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*This handout is intended to provide only very general guidelines. Consult with your veterinarian about other aspects of advanced care that can be considered to ensure adequate health.*

## General Information

Bearded dragons (*Pogona vitticeps*) are native to the Australian desert and are members of the family Agama that includes frilled dragons (*Chlamydosaurus kingii*) and Asian water dragons (*Hydrosaurus amboinensis*). They have become popular pets due to their docile/friendly nature and basic care requirements compared to other reptile species. The bearded dragon's name comes from its defense mechanism – the expansion of the flap of skin under the jaw or “beard” accompanied by dark scales to ward off larger predators such as birds. Hands should be washed after every encounter, as ALL reptiles, even perfectly healthy ones, can carry **salmonella**.

## Lifespan

With adequate husbandry and diets the average bearded dragon can live around 8-10 years. Sexual maturity is typically reached between 8-18 months.

## Sexing

Determining the gender of your bearded dragon can be difficult, if not impossible in juveniles. Both males and females may bob their heads or display defensive behaviors. If you look at the underside of the tail just past the vent males should have two bulges side by side where the hemipenes (reproductive organs) sit in the base of the tail. The absence of these bulges indicates a female. Males also tend to have larger femoral pores as adults that can fill with a waxy substance (normally used for marking their scent on rocks).

## Housing

Juveniles require a 20 gallon tank at minimum, however, a larger enclosure is encouraged. It is recommended that adults be housed in a minimum of 75 gallon tank or larger to allow for adequate space to explore and hunt. It is very important to keep only one bearded dragon per cage as they are territorial and can cause serious injury to each other!

## Substrate

The substrate should be easily cleaned and non-toxic to your bearded dragon. Newspapers, reptile carpet or tile are great options. Sand, bark, gravel and mulch should be avoided as they can cause gastrointestinal blockage if ingested.

## Lighting and temperature

Reptiles need a warm place to bask (**100-105 degrees** for juveniles and **90-95 degrees** for adults) on one side of the cage in order digest food properly. The other side of the cage should be cooler (**75-85 degrees**) so they don't overheat. A thermometer should be placed at both ends of the cage or an infrared laser thermometer may be used to accurately measure temperatures. Lights should be on for 10-12 hours each day and total darkness is recommended at night- a ceramic heat lamp may be used to keep the enclosure warmer at night if needed but avoid nighttime infrared bulbs. Night temperatures should be greater than or equal to 65 degrees.

Bearded dragons MUST have UVB light to survive and a lack of UVB will lead to Metabolic Bone Disease, severe deformation, and even death. A commercially available UVB bulb is necessary as UVB does not penetrate glass or plastic so having the cage near a window does not work. Look for UVB listed specifically on retail packaging before buying. T5 UVB bulbs provide better zones of UVB than compact fluorescents. After about 6-9 months of use, most bulbs will stop emitting adequate levels of UVB, even though they are still shining, so it's important to change the bulb every 6-9 months.













## Humidity

Humidity in the tank should be 30-50% and should be monitored by a hygrometer. Inadequate humidity will affect your reptile's ability to shed its skin properly and can cause other health problems such as respiratory disease and fungal or bacterial infections.

## Diet

Bearded dragons eat a combination of live insects and vegetables every day when young, and every other day as adults. The best insects to use are crickets or dubia roaches which can be gutloaded (see below). Other live insects that can be included in your bearded dragon's diet are superworms, hornworms, silkworms, mealworms and waxworms, however these should not be given as a staple because of the high fat content and/or low digestibility. The general rule is to feed bearded dragons food items that are no larger than the distance between their eyes. Vegetables are a very important part of a bearded dragon's diet. See the list below of vegetables to use.



Staple Vegetables (high in calcium and other necessary nutrients)					
Collard Greens 	Turnip Greens 	Mustard Greens 	Swiss Chard 	Bok Choy 	Dandelion Greens 
Occasional foods/treats – less than 25% of the diet					
Sweet Potato 	Papaya 	Kale 	Butternut Squash 	Berries 	Mango 
Foods to avoid (low in calcium and/or high in phosphorous, oxalates, or goitrogens)					
Idaho potatoes, cabbage, iceberg lettuce, spinach, broccoli, tomatoes, corn, grains, beans, bread, meat, eggs, dog food, cat food, canned or dried insects, pinky mice/small lizards.					

### Gutloading

Gutloading is the process of feeding insects a vitamin and calcium rich diet prior to offering them to your reptile in order to ensure they contain the required nutrients to keep your reptile healthy. Supplementing calcium and multivitamin powder is important, but not sufficient to meet their needs alone. To create an appropriate gut loading diet, use one or two staple vegetables on the list above and feed it to the insects 6-24 hours before feeding those insects to your reptile. While convenient, some commercially available gut loading formulas (Farms Orange Cubes, Fluker Farms High Calcium Cricket Diet, Nature Zone Cricket Bites) are low in calcium, imbalanced and/or insufficient for good nutrition. Some preferred commercial gut loading diets are Repashy Superload, Cricket Crack, and Super Chow.

### Supplementation

Lightly dust all food items with a calcium carbonate or calcium gluconate supplement (**without phosphorus or vitamin D3, as this can lead to toxicity**). Dust prey for baby bearded dragons daily. The frequency of dusting should decrease as your dragon ages so that by adulthood prey are dusted once weekly. Offer a reptile multi-vitamin approximately once a month.

### Water

A shallow water dish with fresh water must be available at all times. It should also be placed on a stable surface, so it cannot be spilled, and it should be easy to climb in and out of from all sides. Vitamin drops do not need to be added to the water.

### Brumation (semi hibernation)

Brumation is a survival tactic that some reptiles utilize to slower metabolism and reduced activity during colder months where food is less available. This typically starts in the fall and winter months (September through February) and can last from a few weeks to a few months. During this time, they usually migrate towards the cooler side of cage and hide or sleep for most of the day despite keeping normal temperatures and offering food. It is not recommended to allow full brumation – this means you should continue to offer food, keep normal temperatures, and soak your bearded dragon in 1” of warm water daily to stimulate appetite/activity and they usually start to come out of it in a few weeks. It is not harmful to discourage brumation, especially since some beardies can get sick during brumation, as their decreased metabolism weakens their immune system. It is difficult to differentiate signs of illness from signs of brumation, so it is important to monitor weight with a small kitchen scale. If they are brumating and they lose 10% of their original weight or more then there may be an underlying illness that should be addressed. Brumation-like signs occurring outside of the typical season for brumation are highly likely to be illness and a vet should be consulted.

### Common medical conditions

#### Parasites

- Coccidiosis is a parasitic infection of the small intestine, which may lead to diarrhea, lethargy, poor appetite and dehydration in the young dragon.
- Pinworms are normal inhabitants of a bearded dragons GI tract, however, in high numbers these parasites can cause disease largely presenting as diarrhea.
- To avoid exposure to endoparasites, be sure to keep enclosure clean and wash all greens and veggies prior to feeding them to your bearded dragon

#### Metabolic bone disease

- This is caused by a deficiency of calcium, ultraviolet light, and/or vitamin D3 that can lead to numerous problems including poor bone quality and pathologic fractures.



- Neonatal and juvenile reptiles, as well as reproductively active females have a higher demand for calcium and are more vulnerable to this condition.

#### Reproductive disease

- Egg binding/dystocia – eggs become too large or misshapen and are unable to be delivered
- Coelomitis - a ruptured egg releases yolk into the body cavity resulting in a severe bacterial infection
- Follicular stasis - egg development stops and inactive follicles take up space in the body cavity
- Females should be provided with a laying or nest box filled with loose substrate to mimic natural behaviors of laying eggs under the soil to avoid reproductive issues

#### Prolapse

- This is the everting of the cloacal, GI, or reproductive structures through the cloacal opening.
- Some of the many causes of prolapse include GI parasites, reproductive disease (dystocia), and tumors.
- If noticed, we recommend applying a dilute sugar solution to help reduce swelling, and contacting your veterinarian right away as if left untreated, the prolapsed tissue can die which can lead to a serious life threatening infection.

#### Obesity

- This happens when they are fed a diet too high in fat or they are not provided with sufficient space for exercise.
- Obesity can lead to diseases of the heart, liver and joints. Bearded dragons are particularly prone to a condition called hepatic lipidosis which is where fat is mobilized and stored in the liver which left untreated can result in liver dysfunction or even failure.

#### Gout and pseudogout

- Gout is caused by excessive amounts of uric acid in the blood either from overproduction or failure to get rid of it
- Excess uric acid gets deposited in either tissues (visceral gout) or into the joints (articular gout) and causes local inflammation and pain.
- Pseudogout is similar to regular gout but is caused by the deposition of calcium crystals instead of sodium urate crystals.

#### Fungal infections

- Usually referred to as “yellow fungus disease”
- Causes severe, necrotizing, yellow/brown or grey-colored, granulomatous dermatitis that if left untreated often leads to systemic infections.
- Prognosis is guarded to poor for this condition.

#### Retained shed (dysecdysis)

- If humidity or temperatures are inappropriate, this can lead to pieces of retained shed
- If left untreated, retained shed can restrict blood flow and cause loss of the tips of their toes

#### References

*Animal Hospital in Centennial, CO.* Aurora Animal Hospital. (n.d.). <https://www.auroraanimalhospital.com/>

Divers, S. J., & Stahl, S. J. (2019). *Mader's reptile and Amphibian Medicine and Surgery*. Elsevier.