

# Aspirin

## ACETYLSALICYLIC ACID

AVAILABLE IN  
81 mg, 165 mg, 325 mg,  
500 mg, 650 mg, & 800 mg  
TABLETS

### USES OF THIS MEDICATION

There are three main uses of this medication:

- The relief of pain secondary to inflammatory disease, usually joint disease or eye disease though safer drugs have largely replaced aspirin in this role.
- To reduce the tendency of blood to clot as in certain heart diseases, glomerular disease, and any other condition with inappropriate tendency for blood to clot, though clopidogrel has largely replaced aspirin for this use.
- To reduce fever. While this is a common use for humans, we recognize that fever has an important place in immune function in fighting infection. Unless a fever is dangerously high, we generally do not reduce it artificially. **Further, as with the treatment of pain, safer drugs are available for this use.**

### HOW THIS MEDICATION WORKS

Aspirin inhibits an enzyme called "Cyclooxygenase" which is involved in the production of inflammatory chemicals called "prostaglandins." Arachidonic acid, a fatty acid that is essential in the diet of cats and dogs, makes up cell membranes. When the inflammatory cascade is active, cells use cyclooxygenase to convert their arachidonic acid into prostaglandins.

The problem is that there turns out to be more than one form of cyclooxygenase, some make inflammatory prostaglandins and some make other (non-inflammatory) prostaglandins. Some prostaglandins have important functions and we would prefer not to interfere with these. Aspirin, unfortunately, does not distinguish between different forms of cyclooxygenase and inhibits them all. Because of this, in this day and age, aspirin has largely been supplanted as an anti-inflammatory drug by safer medications that primarily inhibit the form of cyclooxygenase that is associated with inflammatory prostaglandins. Aspirin is inexpensive and readily available but no longer a leading choice for pain/inflammation relief in our pets.

For information on more up to date methods of pain control, visit the Arthritis Center.

One prostaglandin in particular deserves special mention: "thromboxane" which is involved in blood clotting. When a blood vessel is torn, special blood cells called platelets are called to the area where they pile on top of each other to create a plug. Thromboxane is involved in keeping these platelets stuck together, constricting the blood vessel to minimize bleeding and in several other more complicated operations that promote clotting. By inhibiting cyclooxygenase, thromboxane cannot be produced and the platelets present at the time of the aspirin administration are permanently inactivated. This is the mechanism that allows aspirin to be helpful in preventing abnormal clots, an important part of treatment for many human heart disease patients as well as pets with abnormal clotting tendencies. There are other blood clotting mechanisms present so aspirin does not lead to anyone bleeding to death but surgical and dental procedures should be avoided if possible in patients taking aspirin. It is also good to know that the dose of aspirin needed to "thin the blood" is traditionally believed to be much lower than the anti-inflammatory dose though in recent years this long-held belief has become controversial.

## SIDE EFFECTS

The chief side effects of concern are:

- Nausea or diarrhea.
- Stomach and intestinal ulceration and bleeding.
- Reduced blood supply to the kidney possibly leading to kidney failure.
- Reduced ability to clot blood.

The most common side effect of aspirin is probably stomach upset. In humans this has been so common that numerous alternative pain relievers have arisen (Tylenol®, Aleve®, etc.) It is important to resist the temptation of using any of these non-aspirin products in pets as most have a far greater potential to ulcerate the stomach than does aspirin. As human pain relieving drugs go, aspirin is probably one of the safer one; however, as veterinary pain relieving drugs go, aspirin is generally the last choice.

In short, the most common side effect of aspirin is vomiting. There can also be panting, listlessness, and diarrhea. Serious side effects relate mostly to ulceration of the stomach so one should watch for tarry black stools indicating blood passing through the GI tract.

**CATS METABOLIZE ASPIRIN VERY VERY SLOWLY  
AND IT IS EASY TO OVERDOSE THEM.**

**CHECK THE DOSE AND FREQUENCY OF ADMINISTRATION  
WITH YOUR VETERINARIAN.**

## INTERACTIONS WITH OTHER DRUGS

Using Aspirin with other NSAIDS (non-steroidal anti-inflammatory drugs) exaggerates the ulcerative properties of these medications. Aspirin should not be used in combination with cortisone-type medications (such as prednisone) or with other NSAIDS (such as carprofen) unless absolutely necessary.

Combining aspirin and furosemide leads to an increase in the activity of the aspirin. Toxicity problems could result if higher aspirin doses are used. This is unlikely to be a problem if lower (anti-clotting) doses of aspirin are being used.

Digoxin, a heart medication, will last longer and achieve higher blood levels if given with aspirin.

Spironolactone, a diuretic, will be weaker if given to a patient on concurrent aspirin. The same is true for ACE (angiotensin converting enzyme) inhibitors. In other words, they may be less effective in the presence of aspirin.

Concurrent use of aspirin and phenobarbital may lead to rapid metabolism of the aspirin so that it does not last as long.

Concurrent use of buffered aspirin and tetracycline may lead to binding of the tetracycline to the antacid so that the tetracycline is inactivated. These medications should be separated by at least an hour if used together.

Aspirin is sometimes combined with clopidogrel, another anti-coagulant, in cats in need of extra clot tendency reduction; however, recent studies indicate that clopidogrel alone is more effective than aspirin alone.

The anti-coagulant/anti-platelet effect of aspirin may be enhanced by concurrent use of omega 3 fatty acids, glucosamine (joint support supplement), calcium channel blockers and serotonin reuptake inhibitors.

## CONCERNS AND CAUTIONS

It is important to understand the dosing regimen recommended if aspirin is to be used in a cat. The dosing schedule is very different between dogs and cats.

If an aspirin dose is accidentally skipped in a dog, do not double up on the next dose. Simply give the next dose as scheduled.

**DO NOT USE HUMAN MEDICATIONS ON PETS  
WITHOUT SPECIFIC INSTRUCTIONS ON HOW  
TO SAFELY DO SO FROM YOUR VETERINARIAN.**

Aspirin will reduce blood flow through the kidney which is likely to make pre-existing kidney disease much worse.

Enteric coating of aspirin may alter the way aspirin is absorbed in the stomach. The pills tend to stick to the stomach lining instead of dissolving properly. If enough tablets accumulate, overdose and death can occur. We recommend non-enteric coated aspirin only.

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Additional drug and general pet care information can be found on our world wide web site:  
<http://www.marvistavet.com>