

Petrolatum Is Effective as a Moisturizer, But There Are More Uses for It

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Petrolatum recently has received substantial social media attention. In the last year, the number of TikTok and Instagram videos mentioning petrolatum increased by 46% and 93%, respectively. According to Unilever, the company that manufactures Vaseline, mentions of the product have gone up by 327% on social media compared to last year largely due to a trend known as “slugging,” or the practice of slathering on petrolatum overnight to improve skin hydration.¹ However, petrolatum has a variety of other uses. Given its increase in popularity, we review the many uses of petrolatum within dermatology.

The main reason for petrolatum’s presence on social media is its effectiveness as a moisturizer, which is due to its occlusive property. Its oil-based nature allows it to seal water in the skin by creating a hydrophobic barrier that decreases transepidermal water loss (TEWL). Among available oil-based moisturizers, petrolatum is the most effective in reducing TEWL by 98%, while others only provide reductions of 20% to 30%,² which makes it ideal for soothing itch and irritation in several skin conditions, including dry skin, cheilitis, chafing, and diaper rash. Petrolatum is particularly helpful in sensitive areas where the skin is thinner, such as the eyelids or lips, as it is less irritating than lotions.

Petrolatum also may be used to treat dry skin and mild atopic dermatitis with the soak-and-smear technique,³ which entails soaking the affected skin—or the entire body, if needed—in a plain water bath for 20 minutes and then immediately smearing the skin with petrolatum. Soaking hydrates the damaged stratum corneum and enhances desquamation. The moist stratum corneum absorbs topical treatments more effectively, and

desquamation leaves a thinner stratum corneum for the product to traverse. Smearing with petrolatum then traps the moisture in the skin and thus has a dual function by both delivering the petrolatum to the skin and trapping the moisture from the soak. The result is decreased TEWL, improved hydration, and increased penetration, thereby enhancing skin barrier repair.^{3,4}

Smearing solely with petrolatum is effective in cases not accompanied by considerable inflammation. In cases involving notable inflammation or severe xerosis, a steroidal ointment may be required.³ This generally is done for several nights to 2 weeks before conversion to maintenance therapy. In these cases, petrolatum may then be used as maintenance therapy or bridge therapy for maintenance with simple moisturizers, which decreases recurrence and flares of dermatitis and also prevents continuous exposure to steroidal agents that can result in atrophy and purpura at application sites. The soak-and-smear technique has been found to be effective, with 90% of patients having 90% to 100% clearance.³

Petrolatum also is particularly useful for wound healing. A study on the molecular responses induced by petrolatum found that it significantly upregulated innate immune genes ($P < .01$), increased antimicrobial peptides ($P < .001$), and improved epidermal differentiation.⁵ Additionally, it keeps wound edges moist, which enhances angiogenesis, improves collagen synthesis, and increases the breakdown of dead tissue and fibrin.⁶ It also prevents scab formation, which can prolong healing time.⁷

Petrolatum is superior to antibiotic use after clean cutaneous surgery given its excellent safety profile. In one randomized controlled trial comparing petrolatum to bacitracin, petrolatum was found to be just as effective

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for wound healing with a similar infection rate. Although 4 patients developed allergic contact dermatitis (ACD) with bacitracin use, no patients who used petrolatum developed ACD.⁸ There are numerous other reports of bacitracin causing ACD,^{9,10} with a prevalence as high as 22% in chronic leg ulcer patients.¹⁰ There are even multiple reports of bacitracin causing contact urticaria and life-threatening anaphylaxis.¹¹ In the most recent report from the North American Contact Dermatitis Group's list of top allergens, bacitracin placed 11th with an ACD prevalence of 5.5%. Neomycin, another common post-wound emollient, has similar adverse effects and ranked 12th with an ACD prevalence of 5.4%.¹² Despite the risk for ACD with antibiotics, one study on wound care hand-outs from dermatologists (N=169) found that nearly half (43%) still advocated for the use of antibiotics.¹³ Likewise, another study among nondermatologists found that 40% (10/25) recommended the use of antibiotics for wound care¹⁴ despite strong evidence that topical antibiotics in clean dermatologic procedures offer no additional benefit compared with petrolatum. Additionally, topical antibiotics carry a risk of antibiotic resistance, adverse reactions such as ACD and anaphylaxis, and higher health care costs.⁹ Thus, petrolatum should be used as standard care after clean cutaneous procedures, and the application of antibiotics should be abandoned.

Petrolatum also is an effective treatment for pruritus scroti.¹⁵ It is particularly helpful for recalcitrant disease when several topical medications have failed or ACD or irritant contact dermatitis to medications or cleansing products is suspected. Although topical corticosteroids are the mainstay of treatment, severe burning or redness may occur with prolonged use of these medications, thus it often is useful to discontinue topical medications and treat with plain water sitz baths at night followed by petrolatum immediately applied over wet skin. This approach has several benefits, including soothing the area, providing an occlusive barrier, retaining moisture, and eliminating contact with steroids and potential allergens and irritants. This may be followed with patch testing to determine if ACD from cleansing products or medications is the culprit. This treatment also may be used in pruritus ani or pruritus vulvae.¹⁵

Finally, petrolatum may even be used to treat parasitic skin infections such as cutaneous furuncular myiasis,¹⁶ a condition most commonly caused by the human botfly (*Dermatobia hominis*) or the African tumbu fly (*Cordylobia anthropophaga*). The larvae infest the skin by penetrating the dermis and burrowing into the subdermal layer. It is characterized by furuncular nodules with a central black punctum formed by larvae burrowed underneath the skin. An inflammatory reaction occurs in the sites surrounding the larvae with erythematous, edematous, and tender skin. Symptoms range from mild pruritus and a prickly

heat sensation to intense cutaneous pain, agitation, and insomnia. Occluding the punctum, or breathing hole, of the infectious organism with petrolatum will asphyxiate the larvae, causing it to emerge within and leading to definitive diagnosis and treatment. This permits rapid removal and avoids extensive incision and extraction.¹⁶

The increased social media attention of petrolatum has raised the awareness of its utility as a moisturizer; however, it has many other uses, including soothing itch and irritation, improving wound healing, alleviating scrotal itch, and treating parasitic skin infections. It not only is an effective product but also is a particularly safe one. Petrolatum is well deserving of its positive reputation in dermatology and its current popularity among the general public.

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