

Enclosures for Snakes

Our topics for this week are:

- **Proper containments for snakes**
- **Appropriate climate inside of snake enclosures**
- **Needed maintenance of snake enclosures**

Snake health is highly dependent on their containment. They are high maintenance animals because of the complexities of maintaining an environment appropriate for their species. Enclosures must match the species native region's humidity, temperature, exposure to light, color of surroundings, climbing options, hiding places, access to water, and sometimes, social interactions.

Cramped containment, improper heating, difficult shedding, and territorial issues with others in the enclosure are just some of the ways in which containment can affect the attitude of snakes and their handling safety.

Appropriate enclosures for snakes vary widely because, depending on the species, the snake may be burrowing, arboreal, or semiaquatic. Snakes that need higher humidity should be kept in glass or plexiglass tanks with adequate hiding areas to relieve stress of threatening activities that might go on outside the transparent walls. Enclosures should have perforated, tightfitting lids free of sharp protrusions. Wood cages should not be used because of the inability to be properly sanitized. King snakes must be housed alone since they will eat other snakes.

Minimal size of the enclosure should be at least the length of the snake. Adult snakes should be in at least the size of a 30-gallon aquarium with a secure lid to prevent escape. Rough rocks or branches should be provided to aid in shedding.

Arboreal snakes need enclosures with vertical space and structures to climb and rest on. Branches from hardwood trees may be used, but prior treatment by baking, boiling, or soaking with diluted bleach solution is necessary to prevent introducing pathogens from wild reptiles or birds to the enclosure.

Warmth

Snakes are ectotherms, which means that optimum external heat for the species is needed for normal activity, digestion, and immune functions. This is referred to as the POTZ - preferred optimal temperature zone. If snakes get too hot, heat stress can develop. If they get too cold, indigestion or respiratory disease can result.

The warm environment they require can facilitate the growth of many disease agents. Good ventilation is essential to control odors and disease microbes. Frequent cleaning is also important.

The temperature needed throughout the day by snakes fluctuates within their POTZ. The POTZ for species from temperate climates is 78 to 86F. Tropical species should be maintained at 82 to 92F, and desert species should stay at 84 to 96F.

Heat should be provided in a basking area of the enclosure to allow self-adjustment by the snake moving closer or away from the basking area. The differential between basking areas and resting areas should be about 15 F. Heat lamps should be 50 to 75 watts and positioned so that there is no chance of the snake directly contacting it. Basking surfaces for most species should be 90-100F. Basking lights should be at least 18 inches from the substrate. Ultraviolet lamps provide heat to objects in the enclosure without raising the air temperature. Supplemental heat can be provided with undertank heaters that cover no more than 1/3 of the enclosures floor. Overhead heat sources should be used for diurnal species and undertank heaters for nocturnal species. Extra care is warranted for undertank heaters which can be hazardous for burrowing snakes. Because of the use of water and high humidity in many vivariums, all electric circuits should be wired with Ground Fault Interrupters (GFI) to disconnect the electricity in situations that could cause electrical shock to the snakes or their handlers.

Lighting

The amount and type of lighting are important for indoor enclosures for snakes. Lights should be timed on for 14 hours during summer months and 10 hours during winter months for tropical and subtropical species. Temperate region species need 16 hours of light in summer and eight hours in winter.

Humidity

Optimum humidity for the species is needed for normal shedding, breathing, ability to eat properly, and elimination of waste products. Low humidity requirements for the species involved can contribute to abnormal shedding of skin scales.

Humidity needs vary widely depending on the species of snakes and the habitat in which the species evolved. Humidity should be maintained at 50 to 70% relative humidity for species from temperate climates, 30 to 50% for desert species, and 70 to 90% for tropical species. Low airflow is needed in the enclosure to maintain humidity. Higher humidity environment can be more easily maintained in enclosures that have glass or acrylic sides. It can be enhanced with misting, drippers, foggers, waterfalls, pools or shallow bowls of water, and damp towels draped over the wire top of an enclosure. Hide boxes with peat moss that is regularly misted is another means of enhancing humidity. Rocks with rough but not sharp edges to rub against may aid in the shedding process.

Water

Heavy objects in an enclosure, such as water bowls, should be wide based with a smooth bottom to prevent them from tipping over onto a snake. Ceramic bowls are heavy and can be used for drinking and bathing water.

Substrates

Substrates are play sand for burrowing snakes, and newspaper, brown packing paper, indoor/outdoor carpeting; or aspen shavings for surface dwelling snakes, including semiaquatic snakes. Neither soil nor sawdust should be used because of their ability to retain too much moisture, which can sustain disease producing organisms and due to the risk of introducing parasites to the enclosure. Rocks or gravel should be large enough to prevent it from being eaten.

All snakes should have access to a large and heavy enough bowl of water to permit them to soak their entire body to aid in shedding. Arboreal snakes need branches or platforms sturdy enough to easily support their body weight to climb on. Hide boxes should be placed at each side of enclosure so the snake will not limit its movement due to stress of being in the open.

Snakes should be fed in a separate container than their main enclosure. They may strike at anything that is within reach if excited about being fed. The lid of the feeding box can serve as a shield while presenting the food, e.g., a thawed frozen mouse, in the feeding enclosure. Any uneaten food after 12 hours should be removed. Feeding enclosures should not contain substrate to prevent accidental ingestion and resulting impaction.

Snakes only have one fully functional lung, the right lung. The left lung is vestigial or absent. Their containment must be kept clean to reduce the risk of lung infections. They cannot cough to clear their lungs of exudate.

Cleaning

Snake enclosures should be cleaned daily to remove uneaten food, waste, shed skin, and food and water dishes. Once per week the cage, substrate, and enclosure objects should be disinfected. Rocks for should be boiled for 30 minutes. Sand and branches need to be heated to 200-250F for 30 minutes.

Rubber gloves and eye protection should be worn while cleaning the cage and its contents with mild soap and water. After cleaning, disinfection should be performed with 1 cup of household bleach/gallon of water. After disinfection, the enclosure and its contents should be allowed to ventilate for 5 to 10 minutes in a well-ventilated area and then rinsed thoroughly with water.

Snake enclosures should not be located in or near human food preparation or storage areas. All cleaning equipment such as sponges, buckets, and sinks should be cleaned and disinfected. Cleaning snake enclosures should not involve soaking in bathtubs, basins, or laundry sinks.

A handler of snakes should wear appropriate dress to protect against skin contamination with skin scales or saliva, urine, and other body secretions. Snakes should never be fed by hand nor allowed near a human's face. Hands should be washed after handling any snake or objects

touched by the snake. Handlers should not eat or drink while handling snakes. Young children, the elderly, pregnant women, and people with immunosuppressive diseases or on immunosuppressive medications should not handle snakes due to risk of salmonellosis.

If you have comments or you're interested in particular animal handling subjects, contact us at CBC@BetterAnimalHandling.com

Now let's recap the key points to remember from today's episode:

- 1. Snake species and size are important considerations in selecting an appropriate enclosure.**
- 2. Snakes are escape artists.**
- 3. Snakes should be fed in a separate feeding enclosure.**

More information on animal handling can be found in my books, *Animal Handling and Physical Restraint*, *Concise Textbook of Small Animal Handling*, and *Concise Textbook of Large Animal Handling* all published by CRC Press and available on Amazon and from many other fine book supply sources.

Additional information is provided at: www.betteranimalhandling.com . This website has more than 200 past podcasts with notes on handling of dogs, cats, other small mammals, birds, reptiles, horses, cattle, small ruminants, swine, and poultry.

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.