

Topical Therapies for Skin Disease



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PROFILE

Topical medication, either as a primary or adjunct therapy, plays an important role in treating dermatologic diseases, particularly when systemic therapy is not available or desirable. For allergic patients, topicals help remove allergens and may help manage pruritus and secondary bacterial or yeast infections. In these patients, topical therapy is also currently focused on

repairing the skin barrier, although this area of topical therapy is in its infancy and its benefits have not been well-established.

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TREATMENT

Pruritus

- Various ingredients have been used to mitigate the unpleasant sensation of primary (allergic) pruritus. For mild-to-moderate cases, oatmeal

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and topical anesthetic ingredients, such as pramoxine or lidocaine, are still the most popular. The benefits of these medications are typically short-lived and vary, depending on the severity of the animal's discomfort.

- Topical antihistamines are typically of minimal benefit, while topical glucocorticoids are effective in most cases. Select less potent glucocorticoids first and move to more powerful agents only if needed. Some products (eg, triamcinolone spray) have been demonstrated to be safe and well tolerated with minimal systemic effects.¹
 - Take into consideration the size of the patient and the likelihood of systemic absorption due to the condition of the skin; inflamed or excoriated skin may absorb more than normal skin.
 - An adverse effect of long-term topical glucocorticoid therapy is cutaneous atrophy,

which is most evident on the glabrous areas, such as the ventral abdomen, where vessels become easily noticeable. To avoid this, use a calcineurin inhibitor such as tacrolimus, particularly for localized therapy. Disadvantages associated with this type of topical medication are that the ointment formulation can irritate the skin, cause gastrointestinal upset if ingested, and be messy on the pet's feet or hair coat.

- For generalized treatment of more severe cases, lime sulfur is still used because it provides fast relief. Disadvantages are the strong and unpleasant sulfur smell, temporary yellow discoloration of the skin and coat, and dryness that follows chronic use.
- Phytosphingosine is a newer ingredient used for pruritus as well as seborrhea (see **Seborrhea**).
- Shampoo therapy also provides the benefit of washing away allergens that may be directly absorbed through the skin and trigger skin inflammation and pruritus.

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Secondary Infections

- Topical therapy has historically been viewed as merely adjunctive to the use of systemic antibiotics in cases of pyoderma. The emergence and rapid spread of antibiotic resistance are forcing practitioners to reconsider this strategy, however, and to use topical therapies more frequently as the first course.
 - Ingredients commonly used with good results are chlorhexidine and benzoyl peroxide. Consider benzoyl peroxide when



follicular flushing activity is needed and when the patient has a lot of scaling and crusts. Chlorhexidine is used frequently in cases of mixed infections and commonly combined with an antifungal or azole agent.

- ▶ It is important to remember that human products containing benzoyl peroxide are typically too harsh for dogs; 2.5% active ingredient is typical in veterinary shampoo products compared with 10% in human topical products.
- ▶ Ethyl lactate can be used to achieve a milder, less degreasing effect than chlorhexidine and benzoyl peroxide while preserving antibacterial and follicular flushing action.
- ▶ Good cosmetic effect is often obtained when chlorhexidine is combined with phytosphingosine, which has moisturizing properties.
- Sprays are commonly used for daily topical treatment of bacterial infections, particularly when resistant bacteria are cultured. Options include oxychlorine sprays (Vetericyn, vetericyn.com), which can be used twice daily on patients with methicillin-resistant staphylococcal infections, or stannous fluoride spray, which also can significantly aid in the resolution of infections, as long as it is used at 0.4%.^{2,3}
- Medicated wipes and pledgets containing chlorhexidine and antifungal ingredients can be used for long-term management of localized infections.
- Ingredients commonly used to treat yeast infections include miconazole, ketoconazole, and in dogs with greasy skin, selenium sulfide and climbazole. Resistance is not observed clinically, and the clinician can choose based on the condition of the coat and severity of the infection.

Skin Barrier Restoration

- Since the discovery that dogs with atopic dermatitis have impaired skin barrier, great interest has been shown in therapies to improve this condition. Ingredients that show promise include combinations of ceramides, essential fatty acids, or ceramide precursors such as phytosphingosine.^{4,6}

- Most skin barrier restoration products are available in spot-on formulations, but determining the most effective treatment regimen (once a week versus 3 times a week versus once a month) requires further study. Frequent application will most likely be needed initially to restore the skin, with less frequent application for maintenance therapy.
- The relationship between incorporation of these ingredients into the upper layers of the skin and improvement of clinical signs also warrants investigation. It is speculated that increasing ceramides in atopic skin would lead to improvement in clinical signs, but final evidence of this concept remains to be produced.

Seborrhea

- The majority of seborrhea cases are secondary conditions; topical therapy is best directed at treating its underlying cause (eg, pyoderma, *Malassezia* dermatitis). Primary seborrhea due to a primary defect of keratinization can be treated with such ingredients as tar, salicylic acid, sulfur, and phytosphingosine.
- The mildest product should be selected first to reserve the use of stronger, harsher products as required. A fine balance between keratolytic/keratoplastic products and moisturizing agents should also be achieved to avoid dry skin, which in itself can lead to pruritus. Drier and stronger agents are selected for cases of seborrhea oleosa (ie, greasy seborrhea) while more moisturizing agents should be used for patients with dry skin (seborrhea sicca).

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IN GENERAL

- Topical therapy for veterinary patients is becoming more common as clients are increasingly more willing to devote time and energy to pets and their well-being. Topicals are being used increasingly:
 - ▶ When antibiotics have been ineffective
 - ▶ To enhance the efficacy of oral therapy
 - ▶ To expedite resolution of infection
 - ▶ To help prevent recurrent infection
- Regardless of whether it is a medicated shampoo or intended for regular cleaning, a veterinary product designed for the pH of canine and feline skin should be used rather than a human product. Even baby shampoos are too harsh for dogs and cats. The use of different products in the same patients may be needed over time. Frequently, shampoos and conditioners are combined to obtain a more complete effect.
- Most pruritic dogs benefit from baths using cool to lukewarm water to avoid exacerbation of pruritus. Contact time is also crucial to achieve the maximum effect (in most cases 10-15 minutes is required).
 - ▶ Although most cases are managed with a bath once or twice weekly, some severe

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cases (eg, dogs with multidrug-resistant pyoderma when no systemic antibiotics are available) may need daily baths. It is particularly important in those cases to select the right product; changes may be necessary as the skin condition alters. For example, skin that is initially greasy may quickly become normal or dry, necessitating a product change and addition of a moisturizing conditioner.

Cost Considerations

- Cost of medicated shampoo depends on the product, size of the dog, and frequency of use. It can be expected to range from as low as \$10/month to as high as \$100/month: \$\$
- For patients with generalized pyoderma that requires daily whirlpool baths and oxychlorine spray twice or three times daily, charges can easily be \$50-\$80/day: \$\$\$\$\$

Cost Key

\$ = < \$100	\$\$\$\$ = \$500-\$1000
\$\$ = \$100-\$250	\$\$\$\$\$ = > \$1000
\$\$\$ = \$250-\$500	

See Aids & Resources, back page, for references & suggested reading.

TX AT A GLANCE

Pruritus

- Treat milder cases with oatmeal and topical anesthetics.
- Topical glucocorticoids are effective in more severe cases. Move to more powerful agents only if needed.
- Because of its beneficial antipruritic and degreasing effect, lime sulfur should be considered for any dog with severely pruritic, greasy skin.

Secondary Infections

- Topical therapies are becoming a more common first-line treatment as antibiotic resistance rises. Chlorhexidine and benzoyl peroxide achieve generally good results.
- Treat yeast infections with miconazole, ketoconazole, selenium sulfide, or climbazole.

Skin Barrier Restoration

- Combinations of ceramides, essential fatty acids, or such ceramide precursors as phytosphingosine show promise in restoring damaged skin barrier.

Seborrhea

- In most cases, use topical therapy to treat the underlying condition. Begin with the mildest product and progress to stronger medications only when necessary.
- Avoid drying out the skin, which can lead to pruritus.