FELINE XANTHINE

Hereditary xanthinuria is a rare autosomal recessive disorder of purine metabolism caused by mutations in xanthine dehydrogenase (Type I) or molybdenum cofactor sulfarase (Type II) genes, and causes xanthine uroliths. Xanthine uroliths can also develop as an adverse effect of xanthine dehydrogenase inhibitors (allopurinol administration); however, this medication is rarely prescribed to cats. Urolith recurrence is rapid (<3 months). Many cats with hereditary xanthinuria develop nephrolioths and chronic kidney disease earlier (3-6 years old) than the general population.

MINIMIZING RECURRENCE

** Review manufacturer’s therapeutic food literature to determine indications/contraindications. For pets with multiple health concerns, consult a veterinary nutritionist to select an optimal food.

** Consider candidate gene (xanthine dehydrogenase and molybdenum cofactor sulfarase) sequencing for hereditary xanthinuria. (UMN Canine Genetics Lab)

** Eliminate Xanthine dehydrogenase inhibitors (e.g. allopurinol) as a cause.

** Potassium citrate if urine pH is consistently <6.5 (starting dose: 75mg/kg q12-24h)

** Avoid or reduce xanthine dehydrogenase inhibitors (e.g. allopurinol, februxostat).

** Lower purine/protein foods formulated with low purine ingredients (e.g. egg, dairy, or vegetable protein) that result in a neutral or alkaline urine pH (e.g. Hill’s k/d, l/d, i/d, others).

** If needed, feed canned therapeutic food or add water to food to lower urine specific gravity below 1.030.

** Urinalysis every 3 to 6 months to adjust pH to ≥ 6.5, and urine specific gravity < 1.030. Medical imaging every 3 to 6 months to detect recurrent stones when small to potentially permit their removal without surgery.