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## Allergic Contact Dermatitis to Walnut (*Juglans Regia*) Husk

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Sir,

An 80-year-old non-atopic man presented last July with a 1-week history of severe eczematous lesions localized on his forearms and neck. The clinical history was negative for drug-intake, but revealed that the lesions appeared few days after he had harvested unripe nuts from the lower branches of a walnut (*Juglans regia*) tree [[Figure 1](#)], then pruned the branches and stacked the wood. He performed these activities wearing a t-shirt, long trousers and a hat. He said he did this each year in the same period, and had never had a reaction. One month after complete resolution of the dermatitis, obtained with twice daily topical application of clobetasole propionate for 2 weeks, patch testing was performed using the Italian Society of Allergological, Occupational and Environmental Dermatology (SIDAPA) standard baseline series. Patch and photopatch tests were also done with the European baseline photopatch test series, with wetted walnut leaves, wetted and pounded branches of walnut, and 5% walnut husk hydroalcoholic extract. Readings were performed on D2 and D4 following the International Contact Dermatitis Research Group guidelines and showed a positive reaction only to walnut husk, that was more marked at an additional reading on D7 [[Figure 2](#)]. Ten healthy volunteers were patch tested with the above-mentioned materials, with negative readings.

The diagnostic conclusion was allergic contact dermatitis to walnut husk; the dermatitis did not recur after the patient was instructed to avoid contact with this fruit. So far as we aware, this is the first time that walnut has been described as a contact sensitizer in man. Walnut is mainly associated with irritant reactions and skin hyperpigmentation[1,2,3] due to its content of juglone, an aromatic naphthoquinone present in considerable amounts in many other members of the Juglandaceae family, particularly in all green and growing parts of trees and unripe walnut husks (*Juglans* spp). Accordingly, we patch tested with juglone 1% acq., but the reading was negative. Identifying the sensitizing ingredients contained in walnut husk might be challenging: In 2009, for the first time Zhang *et al.* [4] isolated eight chemical constituents from the ethanol fraction in green walnut husks of *Juglans regia*, while in 2010 Cosmulescu *et al.*[5] analyzed the phenolic fraction, identifying six compounds. These Authors observed that the content of phenolic compounds within the green husk of fruits decreases significantly decreased during maturation. Among the identified phenols, juglone was found in the highest concentrations, followed by vanillic acid.[5] Further studies are required to identify the true culprit allergen of the dermatitis.

## References

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## Figures and Tables

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**Figure 1**



Walnut (*Juglans regia*) tree

**Figure 2**



Positive patch test to walnut husk hydroalcoholic extract 5% at D7

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