

## Letters to the Editor

### Olive oil – contact sensitizer or irritant?

Dear Sir

We read the article of Kränke et al. (1) with interest. The authors suggest that topical application of olive oil may result in irritant rather than allergic contact dermatitis. Olive oil may contain lipid peroxides, inducers of irritant skin reactions. The authors do not mention the method of storing the olive oil used for testing. Unsaturated lipids in olive oil are susceptible to oxidation by O<sub>2</sub> in the air. To prevent lipid peroxidation, it is recommended that pure olive oil is stored in an atmosphere of N<sub>2</sub>. Furthermore, olive oil may be contaminated with benzene derivatives, such as benzene, toluene and C<sub>2</sub> benzenes (2). These cancerogens are also putative agents of irritant skin reactions. As pesticides are often used in the period before harvesting, pesticide residues may contaminate olive oil, especially the fat-soluble pesticides that tend to concentrate in it (3). Polychlorinated dibenzo-p-dioxins, as residues in olive oil, can be the reason for a variety of skin disorders (4).

Thus, a suitable way to investigate potential contact dermatitis due to olive oil as a first step is to use pure olive oil stored in N<sub>2</sub>, as well as the source

of olive oil suspected as having caused dermatitis in the patient.

Your sincerely  
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#### References

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3. Lentza-Rizos C, Avramides E J. Pesticide residues in olive oil. *Rev Environ Contam Toxicol* 1995; 141: 111–134.
4. Rodriguez-Pichardo A, Camacho F, Rappe C, Hansson M, Smith A G, Greig J B. Chloracne caused by ingestion of olive oil contaminated with PCDDs and PCDFs. *Hum Exp Toxicol* 1991; 10: 311–322.

### Reply

Dear Sir

In reply to the letter from Zipprich & Hauser, some points merit further discussion. The pure olive oil used for patch testing in our studies was freshly prepared, protected from light, and its quality was “extra virgin” according to pharmaceutical standards (Deutsches Arzneibuch [DAB 10], Österreichisches Arzneibuch [ÖAB]). This prevented use of olive oil contaminated with benzene, toluene, ethylbenzene, xylenes, or pesticides in clinically relevant amounts (1). Furthermore, such olive oil contains at least 4 complex phenols (i.e.,

hydroxytyrosol) and coffee-acid, preventing autoxidation of its unsaturated lipids (1, 2). It is correct that highly chlorinated dibenzo-p-dioxins and dibenzofurans, as residues in olive oil, caused chloracne in 8 Spanish patients by *ingestion*, but in the report mentioned, there are no contact reactions described (3). Padoan et al. (4) tested 5 patients, reacting to olive oil on patch testing, with all 9 constituents of pure olive oil (according to the Merck Index (5)) and did not find any reaction, so that the specific irritant (or allergen) remained undefined. The aim of our study was to explore

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