

Caring for Your Box Turtle

By Mark Burgess, DVM

Box turtles are small land-dwelling tortoises from the forests and plains of the eastern and southern U.S. Nearly all pet box turtles were caught in the wild. When you obtain a “wild pet,” you must try to duplicate that pet’s natural conditions in order to keep him/her healthy. If they stay healthy, box turtles may live 60-80 years or more. They tend to be mild-mannered and shy. Their maximum size is 5 to 7 inches long, depending on the variety of box turtle.



If you’re thinking about getting a box turtle, please adopt one from a rescue group rather than buying from a pet store or breeder. There are many wonderful turtles out there just waiting to be adopted. To find a turtle rescue, do a search for “turtle rescue” on the Internet or visit the website for American Tortoise Rescue at www.tortoise.com.

Feeding

Box turtles are slow-moving and can’t chase fast prey. A good simple diet is 75-85 percent vegetables and fruit, and 15-25 percent box-turtle food. Your choice of veggies can include dark leafy greens such as spinach, collard greens, kale, and dandelion greens; avoid iceberg lettuce, since it is nutritionally poor. Consult a nutritional guide to choose veggies with good calcium content. Fruits should be used sparingly, as a treat. A good variety helps minimize the risk of nutritional deficiencies; ideally, your turtle should regularly eat at least 8-10 different veggies and fruits.

Various types of dry and canned box-turtle or tortoise food are available; the best are probably the pelleted foods, which are brightly colored and smell fruity. A couple of the more palatable brands are Pretty Pets and T-Rex. The pellets can be offered dry, softened with water, or crushed and sprinkled on dampened veggies as a powder. A diet that includes a good variety of veggies and commercial food is complete and balanced, and your turtle does not need additional supplementation. Avoid high-protein, high-fat foods such as meat, dog food, cat food or monkey chow, since these may harm the turtle.

If you decide not to use a commercial turtle food, protein and vitamins need to be provided in other ways. Achieving a good nutritional balance is more difficult, however. Protein sources can include tofu, beans (various types), earthworms (use night crawlers, not red worms or compost worms), silkworms and crickets. Crickets must be fed a high-calcium, “gut loading” insect food for at least two days prior to feeding them to the turtle, or they will be calcium-deficient. T-Rex makes a good gut-loading cricket food. Mealworms are not very nutritious and are hard to digest; avoid these, except as an occasional treat.

Without box-turtle food, vitamins and minerals should be provided via a single powdered multi-vitamin/mineral supplement, such as ReptoCal or Reptivite. Use a tiny pinch – no

more – on the turtle's food once a week. Overdosing is easy with supplements; it is safer to use a commercial food, which has a balanced supplement included.

Water should be provided at all times. Use a small, low bowl that is too heavy for the turtle to easily tip over; a ceramic ashtray is adequate. Ideally, the bowl should be small enough to prevent the turtle from soaking and defecating in the water. Baths are unnecessary, but if your turtle happens to like baths, put him/her in a separate container with very shallow warm water and keep the baths brief (20-30 minutes maximum).

Housing

A box turtle usually needs a terrarium to live in, although you can let him/her out in the house daily for exercise (up to 30-minute intervals). To trap heat and humidity, the terrarium walls and top should be mostly solid, not screen – unless you live in a hot, humid climate. A minimum size is 3 to 4 square feet of floor space (equivalent to a 18 x 30 inch or 24 x 24 inch enclosure). Cage height is less important, since the turtle lives on the cage bottom. Artificial turf makes good flooring – it can be cleaned and reused, and it can't be eaten. Sand, gravel, corncob, and wood chips may be eaten and cause bowel blockages; if used, they must be changed regularly when soiled.

The air temperature should be 75-85 degrees Fahrenheit in the day, and ideally above 70 degrees even at night. Keep the cage top mostly covered to trap heat and humidity, unless the room is hot and humid. To check the temperature in various locations at the cage bottom, use a good mercury or dial-type thermometer that can be moved. Avoid color-strip thermometers that stick on the cage wall, as these are inaccurate.

There are various ways to keep your turtle at a comfortable temperature. A reptile heat pad beneath the cage is one heating method; hot rocks can be used, but they should be covered with turf or other rocks to prevent burns from direct contact. Heat lamps inside the cage should be located at least 18 inches above the turtle to prevent burns. If a heat lamp is used at night, it should produce minimal light. The best are lightless ceramic-coated bulbs such as those made by Pearlco or Fluker's. Dim purple or red night-lights can also be used.

Box turtles are shy, so the terrarium should be kept in a quiet area. They need hiding places to feel secure, but you should avoid using dark caves or hiding boxes, which block exposure to UV light. Instead, provide objects such as plants or rocks for your turtle to hide behind, or use paper to cover the cage glass in one corner, creating an area that is private but remains well-lighted.

Lighting should be provided 12-14 hours daily, with the remaining hours dark. You must provide white (visible) light and ultraviolet (UV) light in the 280-320 nm wavelengths (called UV-B), to mimic basking in the open sunlight. Most turtles housed indoors will be UV-deprived, since window glass and plexiglass filter out most of the UV light. So, unless you live in a warm climate and house your turtle outdoors, you'll need to use a UV source.

The simplest lighting is fluorescent full-spectrum bulbs; incandescent "screw-type" round bulbs are not adequate. Some good brands are ReptiSun by Zoo Med, Verilux, and

Reptile D-Light. These bulbs won't burn the pet and need to be close to the turtle to be effective; in general, the maximum effective distance is less than the bulb length. For instance, a common 24-inch tube should be within 18 inches of the turtle. Avoid glass or plastic barriers between the bulb and the pet, since these block the UV light. These bulbs produce less UV light over time, so you'll need to change them every 6-8 months when in use.

Note: A few incandescent "screw-type" round bulbs have recently appeared that do produce UV-B; these look like typical bulbs but are actually mercury vapor lamps. They produce both UV and strong heat, so they should be kept at least 18 inches from the turtle. Their effective lifespan is uncertain, but they probably last a year or more. These devices cost \$45 to \$100 and, when turned off, must have a "cool-down" period before they can be restarted. Incandescent bulbs, which cost less and do not require a cool-down period, are simple filament-type bulbs and do not produce adequate UV-B.

Healthy turtles may be allowed to hibernate in the winter in an unheated garage or greenhouse. Ideally, the temperature needs to be below 55 degrees Fahrenheit, and day length should be short (winter hours). Hibernation can be difficult to achieve, and you may elect to keep your turtle active in the winter. Never hibernate a sick turtle.

Common Diseases

Respiratory infections. Respiratory infections are common among stressed turtles, especially new pets that were recently captured and shipped. Poor diet or environment also cause stress to the turtle and allow infection. Symptoms include crusty, runny or swollen eyes; runny nose (often with bubbles out the nostrils); and mucus in the mouth. The turtle often will not eat, and, if untreated, the infection may progress to pneumonia. Respiratory infections are treated by giving antibiotics daily, correcting the environment, and force-feeding, if needed.

Vitamin A deficiency. This condition mimics respiratory infection, but the symptoms are not as severe – mostly eye swelling and discharge. Often, the turtle is still eating. This condition only develops if the turtle has been on a diet deficient in Vitamin A (or is not eating at all) for months. The treatment is to give Vitamin A orally. Good sources of Vitamin A are cod-liver oil, liver, papaya, yellow vegetables, carrots, some greens, and commercial turtle foods.

Middle-ear infections. These usually result from a respiratory infection and are visible as a swelling on the side of the neck where the ear should be. The treatment is surgical drainage of the infection, antibiotic injections, and correction of the diet and environment.

Beak and nail overgrowth. This condition is seen only in turtles that have been in captivity for some time, and is likely the result of nutritional imbalances, such as excessive protein intake or vitamin imbalances (including overdosing with supplements). The beak and nails overgrow and also may become thickened and deformed. A turtle with a severe case may develop deep cracks in the dry, thickened skin of the extremities, which can cause the toes or tail to break and fall off. Treatment involves trimming the overgrown beak and nails, using ointments to soften the dry, thick skin when needed, and correction of the diet and environment.

Shell rot. Infection of the shell is usually bacterial, causing pitting, discoloration or softness of the shell. If untreated, the lesions can deepen and spread, eventually causing death. The treatment is removing the infected areas of shell, applying topical disinfectants daily, keeping the shell dry, and giving injectable antibiotics in severe cases.

Intestinal parasites. Box turtles may carry a variety of worms and other parasites of the digestive tract. Symptoms include diarrhea, poor weight gain, and lethargy, but worms may be present without obvious symptoms. Before the parasites can be treated, you'll need to bring a fecal sample and/or a worm sample (if seen) to your veterinarian for identification so the proper medication can be used.

Appetite loss. Box turtles lose their appetite very easily if their environment stresses them. Cool temperatures, low UV levels, a cramped cage, lack of hiding places, and excess noise or disturbance may all cause the turtle to stop eating. Any illness, such as an infection, usually causes appetite loss as well. If your pet stops eating for more than a few days (except when hibernating), you should seek veterinary advice.

Veterinary Care

Turtles who are well cared for are fairly healthy by nature, but initially it is wise to consult an experienced reptile veterinarian to make sure your pet's diet and cage setup are ideal. You should also have a fecal sample checked for parasites, which are common in turtles. Once an initial health evaluation and review of husbandry is done, an annual routine exam is usually enough. If your turtle becomes ill, you'll need to have an experienced reptile vet that you can consult, whether it is someone with a local practice or a vet who specializes in exotic pets and consults over the phone with your local vet who sees the turtle.

Dr. Mark Burgess is owner of Southwest Animal Hospital/The Exotic Animal Practice in Beaverton, Oregon. Ninety-five percent of his practice is small exotic pets, including ferrets, rabbits, rodents, reptiles, hedgehogs, marsupials, and some wildlife. He lectures at conferences and has published articles on exotic pet disease in medical journals.