

# Continuous Infusions with Elastomeric (Balloon) Pumps – 5FU

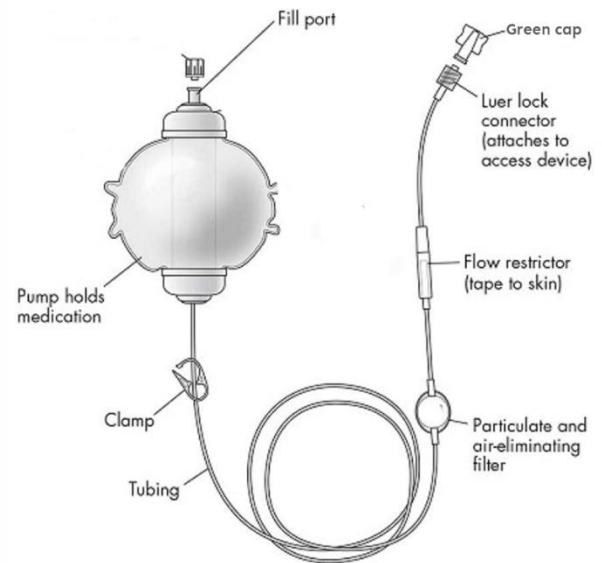
<b>Medication in Your Pump</b>
Drug Name: 5-FU (generic name: Fluorouracil. Brand name: Adrucil®)
Drug Dose:
How Long Infusion Should Last: <b>48 hours</b>
<b>Reminder:</b> Check your pump after 24 hours, and occasionally after that, to make sure the medication is flowing (the balloon will be deflating as the medication infuses)

## Overview

- An external infusion pump is a medical device used to deliver medication into your blood at a controlled rate. Some chemotherapy medications need to be infused over a long period – 24 hours or more. This type of infusion is called a *continuous* infusion and means wearing a heavy, bulky electronic pump during that time.
- For some patients on continuous chemotherapy infusions, elastomeric\* pumps can be used instead. \**Elastomeric* means the balloon part of the pump contains a layer of an elastic substance -natural rubber or a manmade elastic material. When an elastomeric pump gets filled, the elastic layer is stretched. As it contracts to its original size, the pressure pushes the medication through the tubing.
- There are different types of infusion pumps. The elastomeric pump discussed here is:
  - ✓ Lightweight/Portable: You can move about freely while wearing this pump.
  - ✓ Single use/Disposable: When the balloon is empty, you can throw it away. (Instructions for disposal are included here.)
  - ✓ Resistant to radiation exposure (Pump will not be affected if you are receiving radiation therapy.)
  - ✓ Manual: Does not require batteries or an external power source
  - ✓ Quiet/Simple to use
- Studies show both patients and physicians prefer the elastomeric pumps over the electronic pumps for the reasons listed above. Note: Elastomeric pumps do not have alarms to warn of problems such as pump malfunctions. They can also be sensitive to temperature. Very hot or very cold temperatures can speed up or slow how fast the medication is delivered. (See “How to Wear Your Pump During Infusion”)

## The Pump System

- The balloon, filled with your chemotherapy medication, delivers it at a safe, steady rate.
- Tubing that carries your medication from the pump to a catheter (thin, flexible tube) that has been placed under your skin and into a blood vessel. This may be a chest port, a PICC (peripherally inserted central catheter) line, or a tunneled chest catheter.
- Along the tubing, you will see a:
  - clamp to stop and start the flow of your medication
  - flow restrictor to control how fast the medication is delivered from the pump
  - a filter to remove any impurities from your chemotherapy medication as it passes through
  - connector to attach the tubing to your catheter/port (connector is capped when not in use)



## How it Works

### The “balloon” pumps the medication through the system

- The “balloon” pump contains the medication your doctor has prescribed for you.
- The pump gives you your medicine very slowly. It may be 18-24 hours or more before you notice any change in the size of the balloon pump. You won’t see a change in the pump every day, or a line in the pump showing the level of the medication medication flowing through the tubing. The tubing looks clear.
- Over time, the balloon gradually becomes smaller and eventually, you will see it wrinkling.
- To ensure that the balloon pump operates correctly:
  - Do not squeeze the balloon.
  - Check that there are no kinks in the tubing and that the filter is not covered.

## Getting Started

- You’ve received a drug regimen sheet that explains how your chemo works, possible side effects, how to manage them, and when to call the doctor. This handout is about your pump.
- Your pump will be connected to your catheter by your nurse at Roswell Park.
- A pump filled with 5-FU will be connected to your access site and the ON/OFF clamp will be opened. **The pump must be connected with the clamp in the ON/OPEN position for the full infusion time.**
- The nurse will tape the flow restrictor/controller to your skin. It is set at a specific rate that can not be adjusted by you or your doctor. The flow restrictor/controller must always be touching your skin, which allows the pump to give you medication at the right time.

- The medication in the pump should be at room temperature before the infusion begins.
- Once the pump is connected, you're done and you can leave.

## Living with Your Infusing Pump

- ✓ Keep tubing free of kinks. (Roll the tube between your fingers to release kinks).
- ✓ Make sure the clamp is in the ON/OPEN position during infusion and tubing isn't caught in the clamp.
- ✓ The pump is designed to operate when worn close to the body. Keep the section of tubing from the filter to the connector under your clothes, next to your skin.
- ✓ Don't sit, lie, or sleep on the pump. Do not squeeze or play with the filled pump. If you have a pet, keep them away from the pump too!
- ✓ Keep the pump around chest level – between your armpit and your waist. Too high or too low will affect how fast your medication flows. When you lie down, put the pump next to you (on top of the blanket). Don't hang it from something above you or put it below you, such as on the floor.
- ✓ Keep the pump around room temperature. Do not expose the pump to extreme heat or cold; it can affect how fast the medication infuses.
- ✓ Keep it dry!!! **Do not put the pump under water. Don't get the pump or access site wet.** The access site is the area where your catheter (port, PICC line, tunneled catheter) leaves your skin.
- ✓ **Protect the filter from getting wet.** Do not use alcohol or detergent on the filter (it can cause a leak).
- ✓ **Check your pump system every day.**
  - Check for a fluid leak at your access site. If you have a leak, follow the instructions on page 5.
  - Check for signs of infection at the access site: Redness, pain, and swelling. Report them to your doctor right away.

## How to Shower with the Pump

If you are not comfortable showering with the pump, you can clean yourself with a washcloth. Remember to keep the wet cloth or sponge away from the access site and pump.

### Before showering

- Cover your access site with a waterproof dressing.
- Clip the fanny pack on the shower rod away from the flow of water. After your shower, carefully remove the waterproof dressing.

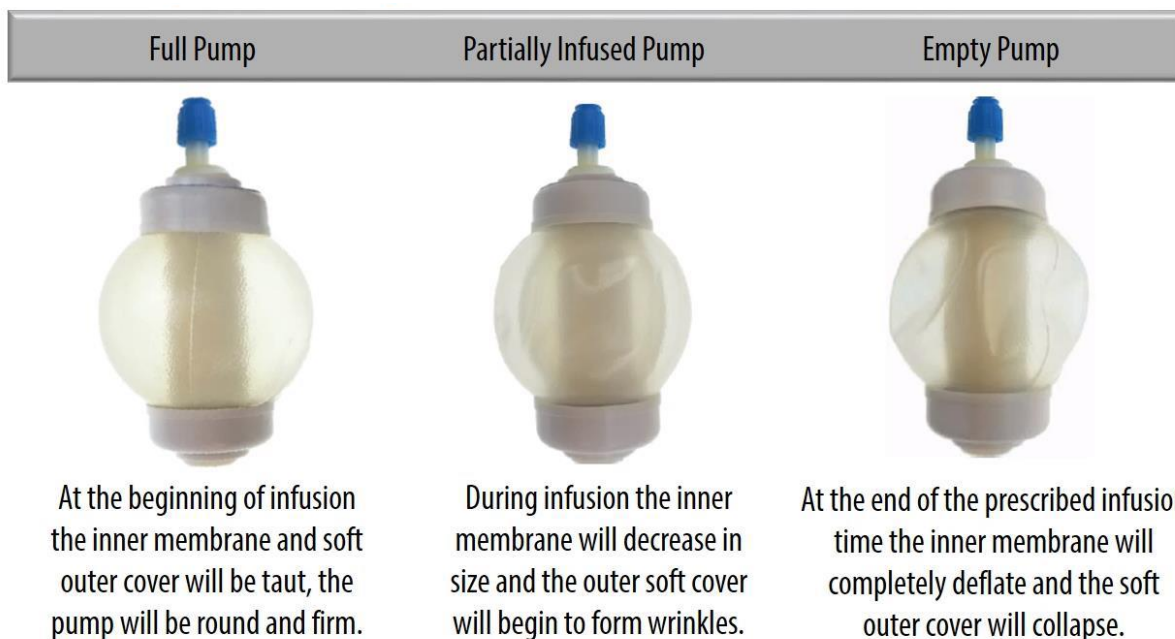
### In the shower

- Wash your hair as usual with your regular shampoo. Then rinse your hair and body well.
- Wash your face and entire body with a non-drying cleanser.
- Thoroughly rinse your body with warm water and pat yourself dry with a clean towel. If you have a handheld shower, use it to direct the water spray away from the pump and access site.

## Activity

- While wearing your pump, you can continue with most of your daily activities and light exercise such as walking.
- You will need to avoid strenuous activity/exercise and other actions that raise or lower your body temperature or make you sweat: Running, push-ups, spinning, hot yoga, contact sports, etc. Avoid saunas, hot tubs, heating pads, electric blankets, polar plunges (plunging/swimming in very cold waters), cold/ice packs on the site, and hot or very cold temperatures – including water temperatures and outside weather
- Don't put your pump in direct, strong sunlight.

**Keep your pump connected for the entire prescribed time – 48 hours.**



**Note: The day after your infusion begins (after 24 hours), check that the balloon on your pump is starting to deflate and you can see some wrinkling.**

If the balloon doesn't look like it has deflated at all:

- Check to make sure the tubing isn't kinked. If it is, straighten it out.
- Check that the clamp has not closed on the tubing. If it has, open the clamp.

**Call the doctor if the balloon hasn't deflated at all or if it is deflating too fast**



*Clamp in closed position*

## Spill Kit

Your spill kit will include 2 pairs of disposable gloves, an absorbent pad, and 2 plastic bags you can seal. You should also keep paper towels and soap and water handy. These items will prepare you to deal with a leak/spill from your pump, if necessary.

## If you have a leak

1. Put on both pairs of disposable gloves.
  2. Put the tubing in the clamp and close the clamp (to stop the flow of medication).
  3. Check the connections - tighten if needed. If the pump is still leaking: If you have been taught how to disconnect your pump from your PICC line or port and have the supplies, then go ahead and disconnect the pump. **If you don't know how to disconnect your pump, call your clinic right away.**
  4. Put your pump, the medication left in the pump, and the tubing in a plastic bag and seal it tightly.
  5. If the medication spilled on surfaces: Soak it up with a paper towel (keep your gloves on!). Then clean the surface(s) with the dish soap/detergent and rinse with clean water. Put all the cleaning supplies in a plastic bag and seal it tightly. Make sure no people or pets come into contact with the supplies you used.
  6. Remove the gloves. Wash your hands with soap and water for at least 20 seconds.
  7. Once the pump is disconnected, call your clinic for further instructions.
- **Clinics hours are Mon- Fri 8 a.m.-5p.m. GI clinic number: 716-845-4005.**
  - **After hours call 716-834-2300 and our Call Center and nurse triage staff will assist you.**

## What to do if the chemotherapy comes in contact with your:

**Skin:** Wash the area immediately with soap and warm running water for at least 10-15 minutes.

**Clothing or linens:** Wash separately in the washing machine through 2 complete cycles before reusing.

**Eyes:** Flush your eyes immediately with cool running water for at least 10-15 minutes. Seek medical attention at the closest hospital emergency department. Call your clinic afterwards and let them know.

## After the Infusion

### Disconnecting your pump from the port and flushing the port

You know your infusion is done when the pump has totally deflated. It should be near the day and time your provider wrote down. It is normal for the infusion to finish 2-4 hours before, or up to 2 hours after, the time given. You are scheduled for a 48 hour infusion. Call your clinic if:

- the infusion finishes 6 hours or more before the expected end time
- the infusion is still going after 50 hours

## How to disconnect your pump from a chest port

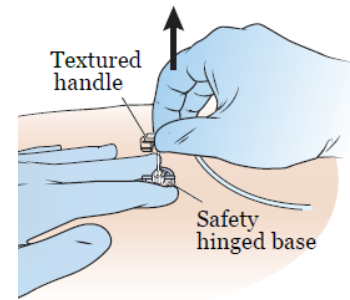
1. Gather your supplies on a clean surface, such as your dining table. Don't do it in a bathroom.
  - 1 (10 mL) syringe prefilled with normal saline.
  - 1 pair of non-sterile gloves.
  - Alcohol pads.
  - 1 gauze pad and 1 band-aid
  - A "sharps" container – a hard plastic container with a lid. The container should be thick/strong enough that the needles cannot poke through. Do not use paper or plastic bags.
2. Wash your hands well with soap and water or use an alcohol-based hand sanitizer.
3. Put on non-sterile gloves.
4. Open the gauze pad, alcohol swabs, and band-aid and take it out of its wrapper. Set it down on your clean table.
5. Get your normal saline syringe ready.
  - Hold the saline syringe with the tip facing up.
  - Loosen the cap, but leave the cap on.
  - Pull the plunger back a little, then press it in – this pushes any air out of the syringe.
  - Set the syringe down on your clean table.

## Flushing the port

- Close the white clamp on the pump and the yellow clamp closest to the pump. Do not close the clamp closest to your body.
- Take the green cap off the end of the connector. Then clean the connector with an alcohol pad for 15 seconds. Let it dry for 15 seconds.
- Take the cap off the syringe. Attach the syringe to the connector by pushing it in and turning it to the right.
- Once the saline syringe is attached, flush the tubing:
  - Push down on the syringe's plunger and inject  $\frac{1}{3}$  of the saline in the syringe. Pause for a few seconds.
  - Repeat step 1 to inject another  $\frac{1}{3}$  of the saline. Pause for a few seconds.
  - Repeat step 1 and inject the last  $\frac{1}{3}$  of the saline.
  - Detach the syringe and set it aside.
  - Close the clamp closest to your body. It should pinch the tubing closed.

## Taking the needle out of your port

1. Peel the tape off your skin and remove the dressing over your port.
2. To take the needle out of your implanted port:
  - Use 2 fingers of your non-dominant hand (left hand if you are right-handed; right hand if you are left-handed) to hold the base steady against your skin.
  - Push the base down gently (against the port). Use the index finger of your dominant hand to pull up (like opening the tab on a soda can) on the textured handle until you hear a click and the needle locks into the safety position.
  - Hold a gauze pad over the area where the needle was and press down gently for 3 minutes. After 3 minutes, place a bandage over the area.
  - Your pump is disconnected. At this point, you may separate the needle and empty syringe from the pump itself.
  - Put the needle in the “sharps” container (a container and top that are made out of hard plastic). Put all the other supplies you used (empty syringe, dirty gloves, etc.) in the biohazard bags provided to you with the elastomeric pump. Double bag the waste material in the additional biohazard bag provided.
  - **Don't** throw the sharps container in the trash. Bring it to Roswell once it is full. There is a sharps disposal box on the 1st floor of the hospital, near the cafeteria.



## When to Call Your Healthcare Provider

You are scheduled for a 48-hour infusion. Call your healthcare provider if:

- the pump empties too fast causing the balloon to deflate quickly and form wrinkles. The pump should not empty in less than 42 hours (which is 6 hours or more before the expected end time)
- your pump does not seem to empty like it should and the infusion is still going after 50 hours (the balloon is not deflating or forming wrinkles) and/or there's still medication in the balloon
- you have a leak or see fluid on your skin around your access site
- the access site looks red, swollen, painful, or is draining
- you have signs of infection: Fever of **100.4°F (38°C)**, chills, or sweats, sore throat, painful urination
- you have numbness or tingling around your mouth or in your fingers and toes
- you have any of the side effects listed on the drug information sheet given to you

Patient Name:

Doctor Name:

Next Appt. Date and Time:

Call the clinic if you have questions/concerns: GI Clinic Phone Number: **716-845-4005**

In Emergency, call 911 or go to the nearest hospital emergency department

## Notes

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