



Health Care for Herps

All Creatures Animal Hospital

Herp Packet Handout #3

Assessing the Health of Captive Reptiles

How can you tell if a snake is sick? This is a common question we get. The honest answer is that it is very challenging to tell if a reptile or amphibian is sick. It is even more challenging to determine what the problem may be. The veterinarian has to piece together all the clues to evaluate the health of reptiles.

Reptile and amphibian physiology is very different from mammals and birds. While most of the medical principles used for other pets, and even for people are still valid, significant adjust-

ments have to be made when applying them to poikilotherms (cold-blooded animals).

Because of the difficulty in recognizing early signs of illness, reptiles are often presented to us in advanced states of deterioration. These patients are often beyond our help at this point. For this reason, we feel it is critical to take a preventative approach to health care.

Health evaluation on new herps, and then annually can help detect problems early and allow successful treatment.

In large collections, where annual examination of each individual may be cost prohibitive, the evaluation of a representative sample of animals can help detect colony-wide health problems.



It is challenging to find and differentiate health problems in captive reptiles.

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Husbandry Evaluation

The vast majority of health problems encountered in captive reptiles and amphibians are associated with an inappropriate environment or diet.

Evaluation of the captive husbandry (environment and care of an animal) is a crucial component of the health exam. When we ask lots of questions about how a pet is cared for, it is not to be judg-

mental. It just helps to identify what some of the more likely health issues may be.

Each time a pet is brought to us, we will want to update things such as exposure to other animals, housing, substrate, sanitation, temperature, humidity, lighting, and diet. If the primary caretaker is not the person bringing the pet in to the clinic, or if the pet is being dropped off

for care, it helps to write down these parameters. We need to know how things are actually done, not how it is supposed to be.

Once we have evaluated the health, the veterinarian may make recommendations for altering the husbandry, either temporarily for treatment of the problem, or long-term for preventing other health problems.

Annual Examination:

- *Husbandry review*
- *Physical examination*
- *Parasite examination (bring a fresh stool sample)*

For Additional Information:

- *Blood workup*
- *Radiographs*
- *Ultrasound*
- *Endoscopy*

Physical Examination

Physical examination is the foundation of preventative health care. Many of the body systems are available to examine with sight, sound, or touch. The eyes, respiratory system, skin, and skeletal system can be assessed on the physical



Physical examination can be challenging in some patients.

Parasite Evaluation

Internal and external parasites are common in reptiles and amphibians. While a successful parasite does not destroy his own home (your animal), parasites in captive herps tend to be more harmful. In a captive environment the parasite eggs are concentrated in a small area and the animal is repeatedly exposed, leading to heavier parasite burdens. In addition, there is a certain amount of stress from captivity.

External parasites are usually found during the physical examination. How-

ever, parasites can live in the blood, the gastrointestinal tract, or sometimes in other tissues. Often parasites pass their eggs in the feces of the host. For this reason, it is advisable that fresh feces (not the white/yellow urate portion) be examined for parasites. Several different methods can be used to identify parasites in feces. Depending on what the concerns are, a flotation, a direct microscopic examination, or a stained preparation may be used to find parasites.

Reptiles and amphibians present some unique challenges with the physical examination. Some reptiles are dangerous to the handler. While crocodylians and venomous reptiles are not recommended as pets, some common pets, however, can give a serious bite in some cases. Large iguanas, monitor lizards, snapping turtles, and some larger boid snakes can present some hazards. Likewise, some very small specimens are very delicate. Small frogs, amphibians, and lizards can have very delicate skin which can tear easily, so great caution

must be taken. Many lizards have tails that break off easily when they are stressed.

Finally, some animals limit our access to vital areas that we'd like to examine. A frightened box turtle or tortoise can completely pull into a shell and make access to anything but the shell and perhaps the legs impossible without anesthesia.

To maximize the information we can gain from the examination, the veterinarian may employ anesthesia, magnification, soaking in water, or other measures.

In a captive environment, parasites tend to get recycled and can reach dangerous numbers in the animal.

In some cases, prophylactic deworming is warranted. The medications used will depend on what parasites are the greatest concern.

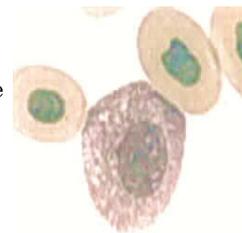
Blood Workup

The protected body and simplified anatomical layout of reptiles limits the information that can be obtained with a physical examination.

To counter this limitation, it is helpful to get additional data on the health of the pet. Blood cell counts can give indications that an animal is fighting an infection, that there are blood parasites, or that there is anemia. In addition,

blood chemistries can help determine the health of various organs such as the kidneys, and can detect imbalances of important minerals such as calcium and phosphorus.

Another important reason for routine blood workups is to establish what the normal levels of blood cells and chemicals are for the individual animal. The first time these are checked, the num-



A blood profile can give information regarding immune function and organ systems.

bers are compared to a database of other members of the same or similar species. By establishing individual normals, more subtle changes can be detected later.

Radiography

In radiography x-rays are projected through an animal onto a film. The tissues of the animal block the x-rays in a variable fashion, leaving an image on the film. The image distinguishes various densities: gas, fat, soft tissue, mineral, and metal. Because of the differences in density, the bones, lungs, mineral foreign bodies, and some other structures can be seen. Because of the way fat is stored in reptiles, the abdominal organs can be difficult to distinguish.

Radiography is an excellent way to evaluate for fractured bones, to assess

bone density, to look for sand or gravel impactions, and to assess for retained eggs.

If more information is needed, sometimes contrast materials are used. For example, if the digestive tract is the concern, a barium suspension can be administered in the mouth or stomach. This liquid appears like metal on a radiograph. Therefore the digestive tract will



Radiography allows a limited view of the internal anatomy of an animal.

be brightly outlined, as in this picture. The only difficulty is the extremely slow transit time in some reptiles. It can take up to a month for material to move through the entire digestive tract of a tortoise!

Radiography, ultrasound, and endoscopy give distinct views of

the internal anatomy of the patient.

Ultrasound

Ultrasound employs high frequency sound waves (above our hearing range) to create an image. While radiographs take advantage of variable absorption of the x-ray radiation, ultrasound takes advantage of the variation in how dif-



ferent materials echo the sound waves back to the sensor. Ultrasound is

very effective for differentiating soft tissues of various consistency and texture. Bone and air are impediments to the ultrasound waves. Fluid transmits the sound waves extremely well. For species with soft shelled eggs, ultrasound will show the eggs more easily than radiographs in many cases. The other helpful feature of ultrasound is that we get a real time moving picture. This makes it perfect for evaluation of the heart.

Ultrasound is a relatively new field in

The moving pictures we get with ultrasound are ideal for evaluation of the heart.

herps. For this reason, there are relatively few references and continuing education courses. The best way for this technology to become more useful is by frequent usage.

Endoscopy

There is no substitute for direct visualization. Endoscopy extends the physical examination to the inside of the body cavity.

O

Using an incision no bigger than the O above, we can visualize the entire coelomic cavity, with focused light and

magnification. In addition, we can take minute tissue samples for laboratory evaluation. This is the most accurate method of diagnosis of organ disease. Newer work is being done to allow us to actually perform surgeries through these tiny incisions to limit the pain of surgery. In the case of chelonians, it can sometimes allow us to avoid cutting through the shell. In fact, the use of an



A photo of the liver of a box turtle with liver disease.

endoscope for examination of the gonads is an accepted method of determining the sex of monomorphic reptiles.

All Creatures Animal Hospital



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Member: Association of Reptile and
Amphibian Veterinarians

Our Mission:

All Creatures Animal Hospital is dedicated to providing progressive medicine in a caring environment for pets of all species. Through preventative medicine, client education, professional development of our staff, and advanced medical and surgical techniques, we hope to foster a strong and lasting bond with clients and their pets.

Necropsy

It is tragic when a pet dies; however, it also offers an opportunity to gain a great deal of information. If there are other animals in the house, this can be critical. If there are no others, it can help to identify shortcomings in the husbandry that could affect future inhabitants of the house.

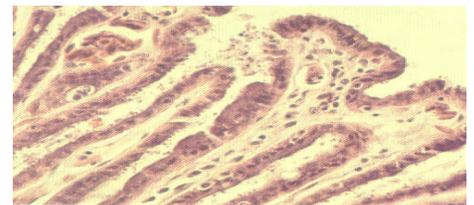
Necropsy is the examination and laboratory testing of an animal that is dead. There are many things that we can do with a patient once they are dead that would be very risky if they were alive. For a herp hobbyist, the death of a specimen offers an opportunity. Even if the cause of death is obvious, very often, incidental conditions can be found that could have a profound impact on the group.

Sometimes only a gross necropsy is done. In this case, gross means “visible

to the naked eye”. This is useful for detecting anatomical changes. Generally it is best to have a full necropsy, which will include a visual examination, a culture from the internal organs to detect infections, and microscopic examination of the organs. These additional tests will detect the more subtle diseases that can evade us on gross necropsy.

In some situations, the emotional bond to a pet may make the thought of a necropsy unpleasant. In these cases, a somewhat more limited necropsy can be performed using the endoscope, without opening up the body. We still can see the organs, and take (small) samples. There are a few inaccessible areas with this method, but it does give much of the same information.

In order for a necropsy to give signifi-



A full necropsy includes histopathology, which can identify subtle disease.

cant information, the body has to be preserved properly. The heated environment that most reptiles are kept in will accelerate decay. As soon as the animal is discovered to be dead, it should be refrigerated. Freezing will destroy many of the cells. The body should be presented as quickly as possible.

Necropsy results may take up to two weeks.