

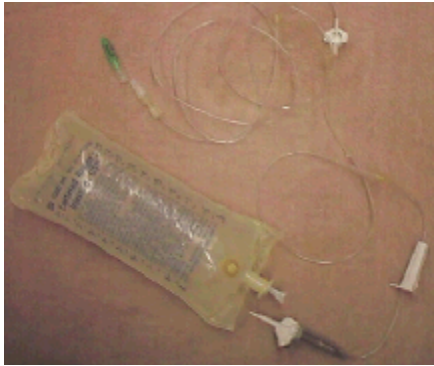
## THE PET HEALTH LIBRARY

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### **Subcutaneous Fluids**

#### **Administration of Subcutaneous Fluids at Home**



There are numerous circumstances under which a patient may require fluid administration under the skin in the home setting. Chronic kidney disease is probably the most common as these patients need extra fluids beyond what they drink to wash dangerous renal toxins through their systems. Sometimes a sick patient will not reliably drink enough water and extra fluid administration is required, or perhaps an oral injury may preclude drinking and thus extra fluids are needed. In any case, if you are reading this, fluids under the skin have

probably been recommended for your pet, you have received a demonstration on fluid administration, and this guide is meant as a handy "tip sheet" for when you are on your own at home with your pet.

#### **Needles**

Needles are color coded according to the bore size of the needle. The higher the number, the smaller the needle bore. Most fluids are administered with 20 gauge (usually pink), 18 gauge (usually olive color), or 19 gauge (usually kelly green) needles. The smaller bore needles are less painful to your pet; however, the fluids flow will be slower. The larger bore needles produce a faster fluid administration but are sometimes more objectionable to the patient. Occasionally a patient is sensitive enough to require a 22 gauge (blue) needle or even a 25 gauge (red) needle. As you refill your needle prescription, you may wish to experiment with different sizes to see what seems to work best for you and your pet.



Needles come with a twist-off plastic seal to maintain sterility. The needle hub, which is clear plastic, usually slips onto the end of the drip set. Needles should be capped when not in use and each needle should be used only once.

In the past, disposal of used needles and syringes was simple. One could simply place used syringes, lancets, and other sharps in a thick plastic container (such as the type liquid laundry detergent comes in) and discard the entire container in the regular trash

when it was full. This is still probably fine in most areas, but as of September 1, 2008 the State of California law precludes the disposal of any home-generated medical sharps in the regular trash. Instead, specific disposal is required to see that sharps go to a medical waste landfill.

Your veterinary clinic might have an appropriate disposal company contracted to remove medical waste; if so, ask the clinic if you can return the syringes there.

Use a "mail-back" system. This means you buy a container for your sharps and when it is full, simply use a prepaid mailing label to send it to the disposal company it came from.

Bring your home-generated sharps to a sharps consolidation center.

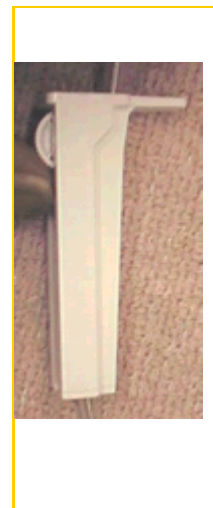
You can probably also bring them to your local pharmacy, as many pharmacies perform this service. Check first to see if your local pharmacy will take care of this.

## Drip Sets



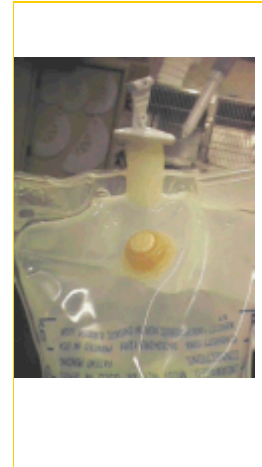
The drip set is the long plastic tubing that connects the fluid bag to the needle. Drip sets come in different sizes according to drop size. For efficient fluid administration, you want a size no smaller than 20 drops per cc. The larger the drop size, the faster the fluid administration will go. (The more drops per cc delivered by the drip set, the smaller the drop size; for example, a microdrip delivers 60 drops per cc).

There will be a small clamp of some kind on the fluid line that will enable you to open and close the line. For subcutaneous fluid administration, the line will either be closed (when not in use) or all the way open (when fluids are given). Sometimes the tubing kinks slightly when it has been pinched closed for a while. You may use your fingers to re-open the line and move the clamp to a different area on the tubing so as not to keep pinching (and thus deforming) the same area of tubing.



The drip set will have a small chamber towards the top where you can see how fast the fluids are running. You will want the fluids to run as fast as possible so as to finish the task quickly. If the chamber completely fills with fluid, you will not be able to see the drip flow. To remedy this problem, invert the set, squeeze the chamber slightly so as to allow some air into the chamber, turn the set right side up and open the flow so as to expel air from the fluid line.

If the drip set is not connected to the bag of fluids when you purchase your set up, the drip set can easily be connected. The fluid bag will have a seal of some kind when is pulled off to open the bag and the sharp point on the end of the drip set is inserted here. Be sure to hold the fluid bag so that the open end is pointed up; otherwise the fluid will drain out of the hole and make a big mess. Also, be aware drip sets come out of their bag or box in an open position so as soon as they are connected to the bag and the bag is inverted, fluid will run out the end until you close the drip set clamp.



Discard your drip set with the empty fluid bag.



### Fluid Bags

There are many types of fluids. They come in glass bottles as well as plastic bags. At our hospital, we mostly use one liter plastic bags which have demarcations printed on the side every 100cc. Be sure you know how much fluid to administer and where on the bag the desired level at the end of administration will be. If you like, ask the technician to mark the bag in pen.

Fluid bags may be given to you already connected to the drip set or they may be purchased separately. When purchased separately, they are often enclosed within another plastic bag to ensure sterility. A small amount of moisture between the two bags is normal and does not indicate a leak in the fluid bag.



For a video presentation on how to assemble the equipment reviewed above and a recap of the above information, please click the PLAY arrow below:

## How It's Done

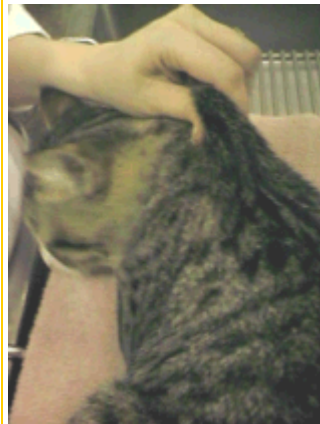


Lifting up the scruff

We will begin assuming that the drip set, needle, and fluid bag are already connected and the patient has been placed on the work surface (floor, table, counter, back of sofa, etc.). The fluid set should be hanging from a location higher than the level of the patient.

A second person can hold the fluids or a wall mounted towel or coat hanger can work. The bag can be set on its side at a level higher than the patient but you will not be able to see the drip flow if the bag is not hanging vertically and you will probably get lots of air in the line.

Pick up a handful of skin at the patient's scruff. This area has a sparse population of nerve endings and the needle is likely to hurt the least in this area. The farther toward the tail you go with the needle, the more the patient will feel the stick. Note that a "triangle" is formed in the skin.



"Triangle" of skin (point of triangle in fingers)

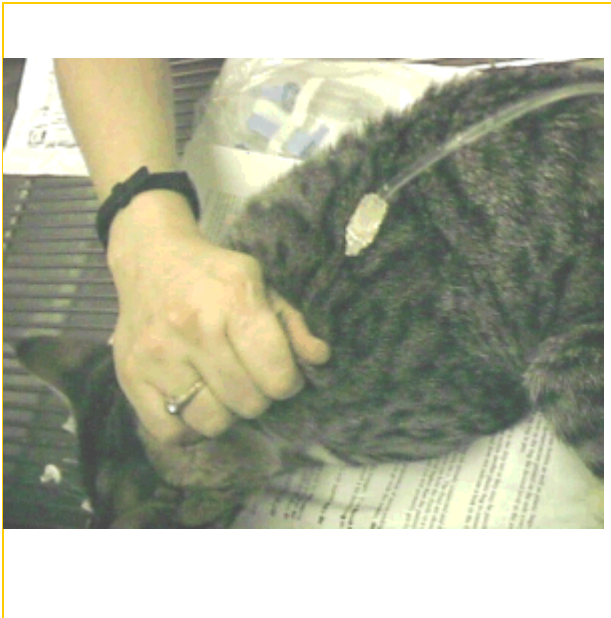
Uncap the needle and boldly stick it through the skin right in the center of the triangle. You should feel a slight punch as the thick skin is penetrated. You may relax your grip a bit depending on your confidence that your pet will continue to sit still.



Inserting the needle



Open the drip set clamp and let the desired amount of fluid run in. A small bulge will appear under the patient's skin as fluid accumulates there.



- If the needle has gone through the skin and out the other side, a stream of fluid will be seen coming from the patient's skin. If this occurs simply pull the needle slightly back toward you but not all the way out so that the needle will again be positioned under the skin. If this is too hard, simply close the drip set clamp and start over.
- If the drip rate in the chamber seems slow, change the angle of the needle insertion slightly with your fingers until you get a

better drip rate.

When the proper amount of fluid has been delivered, close the clamp and withdraw the needle and re-cap it. If a relatively large amount of fluid is to be delivered, you may have been instructed to administer fluids in two locations. If so, repeat the procedure for the second area.

- After fluid administration, the bulge of fluids will tend to droop down around the front legs or chest. This is normal but if this bulge has not resolved by the time you are supposed to give fluids next, do not give the next fluid dose. This would mean that your pet's circulation is not good enough to absorb the fluids or that your pet simply does not need the extra fluids. In either case, report this to your veterinarian and your instructions will probably be revised.



For another description of this procedure please view:

<http://members.aol.com/aquila111/subq/webinstruct.html>

If after the demonstration and instructions you still are not able to accomplish this procedure at home, your veterinarian should allow you to bring your fluid set up and pet to their hospital for the administration of fluids by their staff for a small fee.

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