How Dr. Ritchie Shoemaker's Discovery of Chronic Inflammatory Response Syndrome (CIRS) Saved My Life and Why You Should Care

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Maybe you have been diagnosed with erythromelalgia (EM), postural orthostatic tachycardia syndrome (POTS), multiple chemical sensitivity (MCS), mast cell activation syndrome (MCAS), fibromyalgia or a plethora of other illnesses. Maybe you aren't quite sure if the labels you've been given fit, but you do know one thing–your health has gone missing. Maybe your symptoms leave medical providers scratching their heads and saying that all of your blood work looks fine. Maybe you grew tired of justifying yourself and your multiple symptoms to doctors that seemed to disbelieve you. Maybe you gave up on the medical establishment completely and sought relief elsewhere. Maybe you feel irreparably broken and alone in your quest for healing.

If you hear nothing else, hear this: there is hope for your healing. For when all the king's horses and all the king's men couldn't put me back together again, it was Dr. Shoemaker's Treatment Protocol that led to the reclamation of my health, not to mention my ability to walk! The Mayo Clinic could only strive for symptomatic relief, but Dr Shoemaker's protocol got at the root cause. You see, treatment of Chronic Inflammatory Response Syndrome (CIRS) would be correlated with a complete remission of my erythromelalgia. The wider medical community already accepts that toxin exposure such as heavy metals can drive erythromelalgia [1]. Research is currently underway to share what I discovered with the wider medical community: there is a connection between erythromelalgia and CIRS.

So, who is Dr. Ritchie Shoemaker, and why should I care?

In 1997, a doctor in a rural practice in Maryland was soon to find himself at the epicenter of a public health crisis. An algae-like dinoflagellate came from out of the dark water of the Chesapeake Bay and was wreaking havoc on both people and fish within his community [1]. Dr. Shoemaker didn't shrug his shoulders and leave his sick patients to suffer, or worse yet, offer them an erroneous psychiatric diagnosis. Instead, he used common sense, curiosity, and evidence-based medicine to effectively treat the illness menacing his community. He discovered that cholestyramine not only resolved the unpleasant *pfiesteria*-induced diarrhea but also seemed to resolve the chronic inflammatory innate immune response plaguing many of his patients with multiple symptoms [1]. With one formidable discovery under his belt, he did not retire to a life of leisure for which I am very grateful. Instead, he found ways to fan the flames of his curiosity leading to further monumental breakthroughs. As time would tell, *pfiesteria* was not the only biotoxin that could cause illness in humans.

What other biotoxins could be causing my illness?

There are many potential sources of exposure to biotoxins which can cause illness primarily for those that are genetically susceptible. The thread that ties all of these seemingly starkly different biotoxin exposures together is defective antigen presentation. Twenty-four percent of the population is genetically susceptible to this antigen presentation defect which allows toxins to bind to cell surface receptors leading to chronic upregulation of the innate immune pathway as well as chronic cytokine overproduction. So why doesn't everyone exposed to a biotoxin get ill? Many people have an appropriate immune response and the biotoxin is identified by the immune system and removed from the body. Abracadabra… no illness. For other genetically susceptible people, however, the immune system does not "see" or recognize the biotoxin and therefore

cannot remove the toxin. This spells trouble as the biotoxin is left in the body indefinitely. More on this later, but for now, let's take a peek at which biotoxins can cause illness and how!

- Inhalational illness
    - The majority of those ill with CIRS are sick due to exposure to a *water damaged building*
        - Air in a water damaged building mixes to make a toxic soup of 30+ entities that set off innate immunity including mycotoxins, endotoxins, actinomycetes, microbial volatile organic compounds, and many more.
        - Point- That pesky old leaky window or pipe under the kitchen sink really can be a big deal!
            - In addition, cutting edge research on actinobacteria is helping us understand the importance of certain cleaning techniques.
- Skin disruption via an animal bite
    - *Tick bites* can go on to cause a Post Lyme Syndrome after the acute phase of Lyme disease
        - Complicating matters, many people are not even aware of the initial tick bite!
    - *Recluse spider bites* can cause chronic inflammatory illness long after the initial insult
- Ingestion
    - Eating contaminated reef fish can cause chronic *ciguatera* following the acute illness that lasts for only several days to 3 months
- Exposure to contaminated water
    - *Pfiesteria* as described earlier has an acute phase after exposure via direct contact with water from an estuary or inhalation of aerosolized or volatilized toxin. This acute illness may be followed by a chronic *pfiesteria* induced illness.
    - Exposure to the harmful algae blooms of *cyanobacteria* can cause illness and occur via ingestion, inhalation, or skin contact.
- Dr. Peg DiTulio posits that it is likely that additional biotoxin triggers will be identified as research continues to evolve [2].

Despite multiple sources of environmental exposure resulting in CIRS, the symptoms produced are indistinguishable [1]. For example, the symptoms from CIRS caused by a water damaged building will look like CIRS caused by a brown recluse spider bite or *pfiesteria.* Establishing exposure is a cornerstone of CIRS treatment, yet environmental exposures are one of the hardest elements to show conclusively.

What is CIRS?

Chronic inflammatory response syndrome is an illness that occurs after exposure to one or more of the environmentally produced biotoxins listed above. In addition, CIRS involves multiple body systems. Examples of body systems include the nervous system, the respiratory system, the digestive system, or the endocrine system. One reason this illness is often confusing to the untrained eye is because it affects multiple body systems and has a vast array of symptoms. CIRS symptoms are broken into thirteen "symptom clusters" that are outlined below-

1. Fatigue
2. Weakness, decreased assimilation of new knowledge, aches, headache, light sensitivity
3. Memory impairment, decreased word finding
4. Difficulty concentrating
5. Joint pain, morning stiffness, cramps
6. Unusual skin sensations, tingling
7. Shortness of breath, sinus congestion
8. Cough, excessive thirst, confusion
9. Appetite swings, difficulty regulating body temperature, increased frequency of urination
10. Red eyes, blurred vision, sweats/night sweats, mood swings, "ice pick" pain
11. Abdominal pain, diarrhea, numbness
12. Tearing of the eyes, feeling disoriented, a metallic taste in the mouth
13. Static shocks (ex: when turning on a light), vertigo- feeling dizzy and off-balance [3]

Presence of symptoms within 8 or more of the 13 symptom clusters is deemed a "positive cluster analysis" virtually diagnostic of CIRS [1]. In pediatric patients, 6 of 13 positive clusters support a CIRS diagnosis.

What other diagnoses are often seen in those eventually diagnosed with CIRS?

- Fibromyalgia
- Autoimmune diseases
- Chronic fatigue syndrome (CFS)
- Postural orthostatic tachycardia syndrome (POTS)
- Multiple chemical sensitivity (MCS)
- Mast cell activation syndrome (MCAS)
- Irritable bowel syndrome (IBS)
- Gastroesophageal reflux disease (GERD)
- Asthma
- Psychiatric diagnoses like depression, anxiety, or PTSD
    - Unfortunately, some will be given an erroneous psych diagnosis of somatization which is a fancy way to say, "It's all in your head". In my opinion, this is a tragedy.
- Pediatric associated neuropsychiatric syndrome (PANS) [3]

Did erythromelalgia show up before or after your CIRS?

I thought erythromelalgia was one of the first clues something was off in my body but looking back there were subtle signs much earlier such as diagnoses of Raynaud's disease and 'migraine headaches'. (More on the quotation marks around migraine headaches later as I now understand these weren't truly migraines at all but a sign of CIRS!) In the initial years of erythromelalgia, I did not have a positive symptom cluster. However, as time passed the fatigue, weakness, night sweats, difficulty concentrating, cramps, shortness of breath and cough began to make their appearance. In those I have worked with who have co-existing CIRS and EM, for some EM

showed up early in their illness journey, while others had EM long before CIRS symptoms reared their ugly head.

If this is CIRS, I want to know sooner rather than later. What is my next step?

The Visual Contrast Sensitivity (VCS) test is a highly accurate and cost-effective first step in determining whether biotoxin illness is at the root cause of your health challenges. I enthusiastically say that purchasing the VCS test was the best fifteen bucks I ever spent, and I mean it wholeheartedly. Why? This easy-to-take test can be completed in the comfort of your own home in only 10-15 minutes. By taking you through a series of simple images, the test measures visual contrast or the ability to see an edge or to separate black from white. This neurotoxicology eye test tells us about the functioning or your optic nerve and more specifically retinal blood flow. 92% of those with biotoxin illness will fail the test. If this is the case for you, do not despair. It is frightening to hear that the blood flow to your eye is abnormal due to toxin exposure. Do keep in mind that as you are successfully treated, abnormalities will resolve. It is a wonder to take the VCS test for a second time and to quite literally see things that were not visible before!

When taking the VCS, be sure to be in a well-lit room. For example, do not take the test in a dark room with a small lamp. Light from overhead as well as the light from the computer screen are usually sufficient. In addition, your vision should be at least 20/50 in order to get accurate results. Only have one good eye? That's okay…use that eye for scoring. If you normally wear glasses or contacts, wear them while taking the test. Measure out your distance from the screen and make sure it stays constant. No leaning forward for a better view! Lastly, don't guess when answering the test. If you can't see which directions the lines are going, be honest about that.

If you pass the test yet have a positive symptom cluster as discussed above, you may be in the 8% that can pass the VCS test despite biotoxin illness. You may still benefit from further testing.

Lastly, be sure to go to https://www.survivingmold.com/store1/online-screening-test to take your test. Accept no imitations. Multiple experiences with imitation tests have convinced me that while they may be cheaper, they are not accurate. I receive no financial benefit from referring you to Dr. Shoemaker's test. I am simply aiming to help you avoid inaccurate results.

I failed the eye test. Why do I need labs and an exam?

Many people with CIRS have failed to find improvement despite visiting a boatload of medical providers. Many have been given diagnoses unsupported by objective biomarkers (AKA- actual evidence). If you both failed the eye test *and* have positive cluster symptoms, there is a whopping 98.5% chance you are suffering from biotoxin illness. Diagnosing and treating CIRS is a methodical process, and appointments will differ from the 15-minute follow-ups you've grown accustomed to with other medical providers. You will be asked to send over medical records and prior lab work for review prior to your first appointment. This is a sometimes onerous but important step. During your initial evaluation, you can expect to have a thorough history taken as well as a physical exam. Like Sherlock Holmes, your CIRS provider will work to put the pieces of your own personal sickness saga together. Those calf cramps are a clue. The

strange clawing of your fingers and toes means something. Pain that appears in one part of the body only to resolve and reappear elsewhere the next day is a message. A CIRS savvy medical provider can make sense of the madness and tease out CIRS from other medical diagnoses. Part of the science of diagnosing CIRS involves obtaining specific lab work that can establish genetic susceptibility as well as objective biomarkers.

I've already had a lot of lab work. Doctors tell me it all looks pretty normal. How will this lab work be different?

Simply put- You can't find what you don't look for. Well-meaning medical providers have most likely done much lab work trying to get to the bottom of why you've been feeling so bad. They've probably even told you that your blood work looks okay. They've said things like, "Your body doesn't show signs of acute inflammation. You have a normal C-reactive protein (CRP) test result." However, they have not checked your Human Leukocyte Antigens (HLA) to establish genetic susceptibility to biotoxin illness, nor did they know to use other lab work to look for ongoing activation of the innate immune response. People are often moved to tears when they finally see black-and-white evidence for why they have been feeling so ill.

Once I have taken the VCS test, had symptom clusters evaluated, had a formal and thorough evaluation, sent over past medical records for review, and had the lab work ordered to confirm a diagnosis by a Shoemaker Certified Medical Provider, what next?

You will only be given a diagnosis of CIRS when all other differential diagnoses are eliminated for the list of possibilities your medical provider created [2]. This process of determining what disease is causing your symptoms is pivotal and must be re-examined at every step of progression through the protocol. You may be impatient to race towards a CIRS diagnosis— and for good reason as this means treatment can commence— but you must respect the process of working with your medical provider through the differential list. This is just good medicine, and you deserve thorough treatment.

In addition, certain instructions may be given to test your home, office, and/or school for water damage. It is important to follow these instructions instead of opting to hire a local inspector or remediator. I completely understand your urgency, but safely remediating a water damaged building for someone with CIRS requires a different skill set than the average remediation project. Your Shoemaker medical provider will walk you through the necessary steps for testing and refer you to a CIRS savvy Indoor Environmental Professional (IEP) when needed. We are not only fans of evidence-based treatment but also want to get you healthy in the most cost-effective manner possible. Much like the VCS eye test, mold-specific quantitative polymerase chain reaction (MSQPCR) testing is fast and highly accurate for those suffering from CIRS. This is a DNA based method of mold identification and quantification [2]. MSQPCR testing is the only appropriate way to document a safe building for a person with CIRS [2]. Your medical provider will recommend the appropriate MSQPCR testing for you.

What does treatment look like?

Let's walk through the steps of treatment together using Dr. Shoemaker's Protocol. There will be a great deal of information and many new words to learn. This is the alphabet soup of CIRS. Don't be hard on yourself if you don't download it all in the first go at it. It will help to review this material multiple times. Additional resources are listed at the end of this document, but for now let's take it one step at a time. Once a person is diagnosed and treated for CIRS, they will ascend the CIRS protocol step-by-step [4].

Step #1- REMOVAL FROM EXPOSURE

The first step of the Shoemaker Protocol is "removal from exposure." This means those with CIRS due to a water damaged building will need to get into a 'clean enough' space. No space is free of mycotoxins, endotoxins, actinobacteria, or the like. However, you do need to live and work in a space that is clean enough. This is often the hardest of the steps but necessary for remission of symptoms. Creative problem solving done in tandem with a medical provider and IEP are often necessary to effectively approach environmental challenges at home, work, and/or school. Once a person with CIRS is in a "safe enough" environment, it must be stressed that any additional exposure to biotoxins will likely cause backsliding in treatment and delay recovery. Exposure must be fastidiously avoided! Re-exposure can equal relapse once cured. Avoid buildings with musty smells- simply turn around and walk away- and use appropriate MSQPCR testing prior to living or working in buildings in the future. Other examples of removal from exposure include the following-

-If Post-Lyme Syndrome is driving CIRS, treatment will be tailored to the individual patient.

-If ciguatera, a recommendation to avoid consuming reef dwelling fish is made [2].

Your CIRS proficient Shoemaker provider will make recommendations related to removal from exposure for your unique situation.

Step #2- ADMINISTRATION OF CHOLESTYRAMINE OR WELCHOL

The second step of the protocol involves prescription of a non-absorbable bile acid sequestrant– either cholestyramine (CSM) or colesevelam (Welchol). Your medical provider will consider your past medical history as well as current clinical presentation to determine which medication may be right for you. Regardless of which medication is chosen, the medication's positively charged anion exchange resin is able to bind to negatively charged anions like bile salts where toxins are stored [2]. In essence, these medications bind the toxins. While the average person's immune system can see and therefore remove toxins, those with certain HLA haplotypes associated with CIRS need the help of a prescription binder to remove the toxins. Overtime with frequent dosing, the toxins are excreted each time you have a bowel movement.

-Binders can be constipating. Be sure to drink plenty of water daily while on binders. Be sure you are pooping daily!

-If a significant detox reaction is anticipated due to the severity of illness, your medical provider may ask you to take a 5-day course of high dose omega 3 fatty acids (EPA 2.4 grams/ DHA 1.8 grams) before starting binders and to continue with this dose of EPA/DHA for five additional days after the start of binders [2]

Once in a "safe enough" environment, the VCS eye test and appropriate serum biomarkers should be retested at the end of each treatment step.

Step #3- ERADICATING BIOFILM FORMING MARCoNS

The next step in the protocol includes testing for and treating multiple antibiotic resistant coagulase negative staphylococci (MARCoNS) if necessary. A deep nasal culture may need to be obtained. If a moderate or large amount of MARCoNS are present deep within the nasal passages, the body's ability to produce normal levels of melanocyte stimulating hormone (MSH) is impaired. This is a problem because adequate levels of MSH are pivotal in recovery from the biotoxin-induced illness of CIRS [2]. You can expect treatment of MARCoNS to involve using a compounded nasal spray called "EDTA" 3 times daily. Repeat re-culturing of the nasal passages will be required.

-The use of antifungals is linked to resistance as well as other undesirable changes in the brain. Antifungals should be avoided [4].

Step #4- ELIMINATING GLUTEN FOR THOSE WITH ANTI-GLIADIN POSITIVITY

CIRS will induce in some people a temporary autoimmune issue that is detected by testing for antigliadin antibodies (AGA). Anti-gliadin antibodies indicate gluten sensitivity which differs from true celiac disease [5]. MSH regulates tight junctions in the gut, so the lowered MSH that often accompanies CIRS is a risk factor for gastrointestinal intolerances [3].

-If you a positive for AGA but negative for transglutaminase antibodies (TTG), you should remove gluten from your diet for 3 months. AGA will be retested. Following retest if AGA is negative, you may be instructed to reintroduce gluten back into your diet [4]. If you simply feel better with elimination of gluten, feel free to keep it out of your diet altogether.

-Antigliadin antibodies are most common is children with CIRS [6]

-Increased risk is observed in those with CIRS who have 17-2-52A and 7-2-53 haplotypes [2].

-However, if you are positive for both types of antibodies (AGA and TTG), you will need to remove gluten from your diet permanently due to celiac disease [6].

Step #5- CORRECTING ABNORMAL ANDROGENS

Deficiency in secondary androgens (testosterone and DHEA) may be a problem in 40-50% of people with CIRS due to upregulation (or excess) of aromatase [2, 6]. In addition, those with low vasoactive intestinal peptide (VIP) may have elevated estradiol levels [6]. A normalization of MSH production during treatment will correct androgen issues if no other cause in contributing [2]. Androgens usually reset on their own [3].

-Your provider will avoid testosterone replacement [3]. This is due to a predictable conversion of testosterone to estrone and estradiol when aromatase is upregulated in CIRS [2].

-Your provider may determine giving DHEA in the form of a aromatase challenge is necessary. This includes the following steps [7]-

A) Baseline bloodwork- DHEA, estrone, estradiol, testosterone, androstenedione

B) Challenge with DHEA 3x daily for 1 week

C) Reassess blood work 7 days after the start of the challenge

D) Wait another 7 days and reassess for stability.

E) Interpretation

1) If testosterone increased and estrogens stayed low, aromatase is okay.

2) If testosterone decreased and estrogens increased, aromatase is elevated.

-Aromatase inhibitors should not be used on patients with low MSH [3].

Step #6- CORRECTING ADH/OSMOLALITY

Dysregulation in the production of antidiuretic hormone (ADH)–also called vasopressin–and a disproportionate serum osmolality are commonly seen in CIRS [3]. This is yet another consequence of diminished MSH [2]. Symptoms associated with disruption of this hormone are associated with intravascular dehydration and may include drinking more than the average bear due to increased thirst as well as heading to the toilet more frequently due to increased urination [3]. The misdiagnosed "migraine" headaches I mentioned earlier also come into play here. I know I will get a shoutout from my POTS people when I say that dizziness can occur with position change. An increased incidence of static shocks may also occur. Oh, the look of recognition on a person's face when I ask them if they dread touching light switches or avoid doing so altogether by using their elbow as an alternative method! If levels of ADH are low, then your medical provider may use a medication called DDAVP for a short period of time. This medication is not benign. Follow your medical provider's instructions. They will be monitoring you like a hawk for a brief period for changes in electrolytes (low sodium) and low serum osmolality. They will look for edema (swelling) and/or rapid weight gain due to fluid retention during the initial correction of low ADH [6].

-You will take a 0.2 mg tablet of DDAVP (desmopressin) every OTHER night until you complete 5 doses

-You will be asked to record and report daily weights and report any adverse side effects.

-On day 10 after completion of the 5 doses of DDAVP, labs (ADH, serum osmolality, and electrolytes) will be reassessed.

-You can look for nighttime urination and excessive urination to decrease within the week. Yippee!

-Ongoing treatment will require daily weights and weekly measurement of serum electrolytes and osmolality to identify possible hyponatremia [2].

-You provider may move to nightly treatment if needed [7].

-DDAVP will be reduced and eventually stopped using a taper once ADH and osmolality are within normal limits [8].

An important note on DDAVP. This can be a lifesaving medication for a CIRS patient with acquired von Willebrand syndrome that places them at great risk for uncontrolled bleeding. If your medical provider asks you to carry DDAVP with you, do take this doctor's order seriously [7].

Step #7- CORRECTING ELEVATED MMP-9

MMP-9, more formally known as matrix metalloproteinase, is an inflammatory marker [4]. When this enzyme is elevated, pathological tissue destruction can occur. MMP-9 when overproduced can "deliver inflammatory elements from blood vessels to brain, nerve, muscle, lungs, and joints" [9]. Disabling pain may result [2]. An elevated MMP-9 weakens the blood brain barrier and can result in neurological symptoms and cognitive dysfunction [2].

-Treatment for MMP-9 elevated > 500 includes high dose omega 3 fatty acids. More specifically, supplementation with EPA 2.4 grams and DHA 1.8 grams daily will be recommended [3].

-A low amylose diet may also be considered [7,8]. Food high in amylose trigger spikes in blood sugar. If this temporary dietary change is right for you, your medical provider, will explain next steps.
-If your MMP-9 is > 600, additional lab work–a PAI-1–is indicated to assess for elevated risk of blood clots [3].
-To learn more about why CIRS providers use a reference range different from the one suggested by many labs refer to Dr. Scott McMahon's evidence-based explanation.

Step #8- CORRECTING LOW PLASMA VEG-F

In about a third of CIRS patients, the polypeptide vascular endothelial growth factor (VEG-F) will be low, in another third VEG-F will be high, and in the remaining third VEG-F will be within a normal range [3]. VEG-F plays a pivotal role in the creation of small blood vessels and in oxygen delivery to the capillaries [2]. Low VEG-F can drive shortness of breath, fatigue, cognitive issues, and muscle pain [2]. "A deficiency of VEG-F results in loss of neuroprotection with noted increased permeability of the blood brain barrier as well as capillary hypoperfusion" [6].

-Treatment for low VEG-F mirrors treatment of elevated MMP with high dose omega 3 fatty acid supplementation (EPA 2.4 grams and DHA 1.8 grams daily) used [3].
-If no response if noted to EPA/DHA after a month, your medical provider may move to treatment with VIP [3].
-If plasma VEG-F is elevated > 600, your provider may consider an octreotide scan to rule out a gastrointestinal secreting tumor [3].

Step #9- CORRECTING ELEVATED C3a

Complement system proteins like C3a are important for proper immune function, yet as is often the case, too much of a good thing can prove to be problematic [2]. If you have an elevated C3a, it indicates persistent bacterial colonization in your blood or tissues [3]. This bacterial membrane may be Lyme disease, but it could also be related to something else entirely [3]. Your medical provider will put on their detective hat and try to figure out what bacterial membrane is driving an elevated C3a.

-Treatment includes 1 month of high-dose statins such as Zocor 80 mg daily.

Step #10- CORRECTING ELEVATED C4a

C4a is a split product of compliment activation associated with inflammation and activation of the innate immune system [2, 6]. Testing C4a is a challenge at present due to testing unavailability at labs that produce reliable results [3]. Due to C4a's "cytokine role with basophils and mast cell dysregulation, it is often evidenced by symptoms of histamine excess. Overproduction of C4a results in unregulated inflammation [2]. "Symptoms of elevated C4a include fatigue, musculoskeletal issues, capillary hypoperfusion, and cognitive impairment" [6]. When C4a is elevated, auto-activation of the enzyme that cleaves C4a called "MASP2" can occur [6]. Removal from exposure does not stop the over-production of C4a which creates persistent elevation of C4a [6].

-If your provider notes dermatographia when lightly scratching your skin, this result hints at an elevated C4a.
-Your medical provider will avoid and/or correct erroneous Mast Cell Activation Syndrome (MCAS) diagnoses.

-Continued elevation of C4a will ultimately be treated with vasoactive intestinal polypeptide (VIP) discussed further in step #12.
-In addition, an elevated C4a can trigger Acquired von Willebrand's Syndrome (AVWS) placing you at risk for bleeds. Your medical provider will do a blood panel to evaluate you for AVWS.

Step #11- REDUCING ELEVATED TGFB-1

Transforming growth factor beta-1 (TGFB-1) is a protein that helps cells grow and divide, mature to carry out unique functions, move, and self-destruct [5]. TGFB-1 plays many roles throughout the body and is involved in blood vessel formation, regulation of muscles and body fat, wound healing, and immune system function (particularly regulatory T-cells) [5]. "As with all markers of the activated immune system, TGFB-1 has both therapeutic and pathological potential" [2]. An elevated TGFB-1 can impair T-regulatory cell function which can pull the proverbial trigger setting off other autoimmune issues [5]. An elevation of TGFB-1 can cause remodeling of lung tissues as well as fibrosis of the skin, liver, and/or kidneys [3]. Even the Environmental Protection Agency (EPA) admits that 21% of all new cases of asthma are due to exposure to water damaged buildings [5]. In addition, an elevated TGFB-1 can also cause neurologic issues [5].

-Treatment for elevated TGFB-1 includes use of a medication called losartan at a dose of 12.5 mg per day but may be increased to 25 mg daily if needed [8].
    -Losartan is an anti-hypertensive, so blood pressure should be greater than 130/85 prior to initiating treatment with Losartan, and blood pressures must be monitored regularly [3].
    -Retesting of TGFB-1 may be completed monthly [8].
-VIP can be used if failing to respond to losartan or cannot take losartan [7].

Step #12- USE OF VIP

"The primary treatment goal for CIRS is restoration of neuro-hormonal regulation of the innate immune system" [2]. For some people, this will occur without needing to take this step. For others, this is the "secret sauce" that will finally resolve symptoms. The neuroinflammation of CIRS dysregulates the production of regulatory neuropeptide hormones such as MSH and vasoactive intestinal peptide (VIP) [5]. VIP is both anti-inflammatory and immune-regulatory [3]. Shoemaker and colleagues have even demonstrated a synergistic relationship between VIP, MSH, and ADH in CIRS patients [2]!

-Administration of VIP via a nasal spray is the final step of the protocol and has shown great benefit in CIRS patients, particularly those with grey matter nuclear atrophy and pulmonary hypertension [3,5].

-The criteria must be met and documented prior to initiating VIP treatment. The patient: 1) Must not live, work, or go to school in a water damaged building as proven by appropriate MSQPCR testing , 2) Must pass the VCS test, 3) Must demonstrate negative MARCoNS or have been on EDTA for at least 2 weeks, and 4) Bloodwork must demonstrate a normal lipase and a normal GGTP [2].
-Dosing of VIP is 50 mcg (1 spray) intranasally 4x daily [3]. After several months, the dosing can often be halved [3].
    -Serial TGFB-1 lab work is drawn 1) prior to initial dose of 1 spray of VIP in one nostril and 2) 15 minutes after 1st dose of VIP is administered. If there is a rise in

TGFB-1 noted, an unidentified environmental exposure is most likely occurring and should be investigated prior to treatment with VIP [2].

-Micro doses diluted down as far as 1:100 can be used for those with chemical and/or food sensitivities [3].

-Macro doses may be used for those with more serious illness [7].

-While on VIP, it is important to note that regular monitoring via bloodwork is required.

-The best way to monitor VIP treatment is with GENIE, an exciting nanostring genomic test we will discuss further.

Step #13- VERIFY STABILITY OFF MEDS

The last step of treatment once a patient is no longer symptomatic is repeating the VCS eye test as well as laboratory testing [8]. This is when we evoke words like "cured"! However, education should be enthusiastically given about avoidance of exposures. Sequential Activation of Innate Immune Elements (SAIIE) trials have shown that most successfully treated patients are at risk for relapse when spending time in water damaged buildings [3]. Continued recovery will require avoidance of water damaged buildings. Even brief re-exposures can reactivate CIRS as evidence by the unfortunate "sicker quicker" phenomenon [2].

There is other testing that may be recommended in CIRS. Can you give me the down and dirty on what that is?

Neuroquant

This is a non-contrast MRI of the brain in which special software is used to look for atrophy (shrinking) or edema (swelling) of the brain in 11 areas [4]. The findings of a person with CIRS due to a water damaged building (CIRS-WDB) will look different from those of a person with CIRS with post lyme syndrome (CIRS-PLS) following a tick bite [8].

-In CIRS-WDB, 3 volumetric changes in the brain are noted:

1- the forebrain parenchyma is increased or large

2- the cortical grey is increased or large

3- the caudate is decreased or small [4]

-In CIRS-PLS, 2 different volumetric changes are noted:

1- the putamen in decreased or small

2- the right thalamus is increased or large [4]

Hearing about brain changes related to CIRS is scary, but the good news is that use of VIP at the appropriate point in treatment can often improve brain volumes negatively affected by CIRS!

GENIE

The most exciting movement to date on the CIRS front involves the use of transcriptomics via Genomic Expression Inflammation Explained (GENIE). You might ask, "What is transcriptomics?" It is the analysis of RNA that is present in a sample at a given time [11]. We can see not just genetics but upregulation or downregulation of genes due to a disease process as a snapshot in time [4]! This understanding of differential gene activation allows us to customize and expedite CIRS treatment in new and exciting ways.

CIRS is a beast. You aren't meant to navigate it alone.

In addition to support from a certified Shoemaker medical provider, I find most people challenged with CIRS also benefit from community support. Due to my background as a therapist prior to becoming a medical provider, I run low cost Community Support Circles for those challenged with CIRS, erythromelalgia, or the double whammy of both CIRS and EM. How does a support circle help? It is helpful to learn that you are not alone in your challenges. After all, this disease process is quite isolating. It is really something to sit with people who have struggled in similar ways. It is helpful to be among those with whom you don't have to explain and justify your illness. What I hear most frequently is that it was a godsend to be part of a group finding creative ways forward together. While our groups do delve into the dark waters of what it is like to lose one's health and not to feel safe in one's own body, our groups are also populated with much laughter. Humor is an amazing coping mechanism, and we aren't afraid of employing it! Consider what emotional support might be best for you as you heal. We'd certainly be happy to have you join our circle!

What else do I need to know?

It is important to note that CIRS medicine has evolved and will continue to experience profound evolutions over time due to a strong commitment to evidence-based medicine. For a more comprehensive explanation of CIRS diagnosis and treatment, I suggest purchasing a book available on Kindle recently penned by the expert Dr. Ritchie Shoemaker himself along with esteemed colleagues: "The Art and Science of CIRS Medicine". In addition, there is a lot of incorrect information on the internet about "mold" illness. Maybe this information is well-meaning, but I implore you not to waste your time or money spinning in a circles trying treatments that are not based in evidence. Your health is too important to take chances with bunk science. Besides we are going for the most expedited reclamation of health possible. You've lost a lot of years to illness already, but with treatment of CIRS using the Shoemaker Protocol, you'll find you have much living left to do!

What does health reclamation feel like for a gal that could no longer walk? It feels like flying, vitality, and wonder. It feels like a renewed sense of creativity and energy that had long gone missing. It feels like an urgency and an honor to help those challenged with EM and CIRS to find their own entry back into the land of the fully living. It feels like deep gratitude to the man who uncovered, advocated for, and continues to be a pioneer in my cure. Grab my hand–let's leap towards your vibrant future! Let's leave CIRS and EM in the dust.

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"Although the world is full of suffering, it is also full of the overcoming of it". -Helen Keller
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How do I get help?

To schedule a consult with Dr. Sparks, shoot an email to connect@untamedion.com with "CIRS Consult" in the subject line. Visit www.untamediona.com to see our rates.

You can also find other Shoemaker Protocol Medical Providers here- https://www.survivingmold.com/shoemaker-protocol/Certified-Physicians-Shoemaker-Protocol

You can read more about Dr. Sparks recovery from erythromelalgia at https://www.untamediona.com/erythromelalgia.

You can read more evidence-based information about CIRS at- www.survivingmold.com

To take the Visual Contrast Sensitivity (VCS) Eye Test from the comfort of your own home visit-
https://www.survivingmold.com/store1/online-screening-test

Click here to purchase Dr. Shoemaker's latest book "The Art and Science of CIRS Medicine".

You can read Dr. Sparks blog and sign up for her mailing list at-
https://www.untamediona.com/blog

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