

1 **Are You Missing Mold Illness?**

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2 **Are You Missing Mold Illness?**

- Online continuing education course for medical practitioners
- Created & presented by Dr. Jill Crista

3 **Course Curriculum**

- Stuff You Need To Know First
- Mold ~ A Formidable Foe
- Scary Scary Mycotoxins
- How To Spot Moldies
- The Testing Conundrum
- Peel The Orange
- Protect & Repair
- Fight
- When Things Go Sideways
- And The Environment

4 **Stuff You Need To Know First**

- How this course works
- Certificates

- Impacts

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5 **How This Course Works**

- Over 10 hours - choose when to watch
- CE/CME credit, ND Pharmacy
- 10 Modules ~
Lectures within each module
- Quizzes ~
At end of each lecture
- Case examples
- Updates
- Access for 1 year
- A note on research...

6 **Where Are The RCTs?**

- Medical Ethics
Reign Supreme

7 **Where Are The RCTs?**

- Medical Ethics Reign Supreme

8 **Certificates**

- Mold-literate certification available to licensed primary care providers
- View modules in order
- Watch entire lecture before quiz
- Quiz score >70%
- Eligible practitioners are listed on DrCrista.com
- CE/CME certificates up to 1 week

9 **Put Simply . . .**

- What are molds & mycotoxins
- Who's impacted
- How to test

- What to do if you find it

10 **Impacts of Mold Illness**

- How Common Is It?
- Threats of Indoor Mold
- How Does It Get There?
- Historical Perspective
- Mold vs Yeast
- Definition of Mold Illness
- Do You Agree?
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11 **Indoor Mold Occurrence**

- More than a quarter of all buildings (OSHA)
- Homes, apartments, schools, hospitals, workplaces, college housing, churches, hotels, summer camps, etc
- 66% of materials from WDB contain molds & mold toxins
- Elevated fungal and microbial diversity in dust from WDB
- Molds & mycotoxins persist - test positive at 5 months post WD event
- PMID: 21531835, 19757292, 21585551

12 **Indoor Mold Threats**

- WDBs grow mold in biofilm
- Creating superbugs via antifungals in paint
- Negatively affects all living creatures
- Mold harms via spores, spore fragments, mycotoxins, and chemicals
- Increases the biologic and toxic load (biotoxins) on the inhabitants
- PMID: 12781669, 22017920, 19191921

13 **Problematic Situations**

- Locations
 - Humid climates, coasts, near water, poor drainage, river bottoms

- Building specifics
 - OSB/air tight combo in new construction, dirt crawl spaces, older run-down homes, finished basements, installation of moldy materials
- Budget/Upkeep Issues
 - Low-income housing, college housing, institutional buildings (schools, hospitals, churches)
- During remediation
- PMID: 22017920

14 **Water Intrusions**

- From The Outside-
 - Roof Leaks
 - Siding/Flashing Leaks
 - Wall Cavities
 - Floods
 - Sewer Drain
 - Shared Walls
(condo, apt)
 - Finished Basements
 - Air Intake Filters

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16 Historical Perspective

- The Original Indoor Environmental Illness
- Bible - physical & spiritual illness
- Remediation guidance
- Speaks to dangers to inhabitants and village

17 Indoor Mold: Biblical Remediation

- Leviticus 14: 33-45
- 34 "When you enter the land of Canaan, which I am giving you as your possession, and I put a spreading mold in a house in that land, 35 the owner of the house must go and tell the priest, 'I have seen something that looks like a defiling mold in my house.' 36 The priest is to order the house to be emptied before he goes in to examine the mold, so that nothing in the house will be pronounced unclean. After this the priest is to go in and inspect the house. 37 He is to examine the mold on the walls, and if it has greenish or reddish depressions that appear to be deeper than the surface of the wall, 38 the priest shall go out the doorway of the house and close it up for seven days. 39 On the seventh day the priest shall return to inspect the house. If the mold has spread on the walls, 40 he is to order that the contaminated stones be torn out and thrown into an unclean place outside the town. 41 He must have all the inside walls of the house scraped and the material that is scraped off dumped into an unclean place outside the town. 42 Then they are to take other stones to replace these and take new clay and plaster the house.
- 43 "If the defiling mold reappears in the house after the stones have been torn out and the house scraped and plastered, 44 the priest is to go and examine it and, if the mold has spread in the house, it is a persistent defiling mold; the house is unclean. 45 It must be torn down—its stones, timbers and all the plaster—and taken out of the town to an unclean place.

18 Mold vs Yeast

- Mold ~
 - Multi-cellular fungi
 - Grow in filamentous hyphae (branches)
 - Reproduce via sexual & asexual methods

- Produce airborne spores
- Require organic matter for nutrition

19 **Spores, Spore Fragments & Mycotoxins**

- Occurrence ratio
500:1 ~ Fragment:Spore
- Fragments ~ disrupted mold
- Fragment size ~ nanoparticle-3 microns
- Fragments ~ more allergenic (smaller size, ability to bypass lung clearance)
- Fragments & spores secrete mycotoxins

20 **Mold Spore vs Mycotoxin**

- Mold Spores ~
 - Large enough to trigger allergic-type reactions
 - Trigger mucociliary clearance
 - Recognized as causal for Type I Hypersens reactions
 - Associated with the enigma 'Sick Building Syndrome'

21 **Scary Scary Mycotoxins: History**

- Middle Ages, St. Anthony's Fire
- Salem Witch Trials
- Ergotism ~ Rye & other grains
- Ergot ~ mycotoxin from *Claviceps purpurea*
- Ingest mycotoxin-infected grain
- Symptoms ~ convulsive & gangrenous
- Loss of digits/limbs (small vessel vasculitis), mania (CNS), GI convulsions

22 **The Current Definition of Mold Illness** **Do you Agree?**

23 **Mold Illness Defined**

- "Spore illness"
- Spores ~ large enough to trigger local resp system irritation & immune responses

- NIOSH (Nat'l Inst for Occupational Safety & Health):
"health problems associated with excessive damp conditions and mold, to include: allergies, hypersensitivity pneumonitis, and asthma"

24 **Mold Illness Defined**

- WHO GUIDELINES FOR INDOOR AIR QUALITY: DAMPNESS AND MOULD
- Sufficient epidemiological evidence is available from studies conducted in different countries and under different climatic conditions to show that the occupants of damp or mouldy buildings, both houses and public buildings, are at increased risk of respiratory symptoms, respiratory infections and exacerbation of asthma. Some evidence suggests increased risks of allergic rhinitis and asthma. Although few intervention studies are available, their results show that remediation of dampness problems can reduce adverse health outcomes.
- There is clinical evidence that exposure to mould and other dampness-related microbial agents increases the risks of rare conditions, such as hypersensitivity pneumonitis, allergic alveolitis, chronic rhinosinusitis and allergic fungal sinusitis. Toxicological evidence obtained in vivo and in vitro supports these findings, showing the occurrence of diverse inflammatory and toxic responses after exposure to microorganisms – including their spores, metabolites and components – isolated from damp buildings.
- While groups such as atopic and allergic people are particularly susceptible to biological and chemical agents in damp indoor environments, adverse health effects have also been found in nonatopic populations.
- The increasing prevalences of asthma and allergies in many countries increase the number of people susceptible to the effects of dampness and mould in buildings.

25 **Susceptibility**

- Does everyone exposed to a WDB react the same?
- Predispositions
- Polymorphisms ~ on the rise
- HLA typing
- In my experience, beware the non-allergic

26 **Missing Something In The Dx?**

- Being that spore illness is the only recognized mold illness
- Being that spore fragments are formed 500:1 spores
- Being that spores AND fragments secrete mycotoxins
- Could we be missing symptoms and conditions that are in fact mold?

27 **Review**

- How this course works
- Certification
- Impacts
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28 **Thank You**

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