

Hibernation Information Booklet



Hibernation Information



Hibernation is a worrying time of year for most tortoise owners, so we hope that this guide will help to clear up some of the myths and answer some of the questions that you may have. If followed correctly, this guide should provide you with a successful hibernation technique and also take away the worry and stress that surrounds hibernation. Our guide will discuss what hibernation is, good health and good preparation and why it is beneficial for your tortoise.

Planned preparation is absolutely fundamental to a good, successful hibernation. Unfortunately, an ill or deceased tortoise coming out of hibernation can be the result of a lack of knowledge during preparation, inadequate housing or inappropriate temperature control over the hibernating period.

Hibernation is an important part of natural behaviour for tortoises in the wild so if you have a hibernating species then it is essential for good health, long life and successful breeding that you allow this natural process.

What is hibernation?

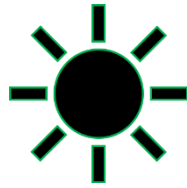


Tortoises are cold blooded (poikilothermic) and so in the wild, when the summer is over, and the winter months are drawing closer they begin a wind down process to cope with the drop in temperatures.

The metabolic activity of a hibernating tortoise is extremely low as they 'sleep', during the hibernating period their brain is not active, and noise or movement will not easily wake a hibernating tortoise.

Hibernating breeds of tortoises are inset with the need to hibernate. It is naturally in their biology and forms part of their essential yearly cycle.

What is aestivation?



Aestivation and winter hibernation work on the same principles regarding temperatures but are at extreme ends of the spectrum and it is important not to get them confused. Aestivation is hibernation due to high temperatures. Winter hibernation is due to low temperatures.

Several reasons for aestivation can include excessively high temperatures, warm rain-free summers or lack of food and water can also induce aestivation.

During aestivation in the wild, tortoises will bury themselves below ground where the temperatures are much lower, and the relative humidity is higher. This minimal activity reduces the requirements of eating and drinking.

Is my tortoise a hibernating species?



It is extremely important that you know the species or sub-species of the tortoise that you own and therefore if they would naturally hibernate in the wild or not. If you have a hibernating species, then it is fundamental to their ongoing health that you allow them to do this. However, you must not hibernate a non-hibernating species as this is not their natural behaviour and will most certainly end in fatality for the tortoise.

Generally, you will find that the tropical species do not hibernate through the winter months, but the Horsfields and Mediterranean species do.

Below is a list of the most commonly available species in the UK:

Hibernating Species

Horsfields Tortoise - *Agrionemys Horsfieldii*

Hermanns Tortoise - *Testudo Hermannii*

Marginated Tortoise - *Testudo Marginata*

Spur-thighed Tortoise - *Testudo Graeca*

Non-Hibernating Species

Leopard Tortoise - Geochelone Paradis

Sulcata Tortoise - Geochelone Sulcata

Indian Star Tortoise - Geochelone Elegans

Red footed Tortoise - Geochelone Carbonaria

What are the benefits of hibernating my tortoise?



The tortoise species that hibernate do this for health benefits. Hibernation is a natural behaviour in the wild for these tortoises and forms part of their essential yearly routine. Hibernation has many benefits for your tortoise such as increasing their lifespan and actively promotes more readily successful breeding behaviours.

One of the more essential health benefits of hibernation is that your tortoise will not be over fed. If your tortoise does not hibernate and therefore stays awake for 365 days of the year it means that they are being overfed and will become overweight which could lead to other health problems in later life.

Tortoises that are overfed due to the increase in food intake over the winter period will grow unhealthily and too quickly. This may lead to the development of metabolic bone disease which in turn can lead to abnormal growth of their shell.

Is my tortoise old enough to hibernate?



We recommend that no matter how old your tortoise is, you do not hibernate over the first winter of ownership. The exception to this is if you have acquired an older more mature tortoise that has a history of a good hibernating routine then it is essential to uphold this. Should you choose to hibernate your tortoise as a hatchling or within the first two years, we recommend that you only hibernate for a very short period of time.

Although, in the wild tortoises would normally hibernate from their first year as hatchlings, we do not recommend doing this for beginners as it is such a delicate age. You can instead overwinter your tortoise.

Overwintering your tortoise creates an artificial summer environment throughout the winter months. This includes providing heat, light and food the same as you would do throughout the rest of the year.

Is my tortoise in good health to hibernate?



If your tortoise has shown any signs of illness or been injured in the weeks leading up to hibernation, then you may need to reconsider whether it's a good idea to hibernate or if overwintering is the better option.

The main factors you should consider are whether your tortoise is healthy enough to hibernate, in being fit and healthy with no sign of illness, injury or disease.

Here is a general health checklist to take into account;

- ⇒ Has your tortoise had a good appetite and been eating well? y/n
- ⇒ Are their ears flat and free from discharge? y/n
(Tortoises don't have external ears but have an eardrum that is hidden under a scale between their eyes and neck, this is usually a slightly darker colour)
- ⇒ Are your tortoises' eyes nice and bright with no discharge or swelling? y/n
- ⇒ Is your tortoise free from external (visual) injuries, parasites or swellings? y/n
- ⇒ Does your tortoise have a clear, dry nose and is able to breathe freely with no wheezing? y/n
- ⇒ Does your tortoises' faeces look normal, solid and moist but free from slime or diarrhoea? y/n
- ⇒ Is your tortoises mouth a nice healthy colour with no spots, discharge or discolouration? y/n

If you have answered 'yes' to all of the questions listed, then it would be deemed safe to hibernate your tortoise. Should you answer 'no' to some or all of the questions, please contact us for advice or seek an appropriate reptile veterinary for advice before hibernation.

Any tortoise that shows signs of illness, injury or disease must not be hibernated under any circumstances as this will most certainly end in death for the tortoise.

How do I prepare my tortoise for a safe hibernation?



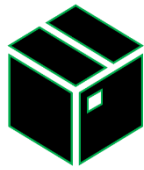
Preparation for hibernation is the most vital part of the process to get correct, good preparation leads to good hibernation!

Approximately 6 weeks before hibernation, you will need to start reducing the amount of food you are offering your tortoise but feed more often, so little and often for roughly 2 weeks. Fresh drinking water must still be available daily as well as continuing to bath your tortoise several times a week as you would do usually.

Approximately 4 weeks before hibernation, you will need to stop offering any food to your tortoise however fresh drinking water must still be available daily. This is an ideal time to worm your tortoise using a good quality wormer such as 'Kusuri Tortoise Wormer Plus' as this will ensure your tortoise is in full health. At this stage you should now be slowly reducing the temperature and the number of daylight/basking hours should be reduced each day all the way up to hibernation day.

During the last 4 weeks of preparation, although your tortoise is not eating, they will need a warm bath every day to ensure that they have a full bladder and an empty gut. This is very important to ensure the health of your tortoise during hibernation. Your tortoise should not have passed any faeces for 7 days prior to going into hibernation.

Which technique do you recommend for hibernation?



There are three main techniques for hibernating your tortoise, the box method, the fridge method and the natural method. Our preferred and recommended technique is the box method, and this is how we hibernate our own tortoises.

The Box Method

The basic idea of the box method involves placing your tortoise in a suitable box and locating a good safe place with an appropriate environment.

To box up your tortoise, use a plastic tub with a securely fitting lid (similar to a 'tupperware' type box) that your tortoise can fit in comfortably with space around it but not so large that it is more than four times larger than the tortoise itself. This must have several air holes in, we advise using a substrate that is moist but not wet, e.g. coco coir and fill to approximately half way. Place your tortoise inside this box and close the lid firmly. Your tortoise will still be awake at this point, however if it is still quite active, extend the preparation period further for one week.

There are several options now, you can use a larger card board box as the last outer layer and pack it with insulation such as shredded paper or environmentally friendly polystyrene chips. We prefer to use a polystyrene box (similar to that used in the transportation of fish) as a middle layer because this is a solid insulated layer and adds an extra layer of protection too.

The tortoise container should now be placed in the cardboard box with insulation or the polystyrene box, ensuring there are adequate air holes in your chosen box. If you are using a polystyrene box, we now recommend that you use a wooden outer box as the final layer. This box must be solid, have appropriate air holes and have secure fastenings such as metal clips.

Whichever type of box you decide to use it is very important that you are able to monitor the temperature inside the box and the outer environment also. You can achieve this by using a digital thermometer that has two probes, placing one inside the box close to the one containing the tortoise and one on the outside of the outer box. The digital display must be visible so that you can do a daily temperature check without disturbing your tortoise.

The hibernation box can now be placed in an appropriate location such as a utility room, garden shed or garage. This location must be free from predators and extreme temperature fluctuations such as heat or frost.



What temperature range should I keep my tortoise within to hibernate safely?



The ideal temperature for hibernating your tortoise is between 3°C and 7°C. The temperature must remain fairly constant and not fluctuate above or below this. This will ensure that your tortoise's metabolism stays at a stable level and therefore will not lose weight because it is burning off calories unnecessarily.

How long should I hibernate my tortoise for?



Regardless of the age of your tortoise, if it is the first time that they have been hibernated we would suggest only a short period of approximately 3-4 weeks and increase this time, year on year. Specifically, tortoises that are under 2 years old, if you choose to do so, should only be hibernated for this short period.

From 3 years old, increase the time that you hibernate your tortoise by 2-3 weeks each year until you reach a maximum of 16 weeks. It is not recommended to hibernate your tortoise for longer than a 16-week period at any age.

How do I wake up my tortoise?



Your tortoise may wake up itself or it may need a little encouragement. When it's time to wake your tortoise from hibernation you will need to slowly raise the temperature to allow your tortoise's metabolism to adapt. Remove any outer boxes and place the box that contains your tortoise at room temperature for around 2 days, this will allow a slow increase in temperature. As your tortoise wakes up, carry out some basic health checks such as those that you did before hibernation.

After a warm bath, your tortoise can now be placed back in the indoor housing unit, such as a tortoise table and the basking lamp and/or UV lights can be turned on to increase the temperature further. After an hour or so your tortoise should be awake and be more responsive, however if they are not don't worry try a warm bath.

Ensure that there is drinking water available daily. It is vital to get your tortoise drinking within the first few hours or as soon as possible to get them re-hydrated. In the two weeks following wake up it is essential to bathe daily with lukewarm water.

Food can be offered on the same day of waking up however your tortoise may take a few days to fully wake up and get their metabolism back up to having a healthy appetite. If your tortoise has not eaten any food in the first 7-10 days of waking up, please contact us for advice or seek an appropriate reptile veterinary for advice.

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