

## HYPERSENSITIVITY TO SECONDARY ALCOHOLS

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**Abstract.** Two previously described patients with alcohol dermatitis and hypersensitivity to primary alcohols were tested for hypersensitivity to secondary alcohols. Gaschromatographically pure 2-propanol and 2-butanol produced an intense eczematous response in both.

Positive patch test reactions to several lower aliphatic alcohols have previously been reported in 5 patients with dermatitis caused by contact with alcohol (1, 2). All the patients studied reacted positively to primary alcohols and negatively to tertiary alcohols. Two of the 5 patients reacted also to secondary alcohols, viz. 2-propanol (*iso*-propylalcohol) and 2-butanol (*sec.*-butyl alcohol). The primary alcohols used had been purified by gaschromatography, while the secondary alcohols were of commercial quality. It was later found that the secondary alcohols used in our study contained contaminating products, including ethanol, which might be suspected as a cause of the pathologic skin reactions. This means that the findings in our previous study cannot be regarded as evidence of hypersensitivity to secondary alcohols. Neither have other published investigations convincingly shown hypersensitivity to secondary alcohols, since the test substances used were not studied for purity (3, 4).

We therefore re-tested the 2 patients who had reacted positively to commercial secondary alcohols, but this time with gaschromatographically pure 2-propanol and 2-butanol.

### MATERIAL AND METHODS

The clinical material consisted of 2 patients (case 2 and 3 in our publication (2) on alcohol dermatitis) and, as controls, 20 volunteers without history of alcohol dermatitis. The test substances were 100% 2-propanol and 2-butanol, gaschromatographically pure (1). Al-test units (IMECO, Astra Agency Co.) and Leukoflex adhesive

plaster (Beiersdorf) were used. Test material was applied for 48 hours on the back and read after a further 24 hours.

### RESULTS

Both patients, but none of the controls, showed strong eczematous reactions to 2-propanol and 2-butanol.

### COMMENTS

The positive reactions to patch tests with gaschromatographically pure 2-propanol and 2-butanol must be considered as convincing evidence of hypersensitivity to these substances. In previous investigations on record, including our own testing, the test substances had not been checked for purity (3, 4). In our first study on a patient with alcohol hypersensitivity we also found allergic reactions to ethanal (acetaldehyde) (1), but no allergic reactions to aldehydes have been found in cases studied since then. Hypersensitivity to primary alcohols can therefore hardly be ascribed to hypersensitivity to aldehydes formed in the skin. This possibility can be excluded with certainty in hypersensitivity to secondary alcohols since they do not form aldehydes. It is difficult to understand how alcohols can act as haptens, since they do not give covalent linkages and it seems less likely that they should be able to form complete antigens.

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