



# UNCOVERING ALLERGEN TRIGGERS IN VULVAL IRRITATION: A SEVEN-YEAR RETROSPECTIVE ANALYSIS OF PATCH TESTING REFERRALS

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# INTRODUCTION

- Vulval Pruritus: More Than Just an Itch
  - Debilitating symptom with profound impact on quality of life
  - Prevalence in general population: 5-10%
  - Up to 70% of presentations to specialists managing vulval conditions
  - Causes include inflammatory, infectious, or neoplastic conditions
  - Inflammatory dermatoses are the most prevalent cause
- Persistent vulval irritation often remains undiagnosed
- Allergic contact dermatitis may be an underrecognised contributor

## STUDY OVERVIEW

- **Aim:** Identify common allergens in patients with vulval irritation
- **Retrospective audit:** 2018-2025 of referrals from specialist gynaecologist
- **Setting:** Specialist dermatology outpatient clinic
- **Focus:** Suspected allergic contact dermatitis in persistent vulval irritation
- **Method:** Patch testing with Australian Baseline Series +/- personal care products
- **Participants:** 40 patients referred by specialist gynaecologist
  - All patients had vulvovaginal candidiasis excluded on microbiological analysis

## Cohort Descriptive Information

Number of patients included

40

Age range

12-65

Minimum number of standard patches applied

60  
(Australian Baseline Series)

Range of 'own products' applied

0-41

Patients patch tested to own products

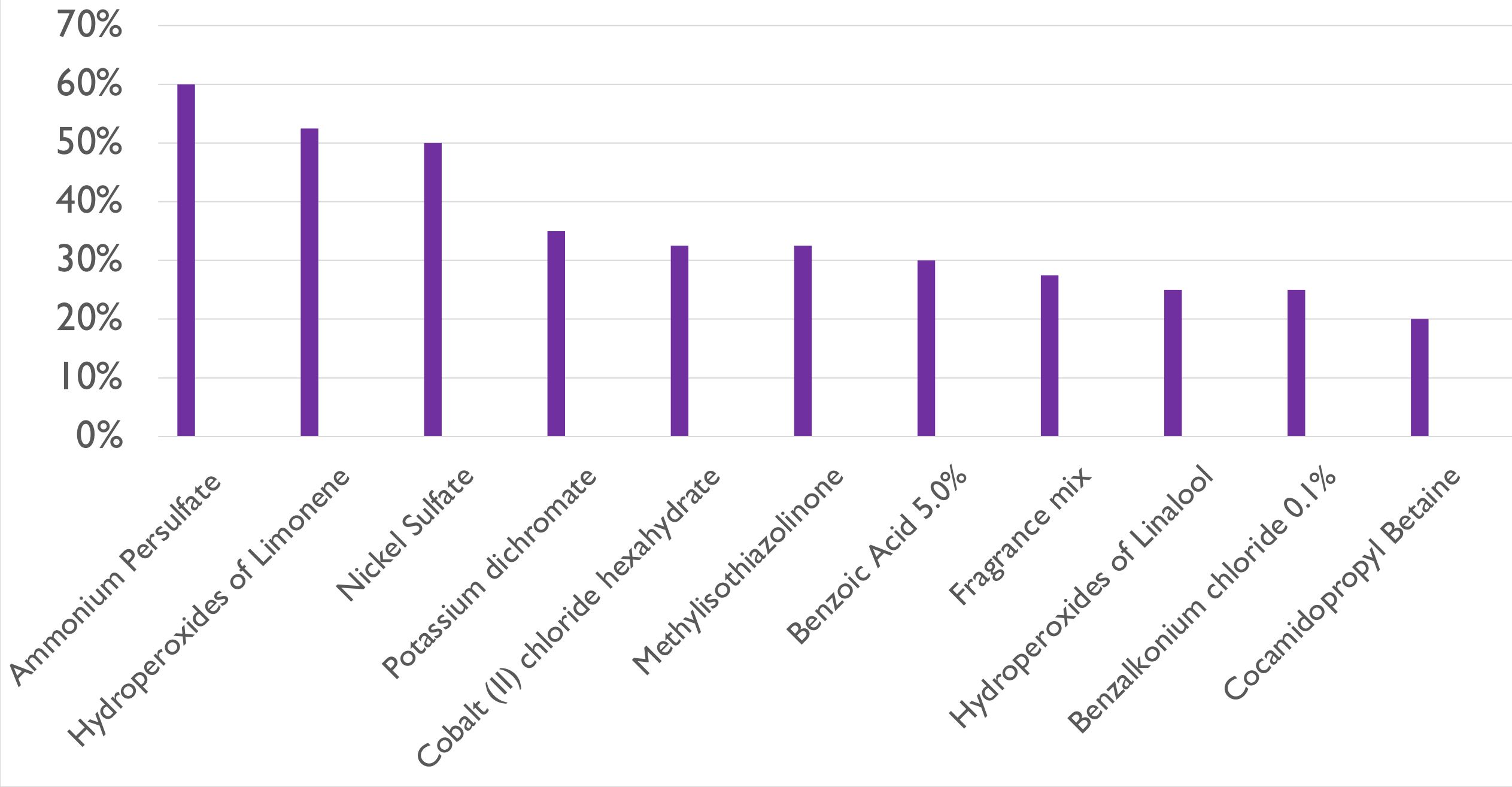
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History of atopy

62.5%

Patch Test Ingredient	Percent of Cohort with Positive Reaction
Ammonium Persulfate	60%
Hydroperoxides of Limonene	52.5%
Nickel Sulfate	50%
Potassium dichromate	35%
Cobalt (II) chloride hexahydrate	32.5%
Methylisothiazolinone	32.5%
Benzoic Acid 5.0%	30%
Fragrance mix	27.5%
Hydroperoxides of Linalool	25%
Benzalkonium chloride 0.1%	25%
Cocamidopropyl Betaine	20%

# Percentage of Cohort with a Positive Patch Test



Allergen	Percent of Patients with Positive Reactions in the literature <sup>1</sup>	Percent of Patients with Positive Reactions in our study
Positive reactions	38% -81.4%	97.5%
Nickel Sulfate	10%-34%	50%
Fragrance Mix	4%-23%	27.5%
Myroxylon Pereirae	4%-28%	20%
Cobalt	6%-14%	32.5%
Benzocaine	10%-12%	10%

1. Vandeweege S, Debaene B, Lapeere H, Verstraelen H. A systematic review of allergic and irritant contact dermatitis of the vulva: The most important allergens/irritants and the role of patch testing. *Contact Dermatitis*. 2023;88(4):249-262. doi:10.1111/cod.14258

## MOST COMMON 'OWN PRODUCT' POSITIVE RESULT

Most common 'own product' positive results	Current cohort
Overall positive reaction rate	66.94%
Shampoo products	64.3%
Laundry products	58%
Conditioner products	44.82%

### Important reminders:

- Fragrances are ubiquitous
  - Personal care products (fragrances found in  $\approx 70\%$ ) e.g. spray perfume, cosmetics, hairspray, shampoo, body wash etc
  - Home environment e.g. air fresheners, essential oils, scented candles, partner sprays for bedding
  - Work e.g. toilet room sprays, spices
  - Sports e.g. deodorant use
  - Travel e.g. diffusers, room spray, hotel toiletries, taxi air fresheners, insect repellents
  - Medications e.g. fragranced topical creams, suppositories<sup>2</sup>



# PATCH TESTING

- Type 4 delayed hypersensitivity reaction
- The five components of patch testing
  1. Selecting the right patient
  2. Knowing what to test including what personal products
  3. Reading patch test reactions, paying particular attention to the 2<sup>nd</sup> reading on day 5
  4. Deciding if the patch test results are relevant to the clinical presentation
  5. Establishing a Diagnosis<sup>2</sup>

## CLINICAL PEARLS

- Misinterpretation of labels on the products is a big issue
  - 'Organic' often contain potent natural allergens
  - 'Fragrance free' does not mean allergen free, can still contain fragrances
- Explain to patients who only treat it for a few days then stop that they are significantly undertreating their skin
- Registered pharmaceutical companies will respond to direct inquiries about specific allergens
- Not every positive is relevant to their presenting symptoms
- Look at positives in perspective
- Contact allergens are the most likely cause
- The best moisturizer is often white soft paraffin / Vaseline

## PATIENT INFORMATION SHEET

### AMMONIUM PERSULFATE

(A-011)

Your patch testing results indicate that you have a contact allergy to **AMMONIUM PERSULFATE**. It is important that you familiarize yourself with this chemical and take steps to avoid coming in contact with it.

#### What is **AMMONIUM PERSULFATE** and where is it found?

This is a chemical used in hair bleaches as an oxidizer. It is also used in de-colorizing and deodorizing oils, in electroplating, in making soluble starch, as a reducer and retarder in photography and in yeast treatment. Further research may identify additional product or industrial usages of this chemical.

#### What else is **AMMONIUM PERSULFATE** called?

This chemical can be identified by different names, including:  
*Ammonium Peroxodisulfate, Diammonium salt, Diammonium Peroxodisulfate, Peroxydisulfuric acid, Persulfate d'ammonium*

This may not be a complete list as manufacturers introduce and delete chemicals from their product lines.

## THINGS YOU CAN DO TO HELP MANAGE YOUR CONTACT ALLERGY

**Be vigilant... read the product label.** Always take the time to read the ingredient listing on product packages. This should be your first step each time you purchase a product as manufacturers sometimes change product ingredients. If you have any concerns ask your pharmacist or your doctor.

**Test the product first.** If you have purchased a new product you should test it on a small skin area to see if you get a reaction before using the product on larger skin areas.

**Advise people you obtain services from of your contact allergy.** This should include people like your pharmacist, doctor, hairdresser, florist, veterinarian, etc.

**Inform your employer if the source of your contact allergy is work related.** You should identify the specific source of the chemical and take the necessary steps to avoid further exposure. Protective wear may be adequate or you may need to make a change in your work activities. Both you and your employer benefit when the cause of your occupational dermatitis is eliminated.

**"Google" it.** The internet is an excellent source of ingredient information that can be searched by product, by company and by specific chemical. Some helpful independent internet links include: [www.nlm.nih.gov/pubs/factsheets/factsheets.html](http://www.nlm.nih.gov/pubs/factsheets/factsheets.html) (U.S. Dept. of Health and Human Services; alphabetic list) [www.nlm.nih.gov/pubs/factsheets/factssubj.html](http://www.nlm.nih.gov/pubs/factsheets/factssubj.html) (U.S. Dept. of Health and Human Services; subject list) [www.cosmeticsinfo.org](http://www.cosmeticsinfo.org) (Cosmetic Industry Category Ingredient Database) [www.whatsinsidescjohanson.com](http://www.whatsinsidescjohanson.com) (information on all S.C. Johnson product ingredients)

If you have any future contact dermatitis concerns or questions, please call the doctor's office.

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### Other Useful Clinical Tools:

- ❖ CoseMe App: provides personalised product recommendations for people with contact dermatitis
- ❖ INCIDecoder: Decodes INCI (International Nomenclature of Cosmetic Ingredients) names into plain English
- ❖ Copilot

## REFERENCES

1. Vandeweege S, Debaene B, Lapeere H, Verstraelen H. A systematic review of allergic and irritant contact dermatitis of the vulva: The most important allergens/irritants and the role of patch testing. *Contact Dermatitis*. 2023;88(4):249-262. doi:10.1111/cod.14258
2. Skin Health Institute, Australasian College of Dermatologists. 12th Annual Patch Test Training Day; May 30, 2025; Brisbane, Australia.
3. Lucke TW, Fleming CJ, McHenry P, Lever R. Patch testing in vulval dermatoses: how relevant is nickel? *Contact Dermatitis*. 1998; **38**(2): 111-112.
4. Raef HS, Elmariah SB. Vulvar Pruritus: A Review of Clinical Associations, Pathophysiology and Therapeutic Management. *Front Med (Lausanne)*. 2021;8:649402. Published 2021 Apr 7. doi:10.3389/fmed.2021.649402
5. Schlosser BJ. Contact dermatitis of the vulva. *Dermatol Clin*. 2010; **28**(4): 697-706.
6. Woodruff CM, Trivedi MK, Botto N, Kornik R. Allergic contact dermatitis of the vulva. *Dermatitis*. 2018; **29**(5): 233-243.
7. Simpson RC, Murphy R. Paediatric vulvar disease. *Best Pract Res Clin Obstet Gynaecol*. 2014; **28**(7): 1028-1041.
8. Veysey EC, Wojnarowska F. Vulval dermatoses. *Expert Rev Obstet Gynecol*. 2008; **3**(1): 93-101.