

**Renal & Urinary Disorders**

FELINE CALCIUM OXALATE UROLITHIASIS



Studies report that between 3-5% of cats presented to veterinary clinics have feline lower urinary tract diseases (FLUTDs). FLUTDs are a group of diseases affecting the bladder and urethra with many contributing factors, including stress, low water consumption, excess body weight, low levels of exercise, and confinement.

Urolithiasis (urinary crystals and stones) accounts for 7-22% of FLUTD cases, and calcium oxalate is one of the two most common uroliths. Similar to other FLUTDs, calcium oxalate urolithiasis is prone to recurrence. However, nutrition can be used as part of a multimodal strategy to lower the risk of recurrence. Since findings of calcium oxalate crystalluria can occur incidentally, especially when urinalysis is delayed after collection of urine, these findings should be considered in the context of whether clinical and radiographic signs are present.

Key Messages

- Therapeutic urinary diets can help reduce the risk of recurrence of calcium oxalate urolithiasis in cats.
 - They increase water intake and urine volume, promoting a more dilute urine. A more dilute urine contains a lower concentration of urolith precursors. A higher urine volume may also increase frequency of urination, helping eliminate precursors before they can form uroliths.
 - Promotion of a more dilute urine is recommended for the management of any FLUTD.
 - They help ensure an optimal balance of dietary minerals and other nutrients, including inhibitors of calcium oxalate formation, e.g., magnesium.
 - They maintain urine pH in an optimal range so as not to promote the development of calcium oxalate uroliths.
 - As measured by RSS (relative super-saturation) technology, a measure of the likelihood of urolith formation, urine in the low metastable range for calcium oxalate is produced which reduces the risk for new calcium oxalate uroliths to form.

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Key Messages (continued)

- Resources that reduce stress and associated risk factors for FLUTDs should be provided, such as:
 - Activity with toys and play sessions, including providing food in puzzle feeders, which can also help maintain ideal body condition and, possibly, decrease other risk factors.
 - An adequate number of resources (e.g., food and water bowls, clean litter boxes, toys, space) in multi-pet households and easily accessible resources (e.g., a senior cat can comfortably climb into and out of the litter box).

Additional Resources

Lulich, J. P., Berent, A. C., Adams, L. G., Westropp, J. L., Bartges, J. W., & Osborne, C. A. (2016). ACVIM small animal consensus recommendations on the treatment and prevention of uroliths in dogs and cats. *Journal of Veterinary Internal Medicine*, 30(5), 1564–1574. doi: 10.1111/jvim.14559

Queau, Y. (2019). Nutritional management of urolithiasis. *Veterinary Clinics of North America: Small Animal Practice*, 49, 175–186. doi: 10.1016/j.cvsm.2018.10.004

The Purina Institute aims to help put nutrition at the forefront of pet health discussions by providing user-friendly, science-based information that helps pets live longer, healthier lives.