

### Allergic Contact Dermatitis from Lyral in an Aerosol Deodorant

*To the Editor:*

A 65-year-old gentleman was referred for an evaluation of a recurrent axillary dermatitis (Fig 1). He had been previously tested with the Thin-Layer Rapid Use Epicutaneous (T.R.U.E.) Test and had no positive reactions.

On physical examination, the patient was found to have bilateral erythematous indurated plaques with satellite peripheral erythematous papules. Based on the patient's history, personal products, and physical examination, he was patch-tested to the North American Contact Dermatitis Group (NACDG) standard series, personal hygiene products, and an expanded fragrance series. At the 96-hour reading, the patient was found to have a ++ reaction to Lyral 5% in petrolatum (Fig 2). Notably, he used Brut Deodorant Spray (by Helen of Troy LP, Idelle Labs, El Paso, Texas), which contained Lyral.

Lyral (hydroxyisohexyl 3-cyclohexene carboxaldehyde) was created and introduced in 1960 by the International Flavors and Fragrances Company. This aromatic chemical is formed through the reaction of myrcenol and acrolein.<sup>1</sup> According to the European Union, Lyral is among the "top-ten" scents developed in the past 25 years.<sup>2</sup> It is found with high frequency in fragrances and deodorants.<sup>3</sup> This lipophilic aldehyde fragrance readily penetrates the stratum corneum and forms covalent adducts that may then serve as weak allergens. Repeated exposures may be required for eventual sensitization.<sup>4,5</sup> Lyral is estimated to have a reactivity rate of 2.7% in the general population<sup>6</sup>; however, a US study found a rate of 0.4%,<sup>7</sup> a difference that may reflect testing protocols.

Recently, the NACDG has incorporated a new compounded fragrance mix (FMII 14% in petrolatum) onto the standard 65-allergen screen. This new mix contains six commonly used fragrance chemicals (in order of positive reactivity rate, Lyral > citral > farnesol > citronellol > a-hexyl-cinnamic aldehyde). Furthermore,



**Figure 1.** Axillary dermatitis demonstrating aerosol effect with peripheral papules.



**Figure 2.** Positive (++) patch-test reaction to Lyral.

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Lyrall has also been chosen for inclusion on the up-and-coming T.R.U.E. Test Panel 3.

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