PAW HEALTH NETWORK INC.

URINARY CRYSTALS

ABOUT THE DISEASE

Urinary crystals are microscopic **crystals**, that in the right conditions, can combine together to form bladder or kidney stones. Please see the documents on these diseases for additional information.

Several different types of **urinary crystals** can form, but the two main types are composed of:

- Struvite – combination of ammonium, phosphate, and magnesium
    - In some circumstances, these crystals may also form when a patient has a urinary tract infection
- Calcium Oxalate – as the name suggests, a combination of calcium and certain oxalates

Generally, there are very few clinical symptoms of **urinary crystals**, until patients develop secondary urinary tract infections. Please see the Urinary Tract Infection for additional information.

Some symptoms may include:

- Straining to urinate (stranguria)
- Increased frequency of urination, while urinating small amounts at one time (pollakiuria)
    - This is not to be confused with an increased frequency of urination, with large amounts of urine (polyuria)
- Blood in the urine (hematuria)
- Painful urination (dysuria)
- Urethral Obstruction
    - More prevalent in male feline patients, typically caused by both inflammatory debris, infectious debris, and crystalline debris that plugs the urethra.
    - Please see the Feline Urethral Obstruction document for additional information.

OBTAINING A DIAGNOSIS

Performing a urinalysis will detect the presence of **urinary crystals** and a secondary urinary tract infection.

Ultrasound can often find large amounts of sediment in the urinary bladder but will not be able to differentiate between type of crystal present. X-rays (radiographs) are not an effective diagnostic tool for diagnosing **urinary crystals**.

A urine culture and sensitivity may be utilized in cases that are poorly responding to antibiotic therapy. With this test, the bacteria are grown at a reference laboratory which helps guide antibiotic therapy. However, even with bacteria found in-clinic, there is a 25% chance of bacterial growth at the reference laboratory. While a culture and sensitivity can help guide therapy, it should not be the sole criteria to stop treating a patient with distinctive symptoms.

TREATMENT

Most immediately, patients often require treatment of underlying urinary tract infection.

Once a patient has been diagnosed with **urinary crystals** there are no store-bought foods or treats that can be fed without increasing the risk of reformation of **crystals**. These prescription diets are formulated by nutritionists and veterinarians to specifically support urinary tract and bladder health.

Once such company, Royal Canin Veterinary Diet ® has created a food called Urinary S/O ®, which has several different mechanisms to dissolve and prevent urinary crystals. Some of these benefits include:

- Struvite dissolution – proven to effectively dissolve pure struvite uroliths
- Low Relative Super Saturation (RSS) – decreased risk of struvite and oxalate crystalline formation utilizing technology that predicts the crystallization potential of urine
- Urine dilution – entice thirst to increase urine volume and reduce the saturation of the urine with precursors to struvite and oxalate crystals

TIPS FOR SUCCESS

- Maintain dietary restrictions to prescription food, without exception.
    - Do not mix other store-bought foods, do not add treats, and do not add people foods
    - There are no store-bought or home-made diets that can replace the prescription foods