

Prescription Label

Patient Name:
Species:
Drug Name & Strength:
Directions (amount to give how often & for how long):

Prescribing Veterinarian's Name & Contact Information:

Refills:

[Content to be provided by prescribing veterinarian]

Lactated Ringer's Solution

(*lak-tayt-ed ring-ers*)

Description:

Fluid and Electrolyte Replacement

Other Names for this Medication:

LRS

Common Dosage Forms:

Veterinary: Sterile solutions in 500 mL, 1000 mL, 3000 mL, & 5000 mL bags or bottles. **Human:** Sterile solutions in 250 mL, 500 mL, & 1000 mL bags.

This information sheet does not contain all available information for this medication and has not been reviewed by FDA Center for Veterinary Medicine. This sheet can help answer commonly asked questions but is not a substitute for medical advice. If you have other questions or need more information about this medication, contact your veterinarian or pharmacist.

Key Information

- Sterile solution that provides fluid (water) and electrolytes (salts), such as sodium, potassium, and calcium, which is normally found in the blood.
- Use with caution in patients with kidney or heart failure.
- Used with an administration set (“IV set,” “drip set”) and needle.
- Sterile needle is required to deliver the fluid under the skin. Needles require proper disposal and may **NOT** be discarded in regular trash.
- Empty bags and tubing may be disposed as regular trash.

How is this medication useful?

Lactated Ringer's solution provides supplemental water and salts. The FDA allows veterinarians to prescribe lactated Ringer's solution in animals for a variety of conditions and situations. You and your veterinarian can make the best decisions for treating your animal.

What should I tell my veterinarian to see if this medication can be safely given?

Many things might affect how well this solution will work in your animal. Be sure to discuss the following with your veterinarian so together you can make the best treatment decisions.

- Medications can interact with this solution, so be sure to tell your veterinarian and pharmacist what medications (including vitamins, supplements, or herbal therapies) you give your animal, including the amount and time you give each.
- Tell your veterinarian about any conditions or diseases your animal may have now or has had in the past.
- If your animal has been treated for the same disease or condition in the past, tell your veterinarian about the treatment and how well it worked or did not work.
- If your animal is pregnant or nursing, talk to your veterinarian about the risks of using this solution.
- Tell your veterinarian and pharmacist about any solution side effects (including allergic reactions, lack of appetite, diarrhea, itching, hair loss) your animal has developed in the past.

How long until I will know if this medication is working, and how long will the effects of this medication last?

This medication should help your animal feel better within 1 to 2 hours. Your animal's clinical signs should improve after that time. The effects of this medication are short-lived, meaning they will stop working within 24 hours, although they may be prolonged if your animal has advanced kidney and/or liver disease.

When should this medication not be used or be used very carefully?

No treatment is 100% safe in all patients, but your veterinarian will discuss with you any specific concerns about using this solution in your animal.

This solution **SHOULD NOT** be used in patients:

- That are allergic to it.
- With heart failure.
- With severe kidney problems.
- With a condition that can worsen because of the salts in the solution.

This solution should be used **WITH CAUTION** in patients:

- With severe liver impairment.
- With water retention.
- With high potassium levels in the blood.
- With too little acid in the blood.

If your animal has any of these conditions or signs, talk to your veterinarian about the potential risks versus benefits.

What are the side effects of this medication?

Side effects that usually are not serious include:

- Stinging or burning at the site where fluids are being given.
- Fluid accumulation. Fluid may build up under the skin of the legs and chest; the buildup should go away before the next time fluids are due to be given.

If any of these signs are severe, worsen, or continue to be a problem, contact your veterinarian.

Side effects that may be serious or indicate a serious problem:

- Infection, which may appear as redness, tenderness, or drainage at or around the area where the fluids were given.
- Cough.

If you see any of these signs, contact your veterinarian immediately.

If my animal gets too much of this medication (an overdose), what should I do?

If you have concerns that your animal has received too much of this solution, contact your veterinarian for recommendations.

How should this medication be given?

For this solution to work, give it exactly as your veterinarian has prescribed. Check the prescription label to be sure you are giving the solution as directed.

Preparing the solution for your animal:

- Before giving this solution to your animal, be sure the solution is clear. Discolored or cloudy solutions should be discarded.
- Remove the administration set and solution bag from the outer package wrapping.
- Ensure solution is warm, but not warmer than body temperature (99° F, 37° C). One common method is to place solution container in a zip-close bag and immerse in warm water. Thoroughly agitate bag to ensure it has warmed evenly. Do **NOT** place bag in the microwave to warm up.
- Use a clean area to prepare and give the fluid to your animal. Setup will include draining a small amount of fluid from the bag; consider working next to a sink or using a small container to collect the fluid.
- Close all clamps along the administration set.
- To open the fluid bag, turn the bag upside down to remove the plastic stopper at the top. **Keep the bag in this position** until the drip set tubing is attached (see below), or fluid will spill out.
- Carefully insert the drip set spike into the top of the fluid bag. Be careful to not touch or contaminate the spike. Do not allow the spike to puncture other parts of the bag during insertion.
- Using the eyelet at the top of the bag, hang the bag as high as possible to allow gravity to move the fluid into your animal as much as possible. Coat hangers or S-hooks can be helpful to hold the fluid bag.
- Release all clamps.
- Squeeze the sides of the drip chamber on the administration set until the solution begins to flow from the bag into the drip chamber and into the tubing.
- Allow fluid to pass through the line. Drain a small amount of fluid into a sink or clean container, being careful not to touch the end of the administration set. Close one of the clamps found along the tubing to stop the flow of fluids while preparing to give the fluids to your animal.
- Replace the cap on the end of the tubing to keep it clean while you gather and prepare your animal.
- When ready to give the fluids to your animal, attach a fresh needle to the end of the administration set.

Administering the solution:

- **Your veterinarian will teach you how to administer these fluids. Be sure you understand these instructions completely before you administer fluids on your own. The instructions below are intended to be a reminder of important points while treating your animal at home.**
- **If your animal is difficult to treat or you are concerned about your animal tolerating the procedure at any time, stop the procedure and call your veterinarian for further instructions.**
- Your animal's skin should be free of dirt and debris, but you do not need to clip, shave, or disinfect the area to give these fluids.
- Initially, you will need 2 people to give the solution to your animal. One person will prepare and give the fluids, while the other person holds and comforts the animal.
- Praise, petting, snuggling, swaddling, and distracting with food may increase your animal's acceptance of this procedure.
- Your veterinarian will give you instructions on where and how much of the solution to give. The solution will be given under the skin at about $\frac{3}{4}$ - 2 inches (2-5 cm) from the middle of the back, running from head to tail, varying from just behind the shoulder blade to slightly in front of the hipbone. Switch sides on where the fluid is given to alternate between your animal's right and left sides for multiple rounds of administration.
- Using your free hand, pinch up a fold of skin. Hold the needle parallel to your animal's body with the bevel facing up. The needle point should be on the bottom, and you should be able to see the opening of the needle.
- Be careful to not stick yourself.
- Gently, but firmly, insert the needle into the center of the fold as instructed by your veterinarian. If the needle is not placed under the skin, you will need to redirect the placement and repeat the previous step.
- Once you are sure the needle is under the skin, open the clamps to begin the infusion. Reposition the needle if fluid is moving slowly or is seen dripping onto your animal's skin. This may mean the needle is not under the skin or has gone through the skin on the other side.

- Use the markings on the bag to determine when the prescribed amount of fluid has been reached. Writing a line on the outside of the fluid bag with a permanent marker can be helpful.
- Fluid will make a lump on your animal's back and will slowly shrink over 4 to 6 hours. Giving large amounts of fluids may require injecting the solution into more than 1 site at a time, or multiple administrations per day.
- Administration may take only a few minutes for each 100 mL of fluid. Watch carefully to be sure fluid continues to flow into the drip chamber. If the dripping stops, the needle may require gentle rotating or repositioning under the skin. Do not remove the needle.
- When complete, stop the fluid administration by closing the clamps on the tubing.
- Firmly and quickly pull the needle out. Be careful to not accidentally stick yourself with the needle or inject yourself. A small amount of fluid may leak from the skin where the needle was removed.
- Place used needles in a sharps disposal container immediately after use. See **How should I dispose of this medication if I don't use it all?** (below)
- Cap the end of the administration set with a fresh, clean needle if the fluid bag was not used completely.
- This solution can be given for various lengths of time. Some animals may need to receive this fluid therapy for an extended period or for the rest of their lives. Be sure you understand how long your veterinarian wants you to continue this treatment. Prescription refills may be necessary before the therapy will be complete. If you want to stop this treatment, talk to your veterinarian, as there may be important reasons to continue giving it.

What should I do if I miss giving a dose of this medication?

If you miss a dose, give it when you remember, but if it is close enough to the time for the next dose, skip the dose you missed, and give it at the next scheduled time. After that, return to the regular dosing schedule. Do not double-up or give extra doses.

How should I store this medication?

- Store unused solution in the original packaging at room temperature and protected from light.
- Lactated Ringer's solution does not contain preservatives. Opened fluid bags and administration sets should be discarded and replaced every 5-7 days or as directed by your veterinarian.
- Keep fluid bags, fluid lines, and needles away from children and other animals.

Can handling this medication be hazardous to me, my family, or other animals?

There are no specific precautions required when handling this solution unless you are allergic to it. Wash your hands after handling this solution or any medication.

How should I dispose of this medication if I don't use it all?

- Unused lactated Ringer's solution may be poured down the toilet or sink. Empty plastic fluid containers can then be placed in regular or recycled waste containers.
- Ask your veterinarian or pharmacist about proper disposal of lactated Ringer's solution if additional medications have been added to the solution.
- Do not save leftover solution for future use or give it to others to use.
- Ask your veterinarian or pharmacist about how to obtain containers to dispose of used needles. Keep needle disposal containers out of reach of children and animals. Once the disposal container is about $\frac{3}{4}$ full, dispose of containers according to your community guidelines. Check with your local pharmacy, trash removal services, or health department (listed in the city or county government [blue] pages in your phone book) to see which disposal methods are available in your area.

What other information is important for this medication?

Use of this solution may not be allowed in certain animal competitions. Check rules and regulations before entering your animal in a competition while this solution is being administered.

If you have any other questions about this medication, contact your veterinarian or pharmacist.

Special Instructions
