

# FACT SHEET | Trichothecenes

Trichothecene mycotoxins are a large family of potentially-toxic compounds. Compared to other mycotoxins, trichothecenes are the most toxic, because they require far smaller parts per billion exposure than other mycotoxins to exert their biological effects on humans, pets (including birds), and plants.

Trichothecenes are efficiently absorbed, most notably through the respiratory tract through inhalation, as well as through the skin, eyes, and gastrointestinal system. Unlike other mycotoxins, they don't require metabolic activation, which means that they're active on contact. They quickly enter systemic circulation, with peak detectable levels in blood and plasma in as little as 5 minutes after exposure.

Trichothecenes can easily move into cells and cause severe health effects, including gastroenteritis, dermal irritation, corneal ulceration, neural toxicity, and blood cell suppression, with potential for systemic toxicity to lead to weakness, shock, and even death in cases of significant exposure.

These mycotoxins have been developed as biowarfare agents and are significantly more toxic than other well-known chemical warfare "blister agents", such as mustard gas, with blistering and bleeding effects. It's concerning that these same molecules exist in the breathable air of damp and water-damaged buildings.

Within the trichothecene family, there is significant variation in toxicity. Macrocyclic trichothecenes, such as roridins, verrucarins, and satratoxins, are generally considered to be among the most toxic trichothecenes.

## MOLD SOURCES

*Fusarium* - Nivalenol, Deoxynivalenol (DON or Vomitoxin), Diacetoxyscirpenol (DAS), Fusarenon, HT-2 toxin, Monoacetylnivalenol, T-2 toxin

*Myrothecium* & *Stachybotrys* - Roridin, Satratoxin, Verrucarins

*Trichoderma* - Harzianum, Trichodermin

*Trichothecium* - Trichothecin, Trichothecinol

Color - varies widely by mold species and the substrate it's growing on.

Building material - wallpaper, wood and wood products, drywall, insulation paper, cardboard, flooring materials including subfloor.

## COMMON SYMPTOMS

Skin irritation, tenderness, redness, itching, peeling  
(can be severe)

Weakness, muscle loss

Fatigue with lassitude

Cognitive impairment

Dizziness, loss of coordination

Blurred or changing vision

Nasal and throat irritation, pain, itching

Sneezing, runny nose, nosebleeds

Wheezing, cough (potentially bloody)

Difficulty breathing, chest pain

Loss of appetite

Nausea, vomiting (potentially bloody)

Abdominal pain

Diarrhea (potentially bloody)

Altered intestinal permeability

Infertility

Anemia

Low blood pressure

Inability to mount a fever

Increased susceptibility to infections

Bleeding disorders

## THINGS THAT HELP MY PATIENTS

Please follow dosing recommendations on any supplement bottle.

Therapeutic Diet ~

Green tea

Extra-virgin olive oil

Brassicaceae family (broccoli, cauliflower, kale, Brussels sprouts, etc)

Binder. Insoluble fiber or super-fine ground dried okra: 2-4 Tbsp divided daily with food for bile conjugated trichothecenes.

Lemongrass powder: 1/8-1/4 tsp twice daily with food, for unconjugated trichothecenes.

Probiotic. Bacillus species for intestinal degradation of unconjugated trichothecenes in the gut.

Bioflavonoids: Green tea polyphenols, lycopene, quercetin, rutin, hesperidin.

Milk thistle (*Silybum marianum*).

Black cumin (*Nigella sativa*).

Red sage (*Salvia miltiorrhiza*/Danshen).

Turmeric (*Curcuma longa*).

Melatonin.

Combine CoQ10 and Vitamin E to support glutathione. (Trichothecene-specific effect.)

Selenium.

Glutathione.

Leucine.

Taurine.

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