



# Brighton Veterinary Surgery

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## AUSTRALIAN FRESHWATER TURTLE CARE

For more information about turtle care, we recommend the book "A Guide to... Australian Turtles in Captivity", and "A Guide to... Health and Disease in Reptiles and Amphibians".

### HEATING

*All physiological functions in reptiles rely on heat.* This includes appetite, activity levels, immune function, reproductive function and digestion.

Water should be heated to **23-25C** 24hr a day, 365 days a year (cooler is better than warmer than this). Measure water and basking zone with a thermometer.

As a general rule, 1 Watt will heat 1L of water.

A 2 foot tank is 68L, a 4 foot tank is 220L.

Basking site available +/- hide if small / shy. Temp at **dry dock 28-33C** provided with a heat lamp that is on during the day (8-12 hr/day), all year round. Swamp basking spot lights work well in high humidity enclosures eg for turtles.

Cooling reptiles during the winter months is not recommended, as it often leads to prolonged cooling which may induce immunosuppression, and lead to disease.

*Never* used electrically heated "hot rocks", as these can lead to very serious thermal burns. Reptiles have evolved to absorb radiant heat from above (eg the sun), therefore are darker on top and lighter under their belly – they have very poor heat and pain receptors under their belly so can sit and burn themselves without knowing.

*Enclosure temperatures should be measured daily to ensure the appropriate thermal gradient is provided. Some thermostats have 2 probes which records the hottest and coolest temperatures over the last 24 hours, these are ideal. And with all electrical devices, thermostats can malfunction – so a separate thermometer is recommended to ensure that the temperature readings on the thermostat are accurate.*

### UVB LIGHT

There is no substitute for direct access to real, unfiltered sunlight. We encourage taking your reptile outside for supervised access to the sun for 20-30 minutes 3-7 times weekly.

Ensure that shade is provided in order to avoid over-heating. UVB is essential for calcium metabolism to form Vitamin D3, to ensure normal growth and calcium metabolism, and is important for skeletal health, muscle health and for digestion and to prevent common diseases such as Metabolic Bone Disease.

You must provide your reptile with access to artificial UVB with a UVB globe during daylight hours, all year round. It is important to note that UVB light itself, is invisible, for this reason it is recommended to change the UVB globe every 6 months – even if it is still giving off visible light. An alternative option is to purchase your own UVB reader to ensure that output is adequate at the time of purchase and for the lifespan of the globe.

UVB doesn't travel through glass, perspex etc. so ensure nothing is in between your UV globe and your reptile – this means that the reptile gets no functional UV from sunlight through a window or through the walls of a tank. For the globe to be effective, it needs to be placed within 30-40cm from your reptile. Even wire mesh can reduce UVB by 10-50% (black mesh less than silver).

### WATER QUALITY/ FILTRATION

An external canister filter is essential. Internal filters are not efficient enough due to the amount of waste that turtles produce (e.g. compared with many fish species).

Filter needs to have capacity to circulate water volume of tank 3-4 times per hour: **Length (m) x width (m) x height = volume (L)**

Clean filter with water from the tank (not with tap water) - filter media doesn't need to be spotless! Never scrub the filter.

The cycling tank relies on denitrifying bacteria in the filter to convert dangerous nitrogenous waste (ammonia) into less toxic by products (nitrites and nitrates). \*Clear water means nothing.\*

Clean filter at a separate time to performing a water change. It can take 6 weeks to get tank to start cycling, so plan ahead, adding plants and fish gradually over this period.

WQT should be performed 2-3 times a week during this time.

Water quality testing can be performed locally at Smith's Aquarium, and water changes are decided depending on results. Water quality testing should be carried out weekly, and the below ranges apply. pH 7-8

Ammonia NH<sub>3</sub> (TOXIC) 0ppm

Nitrites NO<sub>2</sub> (0-0.2ppm)

Nitrates NO<sub>3</sub> (0-22ppm)

Water changes should aim to replace about 10-20% of the water every 1-2 weeks. Do not drain the tank and scrub clean. Scrubbing or removing too much water will reduce vital bacteria, removing less may not remove adequate waste products. Can use buckets or a siphon to remove amount of water required.

New water should be pH tested and adjusted prior to adding to tank. Can use "Prime" for this. Calcium carbonate that is added to the diet may increase water pH (eg make it more basic). Dechlorinate all incoming water (can use a product designed for this, or let water sit for 3 days outside before use).

### SUBSTRATE

There are pros and cons for all types of substrates. (Sand (3-5cm deep) vs. gravel vs. river rocks etc). The smaller the particle, the higher the surface area to grow important denitrifying bacteria. The smaller the particle the more easily it can be ingested.

Clean the substrate with a siphon and clean 10-20% of substrate per week to maintain essential bacteria. Clean a different area each week.

### TANK FURNITURE

Ideally you should house your turtle in the biggest aquarium you can afford - when they are small, a smaller enclosure may be required to help with thermoregulation (maintaining body temperature). When turtles reach adulthood, a 6-8 foot tank is needed.

The tank should 3/4 full with water. Turtles are escape artists! Please ensure there is no opportunity to climb and escape. Turtles will eat anything and have been known to ingest fake plants, docks, ornaments, suction caps and thermometer probes - ensure that all furniture cannot be eaten.

Provide hiding areas (especially when small as sometimes are very shy) - this can be provided up on the dry dock, below the heat light. Provide live plants - elodea, thin or thick vallisneria.

We recommend keeping pet freshwater turtles individually, as in the wild they are solitary animals and only come together to share resources, eg at times of reproduction. Australian Freshwater Turtles housed together are at risk of life-threatening injuries due to fighting, even in pairs or groups that have "always got along well".

### FEEDING

Turtles can only eat in the water. Consider a separate tank for feeding if you are worried about water quality.

There is no perfect captive turtle diet, and although commercial diets are available, use these sparingly - eg frozen turtle blocks, pellets for aquatic turtles, dried products e.g. brine shrimp. Dietary supplementation may be required. If feeding turtle blocks, use calcium dust on blocks 5/7 times and a multivitamin supplement (eg Wombaroo Reptile Supplement) once a week.

Variety is the key! You can try to incorporate a range of foods like marinara mix, fish, insects, earthworms.

**Do not feed:** mince, meat, dog and cat food, and avoid feeding the same thing every day.

Avoid over feeding. Adults should be fed 2-3 times per week (every 3-4 days). Young turtles may be fed once a day most days of the week.

**Long-necked turtles are carnivores** (fish, insects, earthworms, snails, crickets, blood worms, crustaceans - crayfish, brine shrimp.)

**Short-necked turtles are omnivores.** (edible aquarium plants (thin vallisneria, elodea), dark, leafy greens/ vegetables, spinach, parsley, cabbage, broccoli, pumpkin, plus food as per carnivores (above).)

When live insects are provided, it is essential that they are dusted in calcium immediately prior to feeding and limiting the number fed to 3-6 insects – this helps to avoid overfeeding, avoids chitin (exoskeleton) obstruction, and kidney damage from high protein meals. Mealworms are a treat food only – limit feeding mealworms to keep the liver happy, and to prevent obesity. Earthworms are a much more nutritious treat.

(N.B Always count how many insects are given, to ensure that none remain in the enclosure, as these can cause wounds to your pet. Never leave a debilitated reptile alone with live insects or worms.)

#### CALCIUM SUPPLEMENTATION

UVB is absorbed through the skin and works with calcium in the diet to build a healthy and strong skeleton. So that the UVB can do the best job possible it is important that all live insects and salad are dusted with calcium carbonate dust (without phosphorous or Vitamin D) *immediately* prior to feeding (crickets clean off calcium within 18 seconds!). Insects have an upside down calcium: phosphorous ratio, so dusting them with calcium carbonate powder helps to correct this ratio so that the turtle's diet is balanced. We recommend feeding insects Wombaroo Insect Booster to ensure they contain vital minerals and vitamins. Wombaroo also manufactures a "Reptile Supplement" that we use in our reptiles once a week.

#### HYGIENE:

F10 (strength 1:500) is a hospital and reptile grade disinfectant and is what we recommend for your pet at home to kill bacteria, fungus and viruses.

Always remember to wash hands with hot soapy water after touching reptiles, enclosure or equipment. Salmonella is an organism carried by reptiles, which can cause disease in humans. (diarrhoea fever cramps and can occasionally be fatal).

For this reason it is important not to have the turtle in the kitchen, sink, food prep areas, and to take care when children share the household with your reptile. Immunocompromised people should avoid handling reptiles. Healthy reptiles are less likely to shed salmonella. We recommend a general health check every 6-12 months.

Reptiles, especially turtles are very good at hiding their disease and are masters at hiding pain. It is important to weigh your turtle regularly - e.g. on a weekly basis while young, and adults can be weighed monthly. Weigh on digital kitchen scales - used specifically for the turtle, not in the kitchen.

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