

# Healthy shell development in tortoises

## ABNORMAL

### Pyramided growth



#### Why does pyramiding happen?

- Pyramiding happens when the scutes grow vertically vs. horizontally
- Incorrect diet including too much protein, too low calcium, inadequate fiber, lack of vitamin D3, being kept too cool, too much food, not enough exercise and **poor hydration** (soak your tortoise and provide a place to bury!)
- Pyramiding does not occur in the wild
- **Consequences: The tortoise will have significant health issues including, but not limited to, Metabolic Bone Disease and a severely shortened lifespan**

## ABNORMAL

### Sunken shell



#### Why do the shells 'sink'?

- The pyramided shell grows too heavy for the supporting bone structure causing collapse
- Collapse causes damage to the internal organs, especially the lungs
- **Consequences: The tortoise will have significant health issues including, but not limited to, Metabolic Bone Disease and a severely shortened lifespan**

## Healthy growth



- Starts immediately after hatching – correct environmental conditions must be provided
- **EVERY SPECIES** of tortoise needs a warm, moist place to bury themselves during the developmental years
- Burying mimics the conditions in the nest. Current research shows tortoises may spend extended periods in the nest
- While buried the tortoise will absorb the moisture into its shell and skin and the building blocks of healthy growth are started
- Correct fresh, varied diet and correct temperatures are vital as well

#### Can abnormal growth be corrected?

**No.** Once abnormal growth is established the damage both internally and externally is done. Healthy shell will grow under the damaged shell if conditions are changed but the damage will stay.

## Exotic pets need exotic care

Information presented is intended as a general guide and in no way represents finality on the subject. Owners and prospective owners are encouraged to continue learning about the animals in their care.