



**Reviewed by Albert Holgate** BSc (Hons) CVN, Dip AVN, RVN

Albert currently works for the RSPCA Greater Manchester Animal Hospital based in Salford, where he holds the Clinical Manager position responsible for a team of both hospital assistants and qualified nurses. His responsibilities extend to logistics of satellite RSPCA branches and their surgical units and ensuring they have the resources they need from a clinical perspective. Albert qualified as an RVN in 2007 and went on to gain the advanced diploma, and since then has developed an interest in shelter medicine, such examples including, strategies for management of infectious diseases and nursing protocols with population management, veterinary nurse forensics, hoarding and cruelty case management. Since then, Albert has also graduated with a BSc (Hons) in Clinical Veterinary nursing at Myerscough College.

E-mail: [albert.holgate@rspca.org.uk](mailto:albert.holgate@rspca.org.uk)

# Webinar Review: Clinical and physical examination of chelonian with Matthew Rendle

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Dip AVN, RVN

## Overview

This webinar examines the elements of undertaking a full clinical assessment of a particular species of chelonian. It is useful from a veterinary nurse perspective as it covers a basic overview of anatomical differences for identification of various species to ensure correct handling. Matthew covers a useful guide of ensuring all personal protective equipment are used and why this is the case. Protection against salmonella is a key element when handling certain species. Handling in the correct manner and a guide of 'what not to do' when dealing with a full examination is covered. For example, handling at the correct angle is important as on their backs the viscera can push into the lungs and cause respiratory difficulties.

## Step by step systematic examination

A clear systematic approach to look at all anatomical areas for any abnormalities and what to look for is covered. Ideally the approach taken should be from starting at the front working way to the back. The primary concern as a priority should be looking at the overall structure and integrity of the shell with an anatomical reference to the carapace and plastron. Care should be taken not to cause pathological fractures when dealing with species that have a soft shell. It is known that metabolic bone disease in chelonians are commonly associated with poor husbandry. These often lead to weakness and deformities within the skeleton and have long term effects on the welfare. The nasal region should be clear, free from discharge and no bubbles should be seen. The breathing sounds should be nice and quiet with no abnormal sounds heard. The tympanic membrane should be given careful consideration to ensure the area is

nice and flat and not bulbous. This can be prone to abscesses so an area to carefully examine. The sex of chelonian can be identified during the examination by looking at the length of tail and the concavity of the plastron which shows that the concave appearance allows the male to mate. In the female, retained eggs can pose a health issue and can range from lameness to respiratory disease.

Fluid balance can be maintained by placing in a small shallow tray with Hartmann's solution which is the best and non-invasive method of introducing fluids. Invasive methods could be in the form of injection into the pre-femoral fossa with care to avoid the bladder. Subcutaneous injections are generally unsuitable for reptiles and chelonians. The use of a feeding tube in the GI tract usually proves useful with considerations to the renal portal system.

## Ultrasound use

The webinar gives a very brief cover of the use of ultrasound as an aid for examination especially if the chelonian appears to be egg bound. The method typically involves approaching the pre femoral fossae or the pre-humeral fossae and fills these areas with ultrasound gel. Alternatively dunking the back end of the tortoise can be done.

## Radiography

Typically radiography for chelonians involves practitioners simply laying a tortoise flat on a plate and taking a dorsal ventral view, but this is not the best method of gaining a clear image for assessment purpose. The best way to gain a good image for assessment is by using horizontal beam radiography, although this is not without its concerns for health

and safety so the radiation protection supervisor will need to be informed. The horizontal view is done by placing on a box (suitable for purpose) and taking a side view horizontally. This will give clear images of lung tissue and egg movements. The cranial caudal view is similar to the above but from the front of the tortoise and this will show images of the mediastinum and the two lung fields, which is perfect for examination. The temptation to place the tortoise on its side should be avoided as gravity could move the viscera to one side and results in unclear images.

## Feeding tubes

Feeding tubes are often difficult to place. It is recommended that a soft plastic tube is used; a urinary catheter cut to size is appropriate. The length should be measured by half the length of the plastron before placing into oesophagus. The method should be angling the tortoise into position and gripping the head just behind the ears with care not to apply too much pressure. The thumb and forefinger

can be used to open with constant traction by lowering the jaw. The parts between two beaks tend not to be sharp and should be safe for those up to 1 kg. They do not have a hard palate. Regurgitation is common and this is due to the oesophagus being so big and not enough time to absorb the fluids. Matthew recommends holding the tortoise at an angle for 5 minutes for those up to 1 kg. Adding 5 minutes for every kg after this to allow the contents to drain into the stomach effectively. Care should be exercised with larger tortoises to prevent inhalation pneumonia.

Take home messages

1. Not all species of chelonian are the same. Some are soft shelled and some bite!
2. Some species are covered by CITES regulations and have a requirement to be microchipped; this is generally found in the left hind leg.
3. Metabolic bone disease is commonly associated with poor husbandry and

4. Retained eggs can pose a problem with females so correctly sexing when examining will prove useful.
5. Facilities such as ultrasound and radiography used the correct way could promote good clear images to aid diagnosis.
6. Feeding tube placement doesn't have to be difficult but with patience and correct placement, could prove useful for hydration and introducing medication where necessary.

## Reflection

Nursing principles based on Matthew's advice and experience shows that anatomical understanding will aid correct handling and also extend to clinical assessment of various species. In terms of training, the tips given will prove useful to gain a better outcome for diagnosis purposes and also offer successful outcomes for nursing such patients.



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