

# Mushroom Mysteries: Was This a Mushroom Poisoning?

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EVERY YEAR we get asked questions about mushroom poisoning that sometimes really leave us perplexed and there are also some interesting stories we want to share. We provided answers to the people who made inquiries of us, but have deleted most of them here because we want you to think about what answers you would have provided. If any of these strikes a strong cord with you, or you experienced something similar, we would like to hear from you.

**Case 1.** Denise wrote:

“Hey there, this is going to be a VERY strange question. Two days after eating mushrooms (at least 50) that came up in my yard after watering, my cat lost her sight. Do you think it’s possible it was from the mushrooms? I asked my vet and without even thinking about it he said no. I live in Pennsylvania, it happened in July.”

**Case 2.** Betty reported the following as a possible *Coprinus* poisoning:

“We were having dinner at friends (about 6:00). They served ‘duck *pâté de foie gras* from Périgord.’ Only moderate amounts of alcohol and *pâté* were consumed. I began to feel very strange in less than an hour and started feeling really drunk. About 8:30 I vomited. My husband didn’t start to really feel the effects until about 8:45 p.m. when he became dizzy and fell down, also feeling drunk. About 1 a.m. he broke out in hives on his trunk. By morning, we felt well but tired. I plan to check at the market to find the ingredients in the *pâté*.”

**Case 3.** A Coroner’s Office question (in Marilyn’s words):

“The report was that a wrangler, 46, had been found dead in his bunk at a camp in Rocky Mountain National Park. A small package was found in his front pocket, and inside were what possibly might be a couple of mushrooms. Photos were sent via e-mail but were of poor quality. However,

they did not really look like mushrooms. They were described as being very hard, dark-brown in color, and about the size and shape of large lima beans. The specimens were sent to me (Marilyn Shaw) via FedEx. They were very hard and did not appear to be fungal. I checked them under the microscope and could see no hyphal threads nor spores. I took them to Denver Botanic Gardens where several of us, mycologists and botanists, looked at them, but no one had any idea what they were. However, when we exposed a piece to iodine, a dark blue color appeared, indicating starch was present. The coroner’s office reported that the other wranglers described the man as something of a loner, and said that he had mentioned during the previous 24 hours that he did not feel well. He did not drink or use drugs but did smoke. He had two Fentanyl patches on his body, and the objects were wrapped in a Fentanyl wrapper. He had a locked briefcase, but they were never given permission to open it. His wife in Arkansas, where he lived, said that because he was living in a bunkhouse, he kept all his important papers and drugs locked in the briefcase. Autopsy showed an enlarged heart, heavy lungs, and a small pulmonary embolism. They were unsure whether the latter played a role in his death or was ‘simply an artifact of death.’”

**Case 4.** A Coroner’s Office inquiry (in Marilyn’s words):

“A workman arriving to fix a heater found a male, 21, upstairs dead, and a female, 26, dead downstairs. The family’s dog was having seizures and was in the process of dying. Two children—female, 5, and male infant, 8 months—were dehydrated and hungry, but alive. The girl said that Mommy had been sleeping for several days. She was taking care of the infant, giving him crackers and candy. There was a bottle of water, probably from the toilet. The adults had vomited, as had the dog. There was evidence the dog might have eaten the emesis. Mushrooms were found in the house.

They appeared to be hallucinogenic species, judging from the bluing on the stems.”

**Case 5:** Unidentified adult female (in Marilyn’s words):

“Adult female ate a small puffball, 1.25 inches in diameter. One hour later she had ‘gas,’ and 1.5 hours later, nausea and cramping but no vomiting or diarrhea. Her right lower abdominal quadrant was rigid. She said she had experience in gathering puffballs. Several were cooked and eaten by her husband, her 10-year-old son, and two other adults. No one else experienced any problems. She had gone online and was worried that she might have eaten a deadly *Amanita*. She questioned if there were any in Colorado. I explained that possibility, but told her they would not be growing in the coniferous habitat in which the puffballs had been collected.”

**Case 6:** Terri wrote:

“I am writing to ask you about mushroom poisoning. I have a friend who gave me some tea (loose from bulk), and last night I made two cups and drank it all in a short time. After about 20–30 minutes, I suddenly felt my blood pressure rise and felt flushed. I also felt my vision was hazy and lights were bright. I became anxious thinking I was having a stroke or heart attack. I had tingling in my left arm but not constant. I felt weak in my legs when I walked. I had to lie down for about 2–3 hours before feeling better. I knew my blood pressure was still high as I happen to keep a BP cuff at home because I am a physical therapist and use it on my home patients. When I say high, I am talking 140/80 or thereabouts, so actually that is considered borderline hypertensive. Still, it was high for me; I’m usually around 118/60. My pulse remained low, around 54 or so. Can you help? Should I go to a doctor? Should I call poison control. I have the tea and see what appears to be mushroom caps in it and they could be mistaken for flowers. They are small and brown.”

**Case 7:** Heidi wrote:

“In April was living in Seattle as a landscape gardener when my boyfriend came home with morel mushrooms that he found at a resident’s home (he was also a landscape gardener). He said, ‘I have dinner. It is going to be so yummy!’ I was a little

hesitant because I know if you eat the wrong kind of mushrooms you can die! Plus, I’d had *Portabella* mushrooms for dinner the night before and lunch that day! I loved mushrooms! However, I told him I was scared. He assured me he had eaten them lots in Indiana and it was a family tradition to hunt them in Indiana forests. After much online research and cutting them to discover a hollow stem I was convinced they were the right kind and we would have a “yummy dinner.” We soaked them in salt water. Then he said to dry them. I cut off a tiny bite and ate it (raw). I started telling him a story of how I ate Chicken of the Woods once and how delicious it was. About 30 seconds into my story I started to feel weird (as if I was tripping on psychedelic mushrooms—which I have done before and enjoy! However, these mushrooms shouldn’t produce this effect). I had visual disturbances, started crying, saying, ‘I don’t want to die’—essentially, I was freaking out. He too started to feel this way, but then said he ‘controlled it’ and somehow it stopped. I had friends who are mushroom hunters look at the mushrooms, and they said they were true morels and I was fine. This visual distortion lasted about 30 minutes until I calmed down. Then it just felt like my body drained. I was scared for another couple hours. I had no abnormal gastrointestinal problems. I went to bed and went to work the next morning. Two days later I had a regular brown store-bought mushroom and had a similar reaction—just not as strong. It then happened with food without mushrooms. I was scared to get these reactions whenever I would eat, so I just started eating plain simple bread and basics. I slowly started eating other food. But now I am just feeling weird all time with visual disturbances. I have seen a medical doctor who thought it was more mental (anxiety/panic attacks). I read morels can cause panic attacks somehow, and so I saw a psychologist who thought it was more medical. Please let me know if you have heard of any similar experiences with morels, or mushroom toxicity that could cause this effect. I would greatly appreciate any insight or contacts of whom to contact to learn more.”

**Case 8:** Quoted from an email from Gary Lincoff:

“Everyone knows that morels are good edibles, at least when cooked. So . . . about 30 years

ago, a friend of mine had the idea that a more systematic search for morels would provide him with more than enough each year. He got topographic maps (1955 series) showing the sites of apple orchards in northeastern New Jersey. We already knew that morels came up in old apple orchards. We reasoned at the time that this was because apple orchards are limed and that morels favored limed soil. So my friend, maps in hand, went out each May every evening after work, and instead of gathering a hundred over a season, they got thousands. He ate his fill. It was all good. Well, this year my friend saw a doctor because he had been losing weight (I may not have the facts right here). The doctor found a staggering level of arsenic and lead that my friend had been accumulating. Since his job was not in any kind of hazardous activity, his lifestyle was examined. It seems that until 1988 apple orchards around here (maybe not in Washington State) were using a spray that included arsenic and lead. It settled in the ground and presumably was absorbed by morels. The morels still have to be tested to see if arsenic and lead are present in his dried morels, or if the fresh ones next year are positive for arsenic and lead. It's still possible that the morels are not at fault here, but worrisome until we know for sure. I'll keep you posted on this."

The arsenic in morels case struck a cord because when Michael Beug moved to the Columbia River Gorge, he was warned by a local commercial mushroom picker and also by a member of the Oregon Mycological Society (OMS) not to consume morels from the local pear and apple orchards be-

cause they contained dangerous levels of arsenic. Michael had never personally analyzed local morels or local soil for arsenic and so asked Jan Lindgren of OMS if she knew the source of the warning. She did not and furthermore she went on to contact Tjakko Stijve, in Europe, who has done a lot of work with heavy metals in mushrooms. Since many species are hyper-accumulators of metals as well as pesticides from the soil, we might indeed have a real problem. Tjakko doubted that morels would accumulate enough arsenic to be a potential health threat. But when Michael looked at a paper on accumulation of gold from the soil (Borovika 2005), morels were one of the best accumulators of gold. What about arsenic? Meanwhile this same arsenic story also struck a cord with Elinor Shavit, who set about to get some answers and recently wrote a very interesting article "Arsenic in Morels" that explores these questions in much more detail but leaves the question unresolved (Shavit 2008). Who will take this further and help put the question to bed? Mysteries can be so much fun—especially when you can solve one.

### References

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- Shavit, E. 2008. Medicinal Mushrooms: Arsenic in Morels. *Fungi* 1(4):8–16.

