URINE SEDIMENT ATLAS

STRUVITE
- Stones usually white and hard, or yellow and dusty when dry.
- Struvite crystals can be a component of uroliths in dogs.
- Associated with urinary tract infections in dogs.

CALCIUM OXALATE
- Stones often have a very uneven outline.
- Monohydrate crystals often associated with ethylene glycol poisoning.

CYSTINE
- May be associated with a disorder of renal tubular reabsorption.

AMMONIUM URATE
- Often found in animals with liver disease or post-systemic shunt.

Predispositions and mean age at occurrence

CAT
- Female ≥ Male
- 1 to 6 years of age
- No breed predisposition
- Indoor cats
- Obesity

Dog
- Female >> Male
- 2 to 8 years of age
- No breed predisposition
- Indoor cats
- Obesity

Dietary management

URINARY S/C
- 5/0
- 5/0
- 5/0

NORMAL
- Few red and white blood cells.
- Very few squamous epithelial cells or mucus casts.
- Bilirubin crystals in concentrated canine urine, especially in males.

PATHOLOGICAL
- Increased WBC:
  - Urinary tract infection
  - Urolithiasis
  - Neoplasia
- Increased RBC casts:
  - Fever
  - Primary glomerular disease
  - Passive congestion of the kidney
- Bacteria:
  - Infection especially when the presence of bacteria is combined with increased WBC

ATYPICAL CRYSTALS
- Amyloid casts: amyloid, fibrillary casts
- Calcium pyrophosphate dihydrate: hematuria and urolithiasis
- Hematoxylin crystals: hematoxylin crystals, calcium oxalate
- Uroporphyrin: uroporphyrin crystals

KEY POINTS:
- The urine should be evaluated immediately after collection.
- Low quantities of crystals are normally present in urine.
- A cat may have stones and be crystal-free.
- In urolithiasis, the type of crystal observed may not reflect the type of stone present.

A study showed that 92% of canine samples contain crystals when tested after 24 hours, versus 24% when tested immediately.

Driving the cat to the veterinary surgery is sufficient to increase the urine pH. Indeed, urine pH is altered by stress and may increase by 1.4 as a result of hyperstimulation-induced alkalinization.

This logo, when featured on a diet's packaging, guarantees that this diet induces urine that is unfavorable to struvite and oxalate crystal formation.