



### Background

- **Sulfites** (sodium sulfite, sodium bisulfite, sodium metabisulfite, and potassium metabisulfite) are found extensively among **cosmetic, photography, pharmaceutical, and food industries**
- This case demonstrates a novel source of sodium disulfite/bisulfite allergy in PalmOlive liquid dish soap

### Case Presentation

- **62-year-old woman** with 5-year history of **bilateral hand dermatitis**, specifically on her palms and fingers with involvement of the nails
- Previous treatments:
  - topical steroid ointments
  - coal tar
  - flurandrenolide tape
  - Bactine cleansing spray
  - Neosporin
  - moisturizing creams
- Worked as a caregiver
- Affinity for **PalmOlive Ultra SoftTouch Almond Milk and Blueberry Scent liquid dish soap (Fig. 1)** for washing dishes (with inconsistent glove use)



Figure 1

### Patch Testing

Final patch test reading (standard screening series, several supplemental series, few home products):

- **very strong (+++) reaction to sodium disulfite/bisulfite (1% in pet) (Fig. 2)**

Reviewing home products, sulfites declared in:

- PalmOlive SoftTouch Almond Milk and Blueberry dish soap (sodium bisulfite)
- Clairol Professional LiquiColor Gray Busters hair dye (sodium sulfite)

Given exclusive distribution of dermatitis to the hands and inconsistency with wearing gloves washing dishes (dyeing her hair she exclusively wore gloves), **her dish soap appeared to be significantly contributing to her dermatitis**



Figure 2

### Treatment and Follow Up

- Advised to switch to sulfite-free dish soap
- Prescribed twice daily use of **triamcinolone 0.1% ointment**
- Follow up (1 week later): symptom improvement
- **Repeat Open Application Testing** of own Palm Olive dish soap: recurrence of hand dermatitis

### Discussion

- Sodium metabisulfite has been recognized for its ability to cause skin sensitization; other sulfite compounds are less well understood
- Preliminary studies demonstrate sulfite cross-reactivity<sup>1</sup>
- Prevalence of sulfite allergy has increased over the past 20 years<sup>2</sup>

New sources of sulfite allergy over the past 5 years<sup>3-5</sup>:

- **rectal enemas**
- **catheter systems**
- **intravitreal injections**

### Conclusion

- Sodium bisulfite, a lesser known relative allergen of sodium metabisulfite, can be sensitizing and found in seemingly inconspicuous sources such as **liquid dish soap**

### References

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3. Borges AS, Valejo Coelho MM, Fernandes C, et al. Systemic allergic dermatitis caused by sodium metabisulfite in rectal enemas. *Contact Dermatitis*. 2018;78(6):429-430.
4. Grosch E, Mahler V. Allergic contact dermatitis caused by a catheter system containing sodium metabisulfite. *Contact Dermatitis*. 2017;76(3):186-187.
5. Veramme J, de Zaeytijd J, Lambert J, et al. Contact dermatitis in patients undergoing serial intravitreal injections. *Contact Dermatitis*. 2016;74(1):18-21.