

Fact Sheet

Mushroom poisoning

Poisonous wild mushrooms are found growing across South Australia particularly after heavy rains in late summer to early winter when the earth is still warm.

Poisonous mushrooms including Death Cap mushrooms (*Amanita phalloides*), Yellow-staining mushrooms (*Agaricus xanthodermus*), Ghost Fungus (*Omphalotus nidiformis*) and Poison Pie (*Hebeloma crustuliniforme*) have been found in Adelaide and the hills growing in public parks, botanic gardens, nature strips, school ovals, childcare centre play areas, roadsides, farm paddocks and home gardens.

Four people have died in Australia after eating Death Cap mushrooms and many are hospitalised every year after eating other toxic varieties.

There is no simple reliable test that shows which mushrooms are safe to eat. Even mushroom experts can have difficulty identifying some species. Mushrooms change their appearance depending on their growth stage so poisonous mushrooms can appear very similar and be easily mistaken for edible supermarket varieties.

It isn't possible to tell if a mushroom is toxic by its taste and eating poisonous mushrooms can make a person very ill or even have life-threatening consequences. Pets are also at risk of dying after eating poisonous mushrooms.

Things you can do to prevent poisoning from wild mushrooms:

- > Don't pick and eat wild mushrooms.
- > Only eat mushrooms that have been purchased from a reliable greengrocer or supermarket.
- > Cooking, peeling, soaking or drying wild mushrooms does not remove or inactivate any poison to make them safe to eat – mushroom toxins are extremely stable.
- > Teach children not to eat anything straight from the dirt or from a plant in the garden.
- > Keep a close eye on young children and pets outdoors when mushrooms are most likely to be growing.
- > Parents, schools, and childcare workers should regularly check outdoor areas and gardens for mushrooms and remove them.
- > If you have wild mushrooms growing in your garden, the best idea is to pick them wearing gloves, bin them and then wash your hands.
- > Mushrooms are commonly introduced into your garden in mulch and compost containing mushroom spores. Your local nursery may be able to suggest products that are less likely to encourage mushrooms.
- > It can be difficult to completely get rid of persistent mushroom colonies in your yard—it is best to consult with a local garden expert on the most effective and safe way to remove large infestations.
- > Section off the affected part of your yard to keep your children and pets safe until mushrooms are eradicated.
- > Talk to your families, friends and neighbours about the dangers of wild mushrooms.



Mushroom poisoning emergency

In an emergency always phone 000 for an ambulance – if a victim has collapsed, stopped breathing, is having a fit or an anaphylactic reaction.

If you suspect a person might have eaten a Death Cap mushroom you should seek immediate medical attention at your nearest emergency department. Do not wait for symptoms to occur.

The poison from a Death Cap mushroom can cause delayed gastrointestinal symptoms that can take 6-24 hours to appear. The earlier that treatment starts, the better your chances of survival. The window for effective treatment to reduce damage to the liver is very narrow so it is important to get a quick diagnosis.

Anyone who becomes ill after eating a wild mushroom should seek urgent medical attention by going to your nearest emergency department or medical clinic and if possible take a sample of the mushroom or a photo to help identify the variety so the best treatment is provided.

If you suspect you or someone you know has eaten a wild mushroom contact the Poisons Information Centre on 13 11 26 and they will advise if it is necessary to seek immediate medical attention. Don't induce vomiting or give the victim anything to drink (for example Syrup of Ipecac) unless advised by the Poisons Information Centre or other medical professional.

Pet owners should immediately seek veterinary attention for their dog or cat if they suspect their pets have eaten wild mushrooms.

Who is most at risk

Anyone who has consumed a wild mushroom is at risk of potential life-threatening illness.

- > Young children: between 60 – 70 % of calls about mushroom poisoning made by South Australians to the Poisons Information Centre are about children under five years of age. At this age, it is a natural behaviour for toddlers to put things in their mouths and eat plant matter. Most young children who eat poisonous mushrooms find them in the garden at home.
- > Cooking enthusiasts: foraging for wild food is becoming increasingly popular in Australia and is promoted heavily by culinary experts in the media and on television cooking programs. But when people gather wild mushrooms they can accidentally include toxic species.
- > New Asian migrants and international students may accidentally pick Death Cap mushrooms if they mistake them for edible Straw [paddy] mushrooms —the Straw mushroom grows and is eaten throughout Asia but does not grow naturally in Australia.
- > Overseas visitors from countries in the Northern Hemisphere where gathering mushrooms is an established cultural activity.
- > Pets: there have been a number of cases reported in South Australia of dogs that have been poisoned and died from acute liver failure after eating poisonous mushrooms in backyards and when out on walks. While cats tend to be more discerning about what they eat they, are still at risk—particularly inquisitive kittens that might chew on a toxic species.

Remember that poisonous mushrooms can taste good – you can't tell it is toxic by its taste.

Symptoms of mushroom poisoning

- > Onset of symptoms can be delayed by 6 to 24 hours after eating poisonous mushrooms
- > Some wild mushrooms such as the Yellow-staining mushroom cause severe gastrointestinal symptoms — violent stomach cramps and abdominal pain, nausea, vomiting and diarrhoea. The severity of these affects depends on how much is eaten and may last for 2-3 days.
- > Other wild mushrooms containing Amatoxin such as the Death Cap mushroom cause severe gastrointestinal symptoms followed by liver damage characterised by jaundice and bleeding disorders leading to haemorrhage, liver failure, kidney failure, seizures, coma and cardiac arrest leading to death even if only a small amount is eaten.

- > The gastrointestinal symptoms associated with eating Death cap mushrooms can appear to resolve after 2-4 days but during this period of apparent recovery the toxin continues to damage the liver resulting in death up to 1-2 weeks after ingestion.
- > A person is often placed on an emergency liver transplant list if they are known to have ingested Death Cap mushrooms—but a compatible organ may not be available on such short notice. If too much of the mushroom has been ingested, the damage to multiple body organs may mean that a person has become inoperable and even a liver transplant won't save their life.

There is no complete antidote for Death Cap mushroom poisoning – survival depends on early diagnosis and treatment.

Death Cap mushrooms

- > Death Cap mushrooms (*Amanita phalloides*) usually grow near established exotic deciduous hardwood trees—most commonly under oak trees.
- > In other countries, Amanita species have also been found growing near eucalypts, acacia and pines.
- > Death Cap mushrooms are believed to have been introduced in Australia with importation of hardwoods.
- > Australia has some native Amanita species (related to Death Cap mushrooms) that grow together with eucalyptus trees—nothing is known about their toxicity.
- > First recorded sightings of Death Cap mushrooms were in Canberra in the 1960s, in Melbourne in the 1970s and in Adelaide in 2008. Related varieties have also been found in northern Tasmania and WA.
- > Death Cap mushrooms are reported to grow, peel and taste just like a harmless field mushroom— and are sometimes mistaken for edible Straw mushrooms used extensively in Asian cooking.
- > Amatoxin is the lethal substance in Death Cap mushrooms.

Types of poisonous mushrooms

- > Death Cap mushrooms (*Amanita phalloides*) <https://www.rbg.vic.gov.au/science/herbarium-and-resources/identification-and-information-services/amanita-phalloides>
- > Yellow-staining mushrooms (*Agaricus xanthodermus*) <https://www.rbg.vic.gov.au/science/herbarium-and-resources/identification-and-information-services/agaricus-xanthodermus>)
- > Ghost Fungus (*Omphalotus nidiformis*)
- > Poison Pie (*Hebeloma crustuliniforme*).

All mushrooms are fungi. Mushrooms have a similar role to a flower or a fruit in plants. Toadstools is a term that is often used to describe poisonous mushrooms that are not to be eaten.

Wetter weather and warm earth create the ideal growing conditions for wild mushrooms however there is no specific mushroom season.

While some wild-growing mushrooms are edible there are a large number of highly toxic species and it is difficult to tell the difference. The only way to tell is to have it identified by a mycologist (a botanist who is an expert in fungi). However, there is a considerable lack of expert knowledge about many fungi species and it can be difficult even for experienced collectors to distinguish edible mushrooms from dangerous varieties.

- > Toxic mushrooms are usually found in forests or near trees, but they are increasingly being found in public gardens and recreational spaces and in residential yards.
- > Mushrooms vary in colour and shape depending on the stage of growth and maturity— young poisonous mushrooms in their early stages can be mistaken for truffles. Variations in appearance with age make it very difficult to recognise which mushrooms are safe to eat.

- > Poisonous Yellow-staining mushrooms (*Agaricus xanthodermus*) resemble commercially grown Field mushrooms (*Agaricus campestris*) or Horse mushrooms (*Agaricus arvensis*) and greatly outnumber those edible mushrooms growing in the wild.
- > The poisonous Ghost Fungus (*Omphalotus nidiformis*) has been mistaken for edible Oyster mushrooms.
- > There are many unknown species of native Australian mushrooms and very little information about their edibility—only around 30 percent are reported to have been identified.

For more information

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