

**Sodium metabisulfite –
a marker for cosmetic
allergy?**

Contact Dermatitis 2007; 56: 241–242

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A 45-year-old woman developed dermatitis of the face after she applied a cosmetic package comprising day and night creams. Patch tests were performed with the British Contact Dermatitis Society (BCDS) standard, bases + preservatives, and cosmetic series in addition to samples of both creams and the individual constituents. She had positive tests to both cosmetic creams, sodium sulfite from the manufacturer's samples (5% white soft paraffin (WSP)), and sodium metabisulfite (1% pet) in our bases + preservatives battery. Sodium sulfite is a constituent of both cosmetic creams. We assume that the positive test to sodium metabisulfite is a cross-reaction. We hypothesize that a reaction to sodium metabisulfite may be a marker for sulfite allergy in cosmetics and might account for some of the unexplained positives in previous reports.

Key words: allergic contact dermatitis; cosmetics; cross-reaction; sodium metabisulfite; sodium sulfite.

Case Report

A 45-year-old woman developed dermatitis of the face and lips the day after she applied a cosmetic package comprising day and night creams. Patch tests were performed with the British Contact Dermatitis Society standard series in addition to our bases + preservatives and cosmetic series. Individual constituents of the cosmetics were obtained from the manufacturers and tested at appropriate dilutions. Patch tests were positive on day 2 and day 4 for nickel, both cosmetic creams (neat), sodium metabisulfite (1% pet.) from our bases + preservatives series, and sodium sulfite from the manufacturers' samples (5% white soft paraffin (WSP)). Sodium sulfite is a constituent of both the cosmetic creams.

Discussion

Sodium metabisulfite and sodium sulfite are inorganic salts used as antioxidants and reducing agents in the pharmaceutical and food industries. They are found in hair care and colouring agents, artificial tanning products, and a variety of moisturizers and cleansers. Their other use is as a fixative in the photographic industry. There have been case reports of contact allergy to sodium bisulfite in creams such as Trimovate® and ketoconazole as well as

local anaesthetics (1, 2). In addition, urticaria and angioedema limited to the face, neck, upper thorax, and dysphonia without asthma has been reported after the ingestion of food and drinks containing sulfites (3). Vena et al. patch tested 2894 patients to sodium metabisulfite (4). Of them, 50 (1.7%) had positive reactions to sodium metabisulfite and 2 were also positive to sodium sulfite. However, only 12 of the 50 positive reactions were considered relevant, of which 7 were from occupational exposure and 5 nonoccupational. Prick tests, intradermal tests, and oral challenge with sodium metabisulfite in these cases were negative. The largest series of patch tests to sodium sulfite was reported by Petersen and Menné (5). They patch tested 1762 patients to sodium sulfite 1.0% pet. 25 (1.4%) tested positive, but only 3 were considered relevant due to the use of ketoconazole cream.

We recently added sodium metabisulfite to our bases + preservatives series. 8 (6.8%) of 117 consecutive patients patch tested positive to it. 4, including this case, were considered relevant. As far as we are aware, this is the first report of allergy to sodium sulfite in a cosmetic. We assume that the positive test to sodium metabisulfite is a cross-reaction. We hypothesize that a reaction to sodium metabisulfite may be a marker for sulfite allergy in cosmetics and might account for some of the unexplained positives in previous reports.

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