tenderness around the port site
- experience unusual abdominal pain
- develop a fever.

You will remain in the recovery room until you are completely awake and ready to return home.

## Who interprets the results and how do I get them?

The interventional radiologist can advise you as to whether the procedure was a technical success when it is completed.

Your interventional radiologist may recommend a follow-up visit after your procedure or treatment is complete.

The visit may include a physical check-up, imaging procedure(s) and blood or other lab tests. During your follow-up visit, you may discuss with your doctor any changes or side effects you have experienced since your procedure or treatment.

## What are the benefits vs. risks?

### Benefits

- The procedure is minimally invasive, requiring only small incisions.
- Peritoneal ports have a substantially lower rate of infection compared with other access devices.
- Peritoneal ports spare the patient the discomfort and stress of repeated needle sticks.
- Placement of a peritoneal port is a great solution for those requiring prolonged treatment such as chemotherapy.
- A port allows paracentesis to be performed in a home setting.

### Risks

- Any procedure where the skin is penetrated carries a risk of infection. The chance of infection requiring antibiotic treatment appears to be less than one in 1,000.
- Ports require surgical insertion and removal if complications arise or when treatment ceases.
- An infection may develop at an incision site shortly after port placement. The risk is less if you carefully follow instructions about caring for the incisions as they heal.

### Delayed Risks

- Two types of delayed infection may develop: skin infection at the catheter or port insertion site or infection in the peritoneal cavity (peritonitis). The risk of delayed infection can be minimized if you and anyone else who will be handling the device wash hands before flushing it or cleaning the insertion site. The site should be carefully inspected each time the dressing is changed. The risk of infection is higher for individuals who have low white blood cell counts.

## What are the limitations of peritoneal port placement?

Most types of implanted ports have a useful lifetime of about 1,000 punctures.

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