

A VETERINARY GUIDE TO TEAR STAINS



Classic “before and

after” picture of the type used by tear stain snake oil salesmen.

Oy vey, this topic’s a mess, isn’t it? I tell you what, researching this article revealed a TON of misinformation. I’m going to attempt to clear it up.

Quick rule of thumb – any time there’s a million suggested treatments for something, that means that no one treatment works for everyone.

This much is clear. Some dogs produce excessive tears – primarily because when humans turned wolves into poodles, bichons, Maltese, boxers, bulldogs, etc, that selective breeding created short noses and protruding eyes that contribute to abnormally narrow and often crooked tear ducts.

Excessive tears, then, is a problem that can’t necessarily be fixed in most of these dogs (because we bred it into them in the first place), but the effects of too many tears can be managed.

Other veterinary / medical causes for excessive tearing, by the way, include **ingrown eye lashes, abnormally large tear producing glands, abnormally small tear duct openings, stress, drugs, poor quality diet, smoking, ear infection, and plastic food bowls**. ALL OF THESE SHOULD BE RULED OUT BY YOUR VETERINARIAN BEFORE YOU READ THE REST OF THIS ARTICLE.

Importantly, young puppies will tend to produce more tears when they are teething. When the dog reaches maturity, tear staining should lessen.

Now, assuming you and your veterinarian have ruled out medical causes of excessive tear production, what now can be done for the stains that often result? And why do these stains happen in the first place?

Let's begin! Grab yourself a cup of tea, this might take a minute...

Tear stains are usually caused by dye molecules called **porphyrins**. Porphyrins are iron-containing molecules, produced when the body breaks down red blood cells. Porphyrins are excreted primarily through bile and the intestinal tract, but **in dogs a significant amount of porphyrin is excreted through tears, saliva and also urine.**

When porphyrin containing tears or saliva sits on white fur for any length of time, stains result. These iron-related stains intensify/darken in the presence of **sunlight**.

All dogs produce porphyrin, but of course porphyrin staining is most noticeable on light colored dogs. If you have ever noticed a white dog who has been licking or chewing on his leg, the hair in that area will turn iron-brown in color as well.

Primarily, then, most tear stains in most dogs can be simply prevented by keeping the face meticulously free of porphyrin-containing tears. That means keeping the face hair trimmed, and wiping the face at least twice daily with a slightly damp wash cloth, to dilute out and wash away the tears.

Or, if you want to get really fancy, cleaning under the eyes with ordinary contact lens cleaning solution (containing dilute boric acid, that oxidizes the iron in the porphyrins and lightens the color) will help keep things neat and tidy.

But cleaning the face certainly isn't the whole story, is it.....? What about Red Yeast?

Oy, Red Yeast, also known on various websites, blogs and forums as "Ptyrosporin". Well folks, **Ptyrosporin do not exist.**

Time to learn about yeast – AFTER A QUICK HISTORY LESSON

Once upon a time (1874), a fellow named Malassez isolated yeast cells from human dandruff scales (ew!). In 1889, a different fellow named Baillon included this group of yeasts under the genus *Malassezia*, named after the first guy. A third dude named Sabouraud (1904) considered this organism as a cause of dandruff and gave it a new name, *Pityrosporum malassez*. In the following years, there was controversy regarding the generic name of the fungus, and in 1984, *Malassezia* finally gained priority over *Pityrosporum* and was accepted as the generic name for the fungus.

So **Malassezia = Pityrosporum**, but *Ptyrosporin* doesn't exist. Somewhere along the line, probably before the official name change in 1984 (some of these internet legends persist from BEFORE the internet was even invented LOL!) someone boogered up the spelling and mislabelled this yeast

as **Ptyrosporin**. Suffice it to say, the Red Yeast everyone is talking about is not some magical red-stain-making yeast strain found only in dog tears, it's the same, **brown**, boring ol' Malassezia that causes ear infections and skin infections and all kinds of other routine grossness in dogs. This finding was a shock to me, as a tiny little misspelling propagated over thousands of websites has led to a massive misunderstanding of what causes tear stains.

Who cares what it's called, Dr. Magnusson? How do you treat it?

Well, I care, and here's why. If your dog develops a YEAST INFECTION aside her nose as the result of the fur under her eyes being chronically wet with tears, because you're not cleaning her face and keeping her fur trimmed, that's a medical condition easily treated with proper grooming and upkeep.

BROWN staining from yucky yeast infection secondary to poor grooming maintenance, and RED staining from porphyrins, are two different problems, which is why oral supplements aimed at reducing porphyrin production will not work in all dogs.

Now that's cleared up, why do some dogs make more porphyrin than others? *That's the \$64,000 question right there.*

The answer, of course, is not a yeast problem but rather a bacterial problem. Which bacteria, exactly, contribute to excessive porphyrin production? We don't know for sure. There is some suspicion (though nobody has ever proved this) that our old friend Malassezia (aka Pityrosporium, aka NOT Ptyrosporin) are still involved somehow, even though we know very well the problem is primarily bacteria. Some believe the Malassezia somehow interacts with the bacteria in the tears of these dogs, and that somehow Malassezia-fueled bacteria (or bacteria-fueled Malassezia?) then produce porphyrin. The mechanism of this bacterial porphyrin production is unclear.

What is clear, however, is that giving dogs certain antibiotics eliminates excessive porphyrin production in some dogs, so yeast infection is not the only possible cause of tear stains. Tylosin, the antibiotic in Angels' Eyes, is often effective in these bacterial cases. Since we know Tylosin is NOT effective against Malassezia / Pityrosporium / Ptyrosporin, that MUST mean that chronic low grade **bacterial** infections are the cause of tear stains in some dogs.

Wait, did you just say that Angels Eyes and Angels Glow are effective because they contain ANTIBIOTICS?!?

Yup.

Why isn't the FDA more concerned about the OTC use of an antibiotic? Shouldn't that be illegal? It's clearly illegal for any company to make a product containing any other antibiotic, but somehow "supplements" containing Tylosin have managed to fly under the radar. Probably not forever, as every other country in the world has outlawed Angels Eyes and their ilk and some have taken action to remove these products from store shelves ([here's a supporting document from the UK](#)).

As with any antibiotic, Tylosin is usually harmless in small doses, but may be harmful to some dogs. At the very least, giving low-dose broad-spectrum antibiotics to **any** dog is likely to encourage **bacterial resistance**, a problem the human medical community has been hounding the veterinary community about for years (pardon the pun).

ARE THERE ORAL MEDICATIONS THAT REDUCE PORPHYRIN PRODUCTION AND DO NOT CONTAIN TYLOSIN?

I'm so glad you asked! Of course there are! Naturally, now that we're getting into the fuzzy realm of nutraceuticals, probiotics and other poorly-studied supplements with little to no oversight or regulation, I can't really vouch for any of these products. Testimonials abound, you're mostly on your own when choosing one over the other, but as with any product, you'll find someone who swears by each of them, and someone else who says it's voodoo nonsense and doesn't work.

NO MEDICATION IS HARMLESS. None. Not one. Every drug, supplement, and herb has some type of side effect. To say otherwise is negligent and irresponsible. So buyer beware, and always consult with your veterinarian before starting your dog on any supplement please.

Now then... several "natural" supplements have surfaced that claim to reduce tear staining, do not contain obvious antibiotics, and are less likely to be seized by the FDA for breaking the law, so if you want to try one, that's your prerogative.

Here's a couple I've found that some people like and some people don't. I don't endorse any of these, this list is for information purposes only:

[NaturVet tear stain supplement](#)

[Tearlax](#)

HERE'S MY BOTTOM LINE – HOW TO TREAT TEAR STAINS:

STEP 1: Meticulously maintain your dog's clean face. Wipe face with a damp cloth twice a day to remove excessive tears, and keep regular appointments with the groomer.

STEP 2: Throw away your plastic food bowls. Use stainless steel, porcelain or glass. Plastic food bowls often develop tiny cracks that harbor bacteria and cause facial irritation.

STEP 3: Consider a mild boric acid containing solution as found in some contact lens cleaners, or use liquid vitamin C, on a cotton ball, to wipe the dog's face and lighten the tear stains that have already formed. Acids like boric and citric (Vit C) presumably oxidize the porphyrin iron compounds and lighten them, whereas sunlight makes the stains darker.

STEP 4: If porphyria remains despite your best grooming efforts, consider a NON-Tylosin containing oral supplement like the ones listed above.

STEP 5: If your tap water happens to be high in mineral content or iron, consider giving the dog bottled water, or use a filter to create cleaner water.

STEP 6: If you insist on using antibiotics, under veterinary supervision, drugs like doxycycline, metronidazole and enrofloxacin have all been used with some success.

BONUS? – STEP 7: Tums or Apple Cider Vinegar? – I have found **no evidence** that adding a tiny amount of antacid or vinegar to your dog's giant tub of stomach acid will have any effect at all on the pH of their tears, *so I'm calling BS on this one.*

BONUS – STEP 8: Does a higher quality diet reduce porphyrin production in some dogs? Certainly. Veterinarians always recommend feeding your dog the highest quality balanced diet you can afford. Some folks swear by homemade or raw diets, others are concerned about nutrient balance issues with homemade diets, most veterinarians prefer you feed a well-studied commercial diet of some kind, from a major manufacturer. No clear right or wrong here, do what works for you and your family.

I DO NOT RECOMMEND you use OTC Tylosin, Terramycin (oft misspelled Teramyacin), makeup remover, milk of magnesia, yogurt, hydrogen peroxide, gold bond, corn syrup, or any other voodoo concoction to remove tear stains, as obviously putting ANY of these things INSIDE the eye is likely to make your dog really unhappy.

That's all!! Hopefully, you've learned that PROPER GROOMING AND MAINTENANCE of your dog's face is the primary treatment for tear stains, and do please see your veterinarian to rule out medical causes of excessive tears, before starting your dog on any supplements! Thanks for reading, please share this article if you liked it!