## eline Lower Urinary Tract Disease FLUTD

## Symptoms:

chronic bloody urine, urinating in inappropriate areas, painful urination

## Miscellaneous facts:

Causes: immune mediated, viral, neurogenic (sympathetic, stress), bacterial
FLUTD is commonly the cause of behavioral problems seen in cats. Increased water consumption reduces recurrence in more than half of the cases studied. It is not known what action of drugs allows for relief; antidepressants, antibiotics, analgesics or antiinflammatories. Long term care is to be expected, the symptoms come and go even with preventative measures.

Case Study:
70 cats with FLUTD symptoms-41 eat dry food only-3 canned only- rest mixture
> 12 had 1 or more anatomic problems
> 12 obstructed
> 11 had systemic problems
> 10 had behavioral problems
> 8 had crystals present in urine, 1 struvite stone, 7 had calcium oxalate stones(this is up to $40 \%$ from 2 percent by using dietary methods to acidify urine)
> 2 were neoplastic
> $2 / 3 \mathrm{had}$ non obstructive idiopathic cystitis
Diagnosis:
$\checkmark$ Bloodwork including complete chemistries and CBC
$\checkmark$ Urinalysis with sediment
$\checkmark$ X-rays or ultrasound of bladder

## Treatment:

* Increase water consumption-reduces recurrence in more than $1 / 2$ of cases.
* Dietary prevention may be helpful, but changes can cause recurrence. Studies suggest adding water, even to canned food. A helpful tip is to mix water to bouillon to add palatability. The goal is to decrease urine specific gravity to 1.020 . This number is a measure of hydration. Urine pH is difficult to measure accurately and acidifiers have no known value.
* Waltham s/o or Hills c/ds, c/do
* Antivirals-methinamine 250 mg twice a day
* Steroids-no effect
* Antispasmodics-no effect
* Amitriptyline- stops neurogenic behavior- $2.5-5 \mathrm{mg} / \mathrm{kg} /$ day-remove environmental stress
* Analgesic-butorphanol $.3 \mathrm{mg} / \mathrm{kg}$ two to four times a day
* DMSO/Hydrocortisone- $10-20 \mathrm{ml}$ of $10 \%$ solution with heparin
* Antimicrobial-Amoxicillin, Metronidazole, Tylosin
* Environmental-water, clean box, scratch towers

