

## Tortoise Hibernation

Hibernation is defined as an inactive, dormancy state, characterized by lowered body temperature, which some animals fall into during the winter.



## Do I Need To Hibernate My Tortoise?

One point that needs to be established is if tortoises need to hibernate, this depends partially on the species. Species from Mediterranean areas may hibernate during a few weeks in the wild and they have been doing it for hundreds of years so the physiology, growth, reproduction cycles are used to this hibernation period once a year. However, some of these species, kept in captivity and kept from hibernation by maintaining them in a heated environment during the winters, may not show any problems associated with not hibernating them.

Species that commonly hibernate in the wild are: Hermans tortoise, Spur thigh tortoise, Horsfield tortoise, Marginata tortoise...

Species that DO NOT hibernate: Leopard tortoise, African spurred tortoise, red foot tortoise...

If you are not sure if your tortoise needs to hibernate ask your reptile vet or an experienced tortoise keeper.

## Why Do Tortoises Hibernate?

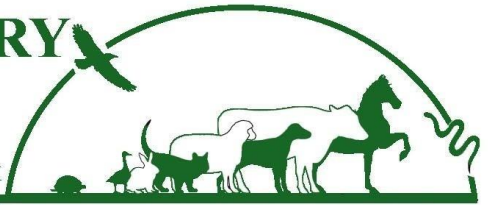
Tortoises, as other reptiles, are poikilotherms, this means that they can not maintain body temperature independent from environmental temperature.

Theories that favour hibernating tortoises are; the fact the we may prevent fast growth as growing slows almost to a halt during hibernation. The hibernation produces a hormone shutdown during the winter and a surge in the spring leading to a normal reproductive cycle.

## How old does my tortoise needs to be to hibernate safely?

Tortoises in the wild may hibernate from the first year of age as the hibernation is triggered by the low environmental temperature in the winter, but the hibernation may be





riskier as they may not have enough energy reserves and they are more exposed to predators. Tortoises that are kept in captivity can be protected from predators but the hibernation still can be risky when they are small as they may not have many energy reserves stored in the body, especially if the hibernation is long.

The answer is more related with the size and weight of the tortoise rather than the age, as a general rule a tortoise should not lose more than 10% of the body weight during the hibernation, this means that a 20 grams tortoise could only lose 2 grams before getting into trouble during the hibernation, while a 2 kilogram tortoise could lose up to 200 grams during hibernation. So as a general rule if the tortoise is very light we may need to be extra careful during the hibernation or avoid it altogether until the tortoise is a bit bigger.

## **How Long Do Tortoises Hibernate For?**

This depends on the external temperature. As long as the environmental temperatures are around 10 C or lower on a regular basis, the core temperature in the tortoise remains low and he/she will stay in hibernation. This is the main reason to keep tortoises, in the United Kingdom, in an artificially controlled temperature. If they stay outside they may go into hibernation very early in the Autumn (October) and they may not wake up until late Spring (April) this leads to a very, very long hibernation, which means less time for the tortoise to build up enough reserves during the spring and the summer to prepare for the next hibernation.

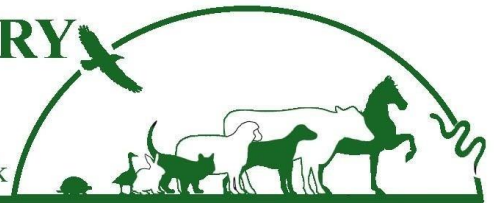
During hibernation, although tortoises remain very quiet and inactive they still require some energy to keep their basic vital functions working, even if these are slower than usual. If the hibernation is very long they may not have enough energy and pass away during the hibernation.

We would not recommend hibernating a tortoise for longer than 10-12 weeks, you can hibernate your tortoise for shorter periods of time initially.

## **Hibernation Preparation**

It is a good idea to take your tortoise to your reptile vet before hibernation for a general health check. They can see if there are any signs of illness, check for the presence of parasites (in order to do this it would be a good idea if you bring in a faecal sample from your tortoise) check the weight before hibernation, see if there is any wounds or external injuries.





If there are any medical problems or your tortoise is recovering from an illness or an injury it may not be a good idea to hibernate them as the healing processes and the immune system will slow down during the hibernation making the recovery slower and more difficult.

If you keep tortoises it may be a very good idea to keep a diary of their weight and bring it with you to the vet so we can see how the weight of the tortoise has been through the year. This can be very helpful before hibernation.

The hibernation preparation is going to take 3-4 weeks, during this period of time we need to decrease the environmental temperature slowly from around 25 C to under 15 C, so the core temperature in the tortoise decreases too.

Stop feeding the tortoise during this period of time so the gastrointestinal tract is empty and no food is sitting in the intestines during the hibernation.

The tortoise may lose around 5% of his body weight during this period of time. It is a good idea to bath the tortoise once a day in these weeks before hibernation to keep her well hydrated.

## **Hibernation**

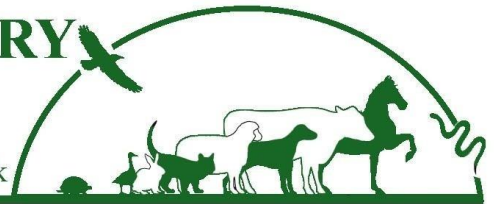
There are three things that need to be monitored during the hibernation.

- Temperature
- Weight
- Humidity and urine production

**Temperature:** The temperature needs to remain between 4 and 10 C during the hibernation, if the temperatures get lower we may have problems such as frost bite injuries while if they get higher the tortoise will become more active and will use more energy leading to a more severe weight loss.

There are different ways to maintain a constant temperature. One example would be to place a smaller box inside a bigger box with some insulating material in between the two. The boxes need to be placed in a cool area that will maintain a reasonably stable temperature. A way of monitoring and ensuring that the temperature is kept within the correct range is needed. (See above for range). An option recommended by us is to use a small fridge, the main advantage is that you can maintain a fairly constant temperature and humidity during the hibernation. (remember to check the temperature in the fridge





before putting your tortoise in!!!). It is very important to open the fridge once a day to allow ventilation and air circulation.

Weight: it is important to monitor weight loss during hibernation. Tortoises should NOT lose more than 10% of their body weight (check weight on the 1<sup>st</sup> day of hibernation). Ideally weight loss should be 1-2% per hibernation month. It is very important to monitor the weight on a weekly basis, if it exceeds the 10% mentioned the hibernation should be discontinued.

Urine production and humidity: Humidity needs to remain relatively high to prevent severe dehydration. The tortoise should not pass any urine during the hibernation as this would mean becoming quite dehydrated and suggest that the tortoise is having a higher metabolic rate than it should.

## Ending hibernation

The temperature needs to be increased gradually up to between 15 and 25 C, you can start bathing the tortoise in warm water once a day to increase hydration and stimulate the animal. The tortoise should start feeding within 7 days from waking up from hibernation. If this does not happen it is a good idea to take the tortoise to your reptile vet for a check up.



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