

I do not generally post advertisements of any sort on my website. But I wanted you to know that this service exists. Many people have already developed close personal relationships with their local veterinarian or live in places where zoologically-trained veterinarians do not exist. With expert guidance from a veterinary zoo specialist, your veterinarian might be perfectly capable of delivering the care that your animal requires. I have no business relationship with Idexx. I do not know their zoological specialists personally and Idexx did not solicit this display. I believe that only your veterinarian can request these consultations. R.S.H.



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Small Animal Health



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July 27, 2016

[IDEXX Telemedicine Consultants](#)

[Meet Our Exotic Animal Specialists](#)

Ryan S. DeVoe, DVM, MSpVM, DACZM, DABVP (Avian), DABVP
(Reptile/Amphibian)

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[Managing exotic animals in everyday practice](#)

Rabbits, ferrets, guinea pigs, cockatoos, macaws, cockatiels, turtles, snakes, lizards, koi carp! Exotic species of all kinds present in general practice. Don't be scared off by their varied anatomies of exotic animals or the challenges of appreciating their clinical conditions.

There is a lot you can do before resorting to referral. Use your existing radiology and sonography equipment to establish an exotic pet service right in your practice. Doing so can create a profit center that's currently slipping through your fingers or flying out the door. Start with these species-specific recommendations for submitting radiographs and cases

[Tip](#)

Before you refer exotic animals, talk to IDEXX Telemedicine Consultants. Our team of board-certified zoological medicine specialists are available to consult with you on radiographs, sonograms, CT/MRI studies, case

photographs, and general exotic animal cases. Submit cases online at vetmedstat.com.

Live Webinar

Mark your calendars for Dr. Stephen Divers' live webinar on exotic animal radiology. You'll learn how to get the best diagnostic films of common exotic pets including birds, reptiles, and small mammals. Dr. Divers will help you avoid common radiology errors and identify common disease issues in these animals.

Dates and Time:

Monday, August 8, 2016

3:00 p.m. ET

Monday, August 9, 2016

12:00 p.m. ET

August is fast approaching. Choose your day and time, and register today !

Managing exotic animals in everyday practice

Species vary. That's why the information you need to provide when you submit cases or radiographs for exotic animals varies, too. Use the following guidance to ensure timely, detailed, and accurate interpretations of your cases and films. Complete submissions also facilitate recommendations for case management, including additional diagnostics and treatment.

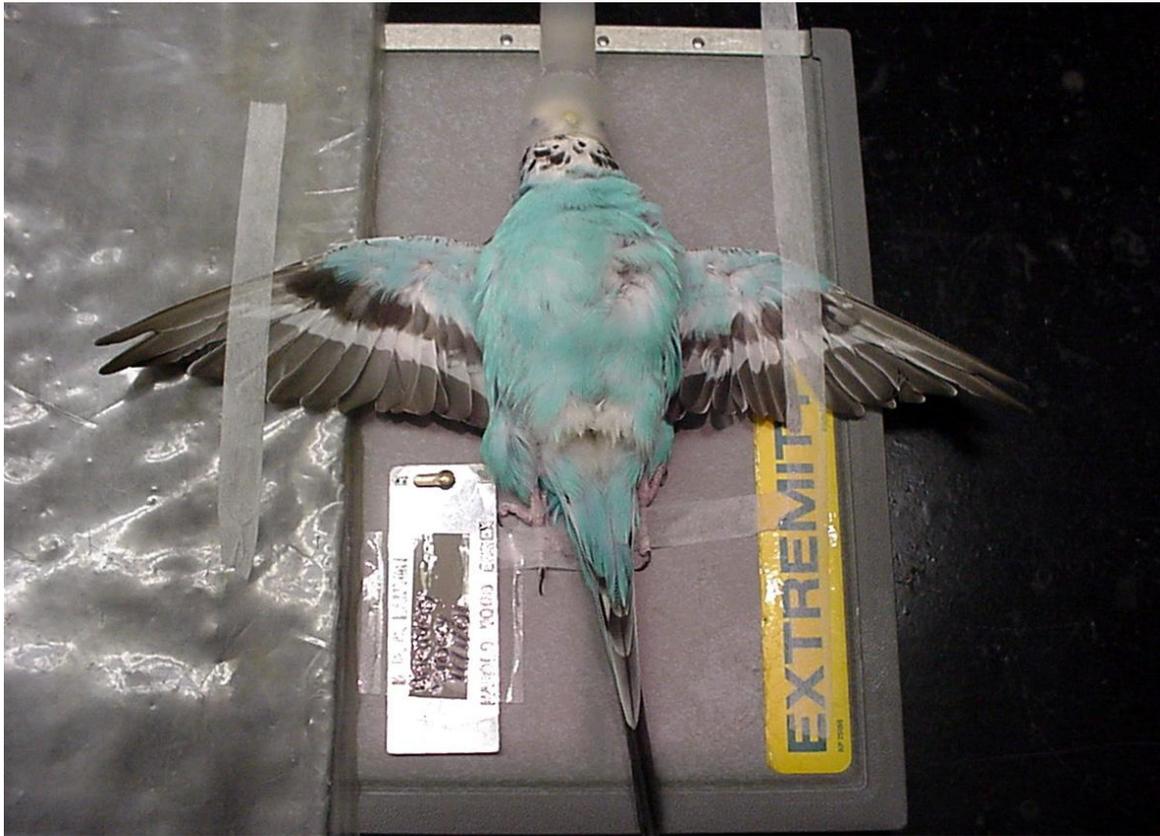
Practice tip—Don't wait! If a rabbit looks a little off, or a bird appears a little fluffed, it's time to use your diagnostics. Sending the animal home on a course of enrofloxacin is rarely beneficial and is not recommended. The longer you wait, the greater the chances that the animal will deteriorate and make investigation even riskier.

Choose a topic and a species for specific guidance.

History

Many exotic animal conditions are directly or indirectly related to the species, husbandry, or nutrition. A detailed history can often help the practitioner identify potential issues and even indicate potential differential diagnoses. The following questions should be considered when taking the history of an exotic animal. Indicate any abnormalities in the Succinct

history section of your submission form to IDEXX Telemedicine Consultants.



Birds

Common or scientific species name

Age

Sex (and how determined)

Origin (captive bred, wild-caught import, unknown)

Does this bird have a reproductive history?

When did the bird last molt?

Are there other animals/species in the same environment?

Has this bird been in contact with other birds in the last 30 days?

When was the last bird added to the collection and was there any quarantine?

Clinical signs/problem (including any changes in behavior, appetite, droppings, etc.)?

What health problems has the bird had previously?

Has the bird received any treatment in the last 30 days? If yes, please give details and response.

How often is the bird fed?

What foods are provided (manufacturer or type)? What is actually eaten?

Are any nutritional supplements used?
What water supply is used (tap, bottled, rain/river)?
How is water provided?
How often is the water changed? Are any in-water supplements used?
Where is the bird's enclosure located inside the home?
What is the cage made of?
What kind of bedding is used?
What décor and furnishings are present?
Are bathing/spraying facilities provided?
How often is the cage cleaned and what products are used?
What percentage of time does the bird spend inside and outside the cage?
Does the bird have regular exposure to sunlight or artificial broad-spectrum lighting (bulb manufacturer and wattage)?
What is the bird's day/night photoperiod?
Does anyone in the household smoke?
Have there been changes in the bird's environment in the last 3 months?

Exotic mammals (rabbits, ferrets, rodents, primates)

Common or scientific species name
Age
Sex
Origin (captive bred, wild-caught import, unknown)
Is the animal vaccinated?
If a primate, has it been tuberculosis (TB) tested? When?
Are there any other animals in the same environment?
What and when was the last animal added to the household/collection?
Has this animal had contact with any other animals in the last 30 days?
Where is the cage located?
What percentage of time does the animal spend in the cage?
What is the cage made of?
Have there been any changes in the environment in the last 3 months?
What décor and furnishings are present in the cage?
What cage bedding is used?
What is the animal's day and night cycle?
Are there any smokers in the house?
How often is the cage cleaned and what products are used?
How often do you feed the animal?
What food items are offered and what is actually eaten?
Are any nutritional supplements used?
What water supply is provided (tap, bottled, rain/river)?
How is water provided?
How often is the water changed?
Are any in-water supplements used?
Clinical signs/problem (including changes in behavior, food/water consumption, feces/urine output)?

Has this animal had previous health problems?

Have any other animals or persons in the household had any illness within the last 30 days?

Has this animal received any medications in the last 3 months (including heartworm medication, dewormer, flea treatments, etc.)?



Reptiles and amphibians

Common or scientific species name

Age

Sex (M/F/U)

Origin (captive bred, wild-caught import)

Does the animal have a reproductive history?

When did the animal last shed its skin? How often does it shed?

Are there any other animals in the same environment?

Has there been any contact with other animals in the last 30 days?

When was the last animal added to the collection?

Clinical signs/problem (including changes in behavior, food/water consumption, fecal/urine output)?

What health problems has the animal had previously?

Has the animal received any treatment in the last 30 days? If yes, give drug, dose, and response.

Have any other animals or persons in the household had any illness in the last 30 days?

Describe the caging used (type, size, construction material)

What is the floor substrate?
What décor and furnishings are present?
Are bathing facilities provided?
How often is the cage cleaned and what products are used?
What heating equipment is used and are they screened from the animal?
What day and night air and basking temperatures are provided?
Is additional lighting provided (type, manufacturer)?
When was the bulb last replaced?
What is the animal's day/night cycle?
Is there access to direct sunlight (not through glass or plastic)?
If yes, how many hours per day or per week? What is the humidity in the cage?
Does anyone in the household smoke?
Have there been changes in the reptile's environment in the last 3 months?
How often is the animal fed?
What foods are provided and what is actually eaten?
Are nutritional supplements (manufacturer, frequency, and amount)?
What water supply is provided (tap, bottled, rain/river)?
How is water provided?
How often is the water changed? Are any in-water supplements used?

Clinicopathology

Routine hematology and biochemistry are often great sources of information. Include any abnormal results when you submit a case for consultation. (Results for tests performed at IDEXX Reference Laboratories are not automatically visible to the telemedicine consultants.)
In general, EDTA is the preferred anticoagulant for hematology for mammals, most birds, and reptiles.
Lithium heparin is preferred for sensitive species of birds (corvids, ravens, cranes, ostrich, hornbills) and reptiles (chelonians).
Plasma or heparin plasma can be submitted for biochemical testing.
Request uric acid in addition to urea for birds and reptiles. In many cases, brief anesthesia facilitates blood collection.

Radiography

When obtaining diagnostic films, keep this tip in mind:

Plane 1, light anesthesia greatly facilitates appropriate positioning for radiography ([register for our upcoming webinar for details](#)).

Straight positioning is essential. Even a slight rotation can result in lesions being missed or normal variance being misinterpreted as significant. Always use a L or R marker.

At least two orthogonal views are required for submission. A single view only gives you half the story.

Correct exposure is critical. Poor exposure should be corrected even if it takes 4 or 5 attempts to get the animal positioned correctly and expose films. Record all information related to positioning in a log. This will help you build a list of techniques for future use.

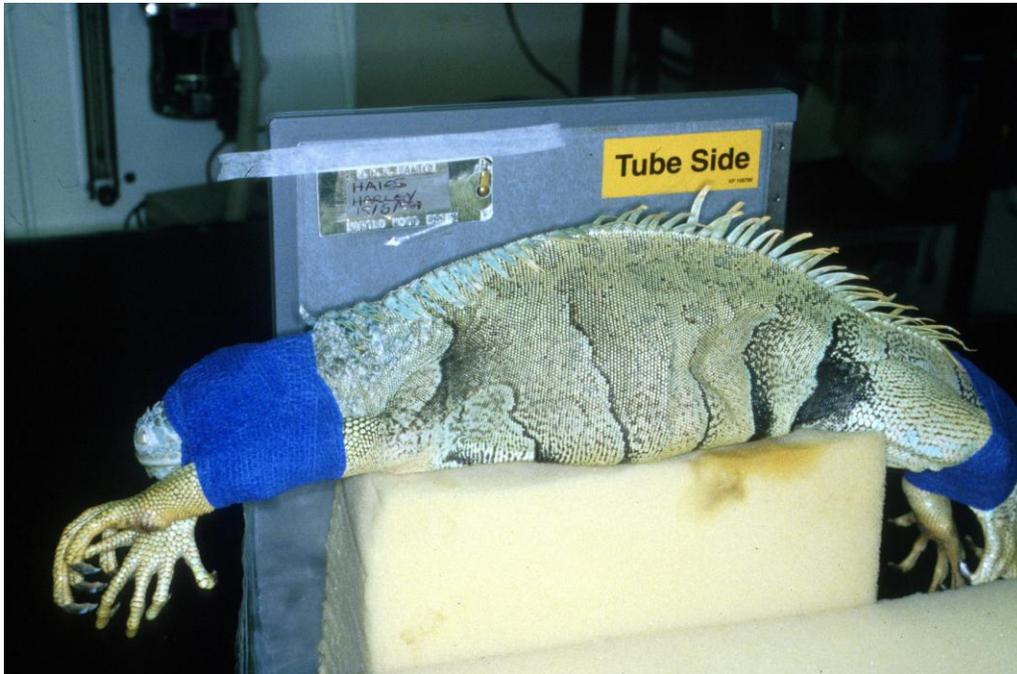


Birds

With the exception of fluoroscopy, adequate and precise restraint is vital for high quality radiographs. Radiographs taken from poorly restrained, conscious birds are invariably inferior. Birds should not be manually restrained for radiography.

There are a number of physical restraint devices that can be used to secure conscious but sedated birds for radiography. However, isoflurane anesthesia is probably more commonly used to ensure perfect positioning, reduce movement artifact, and facilitate ventilation to increase air sac size and contrast.

Two orthogonal views are always required for whole body surveys. Ventrodorsal and lateral views are standard. The ventrodorsal view is achieved with the bird in dorsal recumbency. The head is secured using tape, followed by the wings, and finally the feet are secured caudad. For the lateral view, position the bird in right lateral recumbency, with the head secured, followed by the wings taped dorsad over the body, and the feet taped as caudad as possible. In some birds, the wings cannot be easily folded over the back and a foam insert should be positioned between the wings. It is not advisable to fold the wings dorsally if there are any wing fractures palpable or visible on the VD view. Care must be taken to minimize damage to the feathers by parting wing feathers prior to taping. The ends of the tape should be folded on themselves to allow for quick removal of the tape after the radiographic examination is completed.



Reptiles

Radiographs taken of conscious reptiles secured inside bags on plastic boxes are rarely diagnostic unless merely looking for an egg or large bladder stone.

In general, sedation/anesthesia facilitates the best films. Small lizards and snakes can be masked-down or better still induced in a small induction chamber (e.g., sealed, reusable zipper storage bag) using inhalant (5% isoflurane or 8% sevoflurane) in oxygen. It is very difficult to overdose a reptile with inhalant unless it is intubated and manually ventilated. Upon

removal from the induction chamber, this technique provides around 2–5 minutes of restraint.

Chelonians cannot be induced using inhalants, and in these animals deep IM injection using ketamine (20mg/kg), dexmedetomidine (50ug/kg) +/- hydromorphone (0.5mg/kg) generally results in deep sedation/light anesthesia in 20–40 minutes. These animals should be reversed using atipamezole (500ug/kg IM).



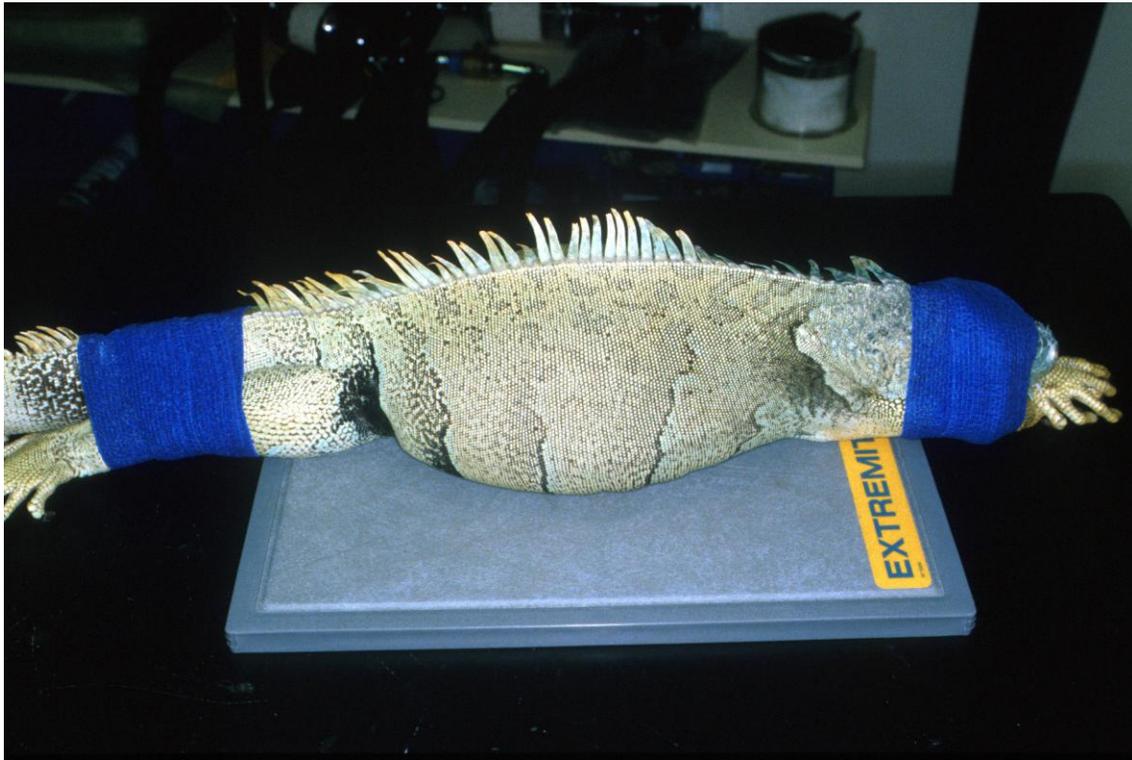
Snakes. Standard views: lateral (horizontal beam preferred) and dorsoventral. Snakes can be difficult to position and restrain for radiographic examinations unless anesthetized.

If the purpose of the examination is simply to rule out radiodense foreign bodies, the snake may be allowed to coil in its natural position while the radiograph is taken. If detailed examination of the skeletal, respiratory, and digestive system is desired, the snake must be extended.

In larger snakes, several films will be needed to radiograph the entire length of the body. It is important to properly label each exposure in order to keep track of all the different views.

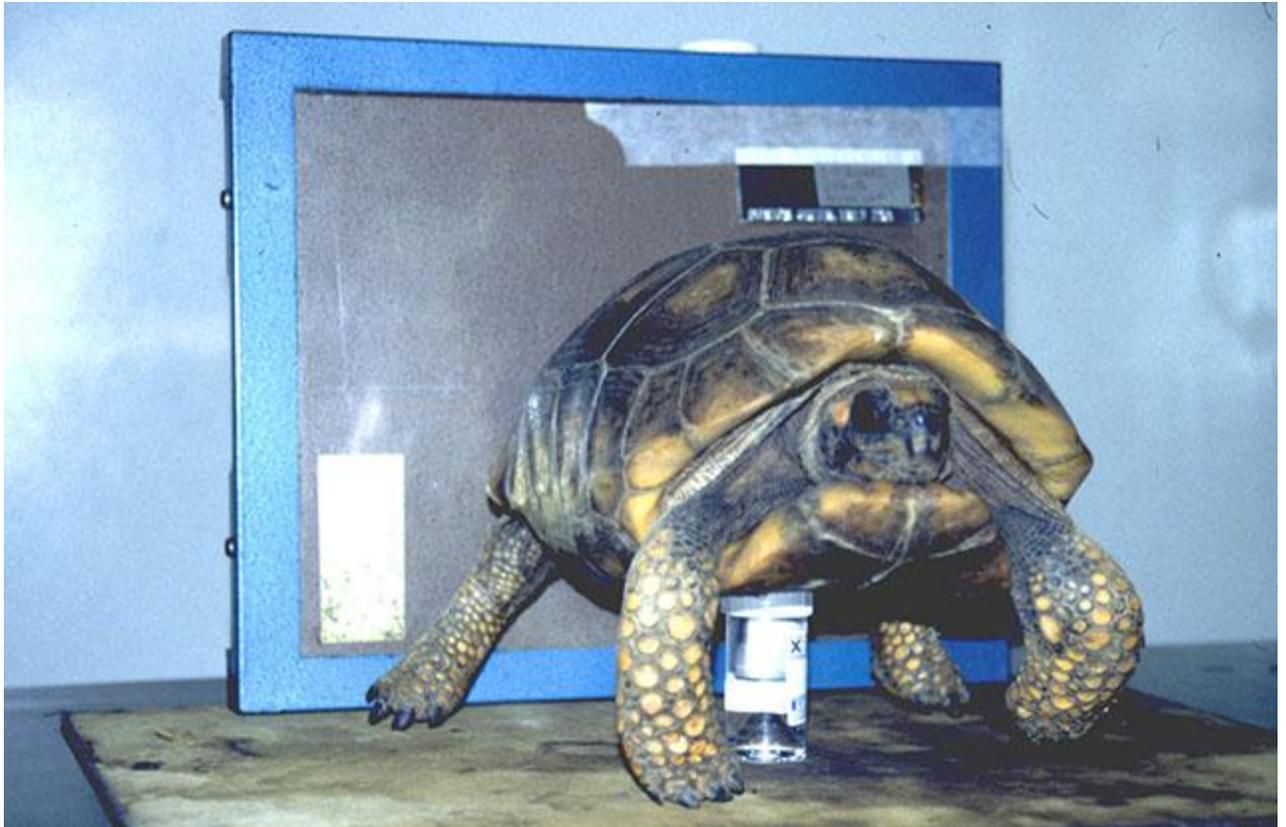
Lateral views are best taken using horizontal beams to avoid displacement artifact of the viscera. However, standard laterals with the snake taped in

lateral recumbency can be useful especially where horizontal beams are not possible or safe to undertake.



Lizards. Standard views: lateral (horizontal beam preferred) and dorsoventral. Small lizards can often be restrained by taping them to the radiography film or table for a dorsoventral view. Placing cotton balls over the eyes, and wrapping them with self-adhesive veterinary medical fabric will often produce a calm, motionless lizard (vasovagal response). A dorsoventral view can be helpful to identify foreign bodies, intestinal impaction, or coelomic masses.

A horizontal x-ray beam provides the best lateral imaging in lizards, especially when evaluating the respiratory system. Elevating the body of the lizard on rolled towels or foam pads helps to prevent superimposition of the limbs with the coelomic cavity. Alternatively, the forelimbs should be taped cranial to the head, and the pelvic limbs taped caudal to the tail base. The positioning for, and interpretation of, crocodylian radiographs are similar to those employed for lizards.



Turtles and tortoises. Standard views: lateral (horizontal beam preferred), craniocaudal (horizontal beam preferred), and dorsoventral.

For vertical beam dorsoventral radiographs, most conscious individuals will remain motionless long enough to permit exposure. Ideally, the head and limbs should be extended from the shell in order to reduce superimposition of the limb musculature on the coelomic viscera.

More active animals can be restrained by taping them to the cassette or by placing them in a radiolucent container, although this should be avoided particularly with smaller specimens (and lower exposures), as material artifacts may appear on the films.

For lateral horizontal beam radiographs, the chelonian is best placed on a central plastron stand. By lifting the animal clear of the ground, the limbs and head will be encouraged to extend, but the tortoise will remain immobile. Both left and right lateral projections should be taken with the lateral edge of the shell touching (or as close as possible to) the cassette. The third basic coelomic view is the horizontal craniocaudal (or anterior-posterior) view. Again, the chelonian is positioned on a central plastron stand, with the caudal edge of the carapace touching (or as close as possible to) the cassette, with the head facing the x-ray tube and the beam centered on the midline of the cranial rim of the carapace.

Radiology of the head and limbs will require their exteriorization from the shell and this will usually require general anesthesia. The use of sandbags,

foam, and tape will aid positioning. Standard interpretation requires that both true lateral and dorsoventral views should be taken—even slight rotation makes interpretation difficult.

Small mammals

Radiographs taken from poorly restrained, conscious mammals are invariably inferior. Small mammals should generally not be manually restrained for radiography.

Sedation can be achieved using midazolam (0.5–2mg/kg) and butorphanol (0.1–0.5mg/kg), but if inadequate, low-dose ketamine (2–5 mg/kg) or inhalant gas (isoflurane or sevoflurane) can be used to ensure complete relaxation and perfect positioning.

Two orthogonal views are always required. For skull/dental evaluations, left and right straight laterals, left and right open mouth obliques, VD, and DV views are preferred (with any face mask temporarily removed to avoid any artifact).

For animals over 2 kg, it is preferable not to perform a whole body radiograph but rather divide into thorax and abdomen, and select the ideal exposure/technique for each region separately. Otherwise, the thorax is often over-exposed. Likewise, the spine is best evaluated using a series of collimated views restricted to the central part of the plate.

Whole-body radiographs that are used for spinal evaluation suffer from beam divergence and reduced sensitivity.