Debunking the myths about petroleum jelly

Payvand Kamrani DO

James Marks MD & Andrea Zaenglein MD

Penn State Milton Hershey Medical Center



Dermatology

Tik Tok makes Vaseline[®] cool again!

A Staple of Grandma's Medicine Cabinet Gets Hot on TikTok

People have coated their faces in Vaseline for decades, but a TikTok trend with a catchy name ("slugging," anyone?) has introduced the skinprotecting petroleum jelly to new users, baffling some longtime devotees.

- Videos mentioning Vaseline increase by 46% in one year
- Vaseline company reported an increase of 327% on social media recognition

PennState Health Milton S. Hershey Medical Center

Dermatology

1

Methods

- Comprehensive literature review through PubMed and Google Scholar
- Relevant keywords such as "petrolatum", "petroleum jelly", "flammability", "allergy", "contact dermatitis", "comedogenicity", "polycyclic aromatic hydrocarbon"



Dermatology

Myth: Petroleum jelly is comedogenic

- Product's physical characteristics are not predictors of comedogenicity
- <u>Animal and Human studies:</u> Petrolatum applied once daily for two weeks did not result in clinical or histological evidence of comedogenicity
- Decreased number of acne lesions following petrolatum use (single center, prospective, n=910)



Fig 3. "Slugging," liberal application of petrolatum, on the left cheek to leave on overnight.

Strauss J, JAAD. 1989;20(2):272-277. Kligman A. J Society Cosmetic Chemists. 1996;47(1):41-48.

PennState Health Milton S. Hershey Medical Center

Myth: Petroleum jelly is flammable



- Myth has been traced back to manufacturers of oxygen equipment vague wording
- Non-flammable unless heated to > 400 degrees F
- Safety Data Sheet: Mild hazard if heated above flash point
- **NFPA*:** Flammability score 0

*National Fire Protection Association

hot day isn't a hazard.

Myth: Petroleum jelly is flammable

- Can be a fire accelerant when impregnated into gauze resulting in faster ignition and spread of flame
- Reports of burns following cigarette ignition
- Use around supplemental oxygen is controversial



Severe burns due to cigarette ignition with petrolatumimpregnated gauze on the face

Myth: Safety of petroleum jelly use in newborns

- 7 studies and 1 meta-analysis yielded mixed results
- Many studies demonstrating
 - Decrease TEWL
 - Decrease severity of dermatitis
 - Decreased fluid requirement
 - Improved urine output and electrolyte balance

Lane, A. *Ped*, 1993;92(3), 415-419. Nopper, A. *Ped* 1996;*128*(5), 660-669. Beeram, M. *JNMA* 2006;*98*(2), 261



Dermatology

7

<u>Myth</u>: Safety of petroleum jelly use in newborns

- Preterm neonates treated with petrolatum exhibited increased rates of cutaneous infections
 - Low birth weight newborns had increased incidence of systemic candidiasis (single-center, retrospective, n=40)
 - Increased risk of *Staph aureus* infections (25 vs 20%) but no difference in death or neonatal sepsis (multi-center, prospective, n =1191)

<u>Recommendation</u>: Do not routinely use petrolatum in neonates due to increased risk of infection however its use in those with impaired barrier function is recommended.

Lane, A. Ped, 1993;92(3), 415-419. Nopper, A. Ped 1996;128(5), 660-669. Beeram, M. JNMA 2006;98(2), 261



Myth: you can't be allergic to petrolatum...but it's close!

- Exceedingly rare, however rare cases have been reported
- Suspected allergen: Polycyclic Aromatic Hydrocarbons
- Lowest rates in white petrolatum (longer purification process)
- Consider when intolerance to many topicals and numerous positive patch-testing results



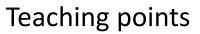
"Angry Back"

Dermatology

Kundu, R. Skinmed 3.5 (2004): 295-296.

PennState Health Milton S. Hershey Medical Center

10





• Evidence-based review highlighting petrolatum's characteristics:

- Non-flammable but may be accelerant and not to be used around an open flame
- Non-comedogenic
- Rare allergic properties secondary to PAH
- Caution in low-birth-weight neonates
- For more information, please refer to our clinical review in JAAD...in print soon!

CLINICAL REVIEW Petroleum jelly: A comprehensive review of its history, uses, and safety

Payvand Kamrani, DO,^a Jamie Hedrick, MS, MBA,^b James G. Marks, MD,^a and Andrea L. Zaenglein, MD^{a,c}



References

- 1. https://www.nytimes.com/2022/02/11/business/vaseline-slugging-tiktok.html
- 2. https://www.vaseline.com/us/en/who-we-are/our-history.htm
- 3. Jayakumar, K. L., & Micheletti, R. G. (2017). Robert Chesebrough and the dermatologic wonder of petroleum jelly. JAMA dermatology, 153(11), 1157-1157.
- 4. Ghadially, Ruby, Lars Halkier-Sorensen, and Peter M. Elias. "Effects of petrolatum on stratum corneum structure and function." Journal of the American Academy of Dermatology 26.3 (1992): 387-396
- 5. https://www.epa.gov/sites/default/files/2014-03/documents/pahs_factsheet_cdc_2013.pdf
- 6. Hall, Sarah, et al. "The flammability of textiles when contaminated with paraffin base products." Fire safety journal104 (2019): 109-116.
- 7. Ridd, Matthew J., et al. "Burns with emollients." bmj 376 (2022).
- Bascom, Rebecca, E. F. Haponik, and A. M. Munster. "Inhalation injury related to use of petrolatum-based hair grease." The Journal of Burn Care & Rehabilitation 5.4 (1984): 327-330
- 9. Tam, Christine C., and Dirk M. Elston. "Allergic contact dermatitis caused by white petrolatum on damaged skin." Dermatitis® 17.4 (2006): 201-203.
- 10. Smack, David Phillips, et al. "Infection and allergy incidence in ambulatory surgery patients using white petrolatum vs bacitracin ointment: a randomized controlled trial." Jama276.12 (1996): 972-977
- Dooms-Goossens, A., and Hugo Degreef. "Contact allergy to petrolatums.(I). Sensitizing capacity of different brands of yellow and white petrolatums." Contact Dermatitis 9.3 (1983): 175-185.
- 12. Schueller, Randy, and Perry Romanowski, eds. Conditioning agents for hair and skin. CRC Press, 1999.

