

Husbandry and Physiology of Iguanas

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The green iguana (*Iguana iguana*) has become the most common of all reptile pets in the United States. Health, growth, and longevity of pet iguanas depend upon the ability of the owner to provide a diet, climate, and environment that mimic those found in nature. Most disorders and diseases of reptiles are related to improper husbandry. Most pet iguanas die, change ownership, or are 'released' within the first year because husbandry needs cannot be met. Thus, it is extremely important for the veterinarian to be aware of these basic needs when advising clients as prospective owners of a pet iguana. This PowerPage reviews features of iguana physiology and husbandry.

Iguana Physiology

Life expectancy:

- Arboreal, diurnal herbivores
- Life expectancy: 15-20 years
- Can reach over 5.0 kg and 1.5 meters in length

Reproductive physiology:

- Sexually dimorphic
 - Males have bilateral femoral pores (scent glands) located on ventral, proximal leg
 - Males have larger dorsal spines
- Females are oviparous
 - Lay eggs that require incubation prior to hatching

Thermoregulation:

- Are ectotherms
 - Body temperature, metabolic rate, and activity vary with ambient temperature
 - Move to different thermal zones to regulate body temperature
 - Ectotherms require 50-90% less energy than endotherms of similar body weight
- Optimally, should have exposure natural sunlight and heat for optimal health
 - Alternatively, providing light with proper wavelengths of UV-A and UV-B is necessary
 - Ordinary glass and plastics do not transmit UV-B light so special equipment is needed
 - UV-A light is beneficial for visualization and normal behavior
 - UV-B light needed for vitamin D synthesis and calcium metabolism
- Optimal "thermal neutral zone" is 78-95F
 - Ideally, provide a temperature gradient within the enclosure
 - Must protect from direct contact with heat sources to reduce thermal injury

Excretory physiology:

- Primary nitrogenous waste is uric acid
 - May excrete small amounts of urea and/or ammonia
- Reptile kidneys lack a loop of Henle
 - Unable to concentrate urine as efficiently as mammals
- Have a nasal salt gland
 - Excrete sodium when plasma osmotic pressure is high
 - Helps animal conserve water
 - Produces a white powder that may adhere to the nares

- Sometimes mistaken for an upper respiratory infection

Cardiovascular physiology:

- Three-chambered heart
 - Left and right atria and a single ventricle
- Venous return from tail and rear limbs routes to kidneys by renal-portal system
 - May affect metabolism of drugs injected in the caudal half of the body due to first pass renal excretion
 - This effect may not be as substantial as previously thought
- Ventral tail vein in most common site for blood collection

Musculoskeletal physiology:

- Capable of “caudal autonomy”
 - The distal portion of the tail may be lost as a defense mechanism to elude a predator’s grasp
 - The lost portion of the tail can regenerate over several months
 - Regenerated section will appear different and is structurally composed of cartilage rather than bone

Iguana Diet

- Obligate herbivores
 - A natural diet of fresh leaves, vegetables, flowers, and fruits served at room temperature
 - Diets high in protein (ie. meat) are inappropriate
- Calcium: Phosphorous ratio of at least 2:1 is necessary
- Sample of a “suggested diet”
 - 60-70% calcium rich foods
 - Kale, collard greens, dandelion, parsley, clover, alfalfa
 - 20-30% other vegetables
 - Broccoli, peas, beans, zucchini, grated carrot
 - 10% Fruits
 - Figs, papaya, melon, apple, strawberry, banana
 - Small amounts of grain or fiber (ie. whole grain bread) may be offered
 - Can supplement a small amount of a complete vitamin mixture with calcium

References

References:

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