

Foodborne poisoning: mushroom

2007 Case Definition (North Carolina)

Clinical description

Mushroom poisoning is caused by the consumption of raw or cooked fruiting bodies (mushrooms, toadstools) of a number of species of fungi. The toxins involved in mushroom poisoning are produced naturally by the fungi themselves and most mushrooms that cause human poisoning cannot be made nontoxic by cooking, canning, freezing, or any other means of processing.

Mushroom poisonings are generally acute and are manifested by a variety of symptoms and prognoses, depending on the amount and species consumed. Mushroom poisonings are generally categorized by their physiological effects. There are four categories of mushroom toxins: protoplasmic poisons (poisons that result in generalized destruction of cells, followed by organ failure); neurotoxins (compounds that cause neurological symptoms such as profuse sweating, coma, convulsions, hallucinations, excitement, depression, spastic colon); gastrointestinal irritants (compounds that produce rapid, transient nausea, vomiting, abdominal cramping, and diarrhea); and disulfiram-like toxins. Mushrooms in this last category are generally nontoxic and produce no symptoms unless alcohol is consumed within 72 hours after eating them, in which case a short-lived acute toxic syndrome is produced.

The most important mushroom poisonings from a public health perspective are those caused by *Amanita phalloides* mushrooms, which produce a heat stable toxin that causes nausea, vomiting, diarrhea, thirst, pupil dilatation, collapse, coma and death; and *Muscaria* type mushrooms, that cause symptoms including salivation, perspiration, pupil dilatation, and wheezing or difficulty breathing. Symptoms from these two types of mushrooms can develop within minutes to 24 hours after consumption of toxic mushrooms in food, whether cooked or not.

Laboratory criteria for diagnosis

Laboratory tests exist for the *Amanita* toxins, but they are not widely available. Diagnosis for all types of mushroom poisonings is usually made on the basis of symptoms in patients with mushroom exposures, and is often aided by correct identification by someone who is well versed in identifying mushroom types of the mushroom species the patient consumed.

Case classification

Confirmed: a clinically compatible case in someone with mushroom exposures