

# Psychiatric Illness or Moldy Brain?

Many people diagnosed with a mental illness or other psychiatric condition tell similar stories. They visit their primary care physician complaining of anxiety, overwhelming sadness, fatigue, joint or muscle aches and pains, brain fog, and other general symptoms. Their doctor orders a limited series of lab tests, examines the results, and finds “nothing wrong.” They are then either given a diagnosis on the spot or referred to a psychiatrist.

Ultimately, they are told they have depression, anxiety, chronic fatigue syndrome, fibromyalgia, or some other diagnosis that doesn't reveal what's really going on or how to cure it. They are sent home with one or more prescriptions for antidepressants, pain relievers, and other medications that, at best, provide only temporary relief. Sometimes the medications provide no relief or even make the condition worse.



*speakers.)*

According to Dr. Shoemaker – a Roswell, NM-based pioneer in mold and biotoxin illness treatment – about 25 percent of the population is susceptible to biotoxins. Coincidentally, as Dr. Ackerley has been known to point out , “When you add up all the psychiatric illnesses that people are exposed to, it’s actually about 25 percent of the population that has been diagnosed or is said to have psychiatric illness.”

Could it be that depression, anxiety, bipolar disorder, schizophrenia, and other medical conditions that cannot be tested for, such as chronic fatigue syndrome and fibromyalgia, may actually be related to infections or environmental toxins?

Although we here at BioDesign Wellness cannot claim that all of these illnesses and certain others are caused solely by biotoxins, biotoxins seem to contribute significantly. The underlying mechanism seems to be that infections and/or biotoxins cause neuro-inflammation, which may be at the root of numerous brain disorders, including mood disorders (depression and bipolar disorder), schizophrenia, Alzheimer’s, and other inflammation-related disorders such as chronic fatigue syndrome and fibromyalgia.

### ***Case Study***

To see this in action, it’s helpful to review one of Dr. Ackerley’s very first case studies showing a connection between biotoxins and psychiatric illnesses:

- A woman in her seventies who was usually “pretty well put together” arrived for an appointment “disheveled and confused.” She had trouble remembering how to get to the office. She had referred herself to an ears-nose-and-throat (ENT) doctor because her sinuses were acting up and

had seen a dermatologist for a strange rash on her shins. She was also having aches and pains.

- Dr. Ackerley was so concerned at one point that she made a note about calling the patient's sons to discuss getting her into assisted living.
- At one point, Dr. Ackerley asked if there was anything new happening in her patient's life. Her patient said that the only thing was that she and her husband decided to renovate their home, and all the walls were being torn out. She could smell the mold, and mold had been found behind several walls.
- Dr. Ackerley decided to try her patient on *cholestyramine* – a medication typically prescribed to lower cholesterol but is also effective in binding to biotoxins, so the body can flush them from the system.
- Three weeks later, her patient came back “looking like a different person.” She was on time, alert, and “put together.” She was coherent and neatly dressed.

### ***The Inflammation-Brain Connection***

What fascinates Dr. Ackerley is that so many psychiatric illnesses are related to inflammation. What fascinates us at BioDesign Wellness Center is that so many illnesses, psychiatric and otherwise, are related to inflammation and that the underlying cause is often an infection or an exposure to environmental toxins along with a genetic inability to flush those toxins from the body. (*Approximately 25 percent of the population has one or more genetic anomalies that interfere with the body's ability to detoxify itself.*)

Infections and toxins that are well known for creating psychiatric complications include the following:

- **Lyme disease** (from tick bites).
- **Streptococcus infections** not treated properly, which can

lead to obsessive-compulsive disorder – Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS).

- **Encephalopathies** such as Rocky Mountain Spotted Fever that get into the spinal cord.
- **Toxoplasmosis**, associated with cats, is related to an increase in schizophrenia and in suicides. Toxoplasmosis may even trigger a change in personality.
- **Toxic mold**. A study conducted in Europe found the level of depression in people living in visibly moldy households was about 34 to 40 percent higher than for residents living in mold-free dwellings.

Inflammation in the brain can be initiated by certain infections or by exposure to mold or certain other toxins, producing symptoms characteristic of one or more psychiatric illnesses. A person may even be diagnosed as having a psychiatric illness, even though that is not what is really going on. The root cause is infection or toxins causing inflammation in the brain and possibly throughout the body's central nervous system (CNS). We often see patients here at our [Tampa Functional Medicine](#) practice who have been exposed to mold with additional neurological symptoms, including numbness or tingling in the extremities (hands or feet), tremors, fatigue, or migraines.

### ***Cytokines in Depression and Alzheimer's***

Several studies provide evidence of a connection between depression and significantly higher concentrations of inflammatory *cytokines*, including tumor necrosis factor and interleukin-6.

Cytokines are various substances – such as interferon, interleukin, and growth factors – that some immune system cells release to trigger responses in other cells. Some cytokines are inflammatory, whereas others are anti-inflammatory. When the

immune system is functioning properly, the two types of cytokines regulate inflammatory responses in the body.

Cytokines also tend to inhibit the expression and function of serotonin – a neurotransmitter that plays a key role in regulating mood. Many antidepressants work by increasing the level of serotonin in the brain, but they do not target the underlying inflammatory responses that negatively impact serotonin expression and function.

Inflammatory cytokines play a role in Alzheimer's disease. At least one study that examined the cerebral spinal fluid in people with Alzheimer's found higher concentrations of the cytokine TGF-beta, which is often found to be elevated in people exposed to and made ill by mold.

### ***Neuro-inflammation = Leaky Brain***

Inflammation in the brain is often referred to as "leaky brain" because what happens in the brain is similar to what happens in the gut with leaky gut syndrome – protective membranes become more permeable, allowing substances to pass through that should be blocked. Cytokines increase the permeability of the blood-brain barrier, increasing the stress response in the brain, which is likely to cause a breakdown of tryptophan, an essential building block of serotonin.

### **Cognitive Impairments Related to Neurotoxins**

Dr. Ackerley often sees patients in her practice in Phoenix, Ariz., with symptoms of depression or anxiety who complain of fatigue and then add, "*My brain just doesn't work the way it used to.*" We have observed this in our practice in Tampa, as well. Many BioDesign Wellness patients report brain fog, impaired memory, or an inability to think clearly. The root cause of this cognitive decline is often found to be associated

with inflammation triggered by biotoxins found in a water damaged building. In fact:

- Several studies link mold exposure to cognitive impairment, and at least one study shows that mycotoxins excreted by mold are neurotoxic.
- One toxic mold – in particular, *Stachybotrys* – releases a mycotoxin called Trichothecenes, which kill olfactory neurons.
- *Fusarium*, a soil fungus, releases the mycotoxin T-2, which indiscriminately kills normal brain cells.
- Some species of *Fusarium* release the mycotoxin Fumonisin, which induces neuronal degeneration in the cerebral cortex—the part of the brain responsible for executive function. People who suffer from cerebral cortex degeneration may blurt out whatever they are thinking, ask the same questions over and over, have trouble solving problems or making decisions, or appear angry or irritable.
- *Aspergillus*, a fungus whose spores are present in the air we breathe, produces OchratoxinA (OTA), a naturally occurring foodborne mycotoxin found in a wide variety of agricultural commodities. OTA depletes striatal dopamine; this depletion is highly associated with mood disorders (depression and bipolar) and with movement disorders such as Parkinson's.

A study done in Poland that followed nearly 300 children showed that children living in homes with visible mold experienced a decline of 10 IQ points over six years compared to children who had not been exposed to mold. Children who had been exposed to mold for three years and then moved to homes without mold experienced a decline of five points.

***Diagnosis: Is It a Biotoxin Illness or Something Else?***

When a patient has symptoms of a mental illness, or brain or psychiatric disorder, one of the first determinations a doctor needs to make is whether the symptoms are related to an underlying infection or biotoxin exposure. Unfortunately, most doctors do not even consider the possibility of infection or biotoxin exposure. They may suspect mold if a patient has sinusitis, asthma, or chronic lung infections, but they don't suspect mold in relation to other conditions, such as depression, bipolar disorder, anxiety, chronic fatigue, or fibromyalgia.

At BioDesign Wellness Center, we are one of the few exceptions. In fact, during our initial examination, we screen patients for tick bites, exposure to mold, and previous infections that may have triggered certain symptoms. We are aware that neuro-inflammation is common among people experiencing depression, anxiety, fatigue, generalized pain, and other symptoms associated with psychiatric disorders.

When a patient experiences symptoms consistent with certain psychiatric conditions and/or chronic fatigue syndrome, fibromyalgia, or other vague diagnoses, we consider biotoxin illness a likely cause or contributing factor, especially under these conditions:

- The patient has no family history of psychiatric illness.
- The age of onset (of symptoms) is over the age of 50.
- Symptoms persist even when the patient is taking the prescribed medication(s).
- The patient has been made to feel like a hypochondriac – that all of their symptoms are “in their head.”

Unlike conventional doctors, who are unlikely to consider mold or tick-borne illness, we routinely ask our patients about any exposure they may have had at home, work, or school to visible mold or hidden mold that is common in water damaged buildings.

We also routinely ask about any tick bites the patient may have had in the past and about any exposure to areas where Lyme disease is prevalent – a person may have gotten bitten and not even realized it.

If we suspect a biotoxin-related illness, we then run tests to look for markers that indicate the presence of the biotoxin(s) or the body's reaction to the biotoxin(s).

### ***Treatment for Biotoxin-Related Illnesses***

At BioDesign Wellness, we have several treatments protocols for people exposed to water damaged buildings or other sources of biotoxins. We usually start by preparing the body to detox, which accounts for making sure vitamin, mineral and macronutrients are adequately being absorbed and utilized by the body. For some this may require healing the gut or supporting the liver.

The Shoemaker Protocol is a 12-step process for eliminating biotoxins and any infectious agents that are releasing biotoxins into the body. It involves addressing the source of the exposure (*for example, having mold professionally removed from the home*), detoxing with Cholestyramine, eradicating any antibiotic-resistant bacteria (referred to as MARCoNS) from the sinuses, correcting elevated serum anti-gliadin antibodies through avoidance of gluten, correcting androgen hormone levels to support the endocrine system, and several additional steps to improve cell function and reduce inflammation.

Diet plays a key role. People who suffer from biotoxin-related illnesses need to avoid sugar and simple carbohydrates that the body quickly converts to sugar. They also need to avoid gluten. Patients are typically required to adopt a very low-carb diet similar to the ketogenic or paleo diet – whole foods (no processed foods), high fat, moderate protein, and very low in

carbohydrates.

Certain supplements also help to dampen the body's inflammatory response, such as turmeric, high-quality fish oil, magnesium, vitamin D, and probiotics.

### ***Get Help***

If you suspect you may be suffering from a biotoxin-related illness or you have been bouncing around from one doctor to another with little or no explanation or relief from your symptoms, we encourage you to schedule an appointment to see a doctor who has experience in diagnosing and treating biotoxin-related illnesses. This is not something you can or should do on your own. You need someone who understands these types of illnesses, knows which lab tests to order and how to interpret the results, and is well trained on the various medications, supplements, diets, and lifestyle adjustments that are most effective in restoring health.

Keep in mind that you won't start feeling better if your doctor cannot identify and treat the underlying cause. If conventional medicine is not delivering the outcomes you desire and deserve, try a different approach – one that focuses on addressing the underlying cause and not just masking the symptoms.

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