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THE CHALLENGES OF HOUSING SICK AND INJURED REPTILES

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Introduction

When a sick or injured reptile requires hospitalisation in a veterinary clinic the role of the Veterinary Nurse may include setting up a temporary environment (enclosure) for the reptile which offers appropriate security, substrate, heating, lighting, and nutrition. Correct housing and husbandry will contribute significantly to the recovery of a sick or injured reptile in hospital.

Physiological Considerations

Reptiles are ectothermic, they do not have the ability to regulate their own body temperature so they physically move between hot and cool areas. One of the most important aspects of caring for a sick reptile is ensuring it is kept at its metabolic optimum. All reptiles have a **preferred body temperature range (PBT)** which varies between species. The **preferred optimum temperature zone** is the range of temperatures (gradient) that we need to physically provide to allow the reptile to maintain its optimal core body temperature within its PBT range.

Sick reptiles benefit from being in an environment that has a temperature range which includes a heated spot that is slightly higher than the reptiles PBT. The mid range will be their PBT and the cooler end ranged down by a few degrees. A sick reptile will spend most of its time at the heated spot. It is difficult for a reptile to dissipate heat and this can lead to heat stress if the enclosure does not provide a temperature gradient.

For intensive care cases it may be beneficial to place the reptile in a 'hotbox' with a consistent temperature set at approximately 3° higher than the PBT. Observe the reptile carefully for heat stress and do not leave it in this environment overnight without observation. Reduce the temperature back to the reptiles PBT over a period of time, prior to moving it into a less intensive environment.

Prior to providing any therapeutics to a reptile it should be kept in a heated environment set at its PBT for a minimum of 30 minutes.

Essential Housing Requirements

The key to successfully housing a reptile in hospital for short periods of time is to keep the set up simple. In the case of pet reptiles, it may be preferable to ask the owner to bring the reptiles own enclosure to the hospital for the reptiles stay, this provides familiarity for the reptile and avoids the need to set up an enclosure (this also provides an opportunity for you to check the enclosure for adequate husbandry needs and advise accordingly). If this is not

feasible, a simple set up providing all the reptiles needs can be achieved using the following guidelines.

A secure enclosure is important. Reptiles are very good escape artists and can squeeze out of the smallest of openings.

Short term temporary options for a veterinary clinic include: -

- Deep plastic tub with wire mesh inserted in the lid (the type you can purchase in a hardware store)
Advantages: Easily available, inexpensive, lightweight, easy to store & hygienic.
Disadvantages: need to adapt the lid to create a mesh lid, lid must be a secure fit.
- Glass tank set up with a tight fitting wire mesh lid.
Advantages: Easily available, inexpensive & hygienic.
Disadvantages: O H & S hazard, does not hold heat well, needs a secure lid made to fit.
- Wooden hot box.
Advantage: You may already have one in your clinic, can maintain constant heat for intensive care cases.
Disadvantage: not hygienic, not designed enough to provide a gradient of heat.

Note: Avoid the use of any enclosure with a wire mesh front. Reptiles can rub their rostrum (nose) against the mesh causing trauma.

Substrate & Furniture

- Hospitalised reptiles can be maintained on newspaper. This is simple, cost effective and hygienic.
- Towels (check for loose threads) or flannelette can be used on the base of any enclosure.
- Furniture will be species dependant. Consideration must be given to the nature of the sickness or injury and furnish according to basic needs. Snakes that are semi-arboreal will benefit from a sturdy area to rest that is set up off the base of the enclosure e.g. a ledge or a flat branch to coil up on. Lizards and dragons may prefer to be up off the ground but need a smaller diameter branch to rest on. If the reptile is very depressed give preference to a safe environment and avoid climbing options.

Security

- Suitable hides (offering security) for a reptile will vary depending on the species size and needs.
- Snakes feel secure if they can touch all sides of the hide with their coiled body. The use of a cardboard box/ upturned ice cream container or tub works well. The 'entry' should be a minimum of twice the body width of the snake to ensure it does not get stuck if it doubles back on itself.
- Blue tongue lizards feel secure sitting under a crevice and this can be provided with the use of a cardboard box. They will also hide under newspaper or a cloth item. Bearded dragons prefer to position themselves on a horizontal branch out in the open and aquatic turtles will bury

themselves under a cloth, or if in an aquatic set up, a piece of floating AstroTurf or a solid structure positioned over the water.

- Smaller lizards/geckos may like to wedge themselves into tight crevices and this can be mimicked by securing egg cartons or bark slithers together in a few layers.

Humidity

- Provision of humidity will depend on the reptile's origin i.e. arid, temperate or tropical environment. In general terms this may vary between 35 - 75 %. Various methods can be used to achieve the humidity desired, this includes; sealing off parts of the enclosure to reduce ventilation, a drip set with constant slow dripping into a bowl (can use an old giving set and fluid bag and fill the bag with tap water), mist spraying the enclosure frequently during the day or provide a large shallow water bowl positioned close to the heat source.

Heating

- Provision of appropriate heating for each species is essential.
- Effective heating for a reptile enclosure includes a combination of the ambient temperature i.e. heated room, and the use of a more direct heat source. Snakes are thigmotherms, requiring contact heat whilst lizards and dragons are heliotherms requiring basking heat from a lamp. Aquatic turtles also benefit from a basking lamp.
- The heat source must be positioned where the reptile feels secure and spends much of its time. A flat piece of slate or a rock positioned in the enclosure directly under a heat lamp or above a heat pad will hold and radiate heat. Infra red globes are effective and when used 24hours a day will provide a dark period during night-time while maintaining the temperature required.
- Not all reptiles require heat throughout the night. This depends on the species being housed, the general health of the individual and simulation of their natural habitat. However, all sick and injured reptiles benefit from being kept at the upper range of their PBT continuously for the initial period of their hospitalisation.
- Never place any form of supplementary heat directly in an enclosure with any reptile species. For example, a snake will coil itself around a globe or sit on a very hot heat pad and will not move from the source, potentially causing thermal burns.

Thermal gradient

- Always place thermometers in an enclosure. Place one at each end, this will provide accurate temperature gradient readings.
- The enclosure should be large enough to provide a thermal gradient i.e. cool at one end and hotter at the other end. Heat lamps and pads should be positioned at the same end of the enclosure. Heat pads should only take up a portion of the floor of the enclosure.

- The temperature must be checked on a regular basis during hospitalisation. The basking (hottest spot) and the spot furthest away from the heat should be checked. The hot spot should be heated to a few degrees warmer than the reptiles PBT. This will then allow the reptile to bask at this spot and reach its PBT easily. The general environmental temperature of the enclosure should not vary more than 2 -3 degrees above or below the PBT of the individual during the daytime.

Lighting

- The best source of lighting for reptiles is natural sunlight which provides UVA & B rays at the appropriate spectrum for reptiles to biosynthesis Vitamin D3. In a hospital environment artificial UV lights mimic this need. Regular fluorescent light globes do not offer the appropriate UV ranges and will not be sufficient. Reptistar®, Reptisun® and Osram® UV spectrum lamps globes are popular preferred choices in Australia and can be set up in single fittings.
- The light fitting must be placed above the enclosure within 46cm of the reptile for efficacy. Place the light on a timer mimicking daylight hours.
Note: UV is filtered out through glass and perspex, for efficacy the light must be positioned over a mesh lid.

Handling

- Keep reptile handling to a minimum to reduce their stress levels (and yours!).
- Where possible, do not handle reptiles if they are in pre slough (shedding of their skin).
- Be aware of infectious diseases in reptiles. If you are looking after more than one reptile from different owners or sources set up barrier nursing between the reptiles.
- Reptiles carry zoonotic diseases. Always wash your hands after handling reptiles.

Water

- Fresh drinking water must be made available at all times. This can be achieved by supplying a bathing dish, drinking dish or fine mist spray. Some small reptiles will only lap water off foliage. Some will drink water if mist is gently sprayed onto face.

Feeding

- To reduce the possibility of gut stasis feeding must occur when the reptile is at its PBT.
- Food may be walked in or crawled over but not eaten. Confirm the reptile is feeding by observing it eat and note that it is defecating.
- Remove uneaten food daily. Food should be consumed within 30 - 40mins of offering. Do not offer more insects in the enclosure than the reptile is capable of eating, do not leave insects in enclosure overnight as they may chew on small reptile's digits.
- Insects should be gut loaded with appropriate food for feeding out and should be fed within 24hrs of being taken out of a gut loading environment.
- Some diets may need to be supplemented with calcium and vitamin supplement powders sprinkled on the food.

- It is unethical to feed live rodents to snakes in a captive environment.
- Defrost all food to room temperature before feeding out to simulate freshly killed prey.
- Feed whole bodied prey when ever possible as nutritional value will be at its best.
- Food may be regurgitated if the reptile (particularly snakes) is handled after feeding or if the enclosure temperature is reduced.

Reluctance to feed is common in the clinically unwell reptile. In addition, other factors effecting anorexia include stress and anxiety, enclosure is in a busy spot, the reptile is in preslough, fed wrong food, at wrong time of day, too much, too often and general housing errors such as temperature and enclosure size.

Waste Material

Reptiles will generally pass formed faeces. The initial portion of the faeces is usually urates. Reptiles do not defecate every day. Their diet intake and gut passage time determine this. Lizards and tortoise generally will defecate daily, snakes may take up to a week to defecate after being fed. Abnormal faeces may appear green in colour. This is due to biliverdin, which is the major bile pigment. This can be an indication of anorexia, hepatic and haemolytic changes.

Summary

There are many other considerations when caring for sick and injured reptiles and further reading is highly recommended to ensure that all nursing skills are utilised and performed with the same diligence as one would when dealing with a companion animal such as a cat or dog.

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