

# Mould Toxicity & the Impact on Mental Health

Integrative  
& Personalised  
Medicine 23

29 June - 1 July 2023 • London UK



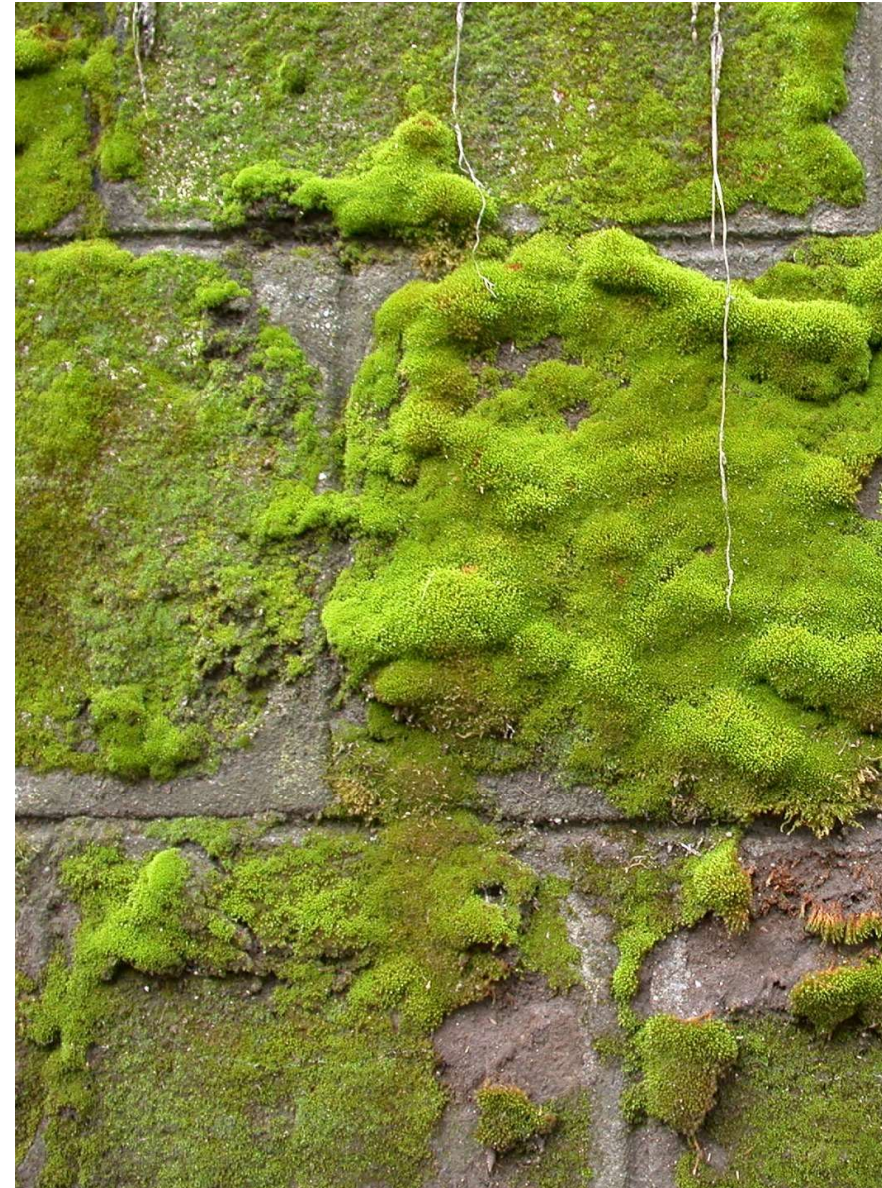
# Mould Facts

Natural function of fungi ~ compost/recycle

Excrete 1° and 2° metabolites ~  
inhaled, ingested, and absorbed through skin

1° metabolites ~ necessary for survival  
aldehydes, alcohols, odors, digestive enzymes,  
and structural elements (ie: beta-glucans)

2° metabolites ~ competitive  
antimicrobials, mycotoxins  
energetically expensive for the mould to make



# Tenacious

Moisture ~ 1° element for growth,  
2° is organic substrate

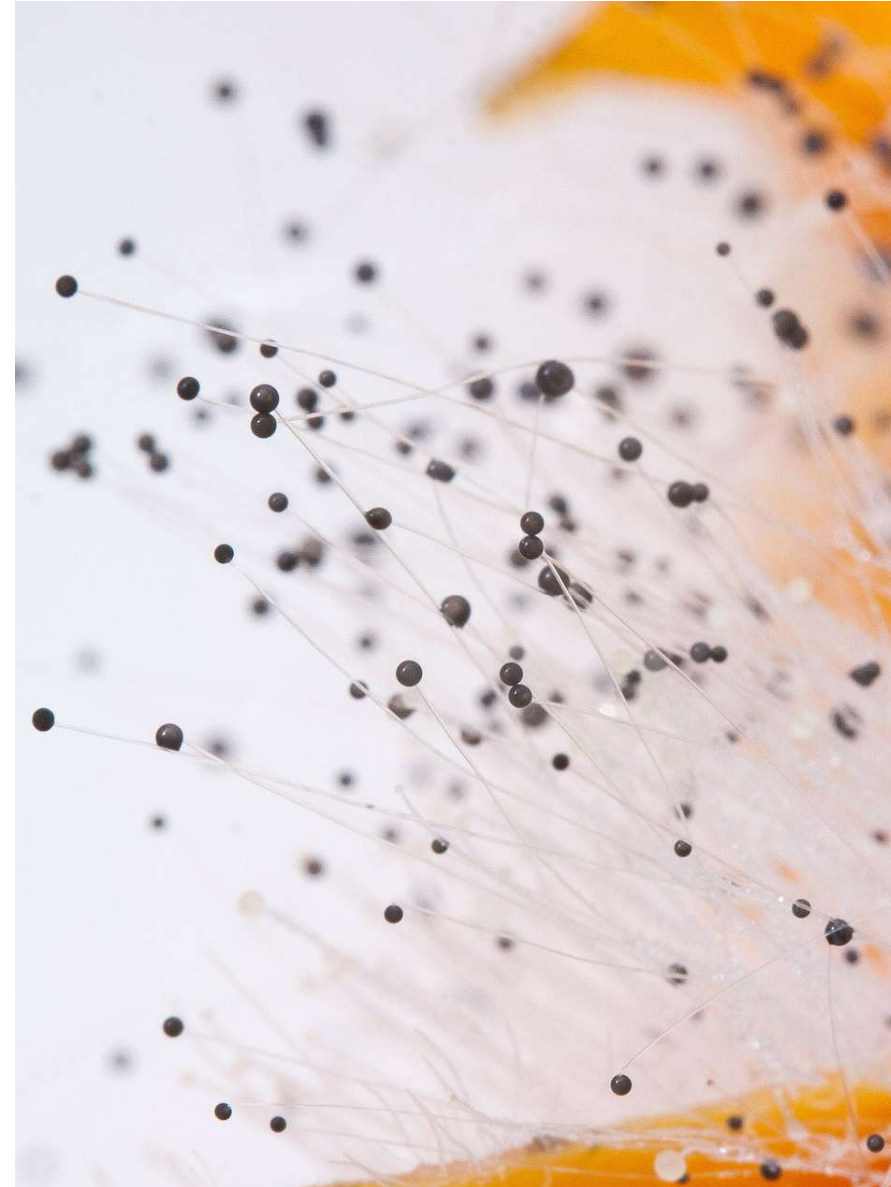
Obvious or visible water not necessary

Relative humidity above 50% promotes growth

Grows on WD surface within 24-48 hours

Difficult to kill ~ any intact spore is dormant,  
not dead (a dead spore is a fragment)

Spore formation and release increases more  
when drying than when wet (survival of species)



# More Than Spore Illness

## Spores

IgE | Allergic rhinitis, asthma, hypersensitivity pneumonitis (CDC)

Non-IgE | Non-IgE mediated Asthma exacerbation (CDC)

Infection | Aspergillosis (CDC)

Mast cell | Recruitment, degranulation, enhanced survival

Figure 1



Highly simplified overview of the diverse stimuli and potential consequences of mast cell activation and secretion of cytokines, chemokines and growth factors

PMID: 29431212

# Mast Cells & The Gut

Mast cells are differently differentiated by tissue and reason for recruitment

Dr. Theoharides - “the gateway to inflammation in the body”

MUCH more than, and not always, histamine ~ may release cytokines and other inflammatory mediators without ever releasing histamine

Symptoms related to eating ~

Post-prandial flushing

Post-prandial fatigue

Post-prandial brain fog

Post-prandial drop in bp

Gastroparesis

GI: heartburn, N/V, constipation, diarrhea

Food avoidances related to histamine concentration, esp left-overs

PMID: 19527167, 19201896, 29431211



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## Fragments

“Mould-othelioma”

## Other Mould Dangers

Chemicals | VOCs, aldehydes, alcohols, MPA

Mycotoxins | Colonization

## Biofilm

Water-damage=increased microbial diversity (ie: actinomycetes, endotoxin)

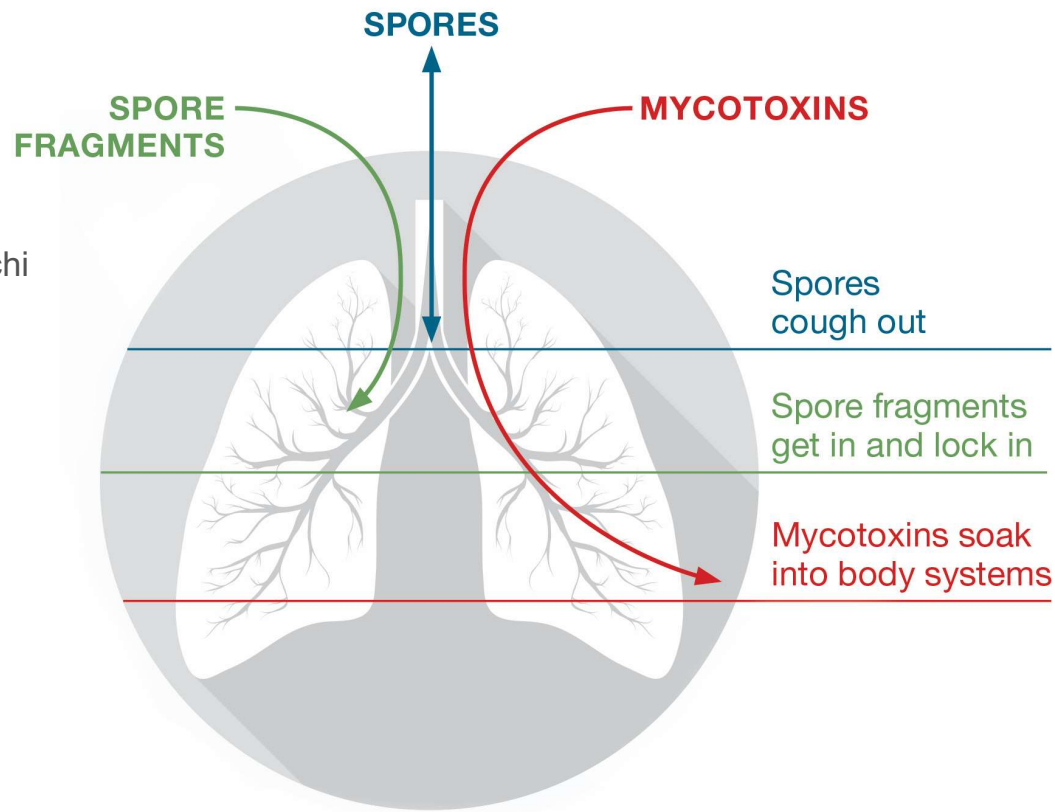
Quorum behavior

PMID: 24368325, 20537281, 24368325, 23710148

# Respiratory System vs Mould

## RESPIRATORY SYSTEM

- >7m Nasal
- 5-7m Pharynx
- 3-5m Trachea
- 3-5m 1° Bronchi
- 2-3m 2° Bronchi
- 1-2m Terminal bronchi
- <1m Alveoli



## MOULD

- Spores-
  - Cladosporium 3-5m
  - Aspergillus 2-5m
  - Penicillium 1-5m
- Fragments- 1-2m
- Mycotoxins- 0.1m



# Mycotoxins

Aflatoxin

Aspergillus flavus, A. parasiticus

Chaetoglobosin A,C

Chaetomium globosum

Citrinin

Aspergillus, Penicillium, Monascus

Enniatin B<sub>1</sub>

Fusarium spp

Gliotoxin

Aspergillus fumigatus, Candida spp

Ochratoxin A

A. ochraceus, A. niger, Penicillium verrucosum, P. nordicum,

P. chrysogenum

Patulin

Aspergillus spp, Penicillium spp, Mucor, Fusarium spp

Sterigmatocystin

Precursor of Aflatoxin, A. versicolor

Trichothecenes (Roridin, Verrucaridin, Nivalenol, Deoxynivalenol, Diacetoxyscirpenol,

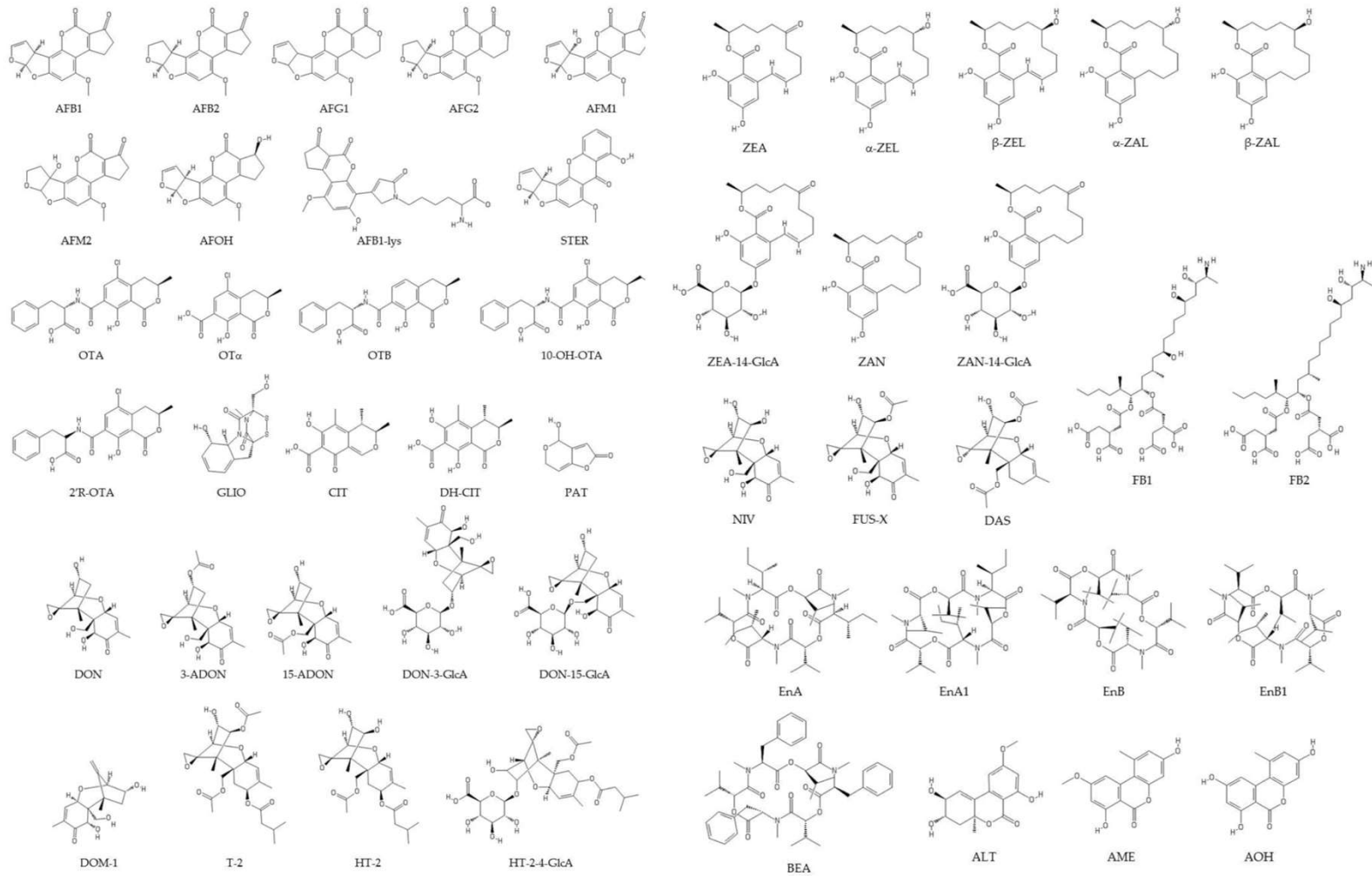
Satratoxin)

Stachybotrys chartarum, Trichoderma viridae, Fusarium spp, Myrothecium

Zearalenone

Fusarium spp





PMID 32121036

# Mycotoxins

\*Lipophilic\*

Immunotoxic

Neurotoxic

Alimentary toxic

Dermatotoxic

Nephrotoxic

Hepatotoxic

Hepatocarcinogenic

Genotoxic

Teratogenic

Carcinogenic

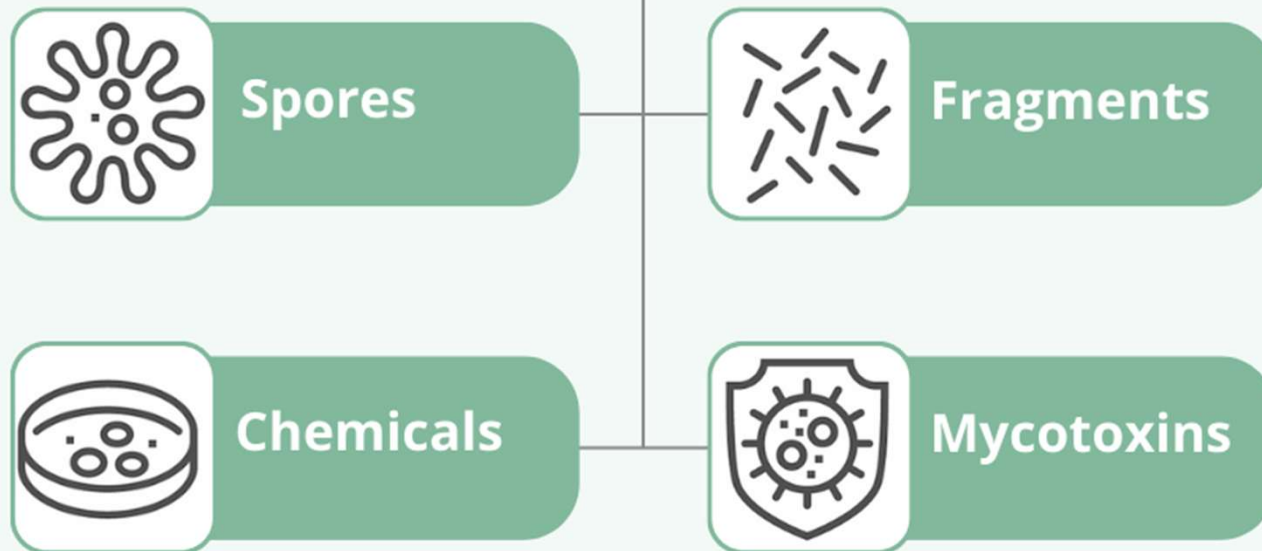
PMID: 26474839, 27178040, 25449202, 12221236, 26600019



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# New Definition of Mold-Related Illness



# What Explains Symptom Persistence?

Occupational studies ~

Coin flip: ~50/50 persister/recovered

Do they stay symptomatic out of the building?

*\*likely different stats for home exposure*

CFS study ~

Normal controls: +fungus, -mycotoxins

CFS pts from WDB: +fungus, +mycotoxins

Damp or WDB exposure is the key

Mould is the trigger

Colonization is the result



PMID: 23580077 Brewer et al, Detection of mycotoxins in patients with chronic fatigue syndrome

# Colonization

Dysbiotic biomes

A continuum ~

If susceptible and/or sufficient exposure duration →

Mycotoxins trigger protective mechanism →

Conversion of healthy microbiome to pathogenic biofilm →

First mucosal then total body fungal burden

Fungi family takes advantage (ie: chronic, subacute candidiasis)

Affects all mucosa/mucocutaneous (GI, resp, bladder, vaginal, skin)

Once recovered, mycotoxins can trigger old pattern

Rationale for effectiveness of antifungals w/o infection Dx

# Biomes, BBB, and OCD

Imbalance in the gut and oropharyngeal microbiomes seen in OCD

Increase of bacteria from the Rikenellaceae family ~  
associated with gut inflammation

Decrease of bacteria from the Coprococcus genus ~  
associated with DOPAC synthesis

During dysbiosis, gut-brain axis pathways are dysregulated and  
associated with altered permeability of the BBB and neuroinflammation

Neurodegeneration and the microbiome:

MS-twin study ~ FMT from MS-affected twin into mice promoted the dz  
*in vivo* vs FMT of twin unaffected by MS

PMID: 35087123, 33362788, 28893994



# Lung Microbiome Effect on the Brain

There's a tight interconnection between the lung microbiota and the immune reactivity of the brain.

A dysregulation in the lung microbiome significantly influenced the susceptibility of rats to developing autoimmune disease of the CNS.

Shifting the microbiota towards LPS-enriched phyla induces a type-I-interferon-primed state in brain-resident microglial cells.

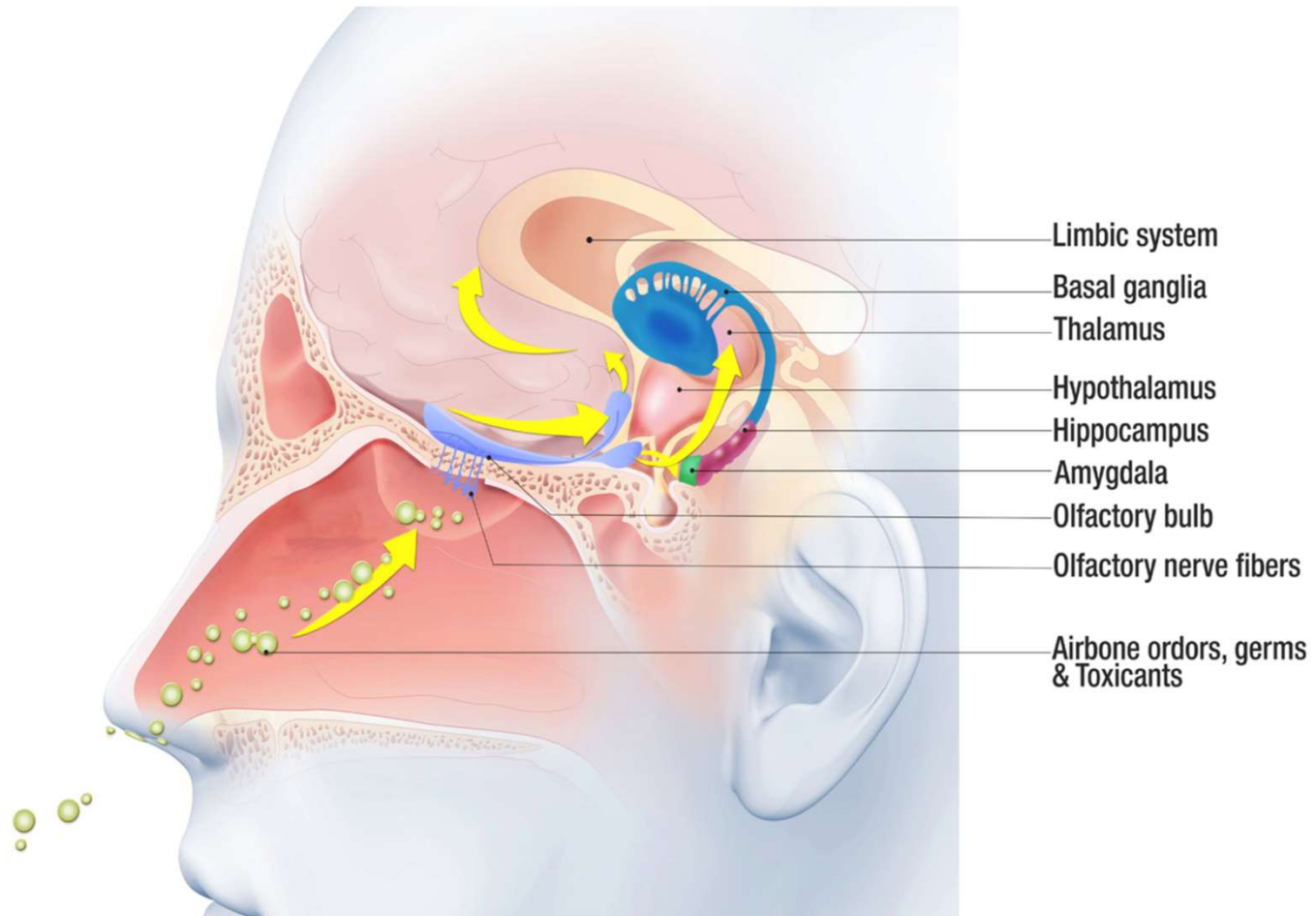
Damp and WDBs modify the lung microbiome.



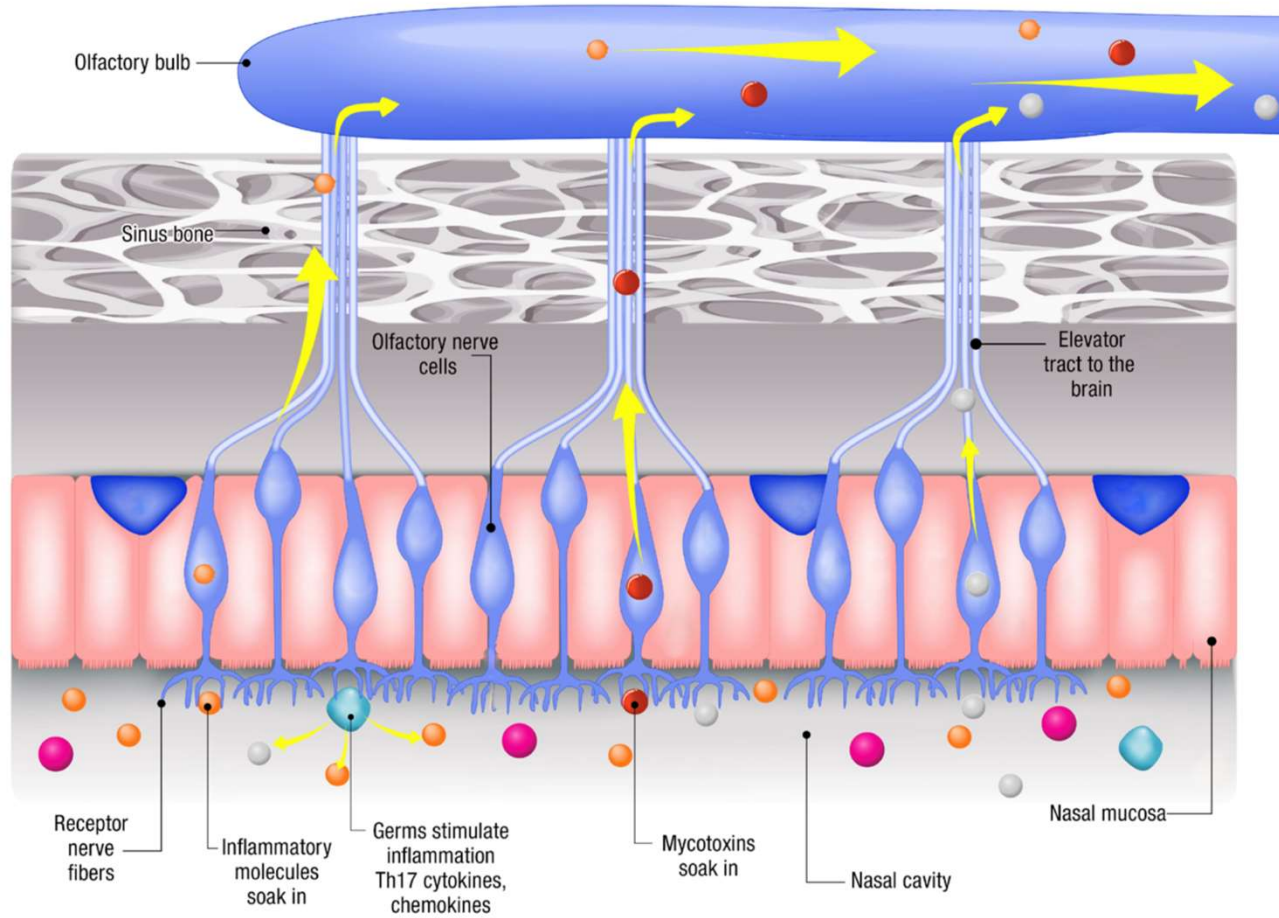
PMID: 35197636, 35417673, 35197592, 32140452, 19793773



# Mould on the Mind



# Olfactory Bulb: “Elevator” to the Brain



# Multisystem Multisymptom

More common than not that each person in an exposure environment has a completely different presentation.

Every living being is affected.

Depends on type of mould, presence of mycotoxins, duration and dose of exposure, and individual susceptibility.



Comparative Study > J Assoc Off Anal Chem. 1983 Nov;66(6):1485-99.

## Analysis for Fusarium toxins in various samples implicated in biological warfare in Southeast Asia

C J Mirocha, R A Pawlosky, K Chatterjee, S Watson, W Hayes

PMID: 6643363

### Abstract

Samples of leaves, water, cereal grains, soil, and yellow powder as well as blood, urine, and body tissues from chemical warfare victims were analyzed for Fusarium toxins by using gas chromatography and mass spectrometry. The leaves, water, and yellow powder samples contained various combinations of T-2 toxin, diacetoxyscirpenol, deoxynivalenol, nivalenol, and zearalenone in concentrations ranging from trace (1.0 ppb) amounts to 143 ppm. These trichothecenes do not occur naturally on the substrates described and were correlated with the so-called "yellow rain" chemical attacks against Hmong people in Southeast Asia. Analysis of leaves, soil, water, and cereals collected in areas adjacent to but apart from the area where chemical attacks had been staged did not contain any Fusarium toxins. Moreover, T-2 and HT-2 toxins were found in human blood, urine, and body tissues (heart, esophagus, kidney, lung, and large intestine) of alleged victims. In addition, diacetoxyscirpenol was found in the kidney of one person who had died.

Mycotoxins have a long history of use as a biological warfare weapon.

*"Yellow rain" T-2 toxin use against the Hmong people in Southeast Asia.*

So, yes, they affect everyone.



# Mould & Neurological Health

- Anxiousness
- Visual processing issues
- Depression
- Cognitive difficulties (brain fog)
- Difficulty with concentration
- H/As and migraine
- Dizziness/vertigo
- Tinnitus
- Incoordination
- Dysautonomia
- Insomnia
- Neuropathies
- Dementia
- Tremor
- Autoimmune encephalopathies (PANS/PANDAS)



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The Brain's

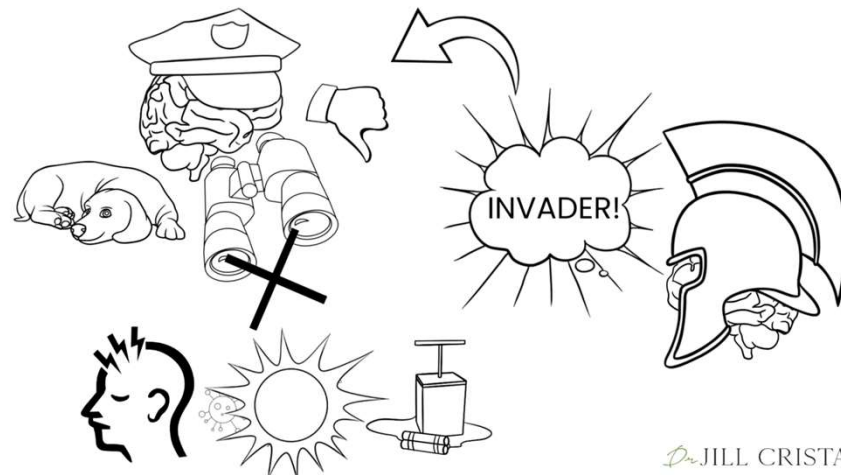
# Chief & Warrior

A Limbic Story

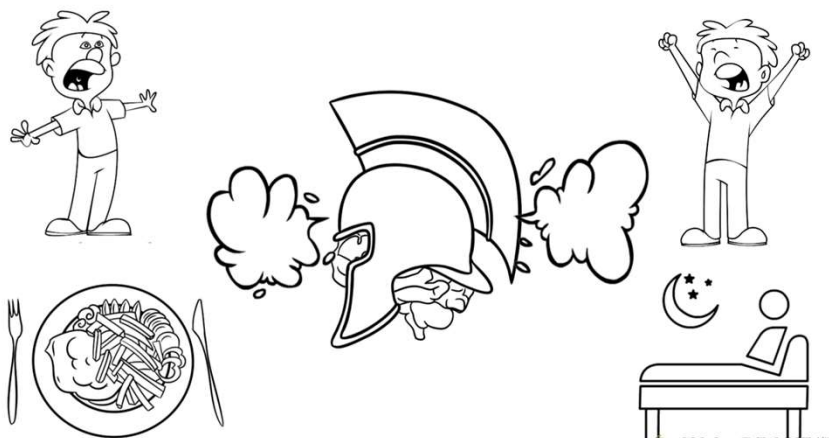


**A LIGHT**  
*in the*  
**DARK**

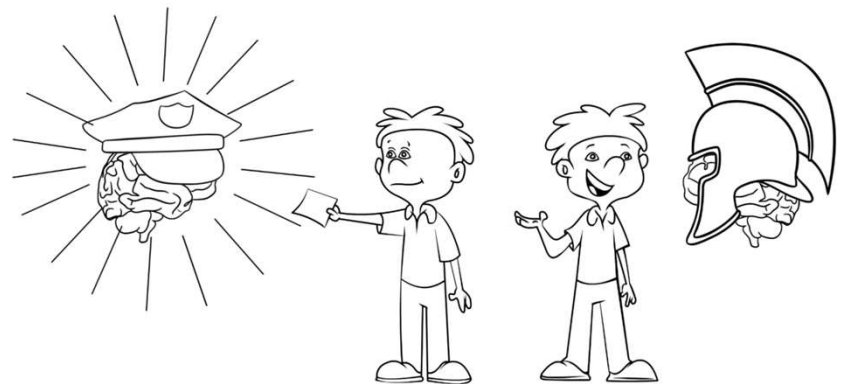
FOR PANDAS & PANS  
DR. JILL CRISTA • NATUROPATHIC DOCTOR



Dr. JILL CRISTA



Dr. JILL CRISTA



Dr. JILL CRISTA



## CATEGORY I:

### GENERAL:

- Fatigue that doesn't otherwise make sense
- Trouble sleeping
- Worse after eating
- Worse after exercise
- Increased thirst
- Stubborn weight gain
- Anemia

### SENSITIVITY:

- Bothered by tags and seams on clothing
- Chemical sensitivities
- Sensitive to light, sound, or touch

### HEAD/MIND:

- Slowed thinking or brain fog
- Unsettled feeling, unquieted mind, overwhelm
- Headaches
- Dizziness, vertigo, or drunken feeling
- Unexplained mood changes, anxiety, or depression

### EENT:

- Allergies/hay fever year-round
- Eye irritation
- Dark circles under eyes
- Floaters in your visio
- Vision blurry, frequently changes, or difficulty reading
- Sneezing or persistent runny nose
- Acute sense of smell for mold
- Recent sinusitis
- Ears feel plugged or clogged
- Itchy or sore ear canals
- Sores in the mouth
- Post-nasal drip or frequent throat clearing
- Chronically sore throat
- Coated tongue

### RESPIRATORY:

- Easily irritated lungs
- Episodic cough
- Shortness of breath, air hunger, or yawn/sigh often

### CARDIOVASCULAR:

- Easy bruising
- Heart palpitations
- Lower extremity edema
- Protruding veins on limbs

### DIGESTIVE:

- Nausea
- Bloating abdomen or flatulence
- Unexplained change in digestion/bowels
- Recent change in appetite
- Crave carbs, sweets, or alcohol

### GENITOURINARY:

- Overactive bladder
- Bladder infections

### SKIN:

- Skin rash, redness or flushing

### IMMUNE:

- Frequent infections or delayed recovery from colds

### MUSCULOSKELETAL:

- Increased body pain

Total CATEGORY I boxes checked : \_\_\_\_\_

- 0 - 4 symptoms = Score 0
- 5 - 7 symptoms = Score 1
- 8 - 10 symptoms = Score 2
- 11+ symptoms = Score 3

ENTER CATEGORY I SCORE : \_\_\_\_\_



## CATEGORY 2:

### GENERAL:

- Voice sounds nasally
- Frequent or strong static shocks
- Histamine intolerance
- Non-obstructive sleep apnea
- React poorly to musty spaces

### SENSITIVITY:

- Sensitivity to EMFs

### HEAD/MIND:

- Migraines
- Difficulty thinking clearly or memory loss
- Confusion or disorientation

### EENT:

- Allergies are not well-controlled by medication
- Chronic sinusitis
- Nose bleeds
- Ear ringing or ear pain that's new or worsening

### RESPIRATORY:

- Asthma or wheezing
- Chronic cough
- Burning lungs

### CARDIOVASCULAR:

- Episodes of fast heart beat
- Chest pain
- Low platelets

### DIGESTIVE:

- Increased food sensitivities
- Frequent vomiting
- Irritable bowel or alternating constipation/diarrhea
- Digestive ulcer or blood in the stool
- Celiac or non-celiac intestinal disease
- Fatty liver
- Liver pain or swelling

### GENITOURINARY:

- Unexplained menstrual changes
- Bacterial vaginosis
- Kidney pain or swelling

### SKIN:

- Itchy or burning skin
- Peeling or sloughing skin
- Raynaud's syndrome
- Eczema or psoriasis

### IMMUNE:

- Epstein-Barr virus activation

### MUSCULOSKELETAL:

- Slow reflexes
- Balance issues or incoordination
- Joints easily injured
- New or worsening nerve pain, numbness or tingling
- Muscle weakness or spasm

Total CATEGORY 2 boxes checked : \_\_\_\_\_

0 - 2 symptoms = Score 0

3 - 5 symptoms = Score 1

6 - 8 symptoms = Score 2

9+ symptoms = Score 3

ENTER CATEGORY 2 SCORE : \_\_\_\_\_





### CATEGORY 3:

#### GENERAL:

- Current exposure to mold
- Previous exposure to damp, musty or water-damaged building any time in your life
- Mold allergy
- Abnormal reaction to medications or supplements
- Autism or sensory processing disorder
- Chronic fatigue syndrome
- Chronic inflammatory response syndrome (CIRS) or positive Shoemaker tests

#### SENSITIVITY:

- Feeling of an internal vibration

#### HEAD/MIND:

- Dysautonomia or Postural Tachycardia Syndrome (PoTS)
- Dementia

#### EENT:

- Daily use of sinus spray, sinus prescription, or Neti pot
- Nasal polyps
- Sinus surgery at any time in your life
- Hearing loss
- MARCoNS
- Oral thrush

#### RESPIRATORY

- Asthma that's difficult to control with medication
- Lung scarring or nodules
- Pulmonary Edema
- Idiopathic Pulmonary Fibrosis
- Respiratory distress or Idiopathic pneumonitis
- Lung cancer

#### CARDIOVASCULAR:

- Arrhythmia
- Coagulation abnormalities
- Arteriovenous abnormality
- Churg Strauss Syndrome

#### DIGESTIVE:

- Peanut allergy
- Cyclical vomiting syndrome
- Eosinophilic esophagitis
- Non-alcoholic steatohepatitis (NASH)
- Hepatocellular carcinoma or other liver cancer

#### GENITOURINARY:

- Infertility
- Chronic pelvic pain
- Interstitial cystitis
- History of kidney stones
- Reduced GFR (glomerular filtration rate)

- IgA nephropathy, nephrotic syndrome, nephritis, or other kidney disease
- Kidney cancer

#### SKIN:

- Recurrent yeast infections or fungal skin infections, including athlete's foot, jock itch or yeast vaginitis
- Erythema nodosum
- Toenail fungus

#### IMMUNE:

- Autoimmunity
- Mast cell activation syndrome (MCAS)
- Aspergillosis, current or history of
- Previous or current cancer diagnosis, not otherwise specified
- Aplastic anemia
- Sarcoidosis

#### MUSCULOSKELETAL:

- Hypermobility or Ehlers-Danlos syndrome
- Tremors or tics
- Difficulty walking

Total CATEGORY 3 boxes checked : \_\_\_\_\_

Score 1 for each box checked.

Total items checked and the Category Score will be the same for this category.

ENTER CATEGORY 3 SCORE : \_\_\_\_\_



## TOTAL MOLD RISK RESULTS

Gather your Category Scores from the 3 previous categories.

CATEGORY 1 SCORE: \_\_\_\_\_

CATEGORY 2 SCORE: \_\_\_\_\_

CATEGORY 3 SCORE: \_\_\_\_\_

Add Category Scores together to calculate your total mold risk.

**TOTAL MOLD RISK** \_\_\_\_\_

0 - 4 = Not Likely Mold-Related Illness

5 - 9 = Possible Mold-Related Illness

10+ = Probable Mold- or Biotoxin-Related Illness

### OTHER THINGS TO CONSIDER:

Lyme Disease, MSIDS, Tick-Borne Co-Infections (Use HOROWITZ MSIDS-LYME QUESTIONNAIRE)

Other environmental toxins (IE: glyphosate, mercury, lead, PM2.5, VOCs, etc.)

Intestinal parasites

Chronic viral syndromes or other stealth infections

Food sensitivities

CVIDS or immunodeficiency syndromes



# Research Study

## MoldIQ

### Welcome!

Thank you for participating in the Mold Illness Questionnaire (MoldIQ) Research Initiative. The purpose of this research is to gather meaningful clinical data regarding mold-related illness, with the goal of publishing the findings in peer-reviewed medical journals. This research has the potential to inform the design of future studies looking into the effects of indoor mold exposure on humans, with a focus on developing accepted treatments.

If you take part in this study, you will be asked to:

- Complete a symptom questionnaire
- Answer questions about your living space
- Submit digital copies of certain laboratory results



The survey will take about 5 minutes to complete.

MoldIQ.org



# The Paths of the Mycotoxin

In damp or WDB exposure ~

Inspiration

Absorption through respiratory capillaries

Carried via blood to Liver & Kidney

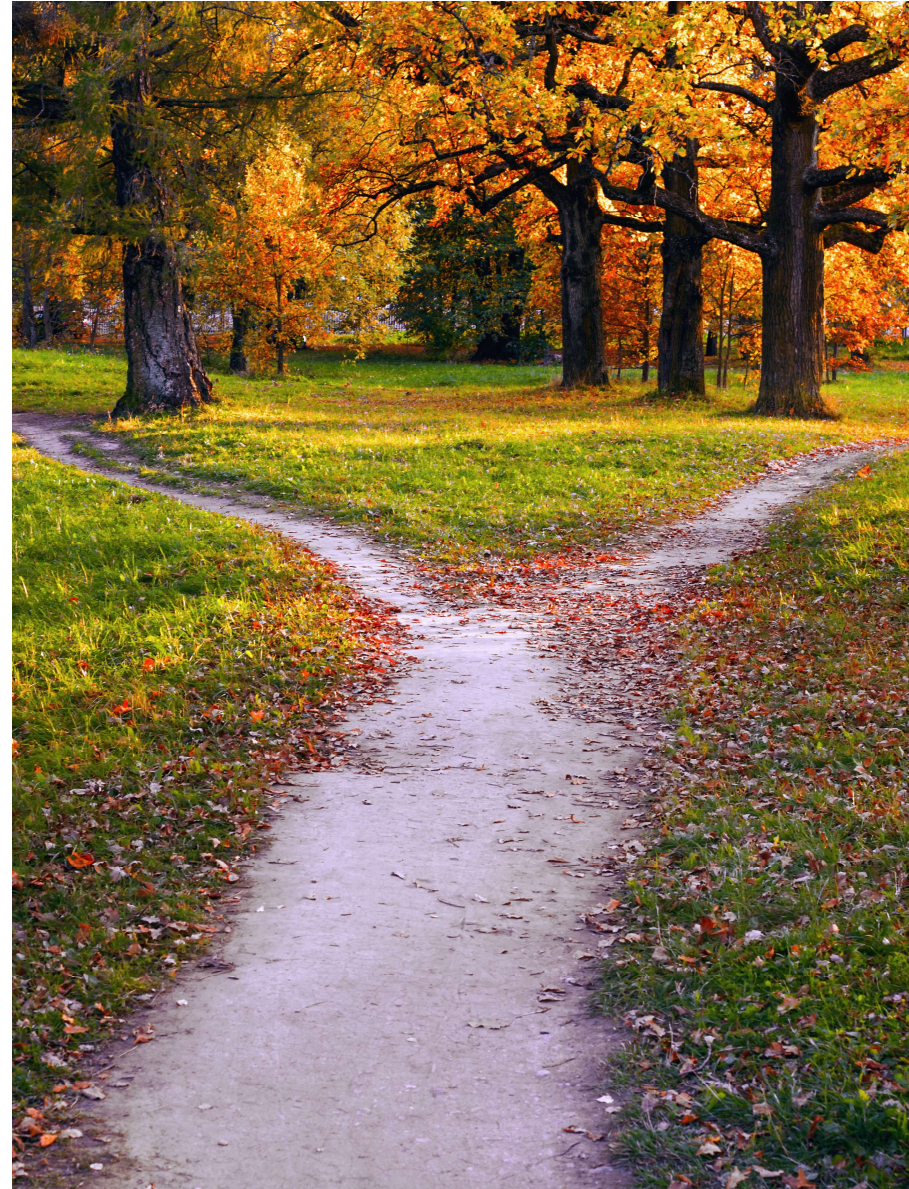
Kidney - filtration to urine

Liver - binds to bile and delivers to gut

Excess absorbed into lipid-rich tissue

Ingested mycotoxins ~

May remain unbound in lumen



# Assessments

Direct Tests ~

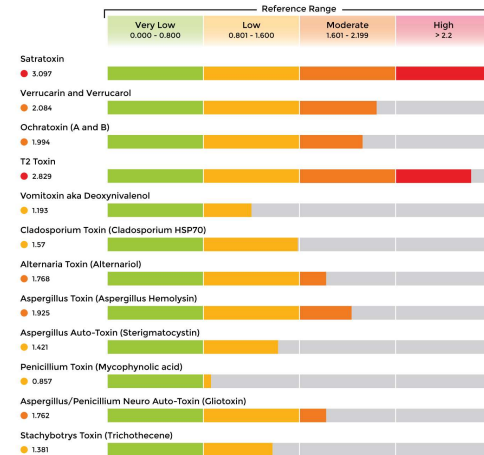
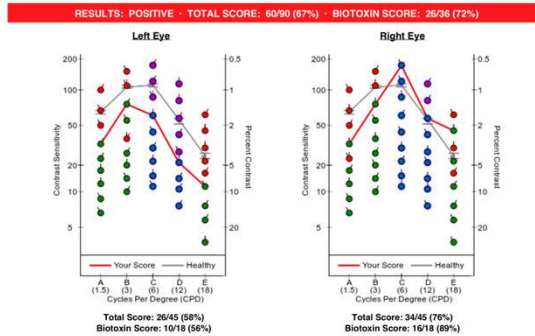
- Urine mycotoxin (LC-MS method)
- Stool microbial assay + yeasts

Indirect Tests ~

- Visual Contrast Sensitivity (vcstest.com)
- Serum IgE/G \*mycotoxin\* antibody
- IgE/G mould spore antibody (standard)
- Urine mycotoxin (ELISA method)

CBC:

- ↓WBC, relative lymphopenia
- ↑NLR, microcytic anemia
- Vit D (↓25-OH and ↑1,25)
- Liver function - esp ↑GGT
- ↓NK cell \*function\* with ↓ or normal NK cell total
- ↑MMP-9 (mast cell correlate)
- Organic Acids Urine Test
- NeuroQuant (1' neuro sxs)



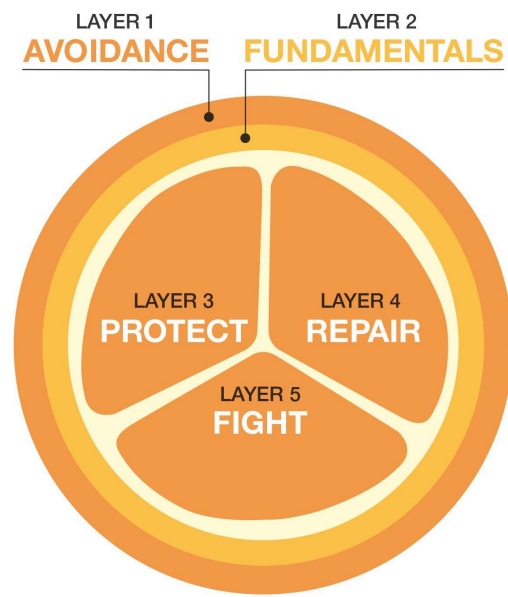


# MEDICAL ETHICS

Where are the RCTs?

# Peel The Orange

- 1 AVOIDANCE
- 2 FUNDAMENTALS
- 3 PROTECT
- 4 REPAIR
- 5 FIGHT



# The First 3 Steps of Toxin-based Illnesses

1. Avoidance

2. Avoidance

3. Avoidance





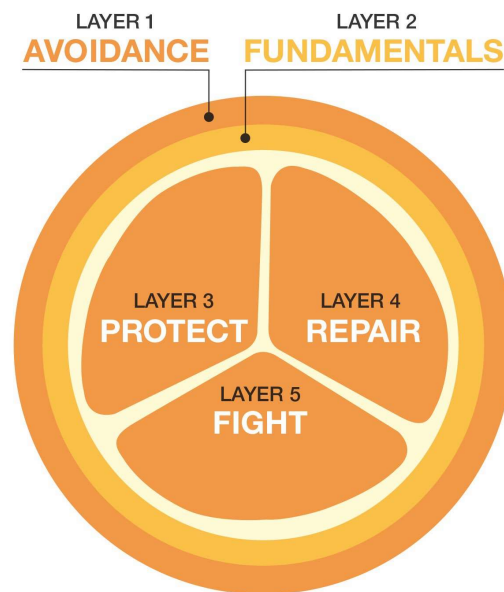
# Avoiding Avoidance

The MOST resistant of all enviro med pts to accept the cause



# Peel The Orange

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- 5 FIGHT



# What NOT To Eat

## **AVOID**

### **FOODS** FIRST TIER

Sweets of any kind

Dried fruits

Leavened bread

Yeast

Simple carbohydrates

Baked goodies

Mushrooms

Corn

Potatoes

Pickles & pickled foods

Vinegar

Soy sauce

Cantaloupe

Grapes

Aged cheeses

Moldy cheeses

Peanuts

Peanut butter



# What NOT To Eat or Drink

## **AVOID**

### **FOODS SECOND TIER**

- All fruit
- Starchy vegetables
- All grains
- Fermented foods
- Shelled nuts
- Condiments made with vinegar or sugar
- Sour cream or other soured milk products

## **AVOID**

### **BEVERAGES**

- ANY sweetened beverage
- Fruit juice
- Oolong and black tea (partially fermented)
- Moldy coffee (check that your company has independent testing)
- Alcoholic beverages
- Fermented beverages, such as cider, kombucha



# What TO Eat to Protect

## EAT!

### PROTECTIVE FOODS

**Colorful vegetables** (eat more veggies than fruit)

- **Beets, artichoke, asparagus, radishes** (helps the liver)
- **Broccoli, Brussel sprouts** (detox via sulfurophanes)
- **Tomatoes** (lycopene neutralizes mycotoxins)
- **Cabbage** (helps your intestines)
- **Celery, cucumber** (helps kidneys with water balance)
- **Bitter greens such as arugula, broccoli rabe, endive, watercress, kale, dandelion greens** (detox mycotoxins)

**Colorful fruits** (eat more veggies than fruit)

**Beef liver** (use organic only)

### Essential fats:

- **Avocado**
- **Olives**
- **Olive oil**
- **Fresh seeds and nuts**
- **Eggs**
- **Fish**

**Yogurt** (rebalance flora)

**Butter** (heal intestinal lining)

### Healing spices:

- **Curry** (turmeric)
- **Parsley**



# What TO Eat to Fight Mould

**EAT!**

## **MOLD FIGHTING** FOODS

Garlic  
Onions  
Scallions  
Chives  
Leeks

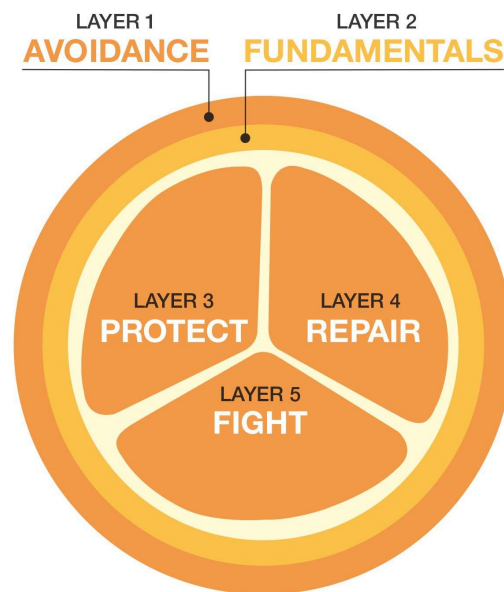
**EAT!**

## **MOLD FIGHTING** SPICES

Clove  
Cumin  
Rosemary  
Sage  
Thyme  
Oregano  
Basil  
Bay leaf

# Peel The Orange

- 1 AVOIDANCE
- 2 FUNDAMENTALS
- 3 PROTECT
- 4 REPAIR
- 5 FIGHT



# The Essence of Protect & Repair

Provide an “oil change” by binding  
mycotoxin-laden bile and replacing with  
Copious Clean Correct fats  
(PC, EFAs, CoQ10)

*“The solution to pollution is dilution”*

*Dr. Walter Crinnion*

Restore fat-soluble nutrients (A, D, E, K)

Bioflavonoids - eat the “rainbow”

Support systems of detoxification

Restore immune depletion





# Bioflavonoids Before Binders

Allows detox via urine over stool

Protects the organs of detoxification - don't forget the kidneys!

IE: Ochratoxin ~ the “persister mycotoxin”  
high affinity binding to albumin  
∴ kidneys (first line of detox) can't clear it

Leads to tissue accumulation in kidney and gut interstitium

Bioflavonoids (esp Astaxanthin) denature Ochratoxin from albumin to allow for clearance, sparing the kidneys from damage



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# My First Step Binders

Food!

Insoluble fiber ~ proven toxin removers, bile binders  
psyllium husk, flax, chia, brans

SIBO safe food binders ~ 1st phase, biphasic diet

Sunflower seeds

Pumpkin seeds

Sesame seeds

Dose ~

Start low & go slow

1/8 tsp qd with largest meal

titrate up to 2-5gm/day

\*\*\*NO BINDERS IF BOUND UP\*\*\*



# Vitamin D

Lab-measured levels correlate inversely with anxiety and depression

Mold: Vit D receptor significantly down-modulated in intestine & kidney after aflatoxin exposure

Promotes lung tissue repair in \*particle-induced pulmonary injury\*  
(#fragments, #lung biome)

Dose to lab levels

Goal 25-OH Vit D >60 ng/mL

Emulsified best, esp if cholecystectomy

Oral (daily-weekly), IM

PMID: 34684344, 30698894, 25483621, 25912039, 26404359, 18569389



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# Turmeric (*Curcuma longa*)

Neuroprotective effects by influencing the "microbiota-gut-brain axis"

Antioxidant, hepatoprotective, nephroprotective, epigenetic protection

Amelioration of aflatoxin-induced effects by increasing availability of GSH

Provides protection against toxic effects of mycotoxins on liver & kidney

Dose: 350mg qd-tid, start low, titrate slowly

Cautions: inhibits cytp450

PMID: 31614630, 25639897, 26450181, 29034472

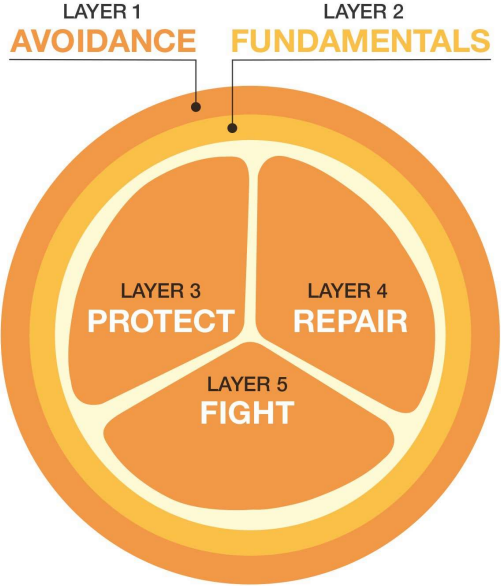


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## Fight = Antifungals

Goal ~ reset the body's biomes

Fungal overgrowth is the fire

Mycotoxins are the smoke

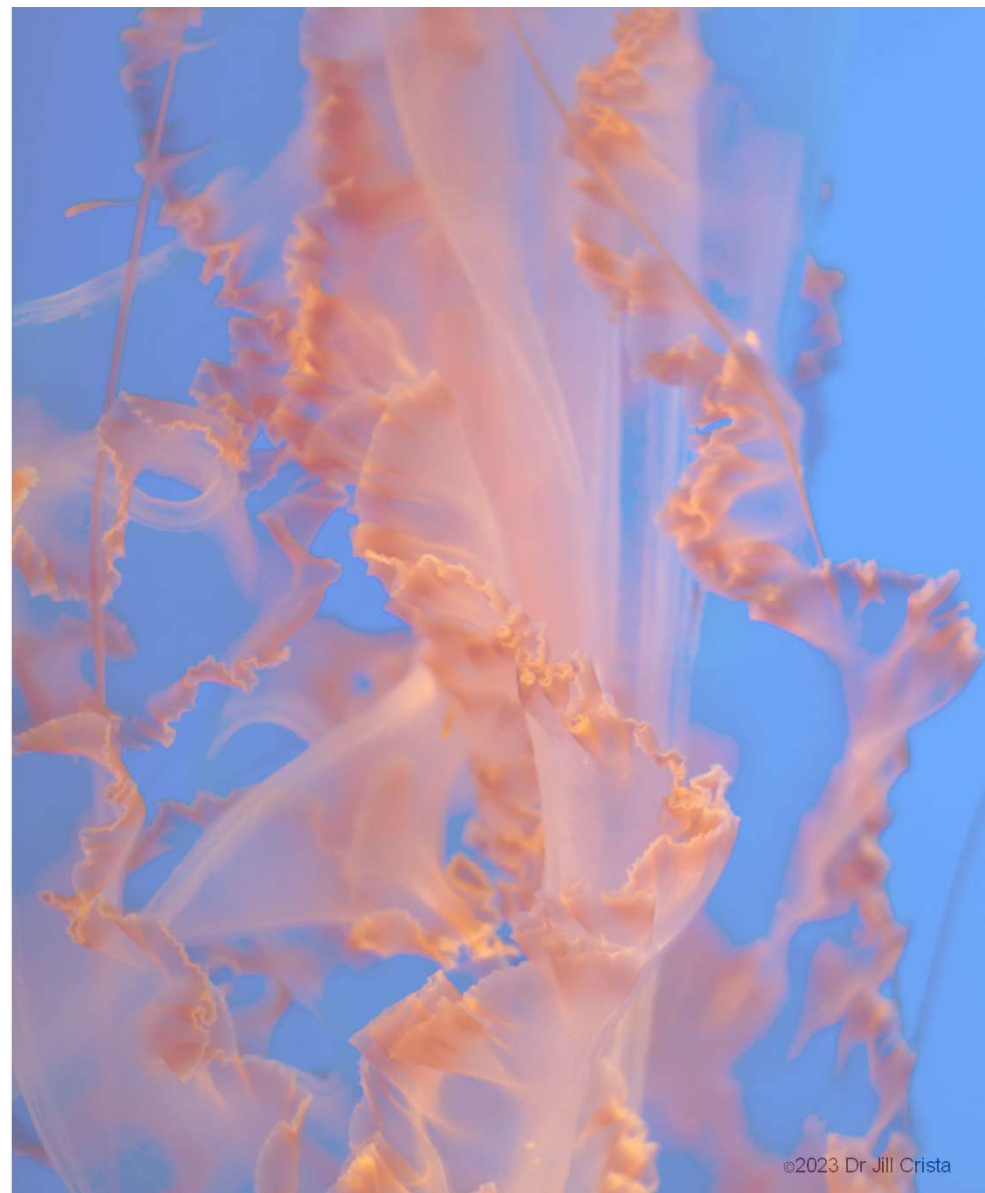
Put out the fire or you'll have to keep mopping up smoke in depleted pts (why binders alone are not sufficient in colonized patients)

Tx until there's no more evidence of smoke (mycotoxins)

Biofilm often a resistance factor



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# Systemic + Intranasal Antifungals

Reduces recalcitrance

Reduces fungal resistance

Reduces mast cell related symptoms ~  
combine with prokinetic if significant MCAS or SIBO  
combine with anti-histamines if significant MCAS

Systemic treatment factors ~

Health status of patient

Infection vs colonization

Location

Botanical medicines can offer effective but less harmful systemic treatment options

Don't be afraid to combine herbs+Rx, many reduce Rx resistance



# Holy Basil (*Ocimum sanctum*)

Ayurvedic - Tulsi, taken traditionally as tea

Antifungal, antibiotic, antioxidant, antiparasitic

Affinity for lungs & mind\*

Significantly inhibited cell adhesion/invasion

Shown to detox aflatoxin

Significantly inhibited activities of MMP-9

Action against fluconazole resistance

Dose ~

Tea: 4 cups daily

Steep covered to retain e.o.'s

Extract: 550mg leaf extract qd-bid



PMID: 20233602, 27471501, 20161958, 27274752



# Rosemary (*Rosmarinus officinale*)

Long history of use and benefits in mental health

NLRP3 inflammasome implicated in OCD, psych disorders

Rosmarinic Acid inhibition of the NLRP3 inflammasome exerts antioxidant, anti-inflammatory, and neuroprotective effects

Antifungal and antimycotoxigenic activity against multiple mold species

Dose ~

Liquid glycerite: 1/4 tsp tid

Capsule: 350mg bid

Also consider essential oil topical applications



# Intranasal Options

Reduce fungal growth  
Reduce mycotoxin production  
Safe to use long-term



## ESSENTIAL OILS

- Cedar leaf (*Thuja plicata*) - broad spectrum antimicrobial
  - Rosemary leaf (*Rosmarinus officinalis*)
  - Ajwain seed (*Trachyspermum copticum*)
  - Holy Basil leaf (*Ocimum basilicum*)
  - Cumin seed (*Cuminum cyminum*)
  - Tea tree (*Maleleuca alternifolia*)
  - Thyme leaf (*Thymus vulgaris*)
- Use organic, inhalation grade

PMID: 22408584, 18190993, 27275253, 24624154, 27211664, 17209812, PMC4483703

# Comprehensive Plan

Avoidance avoidance avoidance

Diet diet diet

Bioflavonoids

Good fats

Bile movement

Fiber binding

Detox + mitochondrial support

Immune support

Antifungals



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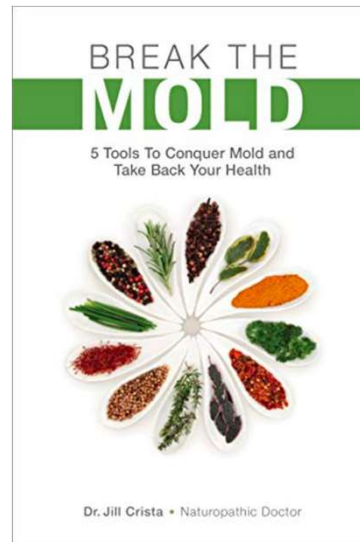
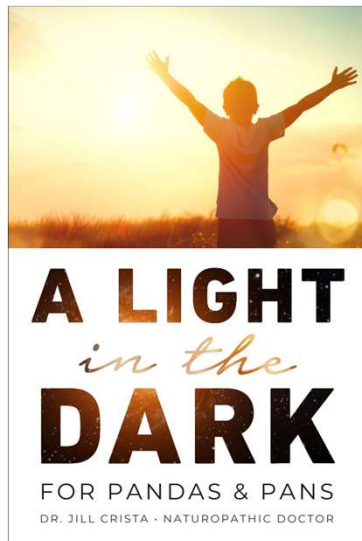


# Orange Half Peeled?

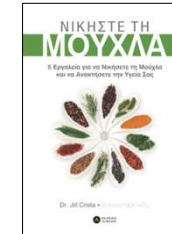


must get out of mold to fully heal

# Helpful Resources



Greek



Chinese



Polish



German



# Education

For the public ~



For medical practitioners ~





 Questions?