



BEST SOLUTION TO YOUR PET'S EYE PROBLEM



J.VET Eye Problem Solutions



RefreshEye
(2% NAC Eye Drops)
7.5ml/bottle



RenewEye plus
(Patented Bio-mucin)
7ml/bottle



Common Small Animal Eye Problems

	Incidence (per 10,000 dogs)	Suggested Treatment
Conjunctivitis	246.2	RenewEye plus
Nuclear sclerosis	62.4	RefreshEye(improve, prevent)
Epiphora	58.2	Eye surgery · RenewEye plus
Cataracts	56	Eye surgery(Treatment) · RefreshEye(improve, prevent)
Third eyelid prolapse	54.7	Eye surgery
Corneal ulcers	50.2	RenewEye plus · Eye surgery (severe cases)
Entropion/eversion of the eyelid	49.4	Eye surgery
Dry eye syndrome	23.2	RenewEye plus
Eyelid cyst	9.7	Eye surgery
Eyelid tumor	8.3	Eye surgery
Corneal scratch	7.9	RenewEye plus
Corneal edema	6.3	Eye surgery · RenewEye plus
Glaucoma	5.9	Eye surgery · Ophthalmic timolol · RefreshEye (Antioxidants)

1,189,844 canine patient records of U.S. Banfield hospitals during 2006

RenewEye Plus



7 ml/bottle

【Ingredients】

- Hyaluronic acid, Bio-Mucin, vitamin E, dipotassium glycyrrhizinate, PMHB, water

【Properties】

- **Bio-Mucin** can stimulate cell growth and migration during re-epithelialization.
- **Hyaluronic acid (HA)** is an excellent moisturiser and maintains the stability of the tear film, helping increase eye moisture and relieve discomfort. Hyaluronic acid provide an environment for healing.
- **Dipotassium glycyrrhizinate (DP)** is a herbal ingredient currently used as anti-inflammatory agent.
- **Vitamin E** is a fat-soluble antioxidants that protect fatty acids from harmful oxidation. It can provide antioxidant protection, improve blood flow to eyes and nourish eyes.

【Indications】

- Corneal ulcer, Dry eye syndrome, Conjunctivitis

【Application】

- Apply 1 to 2 drops in both eyes 2 to 3 times daily or as directed by the veterinarian.



Professional Veterinary Formula

RenewEye Plus



7 ml/bottle

Bio-Mucin (TW 1494119)

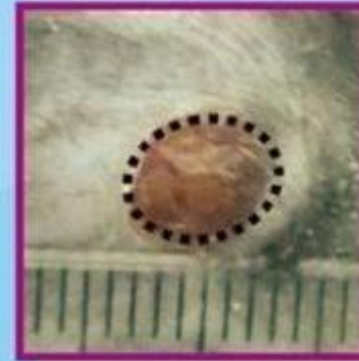
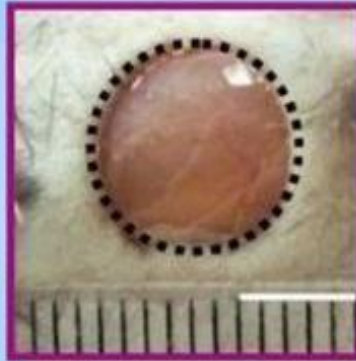
Composition for promoting wound healing

0 days

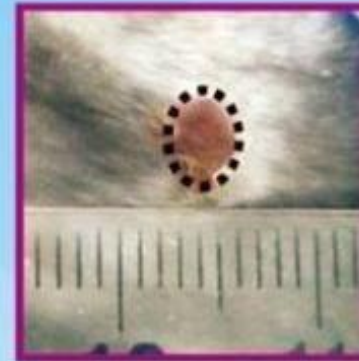
7 days

10 days

Control



Bio-Mucin

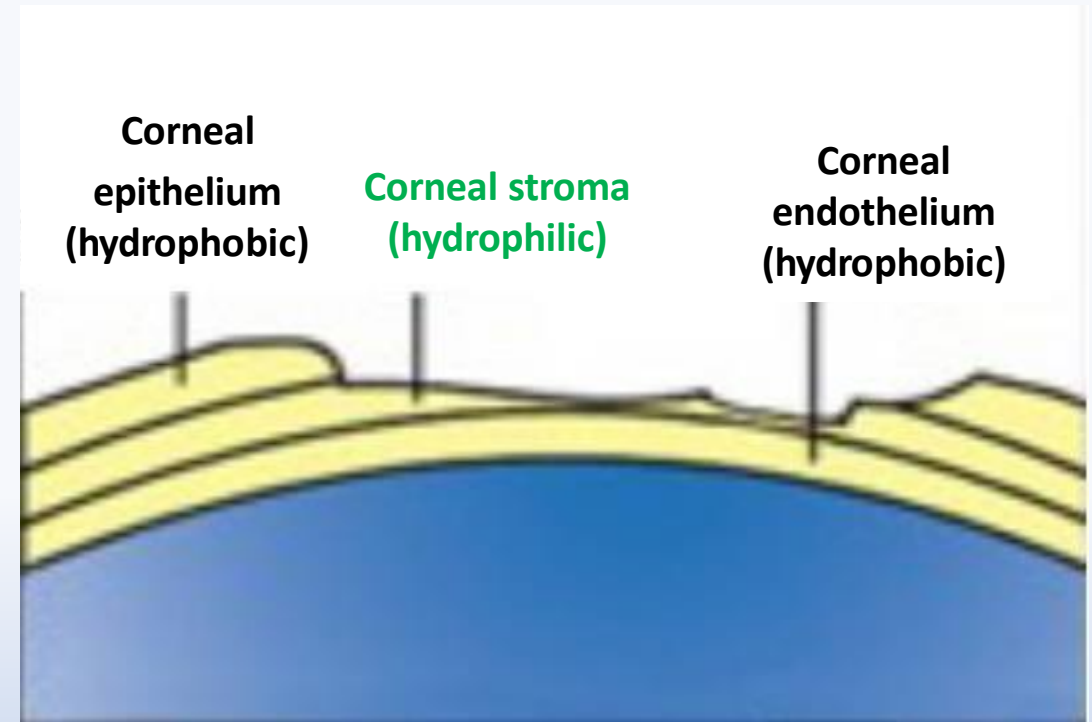


Professional Veterinary Formula

RenewEye Plus

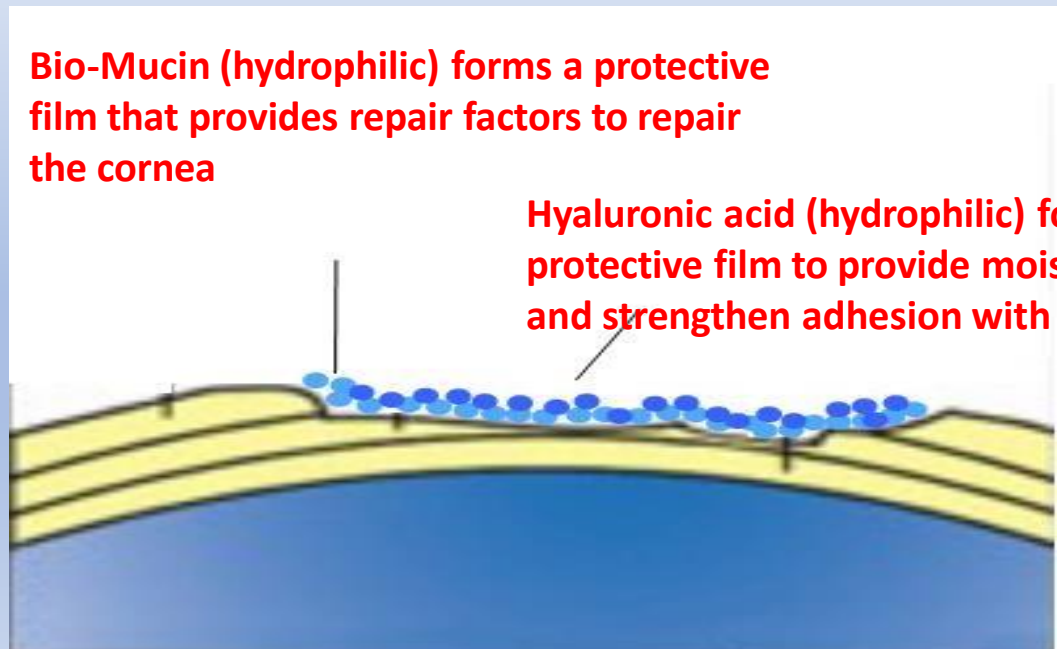


7 ml/bottle



Bio-Mucin (hydrophilic) forms a protective film that provides repair factors to repair the cornea

Hyaluronic acid (hydrophilic) forms a protective film to provide moisturizing and strengthen adhesion with Bio-Mucin



Professional Veterinary Formula

RenewEye Plus



7 ml/bottle

Treatment for dry eye

Inhibition of T cell attack on epithelial cells

- Immunosuppressant, growth factor therapy

Moisturize the eye

- Artificial tear 、 **RenewEye Plus**

Prevent second infection

- Antibiotics 、 **RenewEye Plus**

Promote the repair of epithelial cells

- Growth factor therapy 、 **RenewEye Plus**

RenewEye Plus is a multiple-effect eye drops for dry eye syndrome. It can be long-term used due to its mild compositions.



Professional Veterinary Formula

RenewEye Plus



7 ml/bottle

Clinical use of RenewEye plus

- **Long-term control of dry eye syndrome**
 - No irritation, no corneal damage
 - Effectively improve symptoms of dry eye
 - No significant improvement in tear volume
- **First line eye drops for corneal ulcers**
 - Effectively improvement for mild to moderate superficial corneal ulcers
 - One bottle is a course of treatment.
- **Conjunctivitis and lacrimation problems**



Professional Veterinary Formula

RefreshEye



7.5 ml/bottle

【Ingredients】

- N-acetyl-L-carnosine (N-acetylcarnosine, NAC) 20mg, taurine, vitamin E, hyaluronic acid, PHMB

【Properties】

- **2% N-acetyl-L-Carnosine** has a high antioxidant capacity, which can remove free radicals, decrease oxidative damage in the lens and ameliorate cataract formation, and make the eyes bright and delay aging.
- **Taurine** is an important nutrient for eye and retina health. It has antioxidant and cytoprotective properties that help restore eye health and maintain eyesight.
- **Vitamin E** is a fat-soluble antioxidants that protect fatty acids from harmful oxidation. It can provide antioxidant protection, improve blood flow to eyes and nourish eyes.
- **Hyaluronic acid (HA)** is an excellent moisturiser and maintains the stability of the tear film, helping increase eye moisture and relieve discomfort.

【Indications】

- Cataract, nuclear sclerosis, aging eyes

【Application】

- Apply 1 to 2 drops in both eyes 2 to 3 times daily or as directed by the veterinarian.



Professional Veterinary Formula

RefreshEye



7.5 ml/bottle

2% N-acetyl-L-Carnosine

- ✓ Anti-oxidant protection of eyes, increase light transmittance of lens

Taurine

- ✓ Endogenous antioxidant, healthy retina

Vitamin E

- ✓ Provide antioxidant protection and promote blood circulation in the eyes

Hyaluronic acid

- ✓ Long-term moisturizing eyes, stable tear film, soothing discomfort

Corneal penetration formula

- ✓ Carrying active ingredients to penetrate the cornea deep into the eye, giving more effective protection

PHMB

- ✓ Gentle antibacterial does not damage the cornea, can be used for a long time without causing corneal damage

RefreshEye



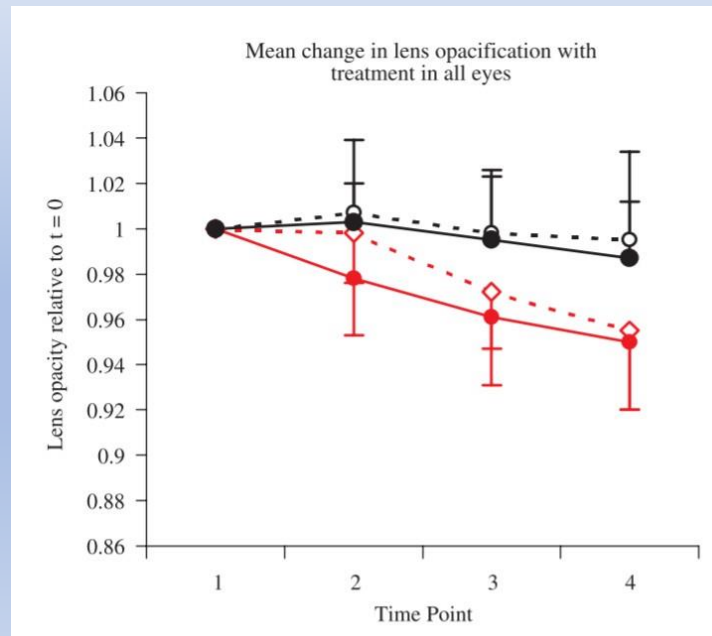
7.5 ml/bottle



Professional Veterinary Formula

Eye drops containing NAC ingredients

- Helps improve the turbidity of crystals (Babizhayev MA., et al. 2014)
- Significantly increase the crystal clarity of immature cataract and lens nucleus sclerosis (Williams DL., et al. 2006)
- Improvement of visual function (visual acuity, glare sensitivity) in elderly patients with cataract (Babizhayev MA., et al. 2016)
- Reduce intraocular oxidative damage in primary open-angle glaucoma (Babizhayev MA., et al. 2016)



- (miscellaneous)
- (mature cataract)
- ◇ (nuclear sclerosis)
- (immature cataract)

Vet Ophthalmol. Sep-Oct 2006;9(5):311-6.

The effect of a topical antioxidant formulation including N-acetyl carnosine on canine cataract: a preliminary study

[David L Williams¹](#), [Patricia Munday](#)



7.5 ml/bottle

Taurine

- Taurine is a naturally occurring free amino acid. Its good neuroprotective and antioxidant properties can help to protect the optic nerve of the eye and slow down oxidative damage to a certain extent. Studies have found that taurine concentrations are significantly reduced in eyes with cataracts (Kasuya Minako, et al. 1992; Anthrayose CV., et al. 2004) and glaucoma (Madl JE., et al. 2005). Taurine helps prevent glycation and denaturation of crystallins. (Devamanoharan PS. , et al. 2004)

Studies have shown that the use of eye drops containing Taurine

- Helps improve diabetic retinopathy (Usama Jihad. 2011)
- Helps prevent age-related retinal changes (Militante & Lombardini 2004)
- Combined with lowering intraocular pressure in the treatment of glaucoma has a better therapeutic effect (Francesca Berardo., et al. 2017)

Clinical use of RefreshEye



7.5 ml/bottle

➤ Early prevention of cataracts

- Proven by experiments to increase the transmittance of crystals
- The effect is more obvious when used in the early stage of immature cataract
- No significant improvement for mature cataracts

➤ Prevention and treatment of Nuclear Sclerosis in aged eyes

- Proven by experiments to increase the transmittance of crystals
- Simultaneously improve other ocular discomfort problems (dry eye, conjunctivitis) in aged animals
- After improving the vision of elderly animals, it is also helpful for the improvement of activity

➤ Recommending all elderly animals as a standing eye care solution

- Prevent cataract and nuclear sclerosis, improve eye discomfort, improve vision

Marketing of RefreshEye

- Since its launch in 2019, it has accumulated sales of 50,000 bottles! !
 - A total of 50,000 pairs of dog and cat eyes have been used, stable use by veterinarians in Taiwan.
 - About 20,000 bottles RefreshEye sold in Taiwan (2.5 million dogs and cats) every year.
 - 1 bottle per 125 pets (dogs and cats) per year. (Taiwan)



7.5 ml/bottle

J.VET Eye Problem Solutions



RefreshEye

(2% NAC Eye Drops)
7.5ml/bottle

Improve for Immature Cataracts

Improve for Nuclear Sclerosis

Help for Mature Cataracts



RenewEye plus

(Patented Bio-mucin)
7ml/bottle

Superficial corneal ulcers

Dry eye syndrome

Conjunctivitis



Professional Veterinary Formula

Common Small Animal Eye Problems

	Incidence (per 10,000 dogs)	Suggested Treatment
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Corneal edema	6.3	Eye surgery · RenewEye plus
Glaucoma	5.9	Eye surgery · Ophthalmic timolol · RefreshEye (Antioxidants)

1,189,844 canine patient records of U.S. Banfield hospitals during 2006

- 638/10,000 dogs have eye problems
- J.VET Eye problem solutions **improve 513/638 (81%) eye problems**

Professional Eye Drops

- ★ Developed by professional veterinary team
- ★ Effective care for common eye problems in pets
- ★ Does not hurt the cornea and can be used for a long time
- ★ Has helped more than 400,000 pairs of pet eyes so far



7.5ml/bottle



7ml/bottle

> > RefreshEye™

Ingredients

N-acetyl-L-Carnosine 2%, Taurine, Vitamin E, Hyaluronic Acid, PHMB

Features

1. Reduces oxidative damage, delays aging, and keeps eyes bright.
2. Long-term moisturization to the eyes and relieves discomfort.
3. Nutrients for the eyes to maintain the health of the eyes and retina.

Indications

Cataracts, nuclear sclerosis, aging eyes

Dosage:

According to the symptoms, use 1~2 drops per eye, 2~3 times a day.
Or use as directed by a veterinarian.

> > RenewEye PLUS™

Ingredients

Patented repair peptide (Bio-Mucin), hyaluronic acid, vitamin E, glycyrrhizic acid, PHMB

Features

1. Patented peptides promote cell activation and help cornea repair.
2. Long-lasting moisturizing hyaluronic acid helps to stabilize the tear film and relieve dry eye discomfort.
3. Vitamin E provide antioxidant protection and eye nutrition.

Indications

Dry eye, corneal ulcer, conjunctivitis

Dosage:

According to the symptoms, use 1~2 drops per eye, 2~3 times a day.
Or use as directed by a veterinarian.

Improve common eye problems in pets with nutritional eye drops

Eye problems are one of the common illnesses in pets, accounting for approximately 7% of hospital visits. The most common eye diseases are conjunctivitis, nuclear sclerosis, epiphora, cataracts, third eyelid prolapse, corneal ulcers, entropion, ectropion, and dry eye syndrome. Statistics show that over 70% of eye disease cases can be effectively treated with eye drops, highlighting the importance of eye drops in ophthalmology treatment.

Non-infectious eye diseases such as cataracts and dry eye syndrome do not usually require treatment with antibiotic eye drops. Instead, they can be managed with nutritional eye drops containing nutrients, antioxidants, and moisturizing ingredients to maintain long-term eye health and improve the problem. Nutrient-rich eye drops are susceptible to contamination and should include antibacterial agents to maintain quality. Common antibacterial agents used in eye drops are benzalkonium chloride (BKC), a quaternary ammonium compound. However, such agents can cause strong irritation to the eye mucosa, leading to animal rejection of the eye drops. Long-term use of these eye drops may also weaken the cornea. When selecting nutritional eye drops for long-term maintenance of pet eye health, it is essential to choose a gentle and non-irritating product in addition to being mindful of the ingredients.

Keywords: NAC, hyaluronic acid, dry eye, corneal ulcer, dry eye, conjunctivitis

Corneal ulcers in dogs and cats

Eye drops to help corneal ulcers heal

Corneal ulceration is usually a damage to the cornea's anterior surface, which can cause discomfort and urge the animal to scratch, leading to further exacerbation of symptoms. Eye drops with the following characteristics can provide good support:

- 1. Antibiotics or antibacterial agents:** Corneal ulcers can easily cause secondary infections, and antibiotics or antibacterial agents such as PHMB with infection-inhibiting effects should be given simultaneously.
- 2. Moisturizing ingredients:** Appropriate moisturizing of the eyes can help relieve discomfort.
- 3. Repairing ingredients:** Eye drops containing growth factors or promoting repair components can help heal the cornea.
- 4. Anti-inflammatory ingredients:** Corneal ulcers are often accompanied by conjunctivitis, and eye drops containing anti-oxidants (such as vitamin E) or anti-inflammatory ingredients can improve swelling problems.

Corneal ulcer prognosis and follow-up

The prognosis of corneal ulceration is closely related to the extent and depth of corneal damage. Most superficial ulcers can heal within 2 to 3 weeks, and it is usually recommended to continue using nutritional eye drops for a period of time after healing to maintain the health of the cornea.

After starting treatment, the patient should return for a follow-up examination at least 3 to 5 days later to determine whether to change eye drops or perform surgical intervention based on the healing condition. If the ulcer does not improve after two weeks of treatment, the prognosis is usually poor, and it is recommended to switch to eye drops with better repair effects or surgical intervention to prevent chronic inflammation symptoms such as melanosis, congestion, fibrosis, etc.

If the corneal ulcer is too severe (elastic layer prolapse), a poor prognosis can be expected, and early ophthalmic surgery should be considered.

Dry eye syndrome ²

Eye drops to help dry eye syndrome heal

The causes of dry eye syndrome may include iatrogenic factors (such as third eyelid removal surgery), medication (such as sulfa drugs), autoimmune disorders, breed or congenital factors, or age-related degeneration. Animals with insufficient tear secretion may experience uncomfortable and itchy dry eyes, leading to secondary infections and corneal damage. Eye drops with the following characteristics can help improve dry eye problems:

- 1. Improve tear secretion:** Immunosuppressive drugs like cyclosporine can treat dry eye syndrome caused by autoimmune disorders. In addition, serum containing abundant platelet-derived growth factors can promote tear gland secretion through mechanisms such as inflammation inhibition and repair promotion.
- 2. Moisturizer:** The main discomfort of animals with dry eye syndrome comes from the dryness of their eyes. Actively providing artificial tears with moisturizing ingredients can reduce the animals' urge to scratch their eyes.
- 3. Prevent secondary infections:** Dry eye pet frequently rubbing their eyes can easily cause secondary infections. Therefore, it is recommended to provide antibiotics or antibacterial agents with infection-inhibiting effects such as PHMB.
- 4. Repair damaged cornea:** The cornea of animals with dry eye syndrome is easily damaged due to frequent eye rubbing and lack of tear lubrication, resulting in a weakened cornea. Even if the pet does not have corneal ulcers, it is still recommended to continue providing eye drops with repair components to help maintain the integrity of the cornea.

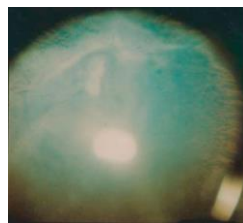
Cataracts and Nuclear Sclerosis ³

N-acetyl-L-Carnosine for cataracts

L-Carnosine is an important antioxidant in the crystalline lens, with the ability to eliminate free radicals, inhibit protein glycation in the lens, and prevent the formation of final products that cause cloudy vision. Studies have found that the concentration of L-Carnosine in the crystalline lens of eyes with cataracts is only one-fifth of that in normal eyes, and the decline in antioxidant capacity of the lens may be the main cause of age-related cataracts.

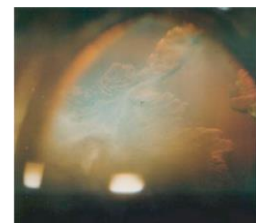
As L-Carnosine cannot penetrate the cornea and enter the eye when applied topically, N-acetyl-L-Carnosine (NAC) is a better option due to its superior corneal permeability, which allows it to enter the eye and convert to L-Carnosine, providing antioxidant protection to the eye. Studies have shown that using eye drops containing NAC can help improve the opacity of the crystalline lens, significantly increasing the transparency of immature cataracts and nuclear sclerotic cataracts.

Before using 1% NAC eye drops



The crystals are cloudy and opaque, preventing light from penetrating.

After 1 month of use



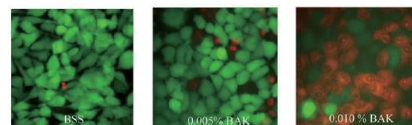
Denatured proteins begin to dissolve like snowflakes.

(Babizhayev MA, et al. 2014)

Preservative Selection for Eye Drops ^{4,5}

PHMB - does not harm the cornea

The traditional antibacterial agent Benzalkonium chloride (BKC) is the most commonly used antibacterial agent in general eye drops. The usual concentration of 0.01% has caused great damage to the eye epithelium and is not suitable for long-term use in the eyes.



The concentration (0.01%) of benzalkonium (BAK) commonly used in eye drops can cause severe damage to conjunctival epithelial cells (red area)

Polyhexamethylene biguanide (PHMB) is a widely recognized as the safest and most effective antibacterial agent that can be used for the eyes. According to a study published by the Association for Research in Vision and Ophthalmology (ARVO), a concentration of 100 ppm of PHMB does not damage the corneal epithelial phospholipid layer, and a concentration of 800 ppm used continuously for two weeks in rabbit eyes did not cause harm, making it an excellent antibacterial agent for use in nutritional eye drops.

References

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