Ball Python Care Guide

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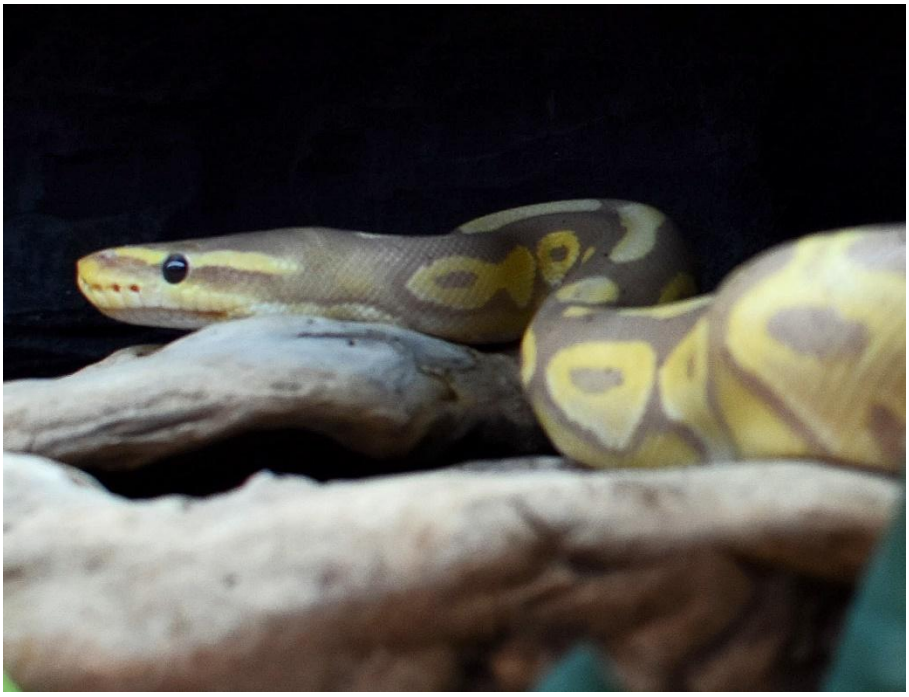
Rescue and Rehabilitation
Science-based Education
Advanced Husbandry Practices



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Introduction

Ball pythons are the most common pet snake on the market. Though they are common across the globe, they are originally from Africa. Their scientific name is "Python regius", or Royal Python, but they get the name "ball python" due to their shy nature. When threatened or afraid, they will often curl up into a tight ball before resorting to attack. Because of their shy dispositions, they are often called "pet rocks". However, if you provide your python with ample room to stretch, branches to climb and tunnels to explore, you may find these snakes to be quite active. Ball pythons are semi-tropical, semi-arboreal snakes. In the wild, they can be found in abandoned animal burrows on the ground, but can also be found in trees hunting birds and arboreal mammals.

Shopping List

1.) **Supplies:**

- **FOR 0-12 MONTHS:** 40 Gallon Front-Opening Terrarium (36x18x18" or larger)
    - Minimum recommended size for ONE juvenile ball python
- **FOR 12+ MONTHS:** 4X2X2' 120 Gallon Front-Opening Terrarium (48x24x24" or larger)
    - Minimum recommended size for ONE adult ball python
    - **LLRR Inc. advocates for more-than-minimum recommendations. Larger enclosure spaces allow for an animal to have much more freedom of choice, more room for exercise, room to express natural behaviors, and provide more space for natural enrichment. Some alternative size ideas can include, but are not limited to:**
        - **150 Gallon Front-Opening Enclosure 60x24x24"**
        - **180 Gallon Front-Opening Terrarium 72x24x24x"**
        - **404 Gallon Front-Opening Terrarium 72x36x36"**
- Linear UVB (long tube, half the length of the enclosure)
    - Zoo Med ReptiSun T5HO 10.0 UVB Kit
    - Arcadia 6% Forest UVB Kit
    - Arcadia ProT5 12% UVB Kit

    - Reptile Systems T5HO Zone 3 10.0 UVB Kit
    - Leap Habitats T5HO 10.0 UVB Kit
        - IMPORTANT! Please avoid knock-off Chinese brands of UVB you may find on Amazon! These are NOT safe and could harm your pet. Brands to avoid for UVB include ReptiZoo, Giangarden, OIIBO, Lucky Herp, Reptile King, etc. The brands listed above are SAFE and thoroughly tested by experts
        - Please note, each UVB listed above will have differing height requirements. The distance of the UVB lamp plays an important role in ensuring your animal is getting the correct exposure to UVB. If UVB fixtures are mounted above mesh, different mesh types can also affect how much UVB your animal will have access to, and will determine how low/high your basking area needs to be. Please refer to the group **Reptile Lighting** for in-depth information on UVB mounting
- Incandescent Basking Bulb
- **Wattage may vary based on power density of the bulbs, your house temperatures, enclosure height, and height of the basking area. Please refer to the guides in the Facebook group Reptile Lighting, and Light My Reptile for in-depth information on basking lamps**
    - Reptile Systems Eco Halogen
        - **CAUTION! REPTILE ECO SYSTEM HALOGENS HAVE VERY INTENSE BEAMS. THESE MAY NOT BE APPROPRIATE FOR EVERY SET UP**
    - ReptiZoo Intense Basking Spot Lamp
    - Exo Terra Intense Basking Spot Lamp
    - Arcadia Basking Spot Lamp
        - Wattage may vary based on your house temperatures, enclosure height, and height of the basking area. Please refer to the guides in the Facebook group **Reptile Lighting** for in-depth information on basking lamps
- Laser thermometer gun
- Manual battery-operated or hand-pump plant sprayer
- Optional, MistKing or equivalent automatic timed misting system
- LED 5000-7000k Light Bar
- Natural, safe substrate options
    - 70/30 Mix of Scott's Organic Topsoil (no fertilizers!) and Quikrete Play Sand
    - Josh's Frogs Tropical BioBedding
    - BioDude Terra Firma
    - Reptisoil
        - All options can be mixed with sphagnum moss and coco chips to help retain humidity
- Hygrometer/thermometer devices x 2
- Temperature probe
- Large water dish
- Flat stones for basking, stacking
- Cork bark and logs for climbing
- Outlet Timer/Power Strip
- At least 3 hides

    - Hides can be created by stacking stones, driftwood, or using pre-made hides (Zilla, Exo Terra and Fluker's have good options)
    - One hide should be a designated humid hide, essential for shedding, typically placed in the center of the enclosure (so it will not become too hot or cold)
- Sphagnum moss
    - Use in humid hide to hold humidity for shedding
- Reptivite OR Repashy Calcium Plus LoD Multivitamin

2.) **Products to Avoid:** (This is not a complete list, just a compilation of the most common unsafe items on the market)

- Coil Florescent UVB Bulbs
    - These bulbs are not inherently bad, but because of their compact size, they should be used in a horizontal position for a wider spread. For many medium and large-sized reptiles who openly bask during the day, they may not provide enough coverage on the animal's body for proper D3 synthesis
- Mercury Vapor Bulbs
    - These bulbs can lead to serious UVB and heat burns. They do provide UVB and heat all in one, but are dangerously inconsistent in their output and cannot be controlled with a dimming device. MVB's also produce an unnatural green light, which may affect an animal's color vision and inhibit natural behaviors
- Reptile Carpet
    - Snags teeth, holds bacteria. Cannot be dampened without molding risk
- Walnut Shell Substrate
    - Serious risk of impaction, oral, nasal and eye blockages. If ingested, this material can cause internal damage

- Aspen Bedding
    - This is not a suitable substrate for ball pythons. It cannot be dampened to hold the humidity these snakes need for hydration and shedding, and will mold. This can lead to respiratory infections
- UVB "test" Cards
    - These items do not accurately detect UVB. They react to light emitted by heat lamps as well, and do not tell you exactly how much UVB is being emitted by a bulb
- UVB "test" Accessories and Décor
    - Just like "test" cards, these items do not accurately detect UVB, and will react to UVA as well
- Colored Heat Bulbs
    - Colored bulbs (red, blue, purple) wash out a reptile's color vision. This can interfere with their natural circadian rhythm and behavior. Heat bulbs should mimic the warm/white color of sunlight
- Heat Mats
    - Heat mats do not provide the correct Infrared heating reptiles need for proper warming, metabolism, digestion. Even with thermostat use, power failures can occur leading to severe, even fatal burns
- Heat Rocks
    - Heat rocks do not provide the correct Infrared heating reptiles need for proper warming, metabolism, digestion. These items have been known to cause serious, sometimes fatal burns

- LED UVB Products
    - As of current research (2026), LED UVB products are not recommended for safe usage in reptile keeping. They do not produce vital UVA2 wavelengths, which signal an animal's body to stop producing pre-D3. This can potentially lead to **hypervitaminosis D3**, and **photoconjunctivitis**
- Liquid Calcium and Vitamin Products
    - Liquid vitamins degrade more rapidly compared to powder supplements. There is also less guarantee that the animal will consume enough of the liquids for any real benefits. Deficiency-related illnesses often occur from using these products. Liquid vitamin and calcium products such as those from Zilla, Fluker's and Exo Terra should be avoided

Quarantining

1.) Why Should You Quarantine?

- Quarantining should be done when you first bring your new ball python home. This is to monitor behaviors, and to give you time to have fecal testing done to check for parasites before moving your python into their permanent setup
- Typically a quarantine period will last **2 to 3 months**
- Quarantine setups are simplified for the sake of maintenance and monitoring. Keeping accessories to a minimum as well as using paper towels will make clean-up and finding droppings for sampling easier.

2.) How to Safely Quarantine:

- New animals should be kept separately from your other pets, if other pets, especially other reptiles, are present in the home. If possible, keep them in a separate room
- Sanitize the new animal's equipment and accessories separately from other pets' items
- Use separate feeding tools for the new animal
- Use paper towel flooring for easier clean-up and sanitizing
- Schedule fecal and physical exams to check for parasites and possible underlying health issues
- For sick animals, wear gloves when handling, and thoroughly sanitize afterwards

Nutrition

1.) Diet:

- Ball pythons are strict carnivores, feeding on birds, mice, rats, bats, lizards, amphibians and small primates in the wild. Providing a variety of feeders in captivity is a great way to give your python a well-rounded diet
- Loving Leos Reptile Rescue does not recommend feeding live prey items to ball pythons, especially unsupervised. There is a great risk the prey will attack your snake, causing serious injuries or death. Frozen-thawed prey items from a quality source, at a temperature between 105-110f, should be provided
    - Safe frozen-thawed prey items
        - Mice
        - African soft fur mice
        - Rats
        - Chicks
        - Quail
        - Gerbils
        - Hamsters
        - Newborn rabbit

2.) **Supplementation:**

- Snakes get most of their nutritional needs from the prey items they eat. However, occasional multivitamin supplementing can help your snake "top up" on their vitamin stores, and avoid serious dietary deficiencies. **A multivitamin such as Reptivite or Repashy Calcium Plus LoD can be dusted on feeder items twice a month for juveniles less than a year old, and once a month for adults**





Arcadia RevitalizeD3, EarthPro-A, CalciumProMG (If using the Arcadia line, rotate products per feeding)



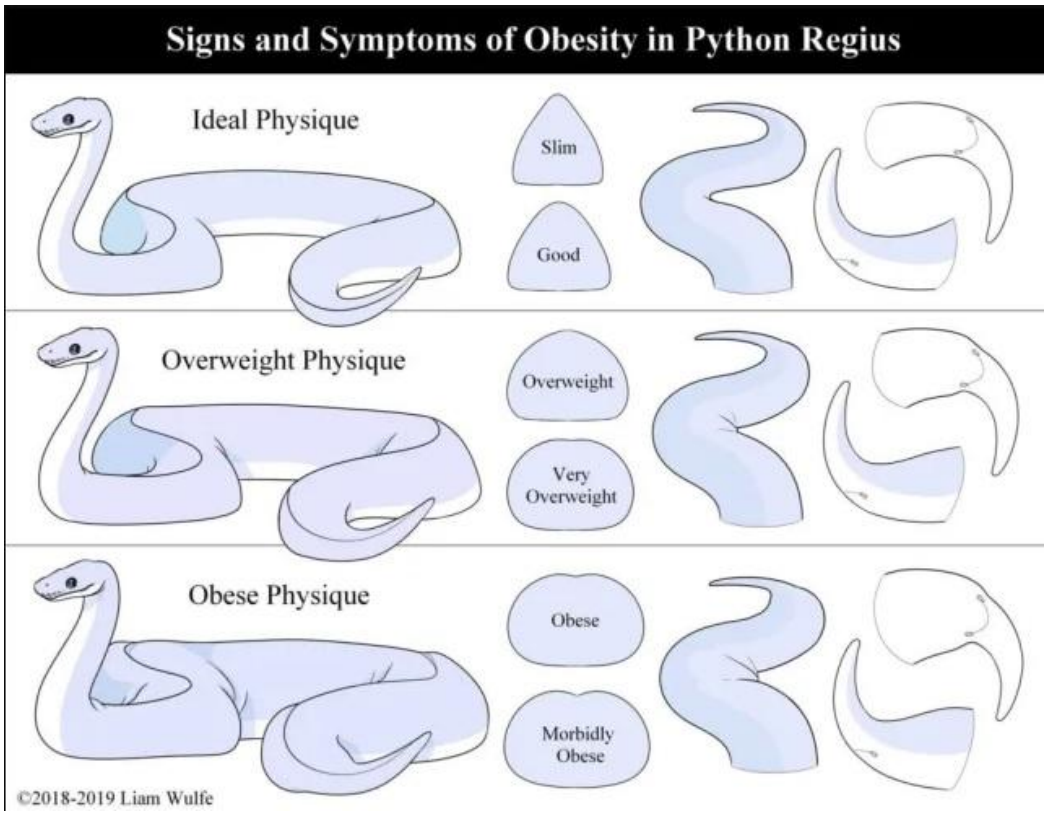
Zoo Med Reptivite with D3



Repashy Calcium Plus LoD

3.) **Feeding Frequency:**

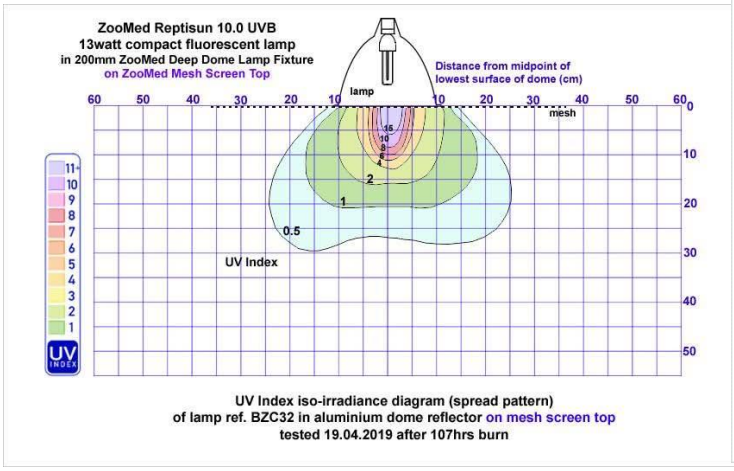
- Juveniles less than 200 grams:
  - 8-12 gram feeder size, once every 5 days
- Juveniles between 250-350 grams:
  - 25-35 gram feeder size, once every 7-10 days
- Sub-Adults between 400-600 grams:
  - 35-50 gram feeder size, once every 14 days
- Sub-Adults to Adults between 700-1500 grams:
  - 60-150 gram feeder size, once every 21 days
- Adults over 1500 grams:
  - 150 gram feeder size, once every 28 days
- **Keep in mind, body condition may dictate variations in feeding frequency. Always monitor your snake's physical condition, so you are not over- or under-feeding your pet.**

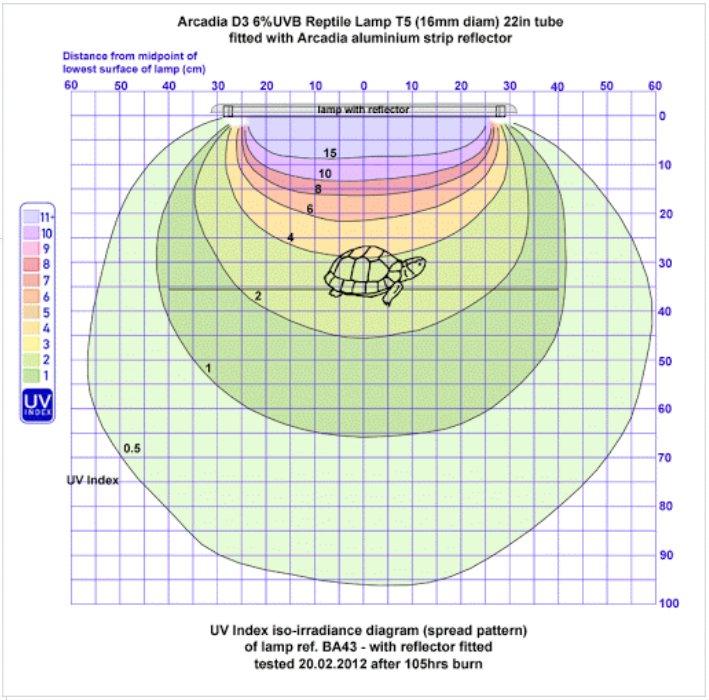


UVB, Heating and Visible Light

1.) The Importance of UVB

- UVB lighting is superior to D3 powder supplementation for the following benefits:
    - Creates beta-endorphin "feel-good" hormones in the skin
    - Promotes better organ health
    - Stimulates white blood cells and promotes better immune health
    - Facilitates natural D3 synthesis for calcium absorption
    - Simulates natural UVB that would be provided by the sun in the wild and promotes more natural behaviors

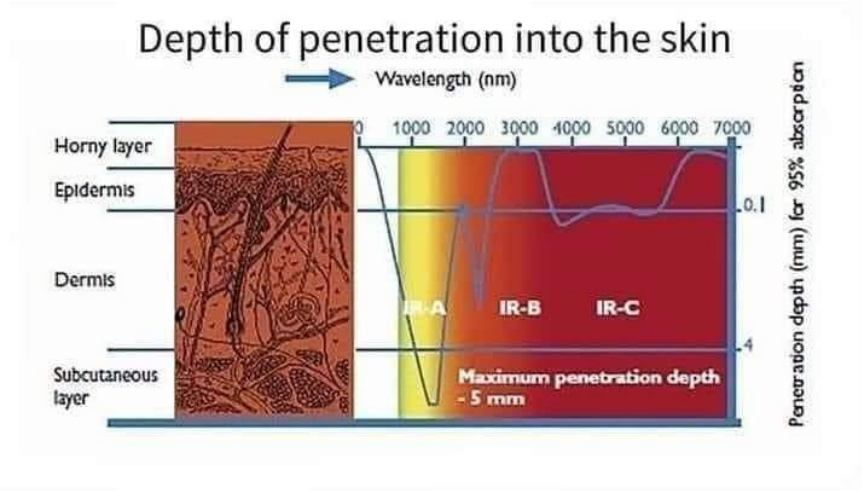




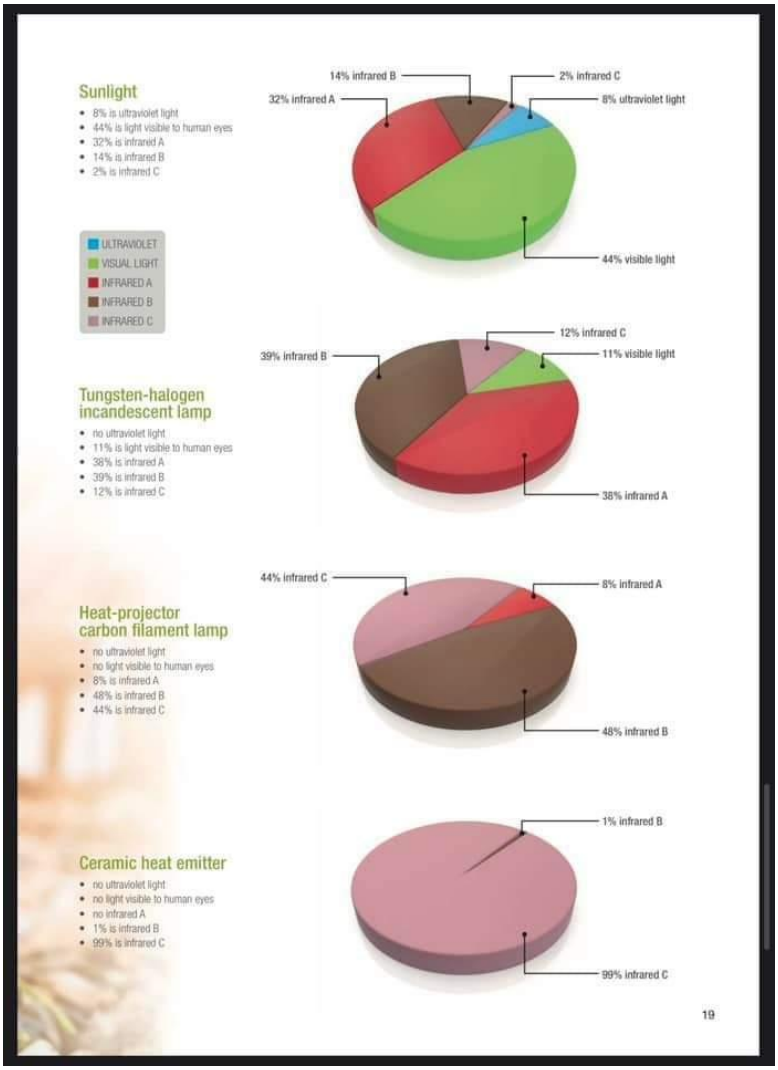
Difference between Coil/Compact UVB coverage, versus Linear T5HO tubes

2.) The Importance of Infrared Heating

- Heat sources that provide Infrared A and B are important for:
    - Deep tissue-penetrating heat
    - Faster warming of the animal's body
    - Less time needed to bask
    - Better metabolism and digestion
    - Promotion of more natural behaviors
    - Surfaces below the basking area that absorb IR-A wavelengths will radiate that heat back out as IR-C, so your animal gets the full spectrum of Infrared heating



Example illustrating the depth of penetration between IR-A, IR-B and IR-C wavelengths. IR-A penetrates into the subcutaneous layer, where IR-C is relatively surface-level on the epidermis

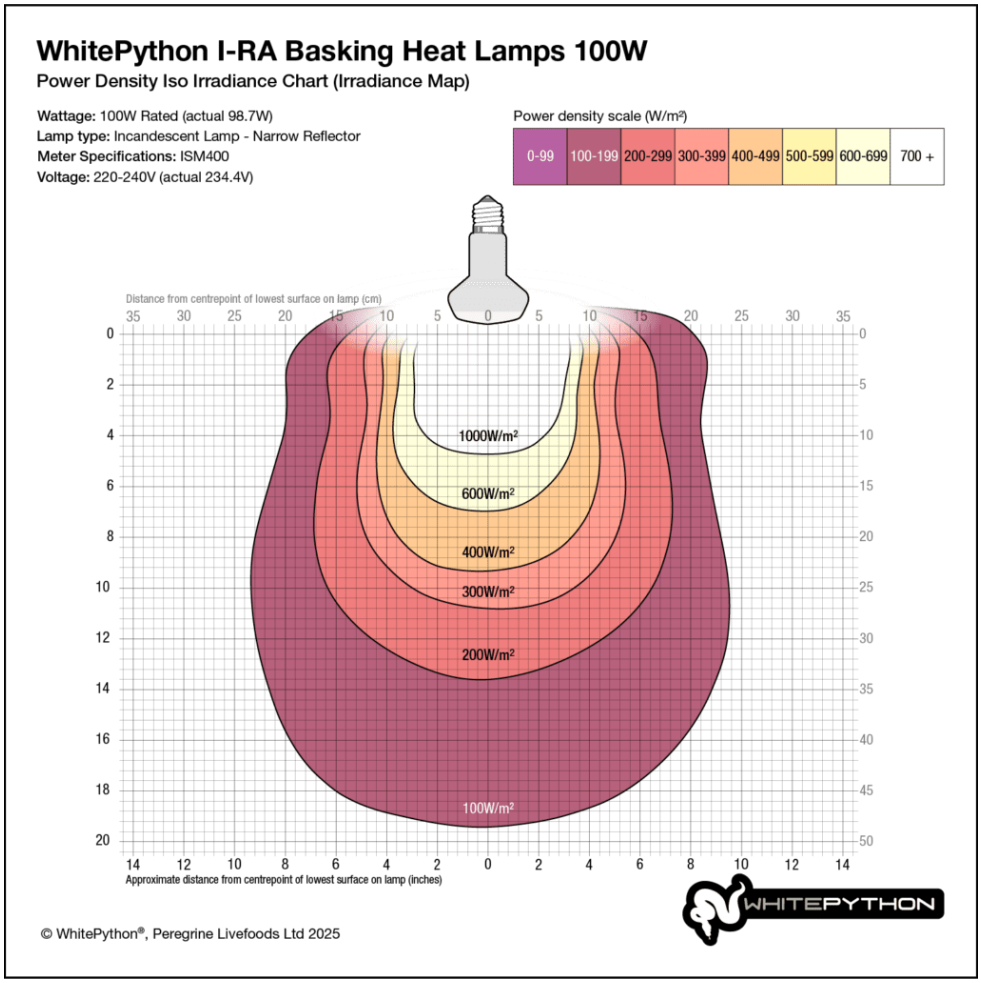


The difference between various heating elements. Incandescent lights provide the most natural array of IR

3.) Bulb Power Density

- Power density is the intensity and spread of infrared radiation from an incandescent/halogen heat lamp. This is measured by **wattage-per-meter squared (W/m^2)**.
- Power densities vary between bulb styles and brands, and providing infrared is not one-size-fits all.
- It's important to note that basking surface temperatures don't tell us much about the power density of a bulb. This is because different basking surface materials don't absorb and radiate infrared the same (i.e., a slate basking surface and a faux resin rock may give different temperature readings, even when under the same heat lamp and at the same distance).
- Ultimately, we want to aim to provide irradiance between **200-350W/m^2**. The distance for this range is different between bulb styles and brands, but there is an easy "test" to measure this distance for the bulb you have. This will help you determine how high or low your basking area should be.
    - **The Hand Test:** Human skin is just as sensitive to infrared radiation as that of reptiles. The tingly sensation of sunlight on your bare skin is the effect of infrared penetrating the epidermis and down into muscles. For this test, think of your hand as your pet reptile's back.
        - Let your basking bulb warm up for a few hours
        - Place your hand on the bottom of the enclosure and raise it until you feel tingly warmth

- If you can comfortably keep your hand under the lamp at this distance for 60 seconds, **you are within the 200-350W/m² range**
- **Different reptile species need different levels of irradiance exposure. Refer to part 6.) Light My Reptile for assistance determining what exposure level your ball python needs**

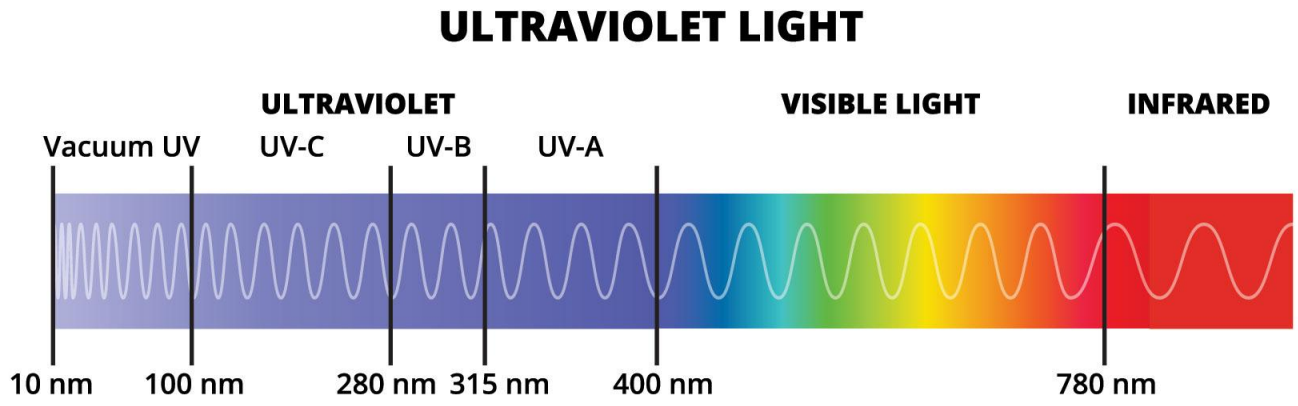


Power Density Irradiance Chart, © WhitePython. Note the range for 200-350W/m² is between 14-10cm (5.5-3.9in) for this particular bulb, but may be closer or farther away based on bulb wattage and make. Refer to the Tomaskas LTD for irradiance charts for a variety of bulbs

4.) The Importance of Full Spectrum Lighting and LUX

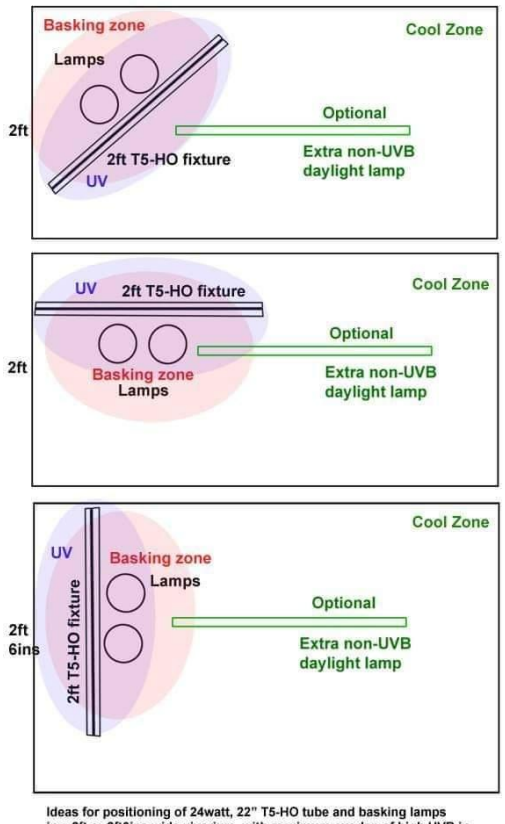
- Many reptiles have **tetrachromatic vision**, meaning they have four rods in their eyes for color detection and can see much more of the visible light spectrum than we can. Providing additional full spectrum lighting helps with:
  - More visible colors for your animal to see
  - Promotion of natural behaviors
  - Closer visible replication of what they would experience under sunlight
- Currently, there are very few products available that cover more of the visible spectrum (as of 2026). Companies working on true LED full spectrum products are:
  - Fauna-Lux
  - Reptile Systems

- **LUX** refers to the amount of light that illuminates surfaces. Consideration should be taken that the sun's brightness is far greater than the UVB, heat lamps and LED's we offer in captivity (the sun offers 32,000 – 100,000 LUX!) Providing more **LUX** over the **basking area** in the form of bright, white light can promote:
    - More natural basking behaviors
    - Mental and physical wellbeing



Quality lighting will cover some of the visible light spectrum (here shown between 400nm to 780nm); however, the purple, or Ultraviolet spectra will be covered in part by UVB lighting. Note that UV-C wavelengths are excluded from UVB and full spectrum equipment and are dangerous.

5.) Proper Lighting Placement

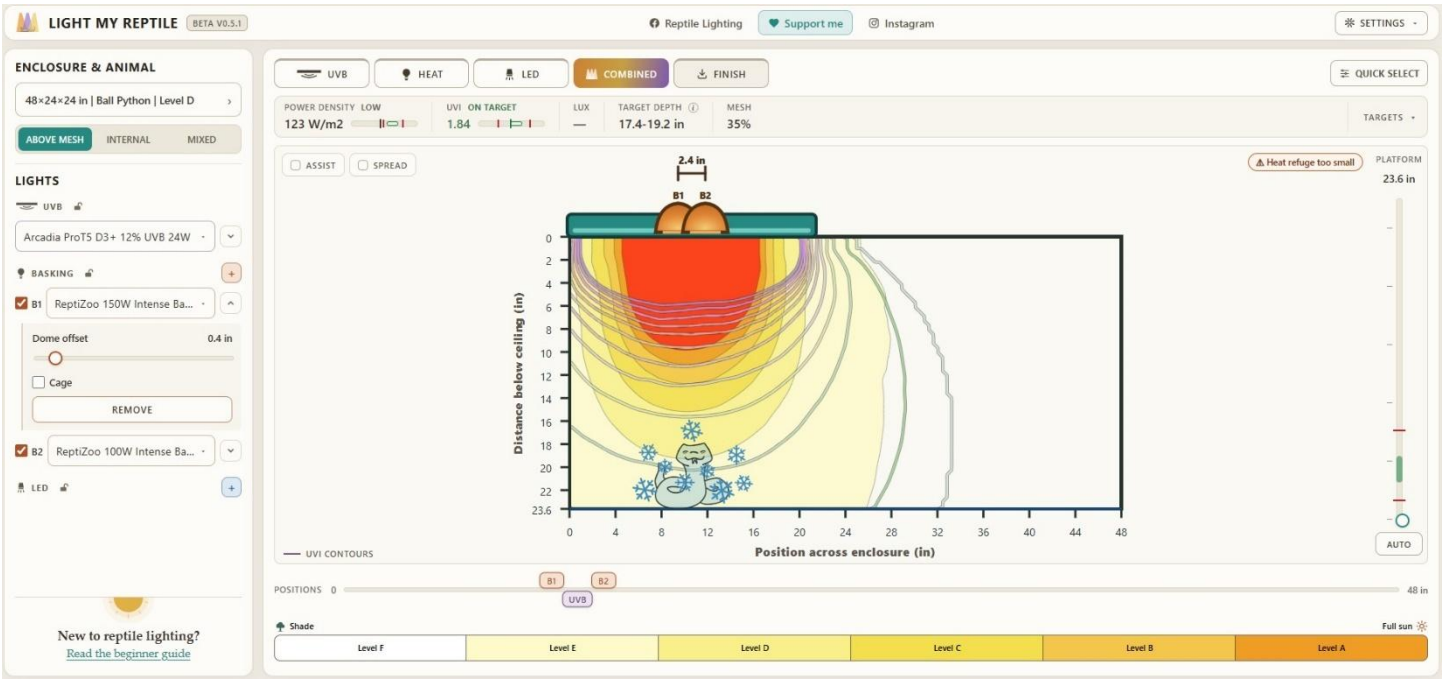


Ideas for positioning of 24watt, 22" T5-HO tube and basking lamps in a 2ft or 2ft6ins wide vivarium, with maximum overlap of high UVB in basking zone. (NB, a 2ft tube won't fit widthways in a 2ft wide vivarium. You have to use a diagonal or lengthways orientation.)

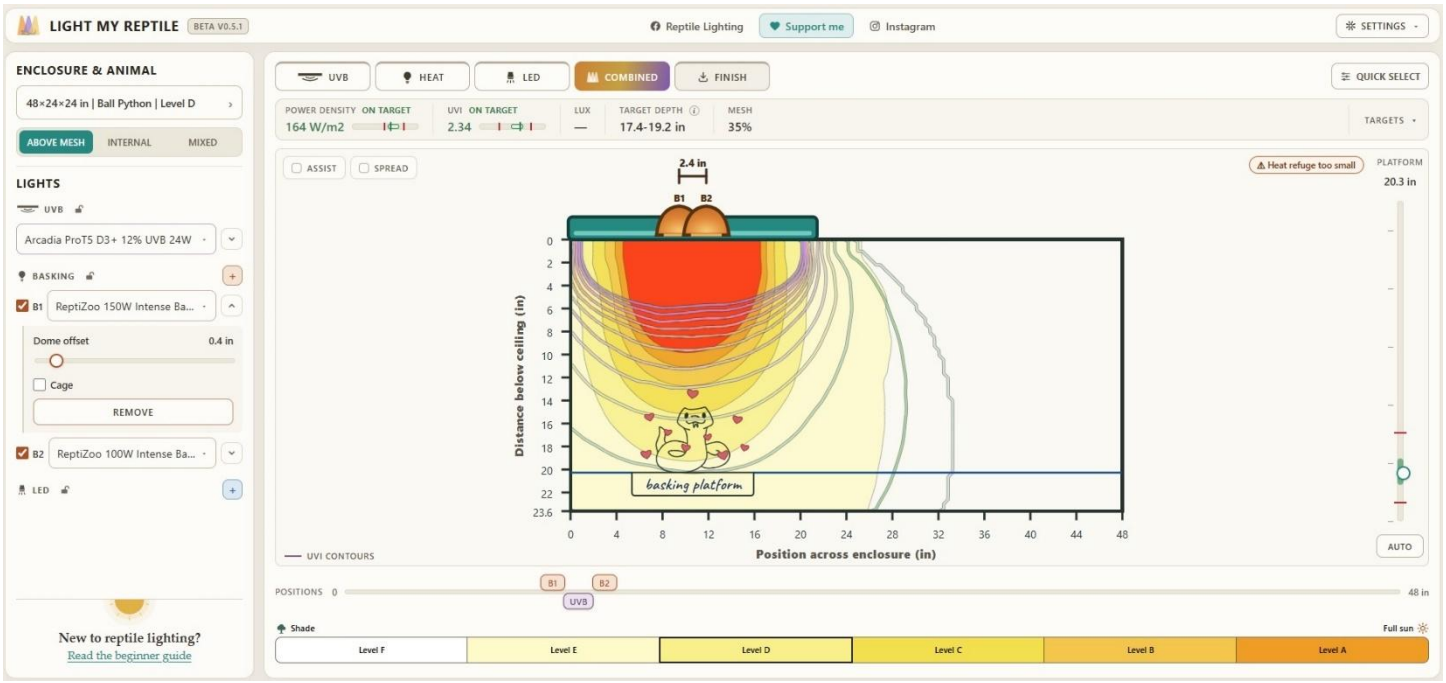
Examples of proper lighting arrangements

6.) Light My Reptile

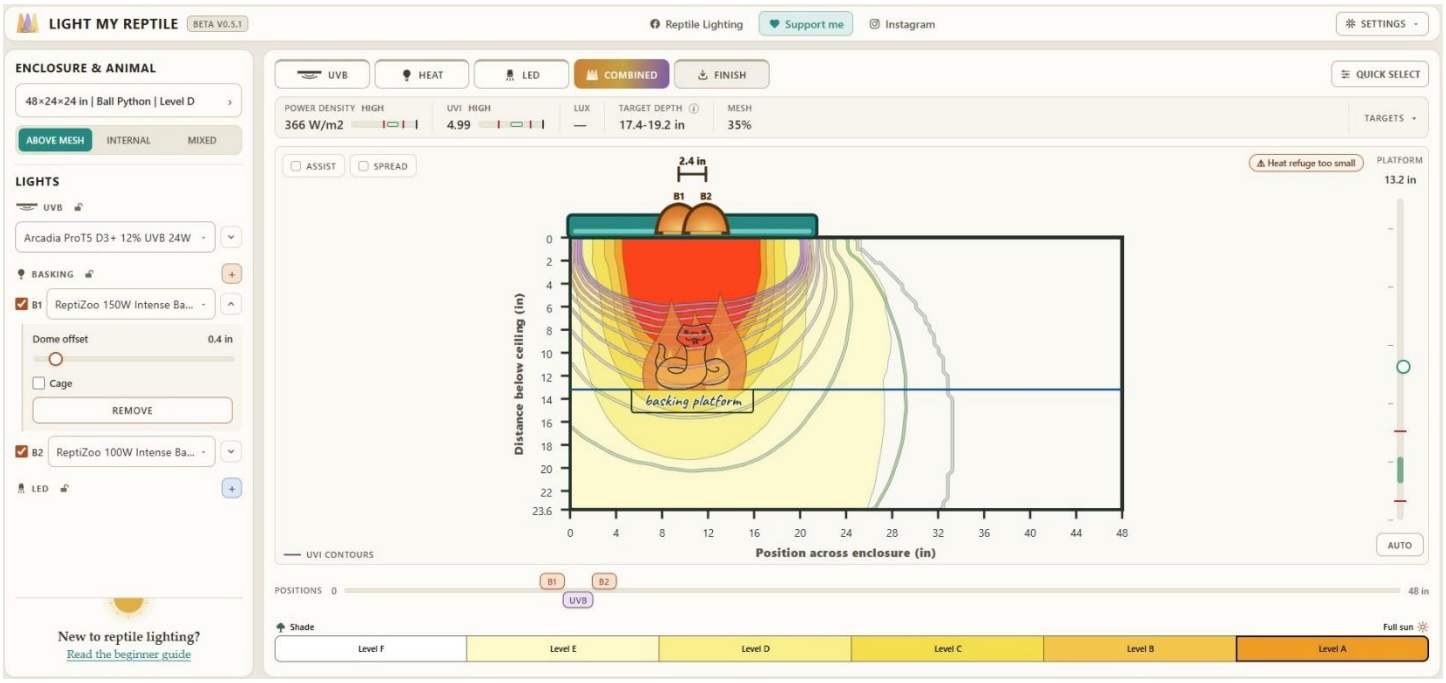
- Light My Reptile is a fantastic tool designed to help keepers take much of the guesswork out of proper lighting and heating provisions. It is an application that was created by Nathan Burton, using data collected by the experts who moderate the group Reptile Lighting.
- This tool allows you to choose lighting, heating and LED equipment that have all been thoroughly tested and are trusted in the herpetoculture hobby. It also lets you choose different mesh densities, you can choose different species, input custom enclosure sizes, and you can mix and match various equipment to see what would be the best combination for UVB, heating and lighting for your pet.



Reference image courtesy of Light My Reptiles. Note the snake is "cold", being too far away from the specified UVB and heat. The equipment is mounted above a mesh type that blocks 35% of wavelengths



Adjusting the height of the snake shows the optimal distance it should be from the specified UVB and heat



Raising the snake's basking platform too high risks overexposure to heat and UVB, which will lead to severe burns

Temperature, Humidity and UV Index

1.) Temperature

- Temperatures should be provided in a "hot-to-cool" gradient across the tank, with your basking bulb placed on one side of the enclosure
- Temperatures can be monitored by placing a hygrometer/thermometer device on the hot side, and one on the cool side. A thermometer temperature probe can be placed just outside of the beam of light beneath the incandescent heat bulb.
    - Hot side temperatures: 80-85f

    - Refer to the "hand test" for guidance on the basking area, but aim for 95-105 degrees surface temperature
    - Cool side temperatures: 75-80f
- Surface temperatures can be measured with a laser thermometer gun

2.) **Humidity**

- Ball pythons live in temperate and tropical forests in Africa. These climates experience long months of monsoon seasons and high humidity
- Ball python burrows often have higher humidity levels than the outside environment
- In captivity we can provide humidity spikes, but should aim for:
    - 65-75% ambient humidity ranges
    - Occasional spikes of 100% with adequate dry-out periods can be implemented
    - A humid hide with damp moss or clean, damp paper towels should be available at all times
    - Ensure your enclosure has good ventilation before attempting to create humidity spikes. Mesh lids, ventilation slats, and even small fans (installed behind a guard) can help maintain adequate airflow. If air is allowed to stagnate, bacterial growth can occur and your snake may develop a respiratory infection or bacterial infections (scale rot)
    - **Consistent humidity spikes can be achieved more easily by using an automated misting system. Setting the system to spray the enclosure for 1-3 minutes twice daily is a good method to maintain humidity levels and spikes, but you may need to adjust these times if you find the enclosure is being over- or under-hydrated**
    - **If using a misting system, KEEP THE EQUIPMENT CLEAN. Using a dark/opaque water bucket instead of a clear bucket will prevent algae and bacterial growth. Regularly check nozzles and tubing for blockages and build up**
- Hygrometer/Thermometer combo devices can be placed on the cool and hot sides to monitor ambient temperatures

3.) **Safe UVB Exposure**

- UVB should be provided through a linear tube that spans halfway across the enclosure. It should be aligned with your basking bulb to one side of the tank, with the basking bulb centered with the middle of the tube
- Not all UVB bulbs are created equally! Certain strengths, bulb styles and brands are not safe or effective for ball pythons (refer to the Shopping List for safe UVB products)
- Ball pythons are **cathemeral** or **nocturnal** animals, meaning they may be more active randomly throughout the day and night, or more active at night. This does NOT mean they won't bask. You may see your ball python sleeping during the day with their tail or nose sticking out of a hide under their UVB. This is enough for them to benefit from the UVB light and synthesize essential D3 in their bodies. Ball pythons may also openly bask when they are comfortable in their environment
- On the Ferguson Zone (the UV requirement scale for various reptile species), ball pythons are in Zone 2. This means they need a UVB index between 2.0-3.0
- The height of your enclosure, whether your UVB is mounted above mesh or inside the enclosure, what brand of tank you have all affect how much UVB your ball python will be exposed to. To figure out how to safely provide UVB for python, refer to the following sources:
    - Reptile Lighting on Facebook
    - Northampton Reptile Center – Ferguson Zone
    - Thomas Griffiths, Tomaskas LTD

- Not Just a Pet Rock – Python regius on Facebook
- Reptiles: Advancing Husbandry Practices
- Light My Reptile

Enrichment

1.) The Importance of Enrichment

- Many reptile species, including ball pythons enjoy living in a stimulating environment where they can climb, bask, sleep, hunt and explore
- When these animals are housed in small, bare enclosures, they often exhibit "stereotypy" behaviors, which may include glass surfing, frequent hiding, pacing, pushing at enclosure doors or corners, and listlessness. These are all indicators of boredom, stress, frustration, anxiety, and eventually sensory-atrophy
- Giving our animals more space and more things to investigate, climb, etc, allows them to exhibit natural behaviors and stimulates their senses. These provisions also decrease fear and stress, and enhance the animal's sense of security

2.) Ways to Provide Enrichment

- Enrichment can be provided by "cluttering up" your python's home. Add in lots of flat, stacked stones (just make sure they are securely placed so the snake can't harm themselves by burrowing beneath the rocks), use natural substrates, bury cork bark rounds in the substrate to create tunnels, stack lots of driftwood to create climbing opportunities, give the snake a new item on occasion to investigate
- Some keepers get even more creative and make "snake towers" for their pythons to enjoy outside of their enclosures. These can be DIY builds or even cat towers your snake can use to climb on and exercise

Enclosure Examples

- These enclosures belong to Loving Leos Reptile Rescue. They are 4x2x2 PVC enclosures, bioactive with live plants and clean-up insects, LED lighting, UVB and incandescent heating





Common Ball Python Illnesses

1.) **Scale Rot**

- Scale rot is often caused by unsanitary living conditions and substrate that is too damp. These conditions create breeding grounds for bacteria, which can lead to severe infection and tissue damage
- Scale rot can be prevented by leaving areas of substrate in the enclosure dry, implementing dry-out periods (only spray down the enclosure when humidity levels are too low, and thorough misting done a few times a week, letting the enclosure return to normal humidity levels in between)



Advanced scale rot. The condition is so severe in this animal that muscle tissue on the belly is exposed

2.) **Parasitic Infection, Mites**

- Mites are parasitic insects that feed on snake blood
- If left untreated, mites can cause serious anemia or death
- Mites appear as tiny black, brown or red raised dots around the edges of scales, around the cloaca, inside the heat pits and around the eyes
- Mites are very invasive and can spread to other snakes in a keeper's collection. Strict quarantine and sanitizing protocols should be taken to eradicate the parasites and prevent them from infesting other animals

A ball python with an infestation of snake mites

3.) **Shedding Issues**



This ball python is severely dehydrated and malnourished. Note the wrinkly appearance to the skin and flaky shedding

4.) **Nidovirus**

- Nidovirus is a contagious, severe, and often fatal upper respiratory and oral virus affecting snakes
- There is no specific treatment for Nidovirus. Care is often supportive with antibiotics to prevent secondary bacterial infections
- Symptoms include reddening and swelling of the oral tissue, wheezing, difficulty breathing, lethargy, and excess mucous production
- If a snake tests positive for Nido and the keeper has multiple snakes, the responsible protocol is to test all snakes in the collection. Culling infected snakes is unfortunately the likely and most responsible route

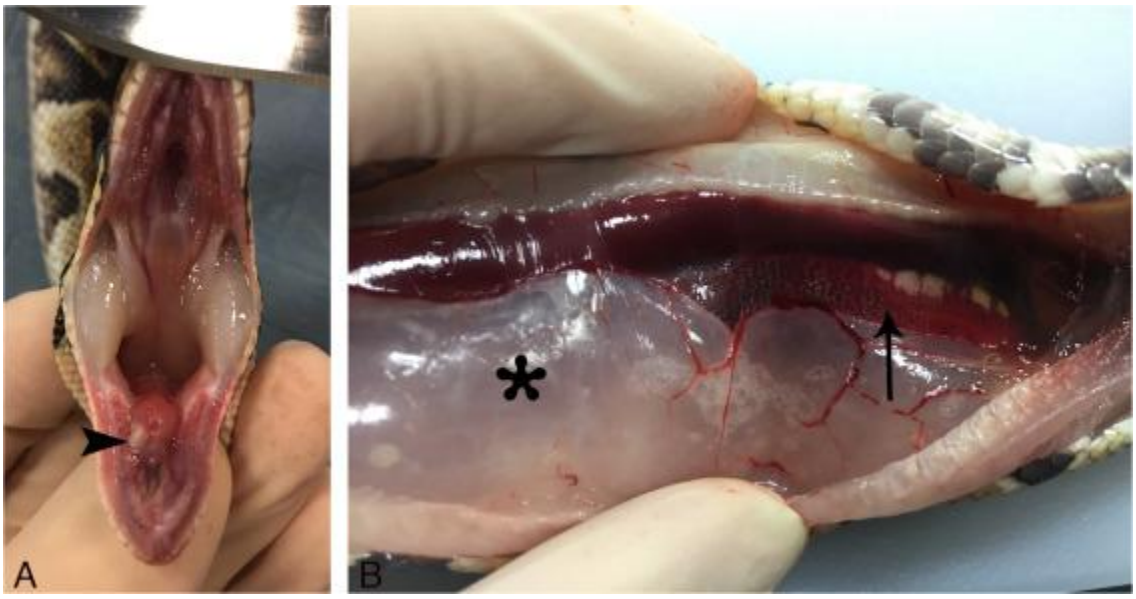


Image A; swelling and reddening of the oral tissue. Image B; postmortem, reddening, swelling and excessive fluid in the esophageal tissue

5.) Vitamin C Deficiency

- Vitamin C deficiency is a rare condition that may result from poor nutrition, a rare genetic predisposition that prevents the snake from absorbing vitamin C, and poor care resulting in extreme anorexia
- Symptoms can include skin tearing, bruising, skin discoloration, fluid retention under the skin, sepsis
- Hypovitaminosis C can be prevented by feeding quality feeders that have been fed a well-rounded diet, and keeping your snake on an appropriate feeding schedule



Ball python with torn skin from a vitamin C deficiency

6.) **Inclusion Body Disease (IBD)**

- Inclusion body disease (IBD) is a highly contagious virus affecting captive snakes, and is a growing problem in the hobby
- IBD is not curable. Symptoms can include incoordination, head tremors, loss of righting reflex, swollen mouth, difficulty breathing, poor body condition
- Snake mites can be carriers of the disease. Unclean or incorrect husbandry parameters can exacerbate symptoms



Ball python unable to right itself

Resources

- **Facebook**
  - Reptile Lighting
  - Behavior Education
  - Not Just a Pet Rock – Python regius
  - Reptiles: Advancing Husbandry Practices
  - Loving Leos Reptile Rescue
- **YouTube**
  - Animals at Home
  - Reptiles and Research
  - Herp Talk
  - Jessica's Animal Friends
- **Supplies**
  - Pangea Reptile
  - Bean Farm
  - Light Your Reptiles
  - Reptile Basics
  - Dubia Roaches
  - PetCo
  - PetSmart
- **Experts to reference for science-based research**
  - Thomas Griffiths, Tomaskas LTD, Zoo Husbandry Consultant
  - Dr. Frances Baines, Veterinary Surgeon
  - Dr. Sarina Wunderlich, light physicist

- Lori Torrini, Behavior Education, Animal Behaviorist
- The British Herpetological Society
- Nathan Burton, Light My Reptile