

## 1 **Are You Missing Mold Illness?**

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## 2 **How To Spot Moldies**

- Are You Missing Mold Illness In Your Patients?
- Dr. Jill Crista

## 3 **How To Spot Moldies**

- It's All About The History
- Symptoms
- Questionnaire
- Look Alikes & Comorbidities
- Differential Diagnoses
- Physical Exam Clues

## 4 **It's All About The History**

## 5 **Informed by History**

- Exposure to WDB at any time in life
- Gestation fwd (bioactivate in utero)
- Include neonatal exposure
- Ask ~ schools, college housing, occupations, camp, vacation
- Will forget, take them through space by space

- No minimum duration required
- Ask about water events, musty smell, not only mold
- Toxic mold is commonly not visible
- Building test results

## 6 **Onset of Symptoms**

- Onset timing varies
- Start vague and nondescript
- Tolerable and excusable
- Mold canaries earlier
- Women earlier
- Assuming daily exp ~ 3-6 months

## 7 **Symptoms**

## 8 **Recognized Human Impacts**

- Allergic (IgE-mediated) ~  
Allergic rhinitis  
Hypersensitivity Pneumonitis  
Asthma
- Non-allergic (non IgE-mediated) ~  
Non-IgE mediated asthma exacerbation
- Infection ~  
Aspergillosis
- PMID: 24368325

## 9 **Respiratory System vs Mold**

- Mold
- Spores-
  - Cladosporium 3-5 $\mu$ m
  - Aspergillus 2-5 $\mu$ m
  - Penicillium 1-5 $\mu$ m
- Fragments-

- 1-2*m*
- Mycotoxins-
- 0.1*m*

## 10 **Totality of Symptoms**

- Many systems
- Many symptoms
- No single diagnostic symptom
- Genetic diversity
- Individualized reactions
- Symptoms abound
- ∴ Totality

## 11 **EENT (Eyes, Ears)**

- Dry eyes
- Red, irritated eyes
- Ocular pruritis
- Floaters
- Light sensitivity
- Eye fatigue
- Allergic shiners
- Dark, sunken eyes
- Blurry vision
- Double vision
- Frequently changing vision
- Icterus
- Pruritic ear canal
- Sore inner ears
- Ear fullness
- Ear popping

- Freq yawning to pop ears
- Ear pain
- Noise sensitivity
- Tinnitus
- Serous otitis media
- Hearing loss

## 12 **EENT (Nose, Throat)**

- Sneezing
- Runny nose
- Blow nose often
- Nose bleeds
- Post-nasal drip
- Nasal voice
- Sinusitis
- Blood-streaked mucous
- Daily sinus spray/Neti
- Nasal polyps
- Allergies (esp not > tx)
- Hayfever
- Coated tongue
- Thrush
- Mouth sores
- Palatal petechiae
- Dry throat
- Itchy throat
- Sore throat
- Back of throat feels full
- Clears throat often

- Globus hystericus
- Cervical lymphadenopathy
- 

### 13 **STORY | Student Athlete**

- College athlete
- URI ↑ frequency & duration
- →bacterial more often ~ sinuses or lungs
- Require antibiotics
- Affecting his ability to compete
- Other sx's "tolerated" -insomnia, itchy ears, "blow his throat" every am
- Rarely had to blow his nose, even though nasal voice
- PND at school, cleared up when home
- Discovered living moldy building at school
- Genetics not extreme sensitive
- CMQ score only slightly probable for mold
- Exercise routine helped him clear mycotoxins
- Treated but refused move - grad soon
- I/S strengthened - ↓ frequency of URIs + improved PND, pruritis, sleep
- Competitive again at his sport
- When he left the moldy place to take a new job, he thrived
- \* \* \*

### 14 **Respiratory System**

- Dyspnea <exertion
- Frequent yawn/sigh
- Chronic dry cough
- Episodic cough
- Recurrent respiratory infxns

- Colds go to lungs
- Delayed recovery
- Wheezing
- Blood streaked sputum
- Asthma
- Incr need for inhaler meds
- Burning lungs
- Hemoptysis
- Heaviness in chest
- Non-obstructive sleep apnea
- Lungs sensitive to inhaled particulates, exhaust, fragrances, musty spaces
- Chronic respiratory illnesses
- Fungal lung infection
- Respiratory distress
- Sarcoidosis of lungs

## 15 STORY | Hay Fever

- Man in 30s, healthy guy, gym rat
- DIY finished basement for home office
- Dev allergy to grass pollen - allergist said prob age
- Allergy medication as recommended
- Soon after, S/T, PND, dry irritated eyes, tinnitus
- Followed by IBS not related to what he ate
- Lack of focus worse when working
- Desired nap rather than exercise
- Hay fever progressed from grass season to any season when it wasn't frozen outdoors
- Allergy medication starting to fail
- Dev a faint wheeze when exercising
- Doc rec asthma Rx - came to see me for alt's

- Errors in basement buildout, mold behind outside walls
- After remediation and tx, all sx's improved, but took longer than he had hoped
- Suspect still being exposed to mycotoxins in belongings
- \* \* \*

## 16 **Cardiovascular System**

- Lightheaded
- Low or reactive bp
- Increased vascular fragility
- Easy bruising
- Spider veins/cherry angioma
- Small vessel vasculitis
- Vessel atonia
- Varicose veins
- Lower extremity edema
- Heart palpitations
- Irregular heartbeat
- Arrhythmia
- Paroxysmal tachycardia
- Postural tachycardia syndrome (PoTS)
- Chest pain
- Myocarditis
- Hemorrhage into body tissue
- Iron-deficiency anemia
- Clotting issues
- Atriovenous malformation
- Coagulation abnormalities

## 17 **STORY | Myocarditis**

- Woman, mid-40s

- Palpitations
- Insomnia
- Fatigue
- DOE
- Angina on exertion
- “no pain no gain”
- Self tx - CoQ10 + incr exercise
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- Angina became unbearable
- Event of MI sxs → ER/referral for CV workup
- Dx myocarditis
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- Mold discovered in basement below slow leaking refrigerator
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- After remediation & mold tx, all sxs remitted w occ palpitations after alcohol ingestion
- \* \* \*

## 18 Digestive System

- Appetite changes/anorexia
- Crave sweets/alcohol
- Food sensitivities
- Peanut allergy
- Abdominal pain
- Gas/bloating
- Constipation/Diarrhea
- Consti-rrhea/IBS
- Nausea
- Reflux
- Ulcer



- SIBO
- Vomiting
- Cyclical vomiting syndrome
- Histamine intolerance
- Intestinal epithelial blunting
- Hematochezia
- Intestinal hemorrhage
- Chemical sensitivity
- Liver pain or congestion
- Hepatocellular carcinoma

## 19 **STORY | Cook's Dilemma**

- 30yo vegetarian cook & foodie
- Nausea, generalized abd pn, IBS, urgent diarrhea alt w gas/constipation
- Wine - h/a, heartburn
- ROS - neuropathy, poor circ, wt gain, sens skin, rash from fav lotions
- Celiac, B12 tests N
- Upper endoscopy - esophagitis
- Colonoscopy - intestinal lining inflam/degradation wo ulceration
- Suppressive med offered
- Social life involved food and drink, socially isolated
- Elimination-challenge - grains, wine, mushrooms, potatoes
- Reintro only had a problem with nonorganic grains, and organic (yes, organic) wine
- Presentation at wine club about ochratoxin in org wine cracked the code
- Timing of wt gain and dig problems when took a new job
- Leaky ceiling; trash cans to catch water during heavy storms
- No mold seen, but was in ceiling tiles
- \* \* \*

## 20 **Nervous System**

- Anxiousness\*
- Easily overwhelmed
- Low mood
- Depression
- Headache
- Migraine
- Drunken feeling
- Dizziness/vertigo
- Balance issues
- Difficulty walking
- Incoordination
- Delayed reflexes
- Internal vibrations
- Parasthesias
- Nerve pains
- Tremors
- Ataxia
- Dementia
- Atonia - central
- Dysautonomia
- Seizures

## 21 **STORY | Mold On The Mind**

- Woman mid-50s
- Muscle twitches - sometimes so severe, wake her from sleep
- Past 5 years - brain fog, insomnia, weak/easily fatigued muscles
- Feared brain tumor but scan neg
- PE revealed UMN lesion
- Built their dream home, a log home in the country

- Sxs started right after moving keepsakes from her mother's basement
- Brought to her home for sorting bc her mother's house smelled terribly musty and made her feel strange
- Unwittingly infected her pristine home
- Removed from home, remediated and she started treatment
- Despite a comprehensive plan, she couldn't move home for a very long time.
- At that time, I wasn't aware of sinus colonies or mycotoxins, ∴ no sinus tx
- Required extra time for her brain to rebuild the injured areas to stop the twitching
- \* \* \*

## 22 Dermatological

- Sensitive skin
- Bothered by tags/seams
- Frequent static shocks
- Flushing
- Hives
- Dermatographism
- Eczema/Rashes
- Desquamation
- Burning sensation
- Pruritic skin
- Photosensitivity
- Recurrent fungal infections  
(jock itch, vaginal, athlete's foot, toenail, intertrigo)
- Delayed wound healing
- Skin reaction to antibiotics
- Hair loss/thinning/slow growth
- Raynaud's
- Psoriatic lesions
- Erythema nodosum (coccidioimycosis)

## 23 STORY | Infant With Eczema

- Infant covered with eczema from head to toe
- So agitated, he couldn't sleep. Agitating autistic sibling
- Cracking > topical steroids with antifungal
- If missed one dose, break out to the point of cracking and bleeding
- Feeling helpless, mom turned to the Internet. She read that other nursing moms noticed improvement with diet changes. She was a very proactive and educated mom. Her devotion to him was unending. She worked for three years to get pregnant. As a parent of another child, a four year old with autism, she understood sacrifice for a child.
- She watched her baby son's reactions carefully and omitted foods that seemed to make things worse. She was down to lamb, rice, homemade organic bone broth, blueberries, and microgreens.
- Other than the antifungal steroid cream, she put nothing on his skin. His clothes were washed in vinegar with an extra rinse, and diapers were organic cotton. There was little I could suggest to improve on this. We added a bath soak of calendula and chamomile tea, which soothed him enough to sleep. I recommended we test his stool for intestinal flora and conduct a full environmental assessment. These proactive parents hired a certified building biologist to check out their lakeside cottage home.
- The indoor air inspector called aghast. There was black mold all over this cottage. It was behind the drywall of almost every wall in the house. The humidity was out of control because the house was essentially built on a bog by a lake. The inspector said the builder should never have been granted a building permit on that land.
- Stool test - excessive yeast overgrowth.
- He had fungus inside and out. With an autistic sibling, he likely had an inherited genetic susceptibility to environmental toxins. It turns out that everyone in the family was sick in their own way. They went to a hotel while remediation occurred and the little boy's skin cleared up.
- Unfortunately in this case, the remediation had to be redone two more times to completely eradicate the mold. Each time they tried to come home, the baby would break out. Thankfully, the parents paid attention.
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- \* \* \*

## 24 Reproductive System

- Unexplained menstrual cycle changes
- Recurrent fungal vaginal infxns
- Bacterial vaginosis

- Chronic pelvic pain
- Infertility - both genders
- Low sperm counts
- Immunotoxicity of fetus
- Immune deficiency in surviving children

## 25 STORY | Infertility

- This story is about the mother of the infant boy with eczema mentioned earlier. She and her husband wanted very badly to get pregnant again. Because I didn't specialize in fertility, I referred her to colleagues. She apparently had a hard time getting pregnant with the little boy with eczema, her second child. Her first son was a four-year old with autism.
- A year since finding the mold in their home, she and her husband still didn't have any luck getting pregnant. They remediated, but the mold didn't seem to want to go away. Their home required a total of three remediations. Each time they moved back, the baby boy, my patient, broke out in a rash. Mold toxins also interfered with the couple's fertility.
- In this case, no one in the family felt well until they moved from the cottage with a moldy history. Even though they did the extra work of clearing mycotoxins and disposing of most of their belongings, they still couldn't get pregnant until they moved. Some people are simply too genetically sensitive to mold. There are times when the best action is to get out.
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- \* \* \*

## 26 Urinary System

- Increased thirst
- Frequent urination
- Nocturnal polyuria
- ADH resistance\*
- Burning in bladder
- Pressure in bladder
- UTI sxs with no infection
- Hematuria
- Interstitial cystitis
- Electrolyte imbalance

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- Kidney or low back pain
- Kidney swelling
- Nephrotic syndrome
- Nephritis
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## 27 STORY | Nephrotic Syndrome

- This young man of 21 was living at home with his parents and one sibling. He came to see me for deep-seated fatigue, low-back pain, blood in his urine, and some libido challenges. I hadn't seen him in more than five years. I was struck by his appearance. He looked washed out with very dark circles under his eyes. He wasn't just pale, he was vampire pale.
- Dark circles were a clue that he was depleting his health by not getting enough rest, exercise, hydration, or healthy food. He admitted that he wasn't treating his body well. His job and a new relationship consumed his schedule. He was definitely staying up too late zoning out to TV. At that appointment, I recommended lifestyle changes and ordered some labs.
- At his follow-up, he had done a marvelous job adjusting lifestyle factors. He cleaned up his diet, drank water rather than soda, started walking to work, and dedicated himself to a sleep routine—whether he could fall asleep or not. He was motivated to improve his libido. But after a few months, he didn't feel much better and was still pale with dark circles under his eyes. There was an issue on his labs that I was concerned about.
- A more in-depth test showed that his kidneys were in trouble. He was developing something called nephrotic syndrome—at 21! He followed adjustments to his treatment plan and we watched his labs carefully. He was very compliant and had improvements on both his tests and symptoms, but they were only mild. Normally in practice, I would've expected near complete recovery in someone so young, motivated, and otherwise healthy.
- Then his mother came to see me for help with asthma attacks and fatigue. His sibling came in with fatigue, chronic sinusitis, and new food sensitivities. The whole family struggled with insomnia. There were other symptoms that led me to ask about their home environment. It turns out that they had mold in their home.
- This young man chose to move out of the house in order to restore his kidney function. Within a few months, his kidneys recovered, back pain eased up, and energy improved. He no longer needed such a substantial treatment plan. At a follow-up visit, about five years after his move, he looked healthy. Libido issues were gone, and his relationship was going strong. He had no issues with fatigue unless he stayed up too late or worked too many hours—normal stuff.
- Granted, initially he wasn't treating his body very well. But when someone makes positive lifestyle changes and doesn't see the benefits, more investigation is warranted. In his case, it was mold.
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## 28 Cognitive

- Brain fog
- Brain fatiguability
- Difficulty word finding
- Delayed cognition
- Memory loss
- Confusion
- Difficultly thinking clearly
- Disorientation
- Cognitive impairment

## 29 STORY | Tremor

- A woman in her early 40s came to see me with her husband. She had a recent diagnosis of essential tremor, a condition similar to Parkinson's Disease. Prospects of recovery were not good. Her tremor was constant, affecting her balance and ability to sleep. She had heart palpitations that made her catch her breath. She also constantly felt like she had a bladder infection, even though no infection was found. The urinary frequency was so bad, she had to leave the appointment to urinate. Family said she'd become more weepy, which everyone understood considering her health issues.
- Her husband seemed overly anxious about her health. While she was visiting the bathroom, he confided that he felt like he was getting more and more impatient and short with her. His sleep was interrupted with worry. This level of irritability didn't fit the kind and empathetic man in front of me.
- On review, she had a tick bite about a year prior to the beginning of her first tremor. The tick was found, removed intact, and sent for testing. It was a Lyme-carrying tick. Even though many people who contract Lyme don't get a rash, she developed a growing red rash where the tick was. It was clear that she needed treatment for Lyme disease. She was given the standard of care at the time, which was later found to be insufficient at eradicating the bacteria.
- It was evident to me that the Lyme bacteria might be persisting and affecting her nervous system. The tremor began in her hand on the same side as the tick bite. We started her on a chronic Lyme protocol. She only had minimal improvement. We tried a few tweaks, and still there wasn't much improvement with her tremor. I consulted with Lyme-literate colleagues to check my protocol or to spur ideas, and one mentioned checking into mold.

- When I brought this idea up to the couple, the expressions on their faces looked as if I had just found them guilty of a crime. They had water damage in their home and with all that was going on with the wife's Lyme disease, they hadn't addressed it. They closed the door to the wet, musty basement to deal with it later. As mold expert Dr. Sandeep Gupta says, "If there's any part of you that you aren't addressing, eventually it will address you."

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### 30 Immune System

- Fungal overgrowth/infections
- Frequent viral infections
- Tendency toward bacterial sequelae
- Delayed healing infxns
- Increased susceptibility to infxn
- Herpes outbreaks
- Chronic EBV
- Mast cell activation syndrome
- Immune suppression
- Spleen / thymus underactivity
- Previous or current cancer dx

### 31 STORY | Church Secretary

- Widowed woman, mid-60's
- Dx BV
- Vaginal itching, burning, odor
- Tx'd for yeast infxn but sxs persisted
- Tx'd with 2 rounds of antibiotics, but s/e diarrhea
- Wt gain, indigestion, gas/bloating, overwhelm, "snippy"
- Sxs onset not long after "stressful roofing project" at church



- Mold growing behind the paneling that lined her office from construction error during roofing project
- No resp sxs bc spores were trapped behind paneling
- Mycotoxin-induced dysbiosis & I/S def
- Remediation and mold tx
- BV improved, also wt gain, digestion, bloating, sense of overwhelm, mood
- \* \* \*

### 32 Musculoskeletal

- Decreased muscle mass
- Decreased muscle tone
- Exercise intolerant ~ EMFs, low oxygenation
- Myositis
- Soft-tissue prolapse
- Soft-tissue injury
- Delayed repair

### 33 Constitutional

- Chronic fatigue syndrome
- Insomnia ~ maint > onset
- Wake w anxious thoughts
- Narcoleptic symptoms
- Sxs worse temp extremes

### 34 Typical Picture?

- Many systems
- Many symptoms
- Genetic diversity
- Individualized reactions
- How to know it's mold?

### 35 Zoltar?

- Many systems

- Many symptoms
- Genetic diversity
- Individualized reactions
- How to know it's mold?
- Clues ~
  - New since water event
  - New onset since move/new job
  - Predisposition worsening
  - Not responding as expected
  - Inner unsettle

36  **Crista Mold Questionnaire**

37  **Questionnaire**

38  **Questionnaire**

39  **Questionnaire**

40  **Questionnaire**

41  **Take A Moment**

- What's your score?
- Of your most stuck patient?

42  **Look-Alikes, Comorbidities, Differentials**

43  **Look-Alikes & Comorbidities**

- Tick-borne diseases ~
  - Persists dt immune deficiency
  - Distinguishing characteristic ~ migrating
- SIBO ~
  - Myenteric plexus neurotoxicity interrupts peristalsis
  - Intestinal epithelium blunting
  - Biofilm promoter
- MCAS ~
  - Dysfunctioning mast cells, differently differentiated dep on tissue → many diff sx pictures
  - Inflammation in multiple systems
  - Wax/wane pattern

44  **Differential Diagnoses**

45  **Differential Diagnoses**

- Clue ~ CMQ Category III
- B12 deficiency
- Lyme & co-infections
- Lung CA/Mesothelioma
- GI ~ UC/Crohn's
- Liver/kidney CA
- Other autoimmune dzs
  - Celiac
  - SLE
  - Scleroderma
  - Sjogren's
- MCAS
- Alzheimer's, Parkinson's
- Glaucoma
- Alcoholism

46  **Physical Exam Clues**

47  **Physical Exam Clues**

- Gross ~  
hypotonia (rounded shoulders, pronation, pronounced veins), sunken eyes, pale or reddish complexion, "puffy", diffuse lymphadenopathy, sighs through interview, pretzeling, adventitious movements
- Skin ~  
rashes, eczema, flushing, dermatographism, ecchymoses, desquamation

48  **Physical Exam Clues**

- Vitals ~  
shallow breathing, usu low bp but reactive, usu temp low-N but mb incr temp (infxn), reactive HR (POTS)

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Orthostatic Intolerance: NASA Lean Test

Lie quietly x5 min beforehand, no talking, no phone. Take baseline HR.

Stand w feet 6-8 in from wall, and lean back against the wall w shoulders touching.

Test at 1, 5, 10 mins.

HR

>30 bpm from supine to standing (10 min)

If under 18yo >40 bpm from supine

to standing (10 mins)

#### 49 Physical Exam Clues

- Neuro ~

+Romberg, +heel-toe, can't toe-stand eyes closed, altered DTRs - usu delayed, but if hyperreflexive screen for UMN lesion (+Romberg, +Babinski, clonus, m.weakness w incr tone, rigidity flexors arms, extensors legs), +CN I (anosmia)/III (convergence)/VII (Bell's palsy)/XIV+XII (palate/tongue), parasthesias (h/c, vibration, sharp/dull), twitches, tremors

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#### 50 Physical Exam Clues

- Eyes ~

sunken eyes, infraorbital darkness medial half, Dennies lines, edema at base of eyelashes, injected conjunctiva, icterus, sensitive to light challenge, convergence insufficiency (eyes drift outward at near vision/while reading), report floaters/white ceiling test, edema around optic nerve, retina-cotton wool spots, VCS fail

- Ears ~

external canal flaking/sloughing/excoriations, poss tragus sign, TM orange-peel consistency &/or retracted, hearing loss, usu (-)Weber (no lateralization, but dulled/req lower tone tuning fork) with (-)Rinne, +Schwabach (b/l sensorineural loss), vestibular eval (caution Dix-Hallpike, alt side-lying head up 45°)

#### 51 Physical Exam Clues

- Nose ~ salute sign, clear or blood-streaked coryza, boggy nasal mucosa, enlarged turbinates, polyps (teardrop/grape), sinuses TTP

- Mouth/Throat ~ dental occlusions w high arched palate (children/allergic facies), palatal petechiae, coated tongue, mouth sores, post pharynx l/a "cobblestoning", hypertrophic/injected tonsils/adenoids, w poss tonsillids/stones, uvula enlarged

- Cervical/tonsillar + cervical chain lymphadenopathy

## 52 Physical Exam Clues

- LU ~  
ausc-harsh bronchial breath sounds, b/l fine crackles in dependent regions not cleared by cough but >leaning fwd (discontinuous high-pitched, low-amplitude, short duration, velcro-like mid-late inspir), expiratory wheeze (continuous high pitched), b/l lower lobe (+)egophony w (-) whispered pectoriloquy
- CV ~  
spider veins, cherry angiomas, lower limb veins collapse when elevated, delayed capillary refill, decr intensity of 1st HT sound, isolated S4 (pause bw ventricles)

## 53 Physical Exam Clues

- GI ~  
delayed bowel sounds, doughy abdomen TTP &/or bloated, +GB sign, liver TTP/enlarged/scarred, kidneys TTP
- M/S ~  
myopenia (unmatched to age), prolapse, synovitis, ganglions TTP, chiro adjustments don't hold

## 54 First 3 Rules of Toxic Exposure

## 55 Review

- It's All About The History
- Symptoms
- Questionnaire
- Look Alikes & Comorbidities
- Differential Diagnoses
- Physical Exam Clues

## 56 Thank You

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