

diisocyanate was challenged with cauliflower vapors and showed no reaction.

Cruciferae vegetables are widely distributed. With the exception of food allergy to mustard and rape pollen hypersensitivity (4), allergic reactions to the *Brassica* genera are rarely documented. There are some reports of allergic reactions because of ingestion (5) or skin contact (6) with this family of vegetables. However, to the best of our knowledge, this is the first case report of IgE-mediated occupational asthma because of boiling vapors of cauliflower and cabbage, with associated food allergy to these vegetables.

Founding sources from RESPIRA Research Network.

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Accepted for publication 23 December 2004  
Allergy 2005; 60:969–970  
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DOI: 10.1111/j.1398-9995.2005.00810.x

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## Occupational allergic conjunctivitis due to coconut fibre dust

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**Key words:** allergic conjunctivitis; coconut fibre; eosinophils; tears.

Coconut fibre is used in the manufacture of mattresses recommended as a hypoallergenic. To our knowledge, there are no published data on coconut fibre-induced occupational allergy.

We present the case of a 46-year-old nonsmoking man, who had been working for 10 years in the coconut fibre mattress factory in the exposure to coconut fibre dust. For the past 5 years, he had been suffering from conjunctivitis symptoms, occurring 20–30 min after beginning of tufting of mattress with coconut fibre. The patient reported only work-related symptoms. He claimed neither airway nor skin symptoms.

Clinical examinations, as well as routine laboratory parameters, remained normal. The total immunoglobulin E (IgE; CAP System, Pharmacia, Uppsala, Sweden) level was slightly higher (110,76 IU/ml). Skin prick tests to common allergens (Allergopharma, Hamburg, Germany) were negative.

### A case confirmed by increase in eosinophil proportion in tears.

The patient was subjected to single-blind test at workplace-like conditions (handling with coconut fibre dust for 30 min) and placebo (potato flour). At the 15-min of test with coconut fibre, clinical symptoms of allergic conjunctivitis were observed. These symptoms persisted till 24 h after the provocation. It is surprising, but the other symptoms (including rhinitis) were not observed. Tear fluid was obtained 10 min before and 1, 6 and 24 h after the challenge with using capillary. The workplace test induced cellular changes in tear fluid. The increase in eosinophil proportion, from 1% before, up to 10% at 1 h, 6% at 6 h and 10% at 24 h were observed (Fig. 1). Test with placebo did not cause any clinical changes or changes in eosinophil proportion in tears.

The reason for recognition of coconut fibre dust-induced occupational allergic conjunctivitis in this patient was the clinical response during specific challenge test accompanied by changes in tear fluid. The conjunctival provocation test is approved model of ocular allergy (1–3), but our case confirmed that assessment of inflammatory cells in tears during test at workplace-like conditions might be also the valuable diagnostic procedure.

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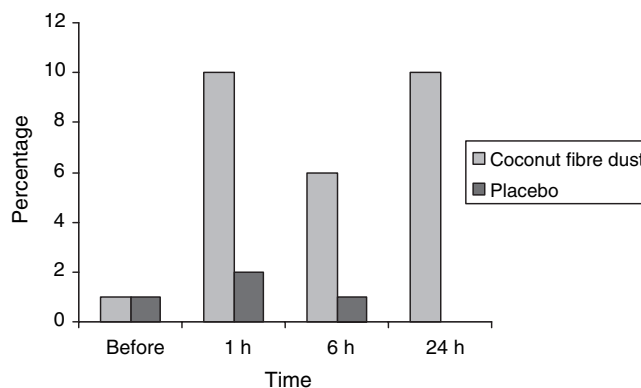


Figure 1. The proportion of eosinophils in tears after challenge tests.

Accepted for publication 9 January 2005  
 Allergy 2005; 60:970–971  
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 DOI: 10.1111/j.1398-9995.2005.00818.x

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## Latex-jujube cross-reactivity: case report and immunological study

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**Key words:** anaphylaxis; cross-reactivity; jujube; latex.

Latex contains several allergenic proteins that can cross-react with proteins contained in many vegetables and fruits. In fact, there are numerous reports describing clinically relevant cross-reactions, so-called latex-fruit syndrome (1). We describe one case of life-threatening cross reactivity between latex and jujube (*Ziziphus mauritiana*).

A 25-year-old nurse was referred for asthma, rhinitis and hand dermatitis that had appeared about 1 year before, and progressively worsened. Symptoms were clearly related to the work environment,

therefore a diagnostic workup for latex allergy was started. Skin prick test with commercial extract evoked a  $8 \times 6$  mm wheal, the CAP-radioallergosorbent test (RAST) assay was 12.5 kU/l (class IV), and the glove test was positive as well. The spirometry was normal, but the methacholine challenge was moderately positive. The relevance of latex was documented by a reduction  $>30\%$  in the peak expiratory flow, occurring invariably when she was at work. The patient did not want to change her occupation, therefore a sublingual immunotherapy to latex (SLIT-Latex, Alk-Abellò, Italy) was instituted, associated with levocetirizine (5 mg/day), inhaled salbutamol, and inhaled steroids. Symptoms gradually improved in few months and after 1 year she was able to attend her usual tasks at the hospital, wearing latex gloves. Skin test reactivity decreased to  $4 \times 3$  mm, and RAST fell to 4.5 kU/l. In the last month she ate for the first time five jujube fruits, and after few minutes angioedema, generalized urticaria, asthma, and hypotension appeared. She was treated at the emergency unit with intravenous epinephrine and corticosteroids. A prick-to-prick with fresh jujube (no extract available) gave an intense cutaneous response of  $8 \times 7$  mm.

We performed an immunological study on serum after extracting Jujube fruits and latex sap as previously described

(2, 3). Patient's IgE reactivity to jujube and latex (at 1 mg/ml) was assessed by immunoblot on a 10% PAGE Bis-Tris gel (Prodotti Gianni, Milan, Italy). The resolved proteins were stained with 0.1% Coomassie Blue or transferred onto a nitrocellulose membrane. The membrane was saturated in TBS buffer containing 5% defatted dry milk, and incubated with patient's serum or control serum diluted 1 : 2. Bound specific-IgE were detected by an ECL western blotting kit (Amersham, Milan, Italy). In inhibition experiment serum was preincubated for 2 h with jujube or latex extracts before being tested against latex or jujube extracts.

Immunoblotting analysis showed a strong IgE-reactivity against a band of about 20 kD, present in both extracts (Fig. 1). Such band corresponds, in latex extract, to prohevein. A complete inhibition of the IgE-reactivity to latex was obtained when serum IgE were adsorbed onto the jujube extract (Fig. 1), but when latex was used as inhibitor, the IgE reactivity against jujube did not disappear (Fig. 1).

Jujube is a member of the rhamnales family, that is used in the preparation of cakes and jams or eaten fresh. There are only few reports of life-threatening reactions to jujube (4, 5), in all cases associated to latex allergy. In our patient, we confirmed the existence of a latex-jujube cross-reactivity, probably due to the

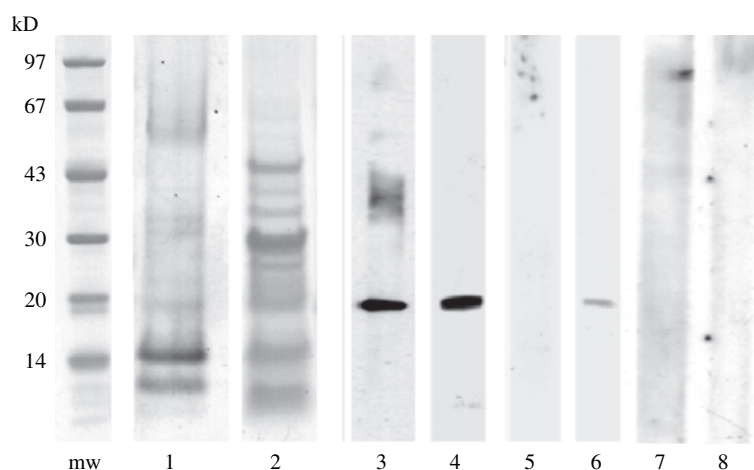


**Figure 1.** Lane 1 and 2, protein profile of jujube and latex extracts. Lane 3 and 4, IgE-reactivity of patient's serum against jujube and latex extracts. Lane 5, inhibition of IgE-binding on latex extract using jujube extract. Lane 6, inhibition of IgE-binding on jujube extract using latex extract. Lane 7 and 8, negative control sera on jujube and latex extracts.