

Subcutaneous Fluids Administration

Administration of supplemental fluids by injection under the skin can benefit cats with a variety of medical conditions. Most often, this is recommended for cats with chronic kidney disease. We recommend that you learn this technique for your cat. Giving injections is outside the comfort zone for most everyone - it is normal to feel reluctance about this. However, fluid administration is not nearly as difficult as it sounds. The benefits provided to your cat, in terms of enhanced quality and quantity of life, will make it worth your time to learn this simple technique.

What equipment is involved, and how is it set up?

- 1) The equipment consists of a needle, a bag of IV fluids, and an IV drip set which is a tube with one sharp end to insert into the fluid bag, and a blunt end where the needle goes, with a valve in between to control the flow rate.
- 2) Remove the outer, protective wrapper from the IV fluid bag. A little moisture inside the wrapper is normal and does not indicate leakage. Pull the white plastic tab to remove the protective covering from the exit port at the bottom end of the IV bag. This will expose a hole that will accept the pointed end of the IV set.
- 3) Remove the IV drip set from its packaging. One end of the line has a sharp point (a trochar) with a protective cap. Remove this cap, and without allowing the trochar to touch anything else, push it into the opening in the bottom of the IV bag as far as it will go. It must be seated firmly to prevent leaks. It should be inserted straight, in line with the bag, to prevent the sharp end from puncturing the bag itself.
- 4) Close the valve or lock in the middle of the IV tubing by moving the roller as far down as it will go (away from the bag). This closes the line and prevents fluid from leaking out during the next step.
- 5) Remove the protective cap from the lower end of the IV set, and put a needle on using firm pressure and a little twist. To prevent bacterial contamination of the fluids, don't allow either end of the IV drip set to touch anything except the hub of the needle on one end and the IV bag port on the other end.
- 6) Hang the bag up using the loop at its top, and gently squeeze and release the bulb (drip chamber) at the top of the drip set until it is about half full with fluid. Then, holding the lower end of the line over a sink or container, open the lock valve on the tubing by rolling the wheel upward. Fluid should flow freely through the line. After all of the air bubbles run out of the tubing, close the lock on the IV line by rolling the roller as far down as it goes. This process only needs to be performed to fill the line with fluid the first time each bag and line are used. Thereafter, it remains full of fluid until the bag is empty.

How do I give the fluids?

- 1) Choose a location where you and your cat can be comfortable for a few minutes - on the floor, a countertop, or in a chair with the cat on your lap. It may help to have the cat in a cat bed, or maybe in a small cardboard box. Hang the IV bag about 2 feet above your cat so that the end of the IV set easily reaches your cat. Plan on spending several minutes giving the cat quality contact time before and after the fluid administration. In the long run, the patient will associate the fluids with the quality contact time and will be less likely to resist the process.
- 2) Grasp a handful of skin over the shoulders or scruff area just off to one side from the middle of the spine and lift firmly enough to create some space between your fingers and the cat's skeletal structures. Insert the needle just under the skin at a shallow angle to the body surface and in line with the fold of skin you are holding up with your other hand.
- 3) Advance the needle through the skin while pulling the roll of skin backward, until the needle is in all the way to its hub. Release the roll of skin while maintaining a little forward pressure with the needle to ensure that it remains in place under the skin should the cat try moving around.

- 4) Holding onto the needle and the cat with one hand, start the fluids by rolling the lock on the IV line all the way up and un-crimping the line with your other hand. Observe the rate of flow in the drip chamber. You'd like to see the fluids streaming in a solid column. If it is a slow drip, or not dripping at all, while watching the flow in the drip chamber manipulate the needle to maximize the flow rate, through rotation, or by swinging the needle point under the skin up and down or side to side. Double check the previously crimped spot in the tube and open it up if needed by rolling it in your fingers.

How do I stop the fluids?

- 1) When you have given the prescribed amount of fluids, stop the flow by rolling the roller in the IV set lock downward firmly. If you do not close it well and the bag is left hanging, fluid will slowly drip out of the line. Pull the needle from under the skin and replace its protective cap.
- 2) Leave the used needle on the line and remember to replace it with a new needle before the next dose of fluids is administered.
- 3) Store the equipment in a safe place at room temperature until the next fluid administration.

What other tips do I need to know?

- 1) Applying rubbing alcohol to the skin before inserting the needle will make the process sting more and is not usually necessary, but make sure the skin is not grossly dirty. Also, the very odor of rubbing alcohol can be irritating to many cats.
- 2) The fluids should be stored at room temperature, not refrigerated. However, injecting fluids at room temperature is a little uncomfortable, so we recommend warming them up prior to injection. Fill a juice pitcher with hot tap water, and immerse the fluid bag upside down, with the IV line and port above the water line, for several minutes. This will bring the fluids closer to body temperature and therefore more comfortable during the injection.
- 3) If a few air bubbles are injected under the skin there is not a big problem, but you may feel a slight crackling sensation when you push on the skin. The body will eventually absorb the air.
- 4) If any cloudiness or discoloration occurs in the fluids, do not use the bag. It may mean that the fluids have been contaminated with bacteria and administering them could lead to an infection.

What do I do with the needles and other waste?

- 1) King County offers several options on their website, including: "place sharps in a two-liter pop bottle and dispose the bottle in your garbage can. The bottle must be marked, 'SHARPS - DO NOT RECYCLE.' Two-liter pop bottles have been shown not to crack or break open as often as other containers." (<http://your.kingcounty.gov/solidwaste/wdidw/material.asp>) click on Sharps
- 2) You may bring sharps to us for disposal in a similar, but smaller, container, but we will be charging \$10.00 per container as of August 1, 2010
- 3) Many Pharmacies in King County offer a sharps drop-off service.
(see here: http://your.kingcounty.gov/solidwaste/documents/household_sharps-disposal.pdf)
- 4) The empty bags can be recycled with plastics, and the lines can be disposed of in the trash.