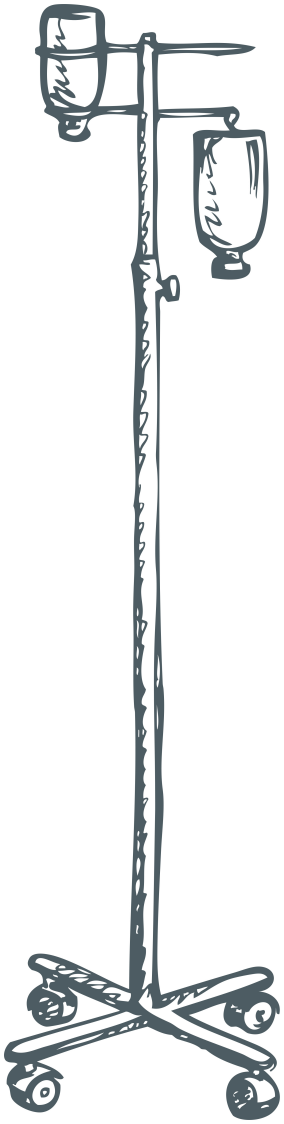
Fluid Therapy



Your Pet and Fluid Therapy

What is fluid therapy?

Fluid therapy is administration of specially formulated liquids for treatment of disease or prevention of problems. More than half of body weight is water, so all animals need to take in fluids every day.

Why is fluid therapy given?

Pets normally take in enough fluids by drinking. There are many reasons a pet might not get enough fluids.

A healthy pet that is undergoing anesthesia may need to receive fluids to help maintain normal blood pressure during the procedure to replace fluids lost in surgery. In addition, the catheter serves as an access point should the need for emergency drugs arise.

A sick pet that is not drinking, or is vomiting or experiencing diarrhea also needs fluids to make up for what is not being taken in or is being lost.

Some pets have problems with organs, such as the kidneys, which prevent their bodies from utilizing the fluids they drink.

Other sick pets have problems with their electrolytes, such as sodium or potassium. Fluids are given to these pets to help bring them back to a normal electrolyte balance.

What is in the fluids?

There are several kinds of fluids and electrolytes that we can use, and our veterinarians choose the specific ones that will best help your pet. Fluids have water, of course, and they may contain sodium, potassium and/or glucose, plus other electrolytes. For the safety of your pet, all of the fluids are sterile, which requires special packaging and handling.

How are fluids given?

Fluids are generally administered through a catheter placed in your pet's vein. This is called intravenous fluid (IV) therapy. It gets the fluids into the body fairly quickly, and it allows us to measure and control the amount and rate of fluids that are administered.

Sometimes veterinarians work with pet owners so owners can give fluids to their pet at home. This type of administration is referred to as subcutaneous because the sterile fluids are placed just under your pet's skin.

This usually occurs when a pet has an ongoing condition, where the pet has received initial treatment in the hospital and then is being maintained on a regular schedule of subcutaneous fluids at home. If this is necessary for your pet, we will teach you how.

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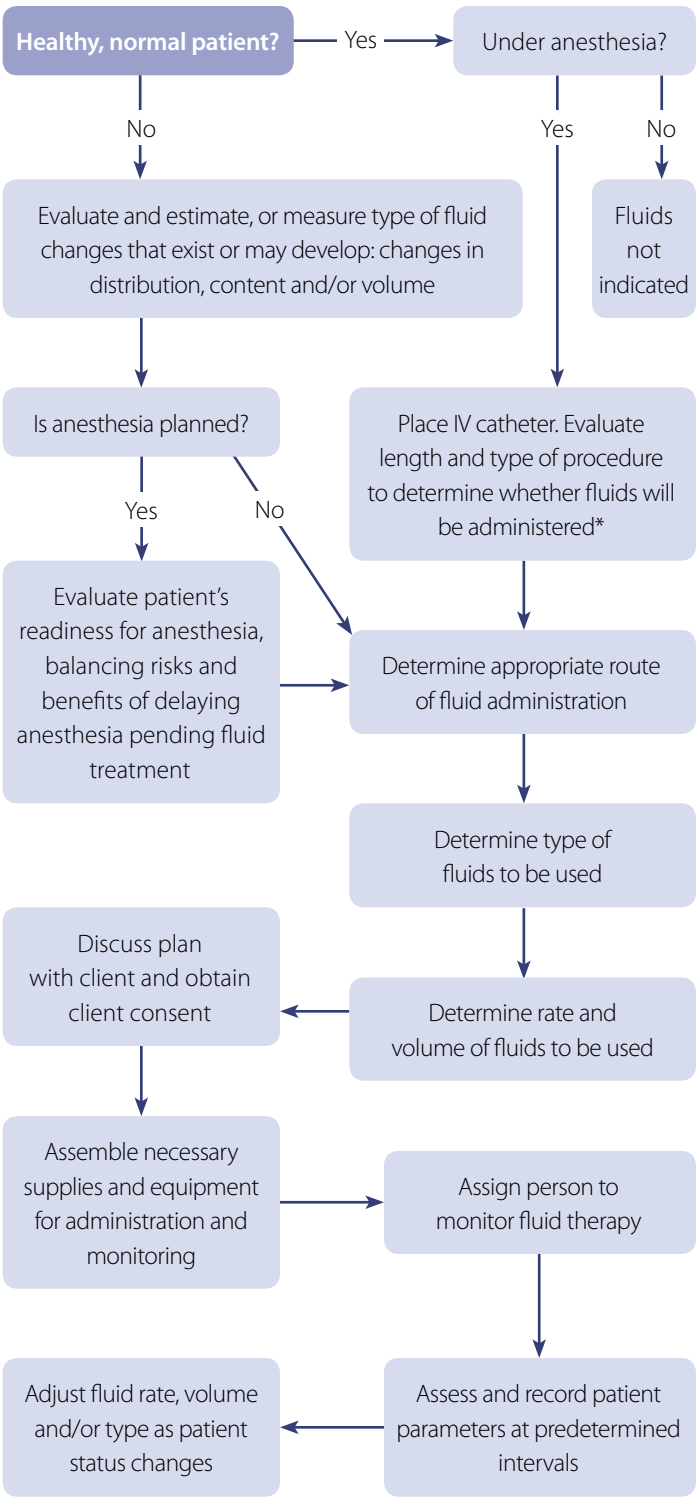
This tool is excerpted from the *2013 AAHA/AAFP Fluid Therapy Guidelines for Dogs and Cats Implementation Toolkit.*
 The guidelines and implementation toolkit were developed with a generous educational grant from Abbott Animal Health.

Model Algorithm

AAHA/AAFP Fluid Therapy Guidelines for Dogs and Cats



*For factors to consider, please see the *2013 AAHA/AAFP Fluid Therapy Guidelines for Dogs and Cats*.

Verify Key Tasks as You Perform Them

Use this checklist to remind yourself to perform key tasks in administering fluid therapy. Make multiple copies and laminate them so you can use them repeatedly in the surgical suite. This checklist is available as a download at aahanet.org/library/FluidTherapy.aspx.

Catheter placement, maintenance and monitoring

- ☐ Shave the area and perform a sterile preparation.
- ☐ Maintain strict aseptic placement and maintenance protocols to extend catheter life.
- ☐ Place the largest-size catheter that can be safely and comfortably used (very small catheters greatly reduce flow).
- ☐ If a catheter is placed in an emergency situation, prepare a new site and place a new catheter once the emergency is resolved.
- ☐ Flush the catheter every 4 hours unless fluids are being continuously administered. Normal saline is as effective for flushing as heparin solution.
- ☐ Unwrap and evaluate daily. Follow the steps below:
  - ☐ Aspirate and flush to check for patency.
  - ☐ Replace the catheter if the dressing becomes loose, soiled or damp.
  - ☐ Inspect for signs of phlebitis, thrombosis, perivascular fluid administration, infection or constriction of blood flow due to too-tight bandaging.

Intravenous fluid administration

- ☐ Prepare a new bag of fluids with a new administration set for each patient regardless of route of administration.
- ☐ Ensure lines are primed to avoid air embolism.
- ☐ Use Luer-lock connections when possible to prevent inadvertent disconnection.
- ☐ Select the appropriate size/volume bag according to patient size if using gravity flow to minimize the risk of volume overload if the entire volume were to be inadvertently delivered to the patient.
- ☐ Use a buretrol if frequent fluid composition changes are anticipated.
- ☐ Consider using t-ports to easily medicate a patient receiving IV fluids if the medication is compatible with the fluid type.
- ☐ Consider using a y-port in patients receiving more than one compatible infusion.
- ☐ Consider a syringe pump for small-volume infusions or for constant-rate infusions (CRIs). Place small-volume CRIs close to the patient's IV catheter so that the infusion will reach the patient in a timely manner.
- ☐ Consider a pressure bag for bolus delivery in an emergency situation.
- ☐ Follow CDC recommendations for changing fluid administration lines no more than every 4 days to reduce the chance of nosocomial infection.

Monitoring fluid therapy

- ☐ Use fluid pumps whenever possible and monitor the pump frequently.
- ☐ Monitor the patient for over-administration. Symptoms include the following:
  - ☐ Increased respiratory rate and effort
  - ☐ Peripheral and/or pulmonary edema
  - ☐ Weight gain
  - ☐ Pulmonary crackles (a late indicator)
- ☐ Monitor the patient for under-administration. Symptoms include the following:
  - ☐ Persistent increased heart rate
  - ☐ Poor pulse quality
  - ☐ Hypotension
  - ☐ Decreased urine output
- ☐ Monitor during anesthesia. Follow the steps below:
  - ☐ Assign a staff member to monitor fluid administration and patient status.
  - ☐ Consider current recommendations of an anesthetic rate less than 10 mL/kg/hr to avoid hypervolemia, especially in cats (rule of thumb start at 3 mL/kg/hr in cats and 5 mL/kg/hr in dogs).
  - ☐ Consider reducing the anesthetic rate in procedures lasting longer than 60 minutes by 25% each hour, if beginning at higher-than-maintenance rate, until the maintenance rate is reached.