Today, much attention has been directed to the dangers associated with stealth infections with little attention being directed toward the diverse mechanisms by which mycotoxins affect nerve action, cause immunosuppression, and may contribute as a co-factor in Alzheimer’s disease and other neurodegenerative disorders. Mycotoxins are secondary toxic metabolites produced by many species of fungi that are increasing in processed foods at an enormous rate. According to the World Health Organization, Alzheimer’s, multiple sclerosis, atherosclerosis, and cancer can be caused by mycotoxicosis. [1]

Mycotoxins are neurotoxins that can produce a wide spectrum of behavioral and cognitive changes, ataxia and convulsions. According to Michael R. Gray, M.D. of the Arizona State Division of Emergency Medical Services, mycotoxicosis "has been extensively described in peer-reviewed literature in the early and mid 20th century – although this literature is not readily accessible on computerized databases, such as Medline and Toxline search systems, because these sources often do not include titles before the 1960's. Nonetheless, mycotoxicosis has clearly been demonstrated to have been the cause of several major human epidemics, usually involving ingestions of foods prepared with mold infested grains and cereals, or from the consumption of livestock which had been fed mold infested feed." Many studies have documented that mycotoxicosis is a causative factor in Multiple Chemical Sensitivity Syndrome, respiratory and neurological disorders and that mycotoxins are carcinogenic, nephrotoxic, and hepatotoxic. [2-6] Iris R. Bell, M.D. from the University of Arizona Health Sciences Center and other researchers were able to trigger abnormal brain wave activity when a patient was exposed to an immunologically-active mycotoxin or other toxins. Abnormalities on EEGs and other objective neurophysiologic modalities within fifteen seconds of an exposure, even when administered in a double blind fashion. [7-9] This research documents that mycotoxins and xenobiotics have direct, biological roles in initiating and/or perpetuating nervous system-related illness. [7-10]

Today, despite many impressive research studies, mycotoxicosis has been ignored in clinical entities of unknown etiology. A.V. Constantini, M.D. from the University of California, School of Medicine, San Francisco has linked mycotoxicosis to gout, hyperlipidemia, atherosclerosis, scleroderma, diabetes mellitus, rheumatoid arthritis, psoriasis, and systemic lupus erythematosus. According to Constantini, "The dietary connection to environmental health is increasingly being made clear in that the causation of the major diseases related to diet are not due to the food but rather to the fungi and mycotoxins present in the food chain." [11]

The health implications of mycotoxin exposure are far reaching because evidence exists documenting that one class of mycotoxins, aflatoxins are mitogenic to T4 lymphocytes and will cause symptoms related to T4 lymphocyte deficiencies. [12-13] Moreover, researchers have documented that aflatoxins in foods constitute a risk factor to mothers and babies during pregnancy, [13-15] and to Kwashiorkor, a disease of obscure etiology characterized by edema and low serum proteins, variable skin and hair changes, apathy, and immunosuppression. [16]

Neurogenic Inflammation in Alzheimer’s and Environmental Illness

Neurogenic inflammation has been defined as a pathway distinct from antigen-driven, immune mediated inflammation. Stimulation of chemical-irritant receptors by mycotoxins and xenobiotics can explain how the overlapping effects of everyday exposures to a wide range of toxins can cause the
symptoms of Alzheimer's and can provide a model for understanding multiple chemical sensitivity syndrome, sick building syndrome, and environmental illness. [17-18]

Mycotoxins are deleterious to cellular and organ physiology and unequivocally increase a person's risk for degenerative disease. [19-20] Mycotoxins and other toxins in food as a cause of stress-induced illnesses remains obscure as the presence of a contaminating mold in food or toxins is not considered evidence of disease causation by the commercial food and agricultural industry. The conditions or factors affecting mycotoxin occurrence include how the food is stored and processed and a number of other biological and environmental factors. [19]

Increasing Mycotoxicosis: A Result of New Food Irradiation Practices?

More clinical efforts are sorely needed in identifying and eliminating mycotoxin stressors now hidden in the majority of foods. Tapping into the life-governing functions of the body while measuring the body's sensed and perceived responses to mycotoxin challenges, known as quantum meridian stress measurement (QMSM), allows the practitioner to observe and learn how mycotoxins may influence meridian-organ functions. Clearly, information on how systems and organs of the body respond to stressors, especially at the central nervous and autonomic nervous system (ANS) levels, may provide relevant adjunctive information to understanding how mycotoxins can disrupt delicate physiological systems and escalate the threat of stealth infections such as hepatitis C.

Rather than rely on single readings of the body's biologic state or of the presence of a mycotoxin in the blood, the physician can challenge the body with chemical, microbial, or mycotoxin stimuli or stressors and observe or record the responses via galvanic skin responses on many levels of biological functioning. These unfailing body signals of ANS/Meridian activity can be supported with laboratory evidence and other physiologic tests. Computerized matrix scans based on meridian stress assessments with stimuli or stressors recorded in a computer format do not yield data that is repeatable or that can be replicated in test-retest situations. Instead, manual testing with actual test samples seems to yield quite impressive data on how stressors such as mycotoxins can affect the ANS and many bodily functions. Our preliminary data shows that the most precise localization of these stressors is found with test samples that use multiple homeopathic potencies of the actual substance (in the case of microbial stressors these multiple potencies must include both the harmonic and disharmonic oscillations of the pathogens) because limited information is found with current "single potency" test samples.

Since 9/11, the widespread practice of using irradiation (gamma rays, electron beams) on foods, homeopathic products, and nutritional supplements has raised some legitimate concerns by members of the natural health care industry. Beams of electrons that are a hundred million times stronger than what items are exposed to under an average airport security X-ray machine are aimed at foods at irradiation sites across the nation. Lethal doses for humans are around 400-2000 reins (a unit measuring radiation) while viruses and bacteria such as anthrax are killed at doses that range from 8,000 to 1 million reins (the doses reported to being used on commercially-prepared foods and produce). Electron beaming penetrates the cell walls and stimulates oxidative stress and chemical reactions that break down DNA, proteins and enzymes in foods and dietary supplements. With serious damage to the molecular structure of foods, nourishment invariably will decrease while harmful mycotoxins increase at unprecedented rates as phyto chemicals and enzymes that prevent mold overgrowth are destroyed or rendered inert.

The emerging problem of increased levels of mycotoxins in our foods is further complicated by other by-products of irradiation, cyclobutanones, a class of toxic radiolytic chemicals documented to cause genetic and cellular damage to human and rat cells. [21-24] Growing evidence that cyclobutanones...
are harmful to humans is further supported by gas chromatography-mass spectrometry studies that report dangerously high levels of 2-DCB toxic chemicals in irradiated foods. [25-26] Yet, despite this evidence and other scientific evidence and repeated warnings from The Center for Food Safety (CFS), the FDA has legalized the irradiation of foods. With agribusiness promoting food irradiation as a way to mask filthy food processing practices and increase the shelf life of foods, irradiation will inevitably lead to a myriad of health problems as it spawns mutant forms of E. coli, Salmonella, and other harmful bacteria, and leads to the formation of carcinogens such as benzene, formaldehyde, octane, butane, and methyl propane in certain foods. [27]

In the case of Alzheimer's, identifying and eliminating stressors is a reasonable goal in clinical practice. Since irradiated foods, genetically-modified foods, radiation, and chemical stressors may trigger clusters of mutations that interfere with DNA stability and reduce the function and regeneratory capacity of lymphocytes, QMSA techniques may be helpful in quickly assessing the unique patterns of stress between mycotoxins, toxins, parasites, parasitic toxins, bacteria, mycoses, viruses and metabolism. It's logical to assume that when stress is reduced, one may expect the nervous system and the entire body to function with greater efficiency. However, it must be emphasized that more detailed explorations are badly needed to document the increasing levels of food-borne mycotoxins and carcinogens in both commercially-grown and organic produce and supplements.

**Clinical Research with Mycotoxicosis**

Our preliminary observations with QMSA reflect alarming increases in mycotoxicosis and chemical stressors as food processing and preparation techniques are rapidly changing in the industry. Mycotoxins accumulate to levels that can disable the liver's tri-phasic detoxification mechanisms while suppressing the immune system so that a simple virus can easily overpower the immune system and create prolonged viral illnesses. This past winter's flu epidemic of recurrent bronchial infections that responded poorly to both pharmacological and alternative medical approaches testifies to what may be the beginning of a serious mycotoxicosis problem in the general population. Dozens of our patients had medically-diagnosed bronchitis that failed to respond to any treatment. Many individuals were sick for 4-6 weeks despite having adequate nutritional and herbal support and being monitored by their physicians. In these cases, QMSA testing revealed that the primary stressor was not microbial, but an overload of mycotoxins in their liver. Once the mycotoxins were decreased or eliminated and appropriate nutritional measures were employed to decrease their mycotoxin loads, they were symptom-free in just a few days. There was another noteworthy clinical finding: parasite infections, especially of Clonorchis and Fasciola Hepatica, seemed to become amplified by mycotoxins and increased their production of parasitic toxins that resulted in escalated immuno-suppression, allowing runaway mycoplasma, herpetic, and viral stressors to spread throughout the body.

Clinical efforts to reduce the stress caused by mycotoxicosis should include the use of Phase I, II and III cofactor/precursor nutrients, and electromagnetically-charged trace minerals along with the obvious elimination of irradiated foods and supplements. However, with no irradiation labeling or terms such as "cold pasteurization" used for irradiated foods and supplements, the public have no way to be sure that the food they are eating has not been irradiated. Clinically, we find that the patient with mycotoxicosis should soak grains, nuts, legumes and seeds prior to cooking or consumption to reduce harmful solvents and mycotoxin levels in processed foods. Ideally, all packaged or bottled foods/drinks should be de-molded with appropriate nutrient complexes. Clearly, when mycotoxicosis ensues, appropriate dietary counseling is necessary so that patients know which foods carry the highest mycotoxin risk (our research is continuing to determine which irradiated foods carry the highest levels of mycotoxins).
In summary, mycotoxicosis can cause one of the most dramatic aberrations in the immune response. Over time, as the mycotoxin load increases, patients will become less responsive to treatment. The principle of time-dependent sensitization (TDS), documented in basic neuroscience research literature, can be applied with mycotoxicosis. [7] Mycotoxins and other chemical or microbial stressors can cross-sensitize and increase allergic and toxic sensitivity in a progressive manner. This TDS model helps to explain the possible stressors involved in Alzheimer's and provides a working model needed to explain how environmental illness, induced by mycotoxins, may accelerate acquisition of sensitization for a wide spectrum of environmental stressors.

Mycotoxins increase the risk of liver cancer promoting carcinogenesis as the immune system is stressed by over 300 different mycotoxins. While the Food and Agriculture Association in 1985 estimated that 25% of the world's food crops are contaminated with mycotoxins (high levels of mycotoxins were reported in peanuts, tree nuts, cereals (grains), beans, and apples), the number is probably much higher today. [28] Over a dozen studies citing the high carcinogenicity of mycotoxins in animals were reported by the Institute for Cancer Research. [29]

There is virtually nothing in our educational process that teaches us exactly how and what kind of excessive mycotoxin load pursues its treacherous attacks on the health of vital systems of the body. There are doubtless myriad therapeutic interactions and applications to consider in dealing with the life-threatening effects of mycotoxicosis. Current scientific research on mycotoxicosis caused by food processing and storage practices reflects a rather unfortunate scientific immaturity. There are mathematical tricks galore to transform data into the desired result, leaving the scientific reader unable to extract the actual results from a set of unwarranted expressions. Hence, conclusions drawn from research on human safety may be inaccurate and warrant further investigations. Moreover, research conducted at public universities is increasingly funded by the $460 billion food-processing industry and much of the earlier 1960-1970 research on irradiation was proven fraudulent. [27] As we explore these health risks, it's important to remember that the real purpose of scientific research on mycotoxicosis and irradiation should be to uncover the subtleties of abnormal body activities that might develop into serious, life-threatening illness with repeated, long-term exposures.

The data presented in this article has documented the emerging health dangers of food-borne mycotoxins and other carcinogens in industry-processed foods and supplements. Public Citizen, a Washington, DC-based watchdog group spokesman Mark Worth said "For 17 years the FDA has knowingly and systematically ignored its own testing protocols that must be followed before irradiated food can be legalized for human consumption." The Center for Food Safety reported "The FDA relied on only 5 of more than 400 scientific studies to determine that irradiated food is safe to eat. Of those 5, only three have been published in peer-reviewed journals. In two of the studies, researchers used doses of radiation at or far below those approved by the FDA, rendering the studies virtually, if not completely useless. The agency has rejected every study that has drawn into question the safety of irradiation." The CFS and Public Citizen groups are working to stop the proliferation of irradiated food and irradiation technology through coordinated campaigns, grassroots organizing, citizen petitions, legal action and efforts to ensure companies are honest with consumers about the dangers of irradiated foods. All practitioners concerned with the welfare of their families and patients need to contact these organizations to support their efforts.

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