



BEST BEHAVIOR

Low-Stress Veterinary Visits for Reptiles

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Abstract

Reptiles can easily become stressed in the veterinary hospital. Minimizing stress begins with their transport to the hospital, followed by handler hand washing and visual observation before patient handling. When handling reptiles, movements should be slow and gentle and the patient should be adequately supported. Specific stress-reduction and handling techniques vary among different types of reptiles.



Take-Home Points

- Most small-to-medium chelonians (i.e., turtles, tortoises, and terrapins) can be held between their front and rear legs on either side of the shell with both hands; aggressive chelonians may require makeshift muzzles.
- Chelonians should always be kept upright.
- Larger lizards may require gentle tail restraint to prevent whipping.
- To prevent tail autotomy, never grab a lizard by the tail.
- Large snakes require 1 handler for every 4 feet of snake.
- Avoid firm restraint with snakes; rough handling can result in struggling or injury to the snake.

According to the Reptile Database, there are 11 940 known reptile species in the world.¹ Although veterinary professionals may see only a fraction of this number as patients in the veterinary hospital, it is likely that they will eventually encounter a wide variety of species. All reptiles can become easily stressed in a hospital environment, requiring a skilled and attentive handler.

Minimizing stress in reptile patients begins during transport to the veterinary clinic and should be discussed with owners beforehand. Reptiles should be transported in secure containers with escape-proof lids and sufficient ventilation.² Some snake owners use cloth bags, such as pillowcases, to transport their snakes. Ideally, the bag would also be placed in a secure, ventilated container. Reptiles are ectothermic, meaning they rely on their surroundings to maintain their body temperature within their preferred optimal temperature zone.³ Measures should be taken to prevent excessive warming or cooling outside of the reptile's preferred optimal temperature zone during transport.⁴ Warming devices, such as warm water bottles or microwavable bean bags, can help keep transport containers warm but should be insulated from the reptile to prevent thermal burns.

When the reptile patient arrives at the clinic, veterinary staff members should have clearly defined roles and an organized plan of action. To minimize patient restraint time, gather the equipment needed to perform a physical examination and collect diagnostic samples before restraining the patient. Multiple captures and extended periods of restraint can greatly increase the patient's stress. Reptiles should be approached in a calm, quiet, and gentle manner.

To evaluate the patient's ability to handle manual restraint, a visual examination of the patient's mentation and appearance should be completed before handling begins. A reptile that is displaying signs of clinical illness is in a fragile state of health. Many reptiles are prey species. To survive predation in the wild, reptiles will engage in a behavior known as the masking phenomenon,⁵ which is an animal's hiding of clinical signs of illness until it is physically unable to hide the illness any longer. Due to the masking phenomenon, potential problems in reptiles may be recognized only by thorough physical examination.⁶

Before handling a reptile patient, whether for examination or restraint, hand washing is recommended. Clean hands will not only reduce cross-infection and contain disease but will also help decrease patient stress and lower the risk for bite injuries from carnivorous patients. Removing the scent of other animals from your hands and clothing will prevent reptiles from mistaking you for a food item. For example, if you approach a carnivorous reptile, such as a monitor, after seeing a rabbit patient, the monitor may pick up on its scent and be more prone to try to bite. On the other hand, if your previous patient



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was a snake and your next patient is a small lizard that would be prey to a snake, the scent of the snake on your hands or clothing may cause the lizard stress.

Stress-response behavior and handling technique recommendations to minimize the stress of reptile patients vary widely among different types of reptiles. This article describes stress-reduction and handling techniques for the reptiles most likely to be commonly seen in veterinary clinics.

CHELONIANS

Chelonians (i.e., turtles, tortoises, and terrapins) are fairly calm patients and generally easy to restrain. Most small-to-medium chelonians can be held between their front and rear legs on either side of the shell with both hands (**FIGURE 1**). Chelonians are not tolerant of being placed on their backs and should always be kept upright.² More aggressive species of turtle should be held toward the rear of the carapace to increase the space between the handler's hands and the patient's beak.² Although chelonians do not possess teeth, they can extend their necks to surprising lengths to deliver a bite with quite strong and sharp beaks. If necessary, a cup may be placed over a biting chelonian's head to act as a makeshift muzzle to perform a physical examination or a brief, nonpainful procedure. This method of physical restraint is low stress and will protect the handler from potential bite injuries.

Many chelonians may pull their heads into their shell, making physical examination difficult, if not impossible. However, with patience and allowing all



FIGURE 1. Holding a small-to-medium chelonian upright between the front and rear legs, using both hands on either side of the shell.

4 limbs to remain on the ground, the head will again emerge. In smaller turtles and tortoises, handlers can push the forelimbs into the shell behind the jaw to keep the head in an out-of-shell position. Debilitated chelonians will allow the handler to grasp firmly behind the mandibles to manually extend the head. To avoid putting excess pressure on the trachea, which is on the ventral aspect of the neck, the handler should hold the sides of the neck. A technique often used to persuade a chelonian patient to protrude its head is to tip the patient forward slightly, with the head down.² The handler can also try touching or gently pressing on the rear limbs to stimulate the patient to extend its head. For stubborn or aggressive patients, chemical restraint can be used; recovery may be prolonged as reptiles metabolize drugs more slowly than mammals or birds.⁷



FIGURE 2. A chelonian being restrained (for radiographs or other nonpainful procedures) by placement on an object that is slightly smaller than the plastron of the shell but tall enough to lift all 4 limbs off the table.



FIGURE 3. Restraining a lizard by holding the forelimbs against the body with 1 hand and the hindlimbs against the tail with the other hand.

Turtles and tortoises can be restrained for radiographs and other nonpainful procedures by placing them on an object that is slightly smaller than the plastron of their shell but tall enough that all 4 limbs are lifted off the table (**FIGURE 2**).

LIZARDS

Like turtles and tortoises, lizards do not tolerate being on their back. The handler should allow smaller lizards to have all 4 feet on a surface, if possible. Proper restraint focuses on controlling the lizard's natural serpentine movement while protecting the handler from bites, scratches, and tail lashes. Never reach over or across a lizard's head as this motion can be mistaken for a predator attack and result in a bite. However, noncarnivorous lizards are more likely to use their long, sharp claws and tails to defend themselves. Towels and gloves can be used to help facilitate capture and restraint of lizards and somewhat protect the handler. Larger lizards, such as full-grown iguanas, can be restrained by holding the forelimbs against the body

with 1 hand and holding the hindlimbs against the tail with the other hand (**FIGURE 3**), which may require 2 handlers, depending on the size of the lizard. To prevent tail whipping, the handler can tuck the tail between their arm and body or between their body and a wall. If 2 handlers are present, the tail can be gently tucked between the hips of each handler.

Smaller lizards can be positioned for radiographs by placing them in a clear baggy or by using positioners to momentarily block the lizard into position. Larger lizards can be restrained by using cotton balls to place slight pressure against the eye sockets and securing them with elastic wrap around the lizard's head (**FIGURE 4**). In lizards, this slight pressure on both eyes results in a vasovagal response, producing a hypnotic state that can cause the lizard to sit quietly for noninvasive, nonpainful procedures, such as radiographs.⁸ Arboreal lizards (e.g., chameleons) will feel more secure if allowed to perch or grasp onto something, such as the handler's fingers or a wooden bird perch (**FIGURE 5**).

Tail autotomy is a defense mechanism in which the lizard will voluntarily shed its own tail to escape predators and is possible for geckos, iguanas, and skinks.³ Muscles rapidly contract around fracture planes within the tail, resulting in the complete detachment of the tail caudal to the fracture plane.³ The tail will regrow; however, compared with the original, the regrowth tends to be shorter, have a smaller circumference, be darker in color, and will not contain vertebrae (**FIGURE 6**). To prevent being perceived as a threat and causing tail autotomy, handlers should never grab any lizard by the tail.

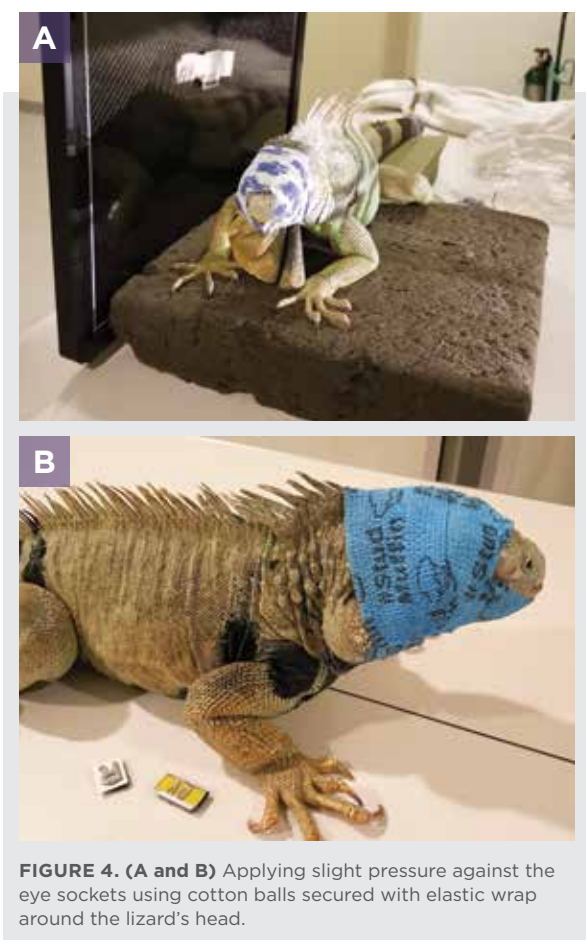


FIGURE 4. (A and B) Applying slight pressure against the eye sockets using cotton balls secured with elastic wrap around the lizard's head.



FIGURE 5. Allowing a lizard to perch or grasp onto a wooden bird perch.



SNAKES

Large, constricting snakes can be quite powerful and potentially very dangerous. Handlers should never drape snakes around their neck or torso. Large snakes could inadvertently injure the handler by simply tightening their muscles to maintain their balance.² Constriction around the neck or torso of the handler could cause inability to breathe or a lack of blood flow to the brain and loss of consciousness.² Snakes are more likely to constrict if they do not have sufficient support during handling or if they feel threatened.² It can be difficult to get an insecure snake to uncoil.

A good rule of thumb to follow when handling snakes is to have 1 handler per 4 feet of snake, which will help provide enough support to lessen the snake's stress and lessen the risk for injury to handlers (FIGURE 7). After the snake is in hand, allow the snake to move slowly through the handlers' hands, while moving hands along the body as needed to maintain support. Snakes are more likely to struggle when firmly restrained.

A tightly coiled snake in an S-shaped posture is usually aggressive or fearful. Most nonvenomous snakes can be

easily captured by using bare hands. Aggressive snakes can be captured by gently placing a towel over the head of the snake. Wearing protective leather gloves, the handler can safely isolate and restrain the snake by grasping the snake behind the head through the towel. However, care should be taken when thick gloves are used as they can decrease the handler's tactile abilities, thereby increasing the risk of injuring the patient. Snakes should be held loosely behind the head, taking care not to put pressure on the back of the head or behind the jaw (FIGURE 7). Rough handling of the snake's head during restraint or holding a snake by the head alone can cause cervical dislocation.

Using clear, plastic tubes to capture snakes can be useful and less stressful than towels and gloves; they are available for inexpensive purchase from most online reptile equipment vendors. Select a clear tube based on the size and length of the snake.³ Slip 1 end of the tube over the head of the snake, then coax the snake into the tube until about half its length is inside the tube.³ Then grasp the body and the tube firmly to prevent the snake from backing out of the tube.³ A snug tube circumference will prevent the snake from being able to turn around inside the tube to attempt escape.



FIGURE 6. Regrowth of a lizard tail that has undergone tail autotomy. Note that it is darker and of smaller circumference.

SUMMARY

Capture and restraint in the veterinary hospital can be stressful for the reptile patient. Slow, gentle movements and adequate support are key to proper reptile handling. Handlers should be mindful to not harm patients while taking measures to protect themselves from injury. If restraint attempts are unsuccessful, sedation or general anesthesia may be necessary. **TVN**



FIGURE 7. A snake being held loosely behind the head, supported by 1 handler for every 4 feet of snake.

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Sarah earned an AAS degree in veterinary technology in 2005. She began her veterinary career working at Iowa State University's Lloyd Veterinary Medical Center in the exotic companion animal department and the wildlife care clinic, dedicating herself to the medical care of exotic animals and wildlife for 15 years. During that time, Sarah achieved VTS status in exotic companion animal medicine in 2015 and earned her BAS degree in veterinary technology in 2018. Sarah currently works as the veterinary technician supervisor for the the University of Wisconsin's Research Animal Resources and Compliance department, overseeing the care and treatment of research animals. Sarah is currently the 2022–2023 president for the Academy of Veterinary Technicians in Clinical Practice. Sarah is also a Veterinary Support Personnel Network instructor, has lectured at various national conferences, and has published multiple articles. She is committed to lifelong learning and sharing her knowledge about exotic animals through lecturing, writing, and instructing courses.



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