

Shiitake mushrooms: be sure to cook them if you want to avoid itching!

The shiitake mushroom or oak mushroom (*Lentinula edodes*) is the world's most widely consumed fungus after the common cultivated mushroom. Native to Asia where it was first grown in China and Japan, it is used in these countries both as a culinary ingredient and in traditional medicine. It has been on the European market for several years and is today grown and produced in France. While it was traditionally an ingredient to be eaten cooked, the growing trend towards the **consumption of raw foods can lead to a highly specific form of poisoning called toxic "flagellate" dermatitis, which is extremely itchy** (photo).



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This appears within hours or days of eating raw or under-cooked shiitake, and covers the entire body, including the face and scalp. First described in Japan in 1977, its pathophysiological mechanism is not yet fully understood. The agent involved is lentinan, a thermolabile substance (i.e. destroyed by cooking) found in the mushroom, and its mechanism of action seems to be toxic and not allergenic. Treatment is purely symptomatic, with the toxic dermatitis eventually regressing in two to three weeks. Only a fraction of the population is likely to be affected (about 2% according to a study conducted in Japan [1]). The amount of product ingested may play a role and the dermatitis can recur in the event of re-ingestion. Note that this dermatitis can be confused with photodermatitis (a skin reaction following exposure to sunlight) even though the clinical picture is different. **In addition, this dermatitis is probably under-diagnosed, as the link with mushroom consumption is not always made by the consumer or his/her doctor, since this disorder is still only poorly understood.**

For several years now, the nine French poison control centres (CAPs) have been dealing with calls from consumers with this condition, and have published a series of 15 cases reported between January 2000 and December 2013 [2]. All the cases described in this paper occurred after ingestion of uncooked shiitake mushrooms, regardless of the mode of consumption: fresh, dried and rehydrated in water, powder or infusion.

References

- [1] Mowad CM, Nguyen TV, Elenitsas R, Leyden JJ. Bleomycin-induced flagellate dermatitis: a clinical and histopathological review. *Br J Dermatol* 1994; 131: 700-702
- [2] Boels D, Landreau A, Bruneau C, Garnier R, Pulce C, Labadie M, de Haro L, Harry P. Shiitake dermatitis recorded by French Poison Control Centers - new case series with clinical observations. *Clin Toxicol (Phila)* 2014; 52(6):625

Having reported this problem to the French Agency for Food, Environmental and Occupational Health & Safety (ANSES), the CAPs updated the data they had published and sent them to the Ministry of Health in July 2015.

A total of 63 cases were recorded between 2010 and 2016, but they only represent a very small fraction of the actual cases, as they only concern people who actually telephoned a poison control centre, having made the link between the dermatitis and consumption. **On 21 August 2015, a press release from the Directorate General for Competition, Consumer Affairs and Fraud Control (DGCCRF) informed the general public of the need to cook this food thoroughly.** On the basis of ANSES's recommendation and in order to inform consumers at the time of purchase of the possible effects of consuming raw shiitake, a Ministerial Order of 5 August 2016 suspended "for a period of one year, the placing on the market intended for the final consumer, whether or not in return for payment, of mushrooms of the species (...) *Lentinula edodes*, when presented fresh, in bulk or pre-packaged, if they are not accompanied by clear information informing the consumer of the need for thorough cooking before consumption".

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