



Guidelines for Acceptable Methods of Euthanasia for Zoo, Exotic Pet, and Wildlife Species

Reptiles

Introduction

There are many situations where euthanasia of an animal is necessary. It is essential to the animal's welfare, and a legal requirement, that the method chosen does not cause unnecessary suffering. The guidelines are for informational use only. They are not exhaustive. Other methods may occasionally be applicable.

Overview

Euthanasia of reptiles is a difficult task to those not accustomed to treating these species. Problems arise because of unfamiliarity of the anatomy (which limits access to sites for injection) and physiology (eg. slow drug metabolism, decreased activity when cold). It is difficult to ascertain with certainty that a reptile is dead, rather than heavily anaesthetised.

Suggested Methods of Choice

The following methods are rapidly effective and straightforward to perform. Prior sedation may be useful in some animals. The animal usually loses consciousness within seconds to minutes of administration.

- Intravenous overdose of anaesthetic agent
 - Primarily pentobarbitone.
- Intraosseous overdose of an anaesthetic agent
 - Primarily pentobarbitone.
- Intracardiac overdose of anaesthetic agent
 - Primarily pentobarbitone.
- Cranial trauma sufficient to induce complete and instantaneous loss of brainstem activity
 - eg. shooting, captive bolt, massive blunt trauma.
- Dropping into liquid nitrogen to provide near instantaneous complete freezing
 - Only for individuals less than 1cm max diameter.

Acceptable Methods (*if methods of choice not possible*)

These methods are effective but involve a prolonged delay (hours) before the animal can be pronounced dead.

- Intramuscular overdose of anaesthetic agents followed by pithing once unconscious



- Primarily ketamine combinations.
- Intracoelomic overdose of pentobarbitone followed by pithing once unconscious.

Unacceptable Methods

The following methods have been suggested for reptile euthanasia in the past but should now be considered unacceptable.

- Freezing – except through the method suggested above.
- Drowning.
- Overdose of anaesthesia by non-ideal route without pithing
 - eg. intracoelomic, intramuscular, gaseous.
- Use of muscle relaxants without inducing anaesthesia.
- Trauma other than cranial trauma as described above
 - eg. decapitation, cervical dislocation.

Confirming Death

Death is difficult to confirm in reptiles. The following criteria have been suggested for evaluating and confirming death.

- Lack of external reflexes.
 - eg. righting, limb withdrawals, cornea-third eyelid response
- Lack of detectable respiratory activity.
 - eg. no spontaneous breathing movements, larynx open, flaccid and unresponsive to touch.
- Lack of detectable cardiovascular activity.
 - eg. doppler ultrasound, ultrasound, ECG.

Reptiles which are heavily anaesthetised, severely ill, or even just very cold will have few, if any, outward signs of activity. They may appear dead by the criteria above but may regain consciousness such as after metabolising anaesthetics or warming.

- In order to confirm that the reptile is dead it is recommended (once the animal is fully unconscious) that pithing or freezing be performed. Pithing is possible in most pet species and cosmetically acceptable via an oral approach to the cranial vault.

Definitions

- Euthanasia
 - *Humane destruction, 'putting to sleep'.*
- Death
 - *Loss of brainstem activity.*
- Pithing



- *Physical destruction of brain tissue.*