

# Amphibian Emergency Care and Supplies

By: Jason Juchems of Poisonfrogs.net

Many people keep medicine, first aid equipment, and other essentials at your home in case of sickness, injury, or a family emergency. Just as you prepare for the needs of your family, it is equally important to be prepared to help care for your animal collection. When maintaining a larger collection, it is essential to have a Medical/First Aid Box and other supplies available to treat your animals. While there are several items that can be included in a medical kit, I will discuss the items I keep on hand to treat my collection. My herpetocultural collection primarily consists of amphibians, however, I also keep geckos and chelonians. In addition to preparing a medical kit, you should also establish a working relationship with a veterinarian. A trusted veterinarian will guide you on dosages and treatment protocols for over-the-counter remedies, as well as prescription medications. To find a veterinarian with a background in reptiles and amphibians in your area, please visit: [www.arav.org](http://www.arav.org).

## Signs of Distress

Symptoms requiring attention include decreased or lethargic movement, a lowered body posture, soaking in water, inability to feed properly, unusual behavior (e.g., nocturnal species active during the day), bloating/edema, cloudy eyes, discoloration, a red belly, shakes/spasms/seizures, labored breathing, or prolapse. Other issues, that typically require a fecal exam, are reduced or discontinued feeding, decreased body weight, or an inability to gain weight.

## Quarantine Area

One of the first items to have on hand is a hospital tank set up as a quarantine area. Any new animals added to your collection should spend time in quarantine before being introduced to the general population. Animals showing signs of distress may also need to be quarantined for treatment. You can use an extra aquarium with a lid, a modified storage tote, a Kritter Keeper container, or a 190 oz. large deli cup-style plastic container for your hospital tank. If a specimen needs treatment, it should be isolated from the rest of the collection and housed in your quarantine area. In some cases, you may need to break down an entire vivarium to sanitize and rebuild it, treating all the inhabitants. Your quarantine area should be in a separate room of your home or facility, using separate materials, and be the last area you work in when handling animals. Sterilization should be done daily to prevent retransmission of disease. Keep the setup simple, using damp paper towel substrate and a baked leaf or two as hiding areas. Vinyl or nitrile gloves should be worn while treating animals in quarantine. When treating more than one quarantine area, dispose of gloves and put on a new pair between each quarantine container. All equipment should be sanitized using a bleach-to-water mixture (1 cup bleach to 1 gallon water) or a commercially available disinfectant.

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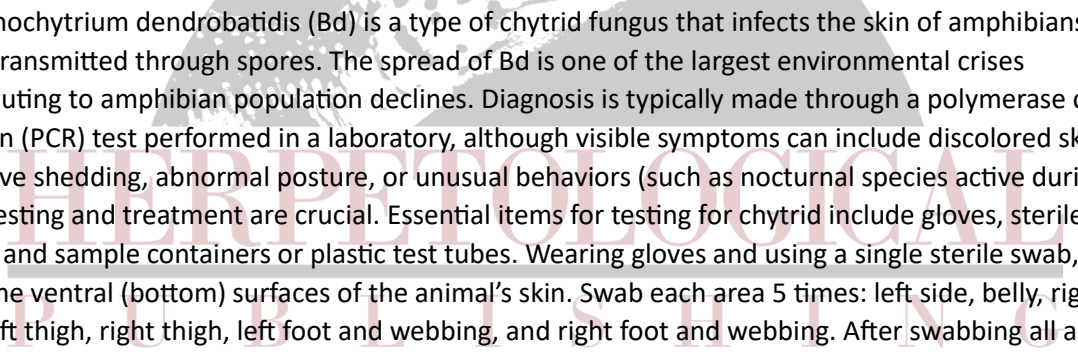
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## Fecal Exams

For animals showing signs of health issues, fecal samples should be collected immediately. For newly acquired specimens, the second or third week of quarantine is a good time to collect fresh stool samples, as freshly imported specimens may not show signs of imbalances or infections in the first week. A healthy stool should resemble a small sausage and be brown to dark brown in color. To collect a sample, use a plastic spoon to extract feces from the terrarium, preferably finding a freshly defecated sample. Once collected, place the feces on a damp paper towel and place it in a plastic zipper bag. Samples should arrive at the testing facility within 48 hours. Fecals are best examined by professionals trained to prepare the sample and identify pathogens. I use commercially available sodium nitrate flotation solution and have also used a home-produced saturated sugar solution when examining samples myself. A high-quality microscope is required for fecal analysis. If you're inexperienced, take the fresh sample to your veterinarian.

## Batrachochytrium dendrobatidis (Bd)/Chytrid Testing



Batrachochytrium dendrobatidis (Bd) is a type of chytrid fungus that infects the skin of amphibians and is easily transmitted through spores. The spread of Bd is one of the largest environmental crises contributing to amphibian population declines. Diagnosis is typically made through a polymerase chain reaction (PCR) test performed in a laboratory, although visible symptoms can include discolored skin, excessive shedding, abnormal posture, or unusual behaviors (such as nocturnal species active during the day). Testing and treatment are crucial. Essential items for testing for chytrid include gloves, sterile swabs, and sample containers or plastic test tubes. Wearing gloves and using a single sterile swab, gently swab the ventral (bottom) surfaces of the animal's skin. Swab each area 5 times: left side, belly, right side, left thigh, right thigh, left foot and webbing, and right foot and webbing. After swabbing all areas, place the swab in a test tube and cap it (you may need to cut the handle of the swab to make it fit the tube). Label each sample clearly. I send my samples to Research Associates Laboratory ([www.vetdna.com](http://www.vetdna.com)) for analysis. I also have them test for Ranavirus, an incurable infection. While Bd is only transmitted to other amphibians, Ranavirus can affect both amphibians and chelonians. If you receive positive test results, chytrid can be treated with a bath/soak treatment.

## Oral Treatments

**Fenbendazole (Panacur):** This granule-based drug treats gastrointestinal parasites, including amoebas, ciliates, flagellates (protozoans), and nematodes (metazoans). Diagnosis is made through a fecal exam. One common treatment is to dust the animal's food with Panacur, which is considered very safe.

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**Sulfadimethoxine (Albon):** An antibiotic used to treat coccidia, often prescribed as a liquid suspension for oral administration or as granules dusted on food.

**Metronidazole (Flagyl):** An antibiotic used to treat bacterial and protozoal infections (including amoebas, ciliates, and flagellates). It is typically administered by dusting food but can also be absorbed through amphibians' skin by soaking or as a mist. It is also used as an appetite stimulant in animals that are eating little to nothing.

## Topical Treatments

**Betadine Solution:** A topical antiseptic used to clean external injuries and protect against bacteria, yeasts, molds, fungi, and viruses. For wound cleaning, dilute Betadine to the color of light iced tea. A pipette can be used to apply it to wounds.

**Silver Sulfadiazine Cream:** An antifungal and antibacterial cream originally designed for burns. It is my go-to treatment for open wounds, especially rub nose.

**Triple Action Antibacterial (Neosporin) without pain relief** can be used as a substitute if silver sulfadiazine. It is important to treat open wounds quickly to prevent infection.

## Drops/Bath Treatments

Before administering any bath treatment to an amphibian, allow the liquid to reach room temperature.

**Enrofloxacin (Baytril)** is a broad-spectrum antibiotic commonly administered as a drop on the back. It is diluted one-part Enrofloxacin to 10 parts amphibian-safe water. Be cautious not to overdose.

**Hydrochloride Solution 1% (Lamisil AT)** is a proven effective as a Bd (chytrid) treatment in captivity. To use, dilute 1 mL in 200 mL of amphibian-safe water and soak the amphibian for 5 minutes.

**Sodium Chloride Hypertonicity Ophthalmic Solution 5% (Muro 128®):** Used to treat eye infections or injuries, often caused by stress, poor water quality, or injury. A drop every 6-8 hours can clear up cloudy eyes in 3-5 days.

**Methylene Blue:** Used as an antifungal and antibacterial treatment. Typically, 2 drops per gallon of water are used for tadpoles, but it can also be used to prevent egg mold or applied to amphibians with rub noses using a cotton swab.

**Calcium Gluconate:** A 2% solution of calcium gluconate can be applied directly to the animal's back. Amphibians with low calcium levels may experience seizures, which can be fatal without intervention.

**Amphibian Ringer's Solution:** The ideal soaking solution for weak, dehydrated amphibians. It can be purchased online through Carolina Biological Supply, or you can find formulations online. If Ringer's

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Solution is unavailable, one-part Pedialyte diluted in 10 parts amphibian-safe water can be used, although it is not suitable for amphibians with low calcium levels.

## Euthanasia

There may come a time when euthanasia is necessary. This is never an easy decision, but the animal's suffering cannot continue. Placing the animal in the freezer is not a humane option. Instead, placing Oraljel on the animal's belly and soaking it in vodka is a more humane method.

## Tools

Throughout this article, various tools and supplies have been mentioned. In addition to those, the following items are also useful, though not necessarily required for everyone:

**Student Dissection Kit:** Can be purchased from Carolina (item number #621096) or any biological supply company. I use it for necropsy, although it's best to consult a veterinarian if you lack experience.

**Razor Blades:** While scalpel blades are preferred for dissection, razor blades are great for removing feces from glass for sample collection and cleaning lime/calcium deposits or algae growth from glass surfaces.

**Tweezers** are a common item for reptile keepers, though they are less commonly used with amphibians. However, they can be very useful for removing ticks from toads.

**Thin guitar picks** may seem like an odd item to keep, but I have found they work very well for opening the mouths of small frogs and salamanders. For larger species, inverted plastic spoons or gift cards are also effective.

**Oral and injectable syringes** are used for dosing and administering medications. Injectables are less common but may be needed to withdraw medicines from injection vials or to administer enrofloxacin injections. We use 22-gauge, 3/4" needles for our syringes. Oral syringes are ideal for dosing soaking treatments, drop treatments, and administering oral medications to larger species.

**Glass beakers** are excellent for mixing soaking solutions, dilutions, and measurements. We recommend purchasing laboratory-grade beakers from reputable brands for their durability and versatility.

If you choose to keep supplies on hand, I recommend storing them in a locked toolbox or cabinet at room temperature. This will help prevent children or guests from accessing dangerous items. Being prepared is the most important aspect of maintaining a collection. While you can't anticipate every situation, it is essential to know how to protect your collection and what resources are available.

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## Suggested Reading

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