

HOT TOPIC

Nutrition and urinary tract health in cats

CALCIUM OXALATE STONES



In focus

Feline lower urinary tract diseases (FLUTDs) have a multi-factorial etiology. Diet can play an important role as part of the overall management.

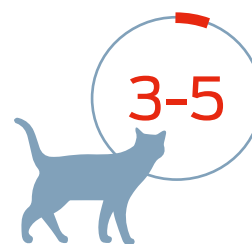
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What are FLUTDs?

FLUTDs are a group of diseases affecting the bladder, ureters, and urethra causing similar clinical signs, e.g., straining to urinate, blood in the urine, and urinating outside of the litterbox. Although the incidence of FLUTDs is <1% of the cat population, FLUTDs have been reported in 3–5% of cats presented to veterinary clinics.¹ Common types of FLUTDs are idiopathic cystitis (55–65% of cases) and urolithiasis (urinary stones and crystals), both of which can recur.¹ Struvite and calcium oxalate are the most common feline uroliths (stones).²



Percentage of cats presented to veterinary clinics reported to have a FLUTD¹

What contributes to the development of FLUTD?

Although the underlying causes of FLUTD are not known, clinical signs may be promoted by different factors including stress, low water consumption (resulting in a more concentrated urine and/or infrequent urination), excess body weight, inactivity, or confinement.³

Although there may be a perception that specific cat foods can be a risk factor, e.g., grocery store brands, there is no evidence to link specific cat foods with FLUTD. Since the condition is multi-factorial, a specific cat food or brand may appear overrepresented in the population of cats developing FLUTDs simply because a majority of cats consume these diets.

How can nutrition help support urinary tract health and manage FLUTD?

Healthy indoor cats may benefit from a diet formulated to support urinary tract health by supporting a balanced urinary pH. Most healthy cats will consume sufficient water to maintain optimal hydration when eating dry foods and drinking water free choice. However, increased water intake may be beneficial in cats predisposed to FLUTD.^{4,5}



METHODS TO INCREASE WATER INTAKE

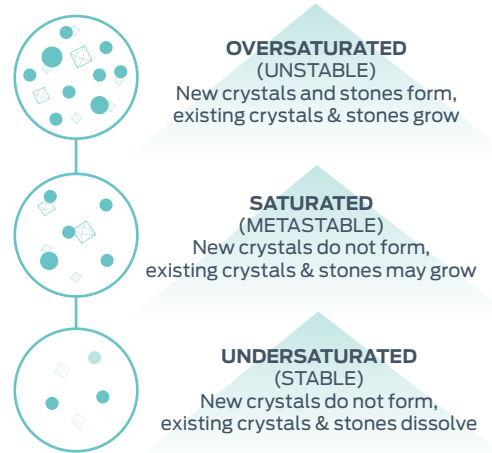
- Offer different water sources (e.g., still vs. moving water, different containers).^{3,6}
- Provide multiple water bowls to reduce the risk of resource competition in multi-pet households.^{3,6}
- Purina studies have shown that a specially-formulated, nutrient-enriched, flavored water supplement increased total water intake.⁷⁻¹¹

Therapeutic urinary diets may help manage and lower the risk of recurrence of idiopathic cystitis, struvite urolithiasis, or calcium oxalate urolithiasis by:

- **Promoting production of a more dilute urine** by increasing water intake and urine volume. A dilute urine contains a lower concentration of urolith-forming minerals and substances irritating to the bladder lining. A higher urine volume may also cause more frequent urination, thus elimination of minerals and irritants more quickly.^{3,4}
- Wet therapeutic diets, due to high moisture content, help increase total water intake.⁴
- Dry therapeutic diets (for cats preferring the texture of dry) may contain increased levels of salt to help increase voluntary drinking.²
- Diets with increased levels of protein also may increase water intake.¹²

Purina utilizes **RSS (relative super-saturation)** technology when formulating therapeutic diets: Purina scientists evaluate effects of the diet on RSS values, a measure of the risk for urolith formation.

INCREASING CONCENTRATIONS OF CRYSTALS IN URINE



Relationship between crystal concentration and stone formation (Adapted from Bartges, J. W., Kirk, C., & Lane, I. F. (2004). Update: Management of calcium oxalate uroliths in dogs and cats. *Veterinary Clinics of North America: Small Animal Practice*, 34, 969-987.)

- **Maintaining urine pH within an optimal range of 6.0–6.4**, which inhibits the production of and dissolves existing struvite uroliths. Regardless of urinary mineral concentration, a urine pH within this range does not support the formation of struvite uroliths.⁴
- **Ensuring an optimal balance of dietary minerals and other nutrients**, including inhibitors of calcium oxalate uroliths, e.g., magnesium, which can reduce the risk for recurrence of calcium oxalate uroliths.⁴

Additional dietary recommendations for FLUTD management include:

- Maintain ideal body condition (monitored with the **Purina Body Condition Score System**) to minimize the risk of becoming overweight.
- Feed multiple small meals daily, which helps moderate an increase in blood pH occurring after eating (the postprandial ‘alkaline tide’), which may help maintain urine pH within the optimal range.¹³
- Use puzzle feeders for indoor cats, which may increase activity, provide mental stimulation, and reduce stress.⁶

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