

## **UROLITHIASIS ADVICE SHEET**

### **What are Uroliths?**

These are more commonly known as bladder stones, although they can also be found in the kidney; urethra (tube from bladder to the outside) and ureters (tubes from kidneys to bladder). Uroliths are hard, stone like structures made up of calcium carbonate and sometimes calcium oxalate. Guinea pigs naturally excrete excess calcium in the urine and have a diet high in mineral content/oxalates. The reason why guinea pigs develop these stones is still unclear, it is likely that this condition is due to multiple factors such as genetics, age, sex, ongoing urinary infections and other illnesses.

It is recommended therefore, to feed a low calcium/oxalate diet and increase water intake.

### **What should I feed to prevent bladder stones?**

It is important to note, that we do not fully understand the reasons behind all developments of bladder stones. Therefore, feeding the following diet may not prevent your guinea pig from developing one but this is currently the most up to date diet advise available on this condition.

#### **Water:**

Guinea pigs should be encouraged to drink more water. Providing them with both a water bottle and a bowl may be advantageous in this case as some may choose one preferred source. Wetting down all vegetables will also increase water intake. Using filtered or bottled water can reduce mineral content intake, this may be especially useful in areas of the country with hard water such as the South East.

#### **Hay/grass:**

Hays and grasses are naturally high in calcium levels; however this is not a reason not to feed. The calcium content also varies between grass species and age of the grass plant. This food should always make up the majority of your guinea pigs' diet and be available ad lib. Timothy hay has a slightly higher calcium content than orchard grasses and some meadow hays, so feeding a variety is advised. Grass may be advantageous as it is naturally higher in water content. Alfalfa hay should never be fed due to the high calcium content.

#### **Pellets:**

Pellets are not an essential part to your guinea pig's diet. If your guinea pig is otherwise fit and healthy with no other medical conditions, then feeding no pellets is advised. If you choose to feed pellets then guinea pigs only need a small amount each day (1 tablespoon per guinea pig). These pellets should be mostly comprised of timothy hay/grasses and not alfalfa.

#### **Vegetables/herbs:**

Fresh food should only make up a small part of your guinea pigs daily diet. Around 50g (half a cup) is all that is needed daily. Vegetables and green food should be fed sparingly and with variety every day. The following lists show calcium content of these foods, high calcium level foods should be avoided.

Calcium content mg per 50g portion (remember 50g of herbs will be a larger quantity than 50g of broccoli for example).

Low calcium foods – feed often but ensure a variety eaten every day	Medium calcium food – feed occasionally	High calcium foods – avoid feeding
Tomato (4mg)	Cabbage (26-28mg)	Rocket (108mg)
Bell pepper (5mg)	Coriander (33.5mg)	Spring greens (105mg)
Cucumber (8mg)	Kale (65mg)	Basil (125mg)
Cauliflower (8.5mg)	Spinach (85mg)	Dill (170mg)
Radish (9.5mg)	Watercress (85mg)	Rosemary (185mg)
Chicory (10.5mg)	Dandelion (93.5mg)	Thyme (315mg)
Fennel (12mg)	Parsley (100mg)	
Carrot (13mg)		
Romaine lettuce (16.5mg)		
Pak Choi (20mg)		
Celery (20mg)		
Parsnip (20.5mg)		
Mint (21mg)		
Broccoli (23.5mg)		
Chard (25.5mg)		
Green beans (26mg)		

It is not advisable to feed fruits of high sugar and carbohydrate foods – such as corn or carrot on a regular bases as these can cause gut bacteria imbalances and obesity.

#### **Other tips to avoiding bladder stones.**

As we don't fully understand bladder stones other things which may help prevention of these are the following:

- Increasing exercise, this includes ensuring your guinea pig has an appropriately sized enclosure, companions and enrichment to aid in activity levels – Exercise helps mix the naturally high mineral content urine to avoid it sitting in the bladder stagnant – potentially forming a stone
- Ensuring your guinea pig remains a good body weight.
- Treating any suspected bladder infections promptly – signs of these include squeaking when urinating, blood in the urine and frequent urination.
- Reducing stress in the environment – such as ensuring they have space away from busy areas or other household pets and children.
- Ensuring their environment is cleaned regularly to avoid the risk of infection.