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POISON CONTROL: 1-800-222-1222

TOXIC MUSHROOM CLINICAL REFERENCE

A Field Guide for Medical Professionals

DESIGNED FOR:

Emergency Medicine Providers
Urgent Care Clinicians
Poison Control Consultation Backup

Covers 8 life-threatening toxic mushroom species

SEVERITY SCALE

1	Uncomfortable	2	Serious	3	Life-Threatening	4	Potentially Fatal

HOW TO USE THIS GUIDE

This clinical reference is designed for rapid consultation during emergencies involving suspected toxic mushroom ingestion. Each page covers one species with toxin type, onset time, symptom profile by organ system, severity rating, and key clinical notes. Use this guide as a quick reference alongside Poison Control consultation.

KEY PRINCIPLE: ONSET TIME IS THE MOST CRITICAL VARIABLE

Early onset (under 6 hours): symptoms begin soon after ingestion - typically less dangerous, often GI irritant or neurological. Delayed onset (6-24+ hours or longer): indicates potentially life-threatening amatoxin (Death Cap, Destroying Angel, Autumn Skullcap) or orellanine (Webcap - onset 2-3 WEEKS) poisoning.

SEVERITY SCALE

1 - Uncomfortable
Unpleasant but typically not dangerous to healthy adults. Monitor and supportive care.

2 - Serious / Requires Treatment
Significant illness; IV fluids, antiemetics, or specific treatment required. Hospital evaluation recommended.

3 - Life-Threatening
Potential for serious organ injury, respiratory compromise, or fatal outcome without treatment.

4 - Potentially Fatal
High mortality without aggressive treatment and/or hospitalization. Toxicology consultation essential.

INTENDED AUDIENCE

- Emergency medicine providers and emergency department nurses
- Urgent care clinicians
- Poison Control backup reference during call volume spikes
- Medical toxicology and clinical pharmacology residents
- Wilderness medicine and outdoor education professionals

DISCLAIMER

This guide is an educational reference only and does not replace clinical judgment, toxicology consultation, or Poison Control guidance. Species identification in the field is difficult and unreliable - treat all suspected toxic mushroom ingestions as potentially serious. Always contact Poison Control (1-800-222-1222) for case-specific guidance.

DEATH CAP

Amanita phalloides

SEVERITY: 4 - Potentially Fatal

TOXIN

Amatoxins (alpha-amanitin)

ONSET

6-24 hours (DELAYED - RED FLAG)

FIELD IDENTIFICATION

Cap: olive-green to yellow-green, 5-15 cm. Gills: white, free. Stipe: white with skirt (annulus). Base: bulbous with white volva (cup). Spores: white.

Death Cap • Amanita phalloides

SYMPTOMS BY SYSTEM

Phase 1 (6-24h) - GI

Severe nausea, profuse vomiting, watery diarrhea, abdominal cramps

Phase 2 (24-72h) - Apparent Recovery

"Honeymoon period" - patient seems to improve. DANGEROUSLY DECEPTIVE.

Phase 3 (72-96h) - Organ Failure

Acute hepatic and renal failure, hepatic encephalopathy, coagulopathy, jaundice

Neurological

Encephalopathy, confusion, seizures in severe cases

KEY CLINICAL NOTES

The Phase 2 honeymoon period is critically deceptive - patients who appear to improve MUST remain hospitalized. Responsible for ~90% of fatal mushroom poisoning worldwide. Amatoxins inhibit RNA polymerase II causing cell death.

TREATMENT / MANAGEMENT

Supportive; consider NAC, silibinin (milk thistle extract). Liver transplant in severe cases. No antidote.

DESTROYING ANGEL

Amanita bisporigera

SEVERITY: 4 - Potentially Fatal

TOXIN

Amatoxins (identical to Death Cap)

ONSET

6-24 hours (DELAYED - RED FLAG)

FIELD IDENTIFICATION

Entirely pure white - cap, gills, stipe, volva. Cap: 5-10 cm, smooth. Gills: white, free. Base: bulbous with white volva. Skirt present. Spores: white.

Destroying Angel • Amanita bisporigera

SYMPTOMS BY SYSTEM

Phase 1 (6-24h) - GI

Severe nausea, vomiting, watery diarrhea, abdominal pain

Phase 2 (24-72h) - False Recovery

Apparent improvement - do not discharge. Same deceptive honeymoon as A. phalloides.

Phase 3 (72-96h) - Organ Failure

Liver and kidney failure, coagulopathy, hepatic coma

KEY CLINICAL NOTES

Pure white coloring makes it dangerously easy to confuse with edible white button mushrooms or immature puffballs. Fatal at doses as low as half a cap. Same triphasic amatoxin syndrome as Death Cap.

TREATMENT / MANAGEMENT

Same as Death Cap. Early decontamination if caught within 1-2 hours. Monitor LFTs, coags, renal function.

AUTUMN SKULLCAP

Galerina marginata

SEVERITY: 4 - Potentially Fatal

TOXIN

Amatoxins (same per gram as Death Cap)

ONSET

6-24 hours (DELAYED - RED FLAG)

FIELD IDENTIFICATION

Small, brown, nondescript. Cap: 2-5 cm, honey-brown, sticky when wet. Gills: brown, attached. Stipe: slender with small ring. Grows on wood. Easy to overlook.

Autumn Skullcap • Galerina marginata

SYMPTOMS BY SYSTEM

Phase 1 (6-24h) - GI

Nausea, vomiting, diarrhea, cramping

Phase 2 - False Recovery

Apparent improvement for 1-2 days

Phase 3 - Organ Failure

Hepatorenal failure, coagulopathy - same as Amanita species

KEY CLINICAL NOTES

Particularly dangerous because it looks completely unremarkable. Often grows near edible Pholiota or Kuehneromyces species. Contains amatoxins at the same concentration per gram as A. phalloides. Small size may lead foragers to ingest many caps.

TREATMENT / MANAGEMENT

Identical protocol to Death Cap. Hospitalize even if asymptomatic when delayed-onset amatoxin poisoning is suspected.

WEBCAP

Cortinarius species (orellanus, rubellus)

SEVERITY: 4 - Potentially Fatal

TOXIN

Orellanine (nephrotoxic bipyridine)

ONSET

2-3 WEEKS (extremely delayed - CRITICAL)

FIELD IDENTIFICATION

Cap: rusty-brown to orange-brown, 4-10 cm, often with radial fibers. Gills: rusty cinnamon from spores. Stipe: same brown tones. Cortina (cobweb veil) when young - may leave rusty belt on stipe.

Webcap • Cortinarius species (orellanus, rubellus)

SYMPTOMS BY SYSTEM

Early (days 2-21)

Initially mild or absent - intense thirst (polydipsia), frequent urination, fatigue, headache

Progressive Renal

Nausea, vomiting, flank pain, decreased urine output as renal failure develops over weeks

Late

Progressive nephrotoxicity -> renal failure. Can develop over weeks to months.

Neurological

Headache, myalgia - may be the only early symptom

KEY CLINICAL NOTES

CRITICAL: extreme delay makes diagnosis very difficult. Patients rarely connect illness to mushroom ingestion from weeks earlier. ALWAYS ask about mushroom consumption in the past 3 weeks when unexplained renal failure presents. May require dialysis or kidney transplant.

TREATMENT / MANAGEMENT

No antidote. Supportive - renal replacement therapy. Refer to nephrology. Prognosis depends on how much kidney function is lost before diagnosis.

FALSE MOREL

Gyromitra esculenta

SEVERITY: 3 - Life-Threatening

TOXIN

Gyromitrin -> Monomethylhydrazine (MMH)

ONSET

2-12 hours

FIELD IDENTIFICATION

Cap: irregular, brain-like or saddle-shaped, reddish-brown (NOT honeycomb like true morel). 5-10 cm. Hollow stipe. Differs from true morel (Morchella) which has a pitted, honeycomb cap attached to stipe at base.

False Morel • Gyromitra esculenta

SYMPTOMS BY SYSTEM

GI (2-6h)

Nausea, vomiting, diarrhea, abdominal pain, bloating

Neurological

Headache, dizziness, weakness, fatigue, tremors

Hematological (severe)

Hemolytic anemia, methemoglobinemia - cyanosis, dyspnea

Organ (severe)

Hepatorenal dysfunction, seizures in massive ingestion

KEY CLINICAL NOTES

MMH is structurally similar to rocket fuel component. Volatile - cooking reduces but does NOT eliminate toxin. Can cause poisoning from steam inhalation during cooking. Easily mistaken for true morels which are prized edibles.

TREATMENT / MANAGEMENT

Supportive. Methemoglobinemia: methylene blue 1-2 mg/kg IV. Hemolysis: transfusion if needed. Pyridoxine (B6) may help.

JACK-O-LANTERN

Omphalotus olearius / illudens

SEVERITY: 2 - Serious / Requires Treatment

TOXIN

Illudin S (sesquiterpene GI irritant)

ONSET

30 minutes - 2 hours (EARLY onset)

FIELD IDENTIFICATION

Cap: large, orange to yellow-orange, 5-20 cm, funnel-shaped. Gills: orange, running down stipe. Grows in clusters at base of hardwood trees or from buried roots. Gills glow faintly in the dark (bioluminescent).

Jack-O-Lantern • Omphalotus olearius / illudens

SYMPTOMS BY SYSTEM

GI (dominant)

Intense nausea, profuse vomiting, severe diarrhea, abdominal cramping - may be incapacitating

Systemic

Weakness, diaphoresis - from dehydration and GI distress

Typically self-limiting

Most cases resolve in 6-24 hours with supportive care

KEY CLINICAL NOTES

Primarily a severe GI irritant. Rarely life-threatening in healthy adults but serious dehydration risk in elderly, pediatric, and immunocompromised patients. Frequently confused with chanterelles (Cantharellus), which are choice edibles. Key difference: chanterelles have forked ridges, not true gills.

TREATMENT / MANAGEMENT

Supportive: IV hydration, antiemetics, electrolyte replacement. Monitor for dehydration in vulnerable populations.

FLY AGARIC

Amanita muscaria

SEVERITY: 3 - Life-Threatening

TOXIN

Ibotenic acid + Muscimol (GABA agonist)

ONSET

30 minutes - 2 hours (EARLY onset)

FIELD IDENTIFICATION

Cap: bright red to orange-red (sometimes yellow/white varieties), 8-20 cm, with white wart-like patches (remnants of universal veil - wash off in rain). Gills: white, free. Stipe: white with ring and bulbous base.

Fly Agaric • Amanita muscaria

SYMPTOMS BY SYSTEM

CNS (dominant)

Confusion, delirium, visual hallucinations, ataxia, sedation, euphoria, dysphoria

Autonomic

Salivation, lacrimation, diaphoresis; also mydriasis (dilated pupils - NOT miosis)

GI

Nausea, vomiting (variable - less prominent than pure muscarinic species)

Severe cases

Deep sedation, coma (rare, mainly in children or massive ingestion)

KEY CLINICAL NOTES

Primarily neurological/psychoactive - NOT typically fatal in adults at normal ingestion. Muscimol is a GABA-A agonist (NOT anticholinergic). Pediatric ingestion warrants careful monitoring. Note: Fly Agaric is NOT the source of muscarine poisoning syndrome despite the name.

TREATMENT / MANAGEMENT

Supportive. Benzodiazepines for severe agitation. Do NOT give atropine (not muscarinic mechanism). Monitor level of consciousness.

DEADLY FIBERCAP

Inocybe species (erubescens, geophylla, others)

SEVERITY: 3 - Life-Threatening

TOXIN

Muscarine (cholinergic agonist)

ONSET

15 minutes - 2 hours (EARLY onset)

FIELD IDENTIFICATION

Small to medium, drab brown to white. Cap: 2-7 cm, fibrous/silky texture, often conical with umbo. Gills: brown, crowded. Earthy or fishy smell. Numerous species, most toxic. No distinguishing feature to the untrained eye.

Deadly Fibercap • Inocybe species (erubescens, geophylla, others)

SYMPTOMS BY SYSTEM

SLUDGE Syndrome

Salivation, Lacrimation, Urination, Defecation, GI distress (N/V/D), Emesis

Cardiovascular

Bradycardia, hypotension

Respiratory

Bronchospasm, bronchorrhea, increased secretions - respiratory distress

Ocular

Miosis (pinpoint pupils), blurred vision

Skin

Diaphoresis, flushing

KEY CLINICAL NOTES

Classic muscarinic toxidrome. TREATMENT: Atropine - dose to effect (dry secretions as endpoint, not heart rate). Start 0.5-2 mg IV, repeat every 5 min until secretions dry. Pralidoxime NOT indicated - this is NOT organophosphate poisoning. Symptoms respond well to atropine if given promptly.

TREATMENT / MANAGEMENT

ATROPINE: 0.5-2 mg IV q5min until secretions dry. Large doses may be needed. Supportive: airway management, bronchodilators if needed.

QUICK REFERENCE TABLE

POISON CONTROL CENTER: 1-800-222-1222 - Available 24/7 - Always consult toxicology for serious ingestions

Mushroom	Toxin	Onset	Key Symptoms	Sev	Treatment Note
Death Cap *Amanita phalloides*	Amatoxins	6-24 hours	Severe nausea, profuse vomiting, watery diarrhea, abdom…	4	Supportive; consider NAC, silibinin (milk
Destroying Angel *Amanita bisporigera*	Amatoxins	6-24 hours	Severe nausea, vomiting, watery diarrhea, abdominal pai…	4	Same as Death Cap. Early
Autumn Skullcap *Galerina marginata*	Amatoxins	6-24 hours	Nausea, vomiting, diarrhea, cramping	4	Identical protocol to Death Cap.
Webcap *Cortinarius species (orellanus, rubellus)*	Orellanine	2-3 WEEKS	Initially mild or absent - intense thirst (polydipsia…	4	No antidote. Supportive - renal
False Morel *Gyromitra esculenta*	Gyromitrin -> Monomethylhydrazine	2-12 hours	Nausea, vomiting, diarrhea, abdominal pain, bloating	3	Supportive. Methemoglobinemia:
Jack-O-Lantern *Omphalotus olearius / illudens*	Illudin S	30 minutes - 2 hours	Intense nausea, profuse vomiting, severe diarrhea,	2	Supportive: IV hydration,
Fly Agaric *Amanita muscaria*	Ibotenic acid + Muscimol	30 minutes - 2 hours	Confusion, delirium, visual hallucinations, ataxia, sed…	3	Supportive. Benzodiazepines for
Deadly Fibercap *Inocybe species (erubescens, geophylla, others)*	Muscarine	15 minutes - 2 hours	Salivation, Lacrimation, Urination, Defecation, GI dist…	3	ATROPINE: 0.5-2 mg IV q5min until

ONSET TIME GUIDE

15 min - 2 hr (EARLY): GI irritant, muscarinic, or psychoactive - usually less severe
2 - 12 hr: Gyromitrin (False Morel) - moderate to serious, hemolytic risk
6 - 24 hr (DELAYED): Amatoxins (Death Cap, Destroying Angel, Autumn Skullcap) - POTENTIALLY FATAL
2 - 3 WEEKS (EXTREME DELAY): Orellanine (Webcap) - ask about mushroom ingestion in past 3 weeks for unexplained renal failure