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[Home](#) | [Eczema, dermatitis and allergies](#)

Allergy to parabens

What is paraben mix and where is it found?

Paraben mix is a mixture of 5 different paraben esters; methyl-, ethyl-, propyl-, butyl- and benzyl-parahydroxybenzoic acids. Parabens are the most commonly used preservatives in topical pharmaceutical preparations. They are also used in cosmetics, skin care products, medications, foods, and industrially in oils, fats, shoe polishes, textiles and glues. Two or more paraben esters are often found in the one product so it is useful to test paraben sensitivity with paraben mix, as there is a high incidence of cross-reactions between the esters.

Products commonly containing paraben preservatives		
Cosmetics	Pharmaceutical/self-hygiene products	Food products
<ul style="list-style-type: none"> • Foundations, powders, concealers • Eye makeup (liners, shadows, mascara) • Facial makeup (blushes) • Bronzes • Makeup removers • Lipstick • Quick-dry nail products 	<ul style="list-style-type: none"> • Topical dermatological medications • Eye, ear and nose drops • Rectal and vaginal medications • Bandages • Local anaesthetics • Moisturizing lotions and creams • Dentifrices • Sunscreens • Cleansers and other skin care products • Antiperspirants and deodorants • Soaps and toothpastes 	<ul style="list-style-type: none"> • Marinated fish products • Salad dressings • Mayonnaise • Mustard • Spiced sauces • Processed vegetables • Frozen dairy products • Jams and jellies • Soft drinks and fruit juices • Baked goods and candies

What are the reactions to paraben mix allergy?

Paraben mix sensitivity produces classic [allergic contact dermatitis](#) reactions. Sometimes it may be seen as a flare or spread of an existing treated rash. Paraben allergic hypersensitivity is not uncommon although rare in relation to its widespread use. It appears that repeated applications of relatively low concentrations of parabens in medications and cosmetics may lead to sensitivity. Allergic reactions to orally ingested paraben-containing foods are rare.

Am I allergic to paraben mix?

Paraben mix allergy is diagnosed from the clinical history and by performing special allergy tests, i.e. [patch tests](#). Patch testing with 15% paraben mix in petrolatum is used.

Self-testing a product for parabens is possible but should be done only after first talking with your doctor. This should be done only with products that are designed to stay on on the skin such as cosmetics (not including

eyeliners or mascaras) and lotions. Apply a small amount of the product to a small tender area of skin such as the bend of your arm twice a day for 1 week. Examine the area each day and if no reaction occurs, you are unlikely to be allergic to it. Even so, you should still be cautious if you are intending to use it over large areas as it may still be an irritant.

Products such as [shampoos, soaps and cleansers](#) should not be tested in this way as they frequently cause an irritant dermatitis.

Treatment of contact dermatitis due to parabens exposure

If you are diagnosed with paraben mix allergy then avoid exposure to paraben-containing products. Once the dermatitis appears on the skin, treatment is as for any acute [dermatitis/eczema](#), i.e. [topical corticosteroids](#) (those not containing paraben preservatives), [emollients](#), treatment of any secondary bacterial infection ([Staphylococcus aureus](#)), etc.

What should I do to avoid paraben mix allergy?

Once paraben sensitivity is confirmed you should try to avoid exposure to any products containing paraben preservatives. This can be difficult because of its widespread use across many products. Read product labels and avoid products that contain any paraben preservatives or any of its alternative names. If unsure, ask your pharmacist for advice or a suitable alternative. Other related substances you may also react to include para-aminobenzoic acid (PABA) esters and [paraphenylenediamine](#).

Alert your doctor and dentist to the fact that you have an allergy to parabens. Your dermatologist may have further specific advice, particularly if you are highly sensitive.

Alternative names/components of parabens

- Methylparaben
- Ethylparaben
- Propylparaben
- Butylparaben
- Benzyl-parahydroxybenzoic acid (p-hydroxybenzoic acid)
- Methyl-parahydroxybenzoic acid (p-hydroxybenzoic acid)
- Ethyl-parahydroxybenzoic acid (p-hydroxybenzoic acid)
- Propyl-parahydroxybenzoic acid (p-hydroxybenzoic acid)
- Butyl-parahydroxybenzoic acid (p-hydroxybenzoic acid)
- Parahydroxybenzoic acid (p-hydroxybenzoic acid)
- Parahydroxybenzoate (p-hydroxybenzoate)

Avoid all of these. At work, request a material safety data sheet to help identify potential sources of exposure.

Further information

Parabens	Chemical formula	CAS number
methyl-4-hydroxybenzoate	C ₈ H ₈ O ₃	99-76-3
ethyl-4-hydroxybenzoate	C ₉ H ₁₀ O ₃	120-47-8
propyl-4-hydroxybenzoate	C ₁₀ H ₁₂ O ₃	94-13-3
butyl-4-hydroxybenzoate	C ₁₁ H ₁₄ O ₃	94-26-8

Food: E210–219

Cross reactions:

- Para-aminobenzoic acid (PABA) esters
- Paraphenylenediamine

Sensitiser: paraben esters

Patch Test: paraben mix 15% in petrolatum (3% each of methyl-, ethyl-, propyl-, butyl- and benzyl-parahydroxybenzoic acids)

Notes: topical parabens have recently been reported to have weak oestrogenic effects leading to concerns about breast cancer. Research is on-going.

Reference

Book: [Fisher's Contact Dermatitis. Ed Rietschel RL, Fowler JF. Lippincott Williams & Wilkins 2001](#)

Related information

References:

- Medscape: [Parabens: A Review of Epidemiology, Structure, Allergenicity, and Hormonal Properties](#)

On DermNet NZ:

- [Dermatitis](#)
- [Allergic contact dermatitis](#)
- [Patch testing](#)

Other websites:

- [T.R.U.E. Tests](#): paraben Mix
- [AllAllergy.Net](#): allergy and intolerance information resource.
- [Allergy New Zealand](#)
- [Allergic contact dermatitis](#) - emedicine dermatology, the online textbook

Books:

See the [DermNet NZ bookstore](#)

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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