

# MEDICATION-INDUCED URINARY STONES

An entire chapter entitled "*Drug-Induced [Urinary Stone Disease]*" appeared in Dr. Osborne's 1999 hardcover textbook. (Please note a ten-year anniversary edition is being rewritten and updated for 2009 publication.)

Following are stone-forming medications about which Dr. Osborne's teaching textbook cautions practicing vets. Like so many other aspects of complicated canine stone disease, the chapter urges any general practice vet diagnosing and treating a stone-forming dog should be given a list of any medications the dog is receiving, and **be reminded** of the possible undesirable influence of stone-forming medications. Please also note - as is unavoidably essential with any information relating to urinary stones - the specific **type-of-stone is prominently identified** in the textbook's drug inventory.

**From:** *Drug Induced Urolithiasis*, pp. 251-266, in Osborne, C.A.; Lulich, J.P., and Bartges, J.W., editors, *The ROCKet Science of Urolithiasis*, Vet Clinics of No. America, January 1999.

## DRUGS WHICH MAY INDUCE **CALCIUM-BASED** STONES

Acidifiers  
Calcitrol  
Corticosteroids (prednisone and analogs)  
Furosemide  
Sodium chloride (salt)

## DRUGS WHICH MAY CAUSE UNDESIRABLE **LACK-OF-SOLUBILITY** OF STONE-CAUSING SUBSTANCES

Urine acidifiers (for dogs forming urate and similar stones thriving in abnormal acid urine)  
Urine alkalinizers (for dogs forming infection and similar stones thriving in abnormal alkaline urine)

## DRUGS WHICH MAY INDUCE **OXALATE** STONES

Ascorbic acid (vit C)

## DRUGS WHICH MAY CAUSE **XANTHINE** STONES

Allopurinol (at overdosages above 450 mg. daily)

## DRUGS AND THEIR METABOLITES WHICH MAY **FORM PORTIONS OR ALL** OF A STONE

Urographic contrast agents  
Magnesium trisilicate  
Phenazopyridine  
Fluroquinolones  
Primodone  
Sulfonamides and their metabolites  
Tetracyclines (antibiotics)