Environmental and Chemical Toxicity and its Negative Impact On Your Health

by Kurt N. Woeller, D.O. & Tracy Tranchitella, N.D.

https://ToxicityMasteryCourse.com
DISCLAIMER

The material contained within this book is not intended to replace the services and/or medical advice of a licensed health care practitioner. The material is for educational purposes only. Kurt N. Woeller, D.O., Tracy Tranchitella, N.D., Health Training Associates, Integrative Medicine Academy, Toxicity Mastery Course and its associated companies, affiliates, shareholders, management, employees or independent contractors assume no legal or personal responsibility for any issues, problems or conditions arising from use of or experimentation with the information described herein. You, individually, whether licensed health professional or lay person, are solely and personally responsible for the result of implementation of any suggestions made herein. Any application of suggestions set forth in the following portions of this document/presentation is at the reader’s discretion and sole risk. Implementation or experimentation with any supplements, herbs, dietary changes, medications, and/or lifestyle changes, etc., is done so at your sole risk and personal and responsibility.

This book is not intended as a substitute for the medical advice of physicians. The reader should regularly consult a physician in matters relating to his/her health and particularly with respect to any symptoms that may require diagnosis or medical attention.

Some names and identifying details have been changed to protect the privacy of individuals. Although the author and publisher have made every effort to ensure that the information in this book was correct at press time, the author and publisher do not assume and hereby disclaim any liability to any party for any loss, damage, or disruption caused by errors or omissions, whether such errors or omissions result from negligence, accident, or any other cause.

Images are for artistic representation only, and should not be taken literally.

Publishing or redistribution of this book, in part or in whole without the express written consent of Health Training Associates, Dr. Kurt Woeller and/or Dr. Tracy Tranchitella is strictly prohibited.

Copyright© 2018 Health Training Associates, Integrative Medicine Academy, Toxicity Mastery Course, Dr. Kurt Woeller and Dr. Tracy Tranchitella.
“Better Living Through Chemistry” was a variant of a sales slogan used by a major chemical company back the 1930’s. As we advance in our ability to make things that are more efficient and effective, we have also increased our toxic burden in the world. Chemicals play a significant role in many of the products that we take for granted in modern society such as adhesives, ceramics, electronics, plastics and petroleum. Modern agriculture is an area where the use of specific chemicals has allowed for mass food production resistant to common pests. However, the impact of these chemicals on the environment and human health can be severe and lasting. Many of these foods, particularly mass-produced grain products, can also be contaminated with molds and mycotoxins (aka. mold toxins). We have yet to fully uncover the long-term effects of these chemicals in our environment, in our food and in our bodies.

https://ToxicityMasteryCourse.com
One of the most vulnerable groups at risk for the detrimental effects of various chemicals are pregnant women. In a research study done by the National Health and Nutrition Examination Survey (NHANES), the exposure rates to various chemicals such as “polychlorinated biphenyls, organochlorine pesticides, PFCs, phenols, PBDEs, phthalates, polycyclic aromatic hydrocarbons, and perchlorate were detected in 99–100% of pregnant women” (1).

Birth defects and developmental disabilities, such as autism, are often linked to certain chemical exposures (2).

The chemical Glyphosate, which is used worldwide in a popular herbicide, is now suspected to be the causative agent in various birth defects, premature babies and miscarriages. Glyphosate is also suspected in increased rates of many other diseases including various cancers, diabetes, dementia and other neurological disorders (3).

https://ToxicityMasteryCourse.com
It is estimated that 1.2 billion pounds of toxic chemicals are released into the air and water in the United States each year, with approximately 80,000 different chemicals in use in the U.S. alone \(^{(4)}\).

Less than 10% of those chemicals have had any safety evaluations.

Fortunately, there are things that can be done to limit exposure to chemicals, reduce their negative impact on health and remove them from the body.

https://ToxicityMasteryCourse.com
Examples of Environmental Chemicals & Their Role in Human Illness

Glyphosate

Glyphosate is a chemical used in the well-known herbicide called Roundup. First introduced in 1974, it has become a popular chemical used on a variety of genetically modified crops such as soy, corn and cotton. It is now available in most home and garden stores for personal use at home. There are many concerns over Glyphosate and human health.

https://ToxicityMasteryCourse.com
1. "Probably carcinogenic in humans" (category 2A) based on epidemiological studies, animal studies, and in vitro studies. This statement comes from the World Health Organization (WHO) International Agency for Cancer Research.

2. Glyphosate is known to disrupt the normal digestive system bacteria (aka microbiome). This causes diminishment of healthy bacteria and increases the potential for pathogenic bacteria (e.g., clostridia, salmonella).

3. Glyphosate disrupts liver enzyme function, compromising liver function and detoxification pathways.

The avoidance of genetically modified (GMO) foods and Glyphosate in commercial herbicide products can go a long way in reducing exposure to this toxic compound. Certain supplements like Humic Acid may help to reduce levels in the body.

Glyphosate can be measured through the Glyphosate Profile from Great Plains Laboratory.

The topic of Glyphosate is covered extensively in Module #4 of the Toxicity Mastery Course: https://ToxicityMasteryCourse.com.
Perchlorate is a chemical used in the production of rocket fuel, missiles, fireworks, flares, explosives, fertilizers, and bleach. It can also be found in certain fertilizers and bleach. Perchlorate is also known to:

1. Contaminate many municipal water supplies throughout the United States and around the world.

2. Can contaminate food sources.

3. Blocks the thyroid gland’s ability to utilize iodine. This is a major concern in pregnant women.
Organophosphates are extremely toxic chemicals. Pregnant women have increased risk for having a child with autism through organophosphate exposure and children are extremely vulnerable to the toxicity effects of these chemicals. Listed here are some examples of organophosphate toxicity:

1. Children exposed to pesticides called organophosphates used to kill insects had more than twice the risk of developing pervasive developmental disorder (PDD). For organochlorines, there was 7X autism rate. Mothers exposed to such pesticides were also likely to have shorter pregnancies and their children to have impaired reflexes.

2. Organophosphates can be harmful to humans because they inhibit acetylcholinesterase, causing acetylcholine (ACh) to accumulate at cholinergic synapses.

3. Excess ACh relative to other brain chemicals such as serotonin, norepinephrine and dopamine can have an adverse effect on brain function.

4. In larger amounts, ACh acts like an inhibitory neurotransmitter causing increased nervous system inhibition (aka depression).
2,4-Dichlorophenoxyacetic Acid (2,4-D)

Toxic Compounds

<table>
<thead>
<tr>
<th>Metabolite</th>
<th>Result µg/g creatinine</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Herbicide</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16) 2,4-Dichlorophenoxyacetic Acid (2,4-D)</td>
<td>2.3</td>
<td>LLOQ, 75th, 95th</td>
</tr>
</tbody>
</table>

2,4-Dichlorophenoxyacetic Acid (2,4-D) is a very common herbicide that was a part of Agent Orange, which was used by the U.S. in the Vietnam War. It is most commonly used in agriculture on genetically modified foods, and as a weed killer for lawns. Exposure to 2, 4-D via skin or oral ingestion is associated with neuritis, weakness, nausea, abdominal pain, headache, dizziness, peripheral neuropathy, stupor, seizures, brain damage, and impaired reflexes. 2, 4-D is a known endocrine disruptor, and can block hormone distribution and cause glandular breakdown.

2,4-D was part of a chemical mixture called Agent Orange and was used by the U.S. military during the Vietnam War. Agent Orange was sprayed in heavily forested regions to increase the visibility for war planes by destroying plant undergrowth and crops. 2,4-D is now being used as an herbicide, sometimes combined with Glyphosate, for commercial purposes.

[Image: Agent Orange]
Some Examples of 2,4-D Toxicity Are:

1. Men who work with 2,4-D are at risk for abnormally shaped sperm and impaired fertility.

2. There is increased risk of Amyotrophic Lateral Sclerosis (ALS) among workers exposed to 2,4-D compared to other company employees (8).

3. 2,4-D interfered with myelination in the brain of animals as the result of lactational exposure, changing behavior patterns of animals that included apathy, reduced social interaction, repetitive movements, tremors and immobility in pups.

4. Neuritis, weakness, nausea, abdominal pain, headache, dizziness, peripheral neuropathy, stupor, seizures, brain damage, and impaired reflexes have been associated with dermal or oral exposure.

These chemicals and others can be measured through the GPL-TOX Profile from Great Plains Laboratory.

The topic of Environmental Chemicals (aka non-metal toxins) is covered extensively in Modules #1, #2 and #3 of the Toxicity Mastery Course – https://ToxicityMasteryCourse.com.
Examples of Heavy Metal Toxins and Their Role in Human Illness

Aluminum

<table>
<thead>
<tr>
<th>TOXIC METALS</th>
<th>RESULT µg/g</th>
<th>REFERENCE INTERVAL</th>
<th>68th PERCENTILE</th>
<th>95th PERCENTILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum (Al)</td>
<td>61</td>
<td>&lt; 8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimony (Sb)</td>
<td>0.65</td>
<td>&lt; 0.066</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arsenic (As)</td>
<td>0.056</td>
<td>&lt; 0.080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barium (Ba)</td>
<td>2.5</td>
<td>&lt; 0.75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Since 1911, experimental evidence has repeatedly demonstrated that chronic Aluminum (Al) intoxication reproduces neuropathological hallmarks of Alzheimer’s disease (AD). Only small amounts of Al are needed to produce neurotoxicity and this criterion is satisfied through dietary Al intake (9).

2. Al sequesters different transport mechanisms to actively traverse brain barriers.

3. Incremental acquisition of small amounts of Al over a lifetime favors its selective accumulation in brain tissue.

4. The hypothesis that Al significantly contributes to AD is built upon very solid experimental evidence and should not be dismissed. Immediate steps should be taken to lessen human exposure to Al, which may be the single most aggravating and avoidable factor related to AD (9).

https://ToxicityMasteryCourse.com
1. Lead is a toxic metal that can greatly affect brain and nervous system function. Its accumulation in the body over time can significantly affect health. There is no apparent ‘safe’ threshold for lead.

2. Scalp hair specimens were obtained from 277 first-grade students:
   a. Striking dose-response relationship existed between levels of lead and negative teacher ratings.
   b. Even stronger relationship existed between physician-diagnosed attention-deficit hyperactivity disorder (ADHD) and hair lead (10).

[Table of Toxic Metals]

https://ToxicityMasteryCourse.com
Other Heavy Metals

<table>
<thead>
<tr>
<th>Metal</th>
<th>(Symbol)</th>
<th>Level</th>
<th>Safe Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>(Al)</td>
<td>5.1</td>
<td>&lt; 8.0</td>
</tr>
<tr>
<td>Antimony</td>
<td>(Sb)</td>
<td>0.17</td>
<td>&lt; 0.66</td>
</tr>
<tr>
<td>Arsenic</td>
<td>(As)</td>
<td>0.30</td>
<td>&lt; 0.80</td>
</tr>
<tr>
<td>Barium</td>
<td>(Ba)</td>
<td>0.44</td>
<td>&lt; 0.50</td>
</tr>
<tr>
<td>Beryllium</td>
<td>(Be)</td>
<td>&lt; 0.01</td>
<td>&lt; 0.020</td>
</tr>
<tr>
<td>Bismuth</td>
<td>(Bi)</td>
<td>0.005</td>
<td>&lt; 2.0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>(Cd)</td>
<td>0.032</td>
<td>&lt; 0.070</td>
</tr>
<tr>
<td>Lead</td>
<td>(Pb)</td>
<td>4.6</td>
<td>&lt; 1.0</td>
</tr>
<tr>
<td>Mercury</td>
<td>(Hg)</td>
<td>1.5</td>
<td>&lt; 0.40</td>
</tr>
<tr>
<td>Platinum</td>
<td>(Pt)</td>
<td>&lt; 0.003</td>
<td>&lt; 0.005</td>
</tr>
</tbody>
</table>

1. Mercury is a very toxic heavy metal with various affects throughout the brain and nervous system. However, it can be associated with cardiovascular disease too in association with other metals \(^{11}\):

   a. Mercury was 22,000X higher in heart biopsy tissue of patients with Idiopathic Dilated Cardiomyopathy (IDCM) than with controls with valve or ischemic disease.
   
   b. Antimony was 12,000X higher in heart biopsy tissue of patients with IDCM than with controls with valve or ischemic disease.

These heavy metals and others can be measured through hair metal, as well as blood and urine assessments.

The topic of Heavy Metal Toxicity is covered extensively in Modules #1 and #5 of the Toxicty Mastery Course – [https://ToxicityMasteryCourse.com](https://ToxicityMasteryCourse.com).
Examples of Mold and Mycotoxins and Their Role in Human Illness

Mold and Mycotoxins

Molds are fungi that can be found in both indoor and outdoor environments. They can be found in almost every environment (e.g., showers, bathrooms, water damaged building material and damp soil). Fungi have even been found in drinking water (12).

Common indoors molds are:
- Cladosporium
- Penicillium
- Alternaria
- Aspergillus

https://ToxicityMasteryCourse.com
A very dangerous mold called *Stachybotrys* (aka *black mold*) can grow on high cellulose and low nitrogen material such as fiberboard, gypsum board, paper, dust and lint. Its growth occurs when there is moisture from water leaks, flooding and damage, high humidity and condensation.

Certain molds also contaminate a wide variety of foods such as grains and fruit. Each can produce various mold toxins (aka mycotoxins) which have adverse health effects such as:

- Headaches
- Nausea and vomiting
- Abdominal pain and bowel changes
- Cancer
- Immune suppression
- Convulsions and other neurological conditions
- Loss of muscular coordination
- Disruption of sleep

[https://ToxicityMasteryCourse.com](https://ToxicityMasteryCourse.com)
1. Toxin produced by Aspergillus mold.

2. Peanuts and peanut butter are considered high potential sources for Aflatoxin, but environmental exposure through water-damaged building material can occur too.

3. Aflatoxins are considered some of the most carcinogenic substances in the environment. They selectively target human p53 protein which is a tumor suppressor.

4. Toxins can greatly affect liver function.
1. Ochratoxin A (OTA) is toxic to the immune system, kidneys and is carcinogenic (13).

2. Exposure is primarily through contaminated foods such as cereals, grape juice, dairy, spices, wine, dried vine fruit and coffee. It can also come from inhalation exposure in water-damaged buildings.

3. OTA can cause significant oxidative damage to multiple brain regions and the kidneys.
1. Produced by fusarium mold, but can also come from Stachybotrys (black mold).

2. This toxin is categorized as trichothecene. Trichothecenes are extremely toxic compounds that can move freely across cell membranes and damage cellular protein building units called ribosomes.

3. Trichothecenes are frequently found in buildings with water damage, but can also be found in contaminated grain.

4. Low levels of exposure to trichothecenes can lead to serious neurological problems, immune, cardiovascular, gastrointestinal and endocrine disruption.

These mycotoxins and others can be measured through the Myco-TOX Profile from Great Plains Laboratory.

The topic of Mycotoxins is covered extensively in Modules #7 and #8 of the Toxicity Mastery Course – [https://ToxicityMasteryCourse.com](https://ToxicityMasteryCourse.com).
Reducing exposure to environmental chemicals is the first step in improving overall health with regards to various toxins. This can often be accomplished by eating organic produce, non-GMO foods and drinking filtered water. If mold exposure is occurring, then the use of various digestive system binders such as activated charcoal and pyrophyllite clay can be helpful. If mold exposure is occurring environmentally from water-damaged building material, then mold remediation is absolutely necessary.

Other interventions are helpful too, such as supplement support for healthy liver function and detoxification. Many toxins deplete the body of antioxidants such as glutathione (GSH). Therefore, the use of glutathione preparations such as liposomal GSH, along with precursor GSH supplements such as N-acetyl-cysteine (NAC), help to restore this important nutrient.
Heavy metal detoxification is often necessary when high levels of metals such as aluminum, lead and mercury are present. There are various methods used to accomplish the removal of heavy metals from the body such as intravenous calcium EDTA, oral DMSA or DMPS, or natural remedies. The use of an ION Cleanse device that generates positive and negative ions in the body has been shown to help with heavy metal detoxification too. This device alone, or in conjunction with infra-red sauna \(^{(14)}\), has also been shown to promote chemical and mold detoxification.
Chemical exposure and the detrimental health effects is a largely untapped area of integrative medicine intervention for people with chronic health problems. Now, more than ever, it is imperative that every integrative health practitioner have a complete and comprehensive plan for assessing and treating chemical exposure and toxicity. Listed on the following page are the key elements of the Toxicity Mastery Course and why this knowledge is important for you personally and in your practice.

https://ToxicityMasteryCourse.com
Learn the hidden dangers of various environmental chemicals and their link to physical and mental health problems.

Learn how chemicals and heavy metals impact the methylation system, mitochondrial function, hormones and pre-dispose to many autoimmune diseases.

Learn how mold and mycotoxins increase risk for serious health problems such as liver and kidney disease, as well as neurological problems.

Learn which chemicals are most at risk for causing health problems.

Develop strategies to reduce exposure to environmental chemicals.

Learn which supplements and foods are most helpful for combatting the negative effects of environmental chemicals.

Learn how to utilize and interpret various environmental chemical tests such as the toxicity panels from Great Plains Laboratory, including their GPL-TOX Profile (which evaluates for over a 170 chemicals) and the Glyphosate test.
Learn how to utilize and interpret various heavy metal tests such as hair, blood, urine and stool.

Learn how to use the GPL-Myco-TOX profile in clinical practice and correlate its information with other tests such as the Organic Acids Test (OAT) from Great Plains Laboratory.

Learn which biomarkers from the Organic Acids Test (OAT) can suggest environmental chemical and mold problems. For example, the Succinic marker on an OAT has a strong link to toxic chemical exposure.

Have access to protocols such as infra-red sauna, ION foot cleanse and heavy metal detoxification that can be used for both adults and children, as well as special needs individuals like children with autism who often have difficulties with environmental chemicals and detoxification.

Learn how to use various antifungal remedies for fungal disorders (e.g., mold, yeast), as well as intestinal binders to reduce digestive system absorption of mycotoxins.

Learn why digestive system problems can often contribute to ongoing problems with toxins.

Learn how to effectively implement digestive system detoxification to improve the overall health of your patient/client.

https://ToxicityMasteryCourse.com
Tracy Tranchitella, N.D.

Tracy Tranchitella, N.D. is a Doctor of Naturopathic Medicine and an integrative medicine physician specializing in small intestine bacterial overgrowth (SIBO) and other chronic digestive disorders. She is also a specialist in naturopathic consultations for general health issues such as autoimmune and cardiovascular disease, chronic fatigue, bio-identical hormone replacement therapy (BHRT), thyroid and adrenal dysfunction and women’s health. She is available for consultation through her private practice, Sunrise Medical Center (https://MySunriseCenter.com).

Dr. Tranchitella is a lab advisor for BioHealth Labs, providing doctors and allied health professionals laboratory interpretation and clinical troubleshooting consultations on various integrative medicine lab tests.

She is an author, educator and cofounder of Integrative Medicine Academy, an online resource for health professionals seeking educational information regarding integrative medicine – https://IntegrativeMedicineAcademy.
Meet Our Instructors

Kurt N. Woeller, D.O.

Kurt N. Woeller, D.O., is a Doctor of Osteopathic Medicine, integrative medicine physician and biomedical autism treatment specialist. He is the author of several integrative health books including *Autism – The Road To Recovery* and *Methyl-B12 For Autism*.

Dr. Woeller is an international lecturer and educator, providing health practitioner education through Integrative Medicine Academy (https://IntegrativeMedicineAcademy.com), an online resource for educational information on integrative medicine topics. He also runs Autism Recovery System (https://AutismRecoverySystem.com), an online resource for caregivers of autism-spectrum individuals.

His private practice, Sunrise Medical Center (https://MySunriseCenter.com) focuses on specialized diagnostic testing and treatments for individuals with complex medical conditions like Autism, Rheumatoid Arthritis, Mental Health Disorders and other chronic health conditions.

Dr. Woeller serves as a clinical consultant for both BioHealth Labs and Great Plains Laboratory, providing patient and physician education. He is on the Integrative Medicine for Mental Health Scientific Advisory Panel and is a member of the American Osteopathic Association.

https://ToxicityMasteryCourse.com
For More Information On The Toxicity Mastery Course
References:


https://ToxicityMasteryCourse.com