Autism: 2015

Dietrich Klinghardt MD, PhD
Chemical Toxicity and Toxic Metals
What is Autism trying to tell us?

As our world becomes more toxic from man-made pollution, our bodies become more toxic. We are in an osmotic equilibrium with the environment and become increasingly affected. The toxic milieu supports the growth of a changed and increasingly pathogenic microbiome which greatly alters our immune system and strongly interacts with the epigenetic regulation of our genes. The epigenetic damage caused is passed onto our offspring and affects more and more people, animals and plants. The numbers are exponentially increasing from generation to generation.

More and more of our children - and their children- and their children’s children - will be chronically ill, earlier and earlier in life, in the not-so-distant future. We are in a rapid cycle of devolution. The future is already here. We all need to do our part to still change where humanity is going.
Drawings of a Person

4-year-old girls

Little pesticide exposure

Heavy pesticide exposure

5-year-old boys

Little pesticide exposure

Heavy pesticide exposure


Abstract

BACKGROUND:
The prevalence of diagnosed autism has increased rapidly over the last several decades among U.S. children. Environmental factors are thought to be driving this increase and a list of the top ten suspected environmental toxins was published recently.

METHODS:
Temporal trends in autism for birth years 1970-2005 were derived from a combination of data from the California Department of Developmental Services (CDDS) and the United States Individuals with Disabilities Education Act (IDEA). Temporal trends in suspected toxins were derived from data compiled during an extensive literature survey. Toxin and autism trends were compared by visual inspection and computed correlation coefficients. Using IDEA data, autism prevalence vs. birth year trends were calculated independently from snapshots of data from the most recent annual report, and by tracking prevalence at a constant age over many years of reports. The ratio of the snapshot:tracking trend slopes was used to estimate the "real" fraction of the increase in autism.

RESULTS:
The CDDS and IDEA data sets are qualitatively consistent in suggesting a strong increase in autism prevalence over recent decades. The quantitative comparison of IDEA snapshot and constant-age tracking trend slopes suggests that ~75-80% of the tracked increase in autism since 1988 is due to an actual increase in the disorder rather than to changing diagnostic criteria. Most of the suspected environmental toxins examined have flat or decreasing temporal trends that correlate poorly to the rise in autism. Some, including lead, organochlorine pesticides and vehicular emissions, have strongly decreasing trends. Among the suspected toxins surveyed, polybrominated diphenyl ethers, aluminum adjuvants, and the herbicide glyphosate have increasing trends that correlate positively to the rise in autism.

CONCLUSIONS:
Diagnosed autism prevalence has risen dramatically in the U.S over the last several decades and continued to trend upward as of birth year 2005. The increase is mainly real and has occurred mostly since the late 1980s. In contrast, children's exposure to most of the top ten toxic compounds has remained flat or decreased over this same time frame. Environmental factors with increasing temporal trends can help suggest hypotheses for drivers of autism that merit further investigation.
• For many years scientists considered the developing fetus to be shielded by the placenta from many chemicals.

• However there is a growing awareness that virtually any substance present in the mother's body is transported to some extent into the womb. New evidence suggests that most chemicals that accumulate in a mother's body fat can cross through the placenta and be incorporated into the developing infant's body at high levels.

• Studies of PBDE's cousin, PCBs, indicate that the developing fetus is particularly sensitive to toxic insult.

• In-utero exposures are dangerous because they occur during a period of dramatic mobilization of maternal fat stores to nurture the rapidly developing fetus especially during the third trimester of pregnancy a time where there is rapid development of the brain and nervous system.

• EWG.org 2005: Executive Summary. EWG tested 10 newborn babies for 413 industrial chemicals, pollutants and pesticides. We learned that these 10 babies were born polluted with hundreds of chemicals.
Results:

• **Executive Summary.** EWG tested 10 newborn babies for 413 industrial chemicals, pollutants and pesticides. We learned that these 10 babies were born polluted with hundreds of chemicals.

• **Babies are vulnerable.** The low doses that we found are more toxic to babies than adults.

• **Human health problems on the rise.** Autism, certain childhood cancers, obesity, asthma and other health problems are all increasing. Chemical exposures are a leading suspect.
Online guide to chemical families tested in 10 newborns

• Mercury (Hg) - 1 tested, 1 found

• Polyaromatic hydrocarbons (PAHs) - 18 tested, 9 found
  Pollutants from burning gasoline and garbage. Linked to cancer. Accumulates in food chain.

• Polybrominated dibenzodioxins and furans (PBDD/F) - 12 tested, 7 found ID/F
  Contaminants in brominated flame retardants. Pollutants and byproducts from plastic production and incineration. Accumulate in food chain. Toxic to developing endocrine (hormone) system

• Perfluorinated chemicals (PFCs) - 12 tested, 9 found
  Active ingredients or breakdown products of Teflon, Scotchgard, fabric and carpet protectors, food wrap coatings. Global contaminants. Accumulate in the environment and the food chain. Linked to cancer, birth defects, and more.
• **Polychlorinated dlbenzodioxins and furans (PBCD/F) - 17 tested, 11 found**
  Pollutants, by-products of PVC production, industrial bleaching, and incineration. Cause cancer in humans. Persist for decades in the environment. Very toxic to developing endocrine (hormone) system.

• **Organochlorine pesticides (OCs) - 28 tested, 21 found**
  DDT, chlordane and other pesticides. Largely banned in the U.S. Persist for decades in the environment. Accumulate up the food chain, to man. Cause cancer and numerous reproductive effects.

• **Polybrominated diphenyl ethers (PBDEs) - 46 tested, 32 found**
  Flame retardant in furniture foam, computers, and televisions. Accumulates in the food chain and human tissues. Adversely affects brain development and the thyroid.

• **Polychlorinated Naphthalenes (PCNs) - 70 tested, 50 found**

• **Polychlorinated biphenyls (PCBs) - 209 tested, 147 found**
How does the brain keep itself clean?

• **Mechanics**: The pumping action of the brain’s lymphatic system (lymphatic system) motored by both the cranial rhythm (rhythmic fluid production and drainage) and by chewing (rhythmic stretching of the brain’s membranes).

• **Biochemistry**: Melatonin is the most important housekeeping molecule, antioxidant and detox agent for mercury, lead and other molecules. Orally taken melatonin does not enter the brain unless it is prepared liposomally. Olive oil clears amyloid.

• **Immunological**: Macrophages also clear tissues of metals and other toxins.

  • Sener, G. et al: “Melatonin protects against mercury induced oxidative tissue damage”. Basic and Clinical Pharmacology & Toxicology Vol 93, Dec 2003, pp 290-296
  

• Glutathione may only be second best. To increase reduced glutathione in the brain NAC works, i.v injected glutathione only if it is offered liposomally.
The housecleaning system of the brain:

Mechanics: the Glymphatic System (glia + lymphatics)

• Studies published in 2012 and 2013 revealed that your brain actually has a unique method of removing toxic waste. This waste-removal system is now called the “glymphatic system” and operates in a way that is similar to your body's lymphatic system, which is responsible for eliminating cellular waste products.

• The glymphatic system piggybacks on the blood vessels in your brain. Glial cells manage this system. It operates only during sleep.

The Glymphatic System clears the brain during the night

• With the pumping action and rhythm of the CSF in the brain, the glymphatic system flushes the waste from your brain back into your body's circulatory system. From there, the waste eventually reaches your liver, where it's ultimately eliminated.

• This system ramps up its activity during sleep, thereby allowing your brain to clear out toxins, including harmful proteins called amyloid-beta, the buildup of which has been linked to Alzheimer's.

• During sleep, the glymphatic system becomes 10 times more active than during wakefulness. Simultaneously, your brain cells shrink by about 60 percent, allowing for greater efficiency of waste removal.

• During the day, the constant brain activity causes your brain cells to swell in size until they take up just over 85 percent of your brain's volume, thereby disallowing effective waste removal during wakefulness.

Treatment of the Glymphatic System

• Correct the bite, especially the vertical dimension (splint, aqualizer.com, liptrainer.com, crowns/onlays), so the pumping action created by chewing works
• Mercury detox to free up the glial cells to do their work
• Good cranial work
• Transcranial PEMF, transcranial IR-laser, CES
• *Klinghardt rhythmic skull compression*. 2-3 min twice daily, best at night
• Neuraltherapy: to tonsils and anterior neck once weekly, superior and inferior (stellate)cervical ganglion injections
• CCSVI – opening the anterior neck veins and lymphatics with
  a. catheter/balloon
  b. bee venom ointment anterior neck
  c. oral Deep Purple 1 tsp bid (www.BioPureUS.com)
  d. manual work: Klinghardt anterior neck massage: 2 min twice daily
  e. Neural therapy
The blood brain barrier is not developed until we are 18 months of age. No toxic insult is tolerated before!
Progesterone: a natural immuno-regulator

• Progesterone exerts its protective effects by rebuilding the blood–brain-barrier, decreasing inflammation and limiting cellular necrosis and apoptosis (Stein et al. Ann Emerg Med, 2007, June 21)

• In animal systems, progesterone decreases expression of HLA-DR antigens and dendritic cell-induced stimulation of T cells (Butts et al. Intern Immunol 10: 287-296)
Toxins from a toxic environment enter our system through damaged boundaries and membranes (gut barrier, blood brain barrier, damaged endothelium, etc.). It appears that there is an intentional destruction of human health by poisoning our air, our food and the many direct insults to our body (mercury-amalgam fillings, persistent contrails, herbicides, toxic adjuvants in vaccines, building materials and styles, glyphosate in coffee, etc). A toxic inner milieu turns our symbiotic life-giving microbiome into a pathogenic cesspool with all the consequences of a “chronic infection”. Microbes achieve dominion over our system by secreting a large cocktail of small molecules referred to as “biotoxins” which are responsible for most symptoms.

Man-made toxins and microbial toxins have to be cleared via the same biochemical pathways, which are not fully functional in the ASD children for a variety of reasons: genetic SNPs and mutations, epimutations, age at time of injury, EMR exposure, psychological stresses in the family, man-made insults on the child’s brain (vaccine adjuvants, medical drugs taken by the mom during pregnancy, ie Tylenol, mom’s amalgam fillings) etc., etc.

Glyphosate: main ingredient of 240 items in your gardenstore (Roundup etc.)

Gallup 360 Concentrated Glyphosate Weed Killer, 5 Ltrs (dilutes to make 166Ltrs)
by Your DIY Shop
£27.75
More buying choices
£27.75 new (3 offers)
4.7 out of 5 stars 428

Garden & Outdoors: See all 240 items
Agronomic Benefits of Glyphosate:  (Monsanto’s official paper)
(the UK is the leader in the EU in the use of “Roundup” and David Cameron is known to have a strongly supportive relationship with Monsanto)

• Glyphosate works by blocking the shikimic acid pathway, a metabolic pathway that is essential for plant growth. That pathway is present in all plants, but does not occur in animals, which makes glyphosate a very effective broad-spectrum herbicide and contributes to its low toxicity in animals.

• Unlike the many herbicides that act on either grasses or broad leaved weeds, glyphosate is effective on almost all weeds, providing broad-spectrum control. Glyphosate controls weeds that might otherwise persist for several years, competing with crop plants for water, light and nutrients. The application of glyphosate before the new crop is planted Position Paper of the Glyphosate Task Force (GTF), June 2013

• has the potential to improve harvests by up to 30%-60% for many of Europe’s major crops, depending on the weed population and other conditions. Common couch grass, a frequent invader of cereal fields in Europe, can reduce yields up to 60%.

• In some countries such as the UK, glyphosate is used as a harvest aid to reduce grain moisture levels, thereby reducing drying costs and accelerating the maturation process of crops like maize, oilseed rape and cereals.
Introduction

• The active ingredient glyphosate present in some of the most widely used broad-spectrum herbicides, accounts for some 25% of the global herbicide market. They are used in both agriculture and domestic situations and are a simple and cost-effective way of controlling weeds that otherwise persist for years or reduce crop yields. The popularity of glyphosate can be attributed to its effectiveness, safety profile and its contribution to the sustainability of European agriculture while providing significant environmental advantages in terms of reduced carbon emissions and soil erosion.

• Within the framework of EU legislation glyphosate is being reviewed to renew its approval for a further 10 years. A number of companies formed the Glyphosate Task Force (GTF) to share the work involved in the renewal process.

• Glyphosate use has facilitated change in farming practices. By chemically controlling a broad spectrum of weeds including their entire root systems, glyphosate has eliminated or reduced the need for ploughing of soils. These reduced tillage practices allow farmers to plant crop seeds directly into stubble fields.

• Several important crops in Europe, including maize, are predominantly managed with these practices in combination with glyphosate making glyphosate a popular tool for farmers in pursuing soil conservation practices.

• Benefits for Trade: The use of glyphosate has facilitated improvement in crop yields and profitability resulting in the EU being a net exporter rather than a net importer of wheat and course grain while it has led to a reduction in the EU import deficit for oilseed and sugar.
Summary of the loss potential and the actual losses due to fungal and bacterial pathogens, viruses, pests and weeds, the efficacy of applied control measures in wheat, rice, maize, barley, potatoes, soybean, sugar beet and cotton in 1996-1998, OEKE and Dehne, 2004

<table>
<thead>
<tr>
<th>Pest group</th>
<th>Loss potential (%)*</th>
<th>Actual losses (%)**</th>
<th>Efficacy (%)</th>
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</thead>
<tbody>
<tr>
<td>Fungi &amp; bacteria</td>
<td>14.9</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>Viruses</td>
<td>35.8</td>
<td>12.9</td>
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<td>Pests</td>
<td>42.4</td>
<td>10.1</td>
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<tr>
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<td>70.6</td>
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<tr>
<td>Total</td>
<td>67.4</td>
<td>9.8</td>
<td>52.5</td>
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</table>

* As percentage of attainable yields
** As percentage of loss potential prevented
Abstract: Glyphosate, the active ingredient in Roundup®, is the most popular herbicide used worldwide. The industry asserts it is minimally toxic to humans, but here we argue otherwise. Residues are found in the main foods of the Western diet, comprised primarily of sugar, corn, soy and wheat. Glyphosate's inhibition of cytochrome P450 (CYP) enzymes is an overlooked component of its toxicity to mammals. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics. Thus, glyphosate enhances the damaging effects of other food borne chemical residues and environmental toxins. Negative impact on the body is insidious and manifests slowly over time as inflammation damages cellular systems throughout the body. Here, we show how interference with CYP enzymes acts synergistically with disruption of the biosynthesis of aromatic amino acids by gut bacteria, as well as impairment in serum sulfate transport. Consequences are most of the diseases and conditions associated with a Western diet, which include gastrointestinal disorders, obesity, diabetes, heart disease, depression, autism, infertility, cancer and Alzheimer’s disease. We explain the documented effects of glyphosate and its ability to induce disease, and we show that glyphosate is the “textbook example” of exogenous semiotic entropy: the disruption of homeostasis by environmental toxins.
ABSTRACT

Many neurological diseases, including autism, depression, dementia, anxiety disorder and Parkinson’s disease, are associated with abnormal sleep patterns, which are directly linked to pineal gland dysfunction. The pineal gland is highly susceptible to environmental toxicants. Two pervasive substances in modern industrialized nations are aluminum and glyphosate, the active ingredient in the herbicide, Roundup. In this paper, we show how these two toxicants work synergistically to induce neurological damage. Glyphosate disrupts gut bacteria, leading to an overgrowth of Clostridium difficile. Its toxic product, p-cresol, is linked to autism in both human and mouse models. p-Cresol enhances uptake of aluminum via transferrin. Anemia, a result of both aluminum disruption of heme and impaired heme synthesis by glyphosate, leads to hypoxia, which induces increased pineal gland transferrin synthesis. Premature birth is associated with hypoxic stress and with substantial increased risk to the subsequent development of autism, linking hypoxia to autism. Glyphosate chelates aluminum, allowing ingested aluminum to bypass the gut barrier. This leads to anemia-induced hypoxia, promoting neurotoxicity and damaging the pineal gland. Both glyphosate and aluminum disrupt cytochrome P450 enzymes, which are involved in melatonin metabolism. Furthermore, melatonin is derived from tryptophan, whose synthesis in plants and microbes is blocked by glyphosate. We also demonstrate a plausible role for vitamin D3 dysbiosis in impaired gut function and impaired serotonin synthesis. This paper proposes that impaired sulfate supply to the brain mediates the damage induced by the synergistic action of aluminum and glyphosate on the pineal gland and related midbrain nuclei.
Abstract

Manganese (Mn) is an often overlooked but important nutrient, required in small amounts for multiple essential functions in the body. A recent study on cows fed genetically modified Roundup(R)-Ready feed revealed a severe depletion of serum Mn. Glyphosate, the active ingredient in Roundup(R), has also been shown to severely deplete Mn levels in plants. Here, we investigate the impact of Mn on physiology, and its association with gut dysbiosis as well as neuropathologies such as autism, Alzheimer's disease (AD), depression, anxiety syndrome, Parkinson's disease (PD), and prion diseases. Glutamate overexpression in the brain in association with autism, AD, and other neurological diseases can be explained by Mn deficiency. Mn superoxide dismutase protects mitochondria from oxidative damage, and mitochondrial dysfunction is a key feature of autism and Alzheimer's. Chondroitin sulfate synthesis depends on Mn, and its deficiency leads to osteoporosis and osteomalacia. Lactobacillus, depleted in autism, depend critically on Mn for antioxidant protection. Lactobacillus probiotics can treat anxiety, which is a comorbidity of autism and chronic fatigue syndrome. Reduced gut Lactobacillus leads to overgrowth of the pathogen, Salmonella, which is resistant to glyphosate toxicity, and Mn plays a role here as well. Sperm motility depends on Mn, and this may partially explain increased rates of infertility and birth defects. We further reason that, under conditions of adequate Mn in the diet, glyphosate, through its disruption of bile acid homeostasis, ironically promotes toxic accumulation of Mn in the brainstem, leading to conditions such as PD and prion diseases.
Detection of Glyphosate Residues in Animals and Humans
Monika Krüger, Philipp Schledorn, Wieland Schrödl, Hans-Wolfgang Hoppe, Walburga Lutz and Awad A. Shehata, Institute of Bacteriology and Mycology of Veterinary Faculty, University of Leipzig, Germany

Abstract

In the present study glyphosate residues were tested in urine and different organs of dairy cows as well as in urine of hares, rabbits and humans using ELISA and Gas Chromatography-Mass Spectroscopy (GC-MS). The correlation coefficients between ELISA and GC-MS were 0.96, 0.87, 0.97 and 0.96 for cattle, human, and rabbit urine and organs, respectively. The recovery rate of glyphosate in spiked meat using ELISA was 91%. Glyphosate excretion in German dairy cows was significantly lower than Danish cows. Cows kept in genetically modified free area had significantly lower glyphosate concentrations in urine than conventional husbandry cows. Also glyphosate was detected in different organs of slaughtered cows as intestine, liver, muscles, spleen and kidney. Fattening rabbits showed significantly higher glyphosate residues in urine than hares. Moreover, glyphosate was significantly higher in urine of humans with conventional feeding. Furthermore, chronically ill humans showed significantly higher glyphosate residues in urine than healthy population. The presence of glyphosate residues in both humans and animals could haul the entire population towards numerous health hazards, studying the impact of glyphosate residues on health is warranted and the global regulations for the use of glyphosate may have to be re-evaluated.
Evaluation of **DNA damage in an Ecuadorian population exposed to glyphosate**

César Paz-y-Miño\textsuperscript{1,2}, María Eugenia Sánchez\textsuperscript{1,2}, Melissa Arévalo\textsuperscript{1}, María José Muñoz\textsuperscript{1}, Tania Witte\textsuperscript{1}, Gabriela Oleas De-la-Carrera\textsuperscript{1} and Paola E. Leone\textsuperscript{1,2}

\textsuperscript{1}Laboratorio de Genética Molecular y Citogenética Humana, Escuela de Biología, Pontificia Universidad Católica del Ecuador, Quito, Ecuador.

\textsuperscript{2}Unidad de Genética, Facultad de Medicina, Pontificia Universidad Católica del Ecuador, Quito, Ecuador.

Abstract

We analyzed the consequences of aerial spraying with glyphosate added to a surfactant solution in the northern part of Ecuador. A total of 24 exposed and 21 unexposed control individuals were investigated using the comet assay. The results showed a higher degree of DNA damage in the exposed group (comet length = 35.5 μm) compared to the control group (comet length = 25.94 μm). These results suggest that in the formulation used during aerial spraying glyphosate had a genotoxic effect on the exposed individuals.

**Key words:** comet assay, DNA damage, Ecuador, genotoxicity, glyphosate.

Received: May 24, 2006; Accepted: November 7, 2006.
Abstract
A huge increase in the incidence and prevalence of chronic diseases has been reported in the United States (US) over the last 20 years. Similar increases have been seen globally. The herbicide glyphosate was introduced in 1974 and its use is accelerating with the advent of herbicide-tolerant genetically engineered (GE) crops. Evidence is mounting that glyphosate interferes with many metabolic processes in plants and animals and glyphosate residues have been detected in both. Glyphosate disrupts the endocrine system and the balance of gut bacteria, it damages DNA and is a driver of mutations that lead to cancer. In the present study, US government databases were searched for GE crop data, glyphosate application data and disease epidemiological data. Correlation analyses were then performed on a total of 22 diseases in these time-series data sets.

*Corresponding author: andreleu.al@gmail.com

URL for the full paper:

Glyphosate is the primary ingredient of Monsanto’s “Roundup”
The Pearson correlation coefficients are highly significant between the percentage of GE corn and soy planted in the US and

- Hypertension, stroke
- diabetes prevalence
- diabetes incidence
- obesity,
- lipoprotein metabolism disorder,
- Alzheimer’s, senile dementia,
- Parkinson's,
- multiple sclerosis,
- autism

- inflammatory bowel disease
- intestinal infections
- end stage renal disease
- acute kidney failure
- cancers of the
  - Thyroid
  - Liver
  - Bladder
  - Pancreas
  - Kidney
  - and myeloid leukaemia
Transcriptome profile analysis reflects rat liver and kidney damage following chronic ultra-low dose Roundup exposure
Robin Mesnage, Matthew Arno, Manuela Costanzo, Manuela Malatesta, Gilles-Eric Séralini, and Michael N. Antoniou
*Environmental Health* 2015, 14:70, Aug 25, 2015

**Abstract**

Glyphosate-based herbicides (GBH) are the major pesticides used worldwide. Converging evidence suggests that GBH, such as Roundup, pose a particular health risk to liver and kidneys although low environmentally relevant doses have not been examined. To address this issue, a 2-year study in rats administering 0.1 ppb Roundup (50 ng/L glyphosate equivalent) via drinking water (giving a daily intake of 4 ng/kg bw/day of glyphosate) was conducted. A marked increased incidence of anatomorphological and blood/urine biochemical changes was indicative of liver and kidney structure and functional pathology. In order to confirm these findings we have conducted a transcriptome microarray analysis of the liver and kidneys from these same animals.

**Conclusion**

Our results suggest that chronic exposure to a GBH in an established laboratory animal toxicity model system at an ultra-low, environmental dose *can result in liver and kidney damage* with potential significant health implications for animal and human populations.
20 March 2015
IARC Monographs Volume 112: evaluation of five organophosphate insecticides and herbicides

Lyon, France, 20 March 2015 – The International Agency for Research on Cancer (IARC), the specialized cancer agency of the World Health Organization, has assessed the carcinogenicity of five organophosphate pesticides. A summary of the final evaluations together with a short rationale have now been published online in The Lancet Oncology, and the detailed assessments will be published as Volume 112 of the IARC Monographs.

The herbicide glyphosate and the insecticides malathion and diazinon were classified as probably carcinogenic to humans (Group 2A).

The insecticides tetrachlorvinphos and parathion were classified as possibly carcinogenic to humans (Group 2B).
Think you can avoid glyphosate by buying organic? Think again. A new investigation by Tropical Traditions reveals that many products in the organic grain market in the U.S. contain glyphosate residue at levels almost the same as conventional grains.

Brian Shilhavy, Health Impact News Editor

With over 80% of the U.S. food supply now reportedly contaminated with the herbicide glyphosate, many people are turning to USDA certified organic products to avoid this toxic chemical. Current USDA NOP (National Organic Program) standards do not allow the use of the herbicide glyphosate on organic crops.

However, a new investigation by Tropical Traditions has revealed that the U.S. organic grain market is contaminated with glyphosate.

Tropical Traditions has sold organic grains for years. After reading new research about the issue of “crop desiccation” done by using glyphosate on wheat and other grains just prior to harvest, Tropical Traditions decided to first test some commercial wheat products with wheat grown in Montana, North Dakota, and Canada. They sent the commercial samples to a well-known and respected laboratory to test for glyphosate.

All tested positive for glyphosate residue. The range was from 0.07 mg/kg to 0.09 mg/kg. Keep in mind this is glyphosate found in non-GMO crops. For a GMO crop such as GMO soybeans, which are sprayed heavily with glyphosate, the range is typically between 3.3 and 5.7 mg/kg. (Source.)

Next, Tropical Traditions tested the USDA certified organic grains from suppliers they had been using, sourced mainly from western states such as Montana and Idaho. Sadly, the presence of glyphosate residue was found in organic wheat and other organic grains, including organic barley, oats, spelt, and einkorn. The range was from 0.03 to 0.06 mg/kg, just slightly lower than the conventional grains that were tested.

The only organic grains that tested clean were organic rye and organic millet. There was also one variety of organic wheat from small-scale farmers in Wisconsin that tested clean from glyphosate.
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Glyphosate, pathways to modern diseases II: Celiac sprue and gluten intolerance
A Samsel, S Seneff - Interdisciplinary toxicology, 2013 - degruyter.com
ABSTRACT Celiac disease, and, more generally, gluten intolerance, is a growing problem worldwide, but especially in North America and Europe, where an estimated 5% of the population now suffers from it. Symptoms include nausea, diarrhea, skin rashes, ...

Glyphosate's suppression of cytochrome P450 enzymes and amino acid biosynthesis by the gut microbiome: pathways to modern diseases
A Samsel, S Seneff - Entropy, 2013 - mdpi.com
Abstract: Glyphosate, the active ingredient in Roundup®, is the most popular herbicide used worldwide. The industry asserts it is minimally toxic to humans, but here we argue otherwise. Residues are found in the main foods of the Western diet, comprised primarily of sugar, ...

Aluminum-induced entropy in biological systems: implications for neurological disease
CA Shaw, S Seneff, SD Kette, L Tomljenovic... - Journal of ..., 2014 - hindawi.com
Christopher A. Shaw, 1,2,3 Stephanie Seneff, 4 Stephen D. Kette, 5 Lucija Tomljenovic, 1 John W. Oller Jr., 6 and Robert M. Davidson 7. ... Al forms toxic complexes with other elements, such as fluorine, and interacts negatively with mercury, lead, and glyphosate. ...

Is encephalopathy a mechanism to renew sulfate in autism?
S Seneff, A Lauritzen, RM Davidson, L Lentz-Marino - Entropy, 2013 - mdpi.com
Review Is Encephalopathy a Mechanism to Renew Sulfate in Autism? Stephanie Seneff 1,* , Ann Lauritzen 2, Robert M. Davidson 3 and Laurie Lentz-Marino 4
Many neurological diseases, including autism, depression, dementia, anxiety disorder and Parkinson's disease, are associated with abnormal sleep patterns, which are directly linked to pineal gland dysfunction. The pineal gland is highly susceptible to environmental ...
Autism: Exposure to plastics (mom drinking from plastic bottles during pregnancy)
Mother-to-child toxin transfer in breast milk

Concentration of PBDEs in participant's breast milk: EWG study
• Eliminating Glyphosate, Pesticides, Phthalates, Bisphenol A, wood preservatives, petrochemicals

• Eat organic
• Deep Purple (BioPureUS.com) – freeze dried Acai, pomegranate, plum
• Rosehip – natural ascorbates and their needed co-factors
• Vit E, Glycine und Selenium
• Core (BioPure = zinc, manganese, biotin, P5P etc.)
• Homeopathic auto-urine therapy (AUT): H-Series of 1:5 dilutions. Sucuss 50 times. After step 6 (=H6) test with ART. The dilution which gives the strongest yang state is used. 8 drops hourly for 2 days, then qid. Renew weekly, since antigens in urine will change rapidly (more: see protocol handout)
• Homeopathic “simile” (i.e. glyphosate 12 C)
• Binders: ZeoCLear 1-2 scoops tid, chlorella 8 tbl, microSilica 1scoop between meals and/or at bedtime (all from BioPure)
• Sauna therapy
• Laser detox with glyphosate, plastic, etc.
Sources of Mercury in the autistic child

1. Environmental

- 1977-2002 increase in environmental Hg 3–5 fold (UNEP, 2002)
- 1790-1990 increase of environmental Hg 20 fold, in fish at least 1000 fold (Bender 2002 Mercury Policy Project, USA)
- Air: today 25 times higher Hg level then 200 years ago (J. Mutter et al)
- “Environmental mercury release, special education rates and autism disorder: an ecological study of Texas”
  

"on average, for each 1000 lb of environmentally released mercury, there was…a 61% increase in the rate of autism"
2. **Mother**: 2/3rds of body burden passed on to child during gestation and breastfeeding
   - 70-80% of mother’s Hg burden from amalgam fillings
   - Stoz et al 1995: Hg in umbilical chord vein 0.2-5ng/ml
   - Jedrychowski et al 2005: Neurodevelopmental problems in children, when Hg in chord blood over 0.8 ng/ml
   - Toxin transfer during gestation and lactation period can be significantly reduced by giving the mother regular doses of the algae chlorella (BioPure/sound cracked): 12-30 tbl. 3 times/day “Algenpraeparat hilfreich bei Amalgamausleitung” D.Klinghardt Erfahrungsheilkunde 7/1999, 435-438

3. **Vaccines**
     - *A review of Thimerosal (Merthiolate) and its ethylmercury breakdown product: specific historical considerations regarding safety and effectiveness*
     - Thimerosal (ethyl-mercury thiosalicylate) from vaccines, Rh-prevention (Rhogam), other medications
     - Autism and ASD is absent in the Amish community where children are not vaccinated. As soon as they do, they also become ill
   - Mercury is still in most flu vaccines, Hep B vaccine and in Rhogam (Rhesus prevention). It has been detected (unpublished research) in trace amounts in most other vaccines
FIGURE 1: VACCINE MERCURY BURDEN AND AUTISM RISK: UNITED STATES

California autism prevalence (cases per 10,000)

Vaccine mercury exposure (micrograms)

California's reported rates of autism by year of birth

Cumulative mercury exposure through childhood vaccines in 19-35 month olds surveyed

Year of birth 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00

Year of survey 87 88 89 90 91 92 93 94 95 96 97 98 99 00

(1) Includes DPT, haemophilus influenza B and hepatitis B exposures weighted by survey year compliance
Public Health and Economic Consequences of Methyl Mercury Toxicity to the Developing Brain
Environ Health Perspect. 2005 May; 113(5): 590–596.

Leonardo Trasande, Philip J. Landrigan, and Clyde Schechter Center for Children’s Health and the Environment, Department of Community and Preventive Medicine, and Department of Pediatrics, Mount Sinai School of Medicine, New York, New York, USA;

Abstract
Methyl mercury is a developmental neurotoxicant. Exposure results principally from consumption by pregnant women of seafood contaminated by mercury from anthropogenic (70%) and natural (30%) sources. Throughout the 1990s, the U.S. Environmental Protection Agency (EPA) made steady progress in reducing mercury emissions from anthropogenic sources, especially from power plants, which account for 41% of anthropogenic emissions. However, the U.S. EPA recently proposed to slow this progress, citing high costs of pollution abatement. To put into perspective the costs of controlling emissions from American power plants, we have estimated the economic costs of methyl mercury toxicity attributable to mercury from these plants. We used an environmentally attributable fraction model and limited our analysis to the neurodevelopmental impacts—specifically loss of intelligence. Using national blood mercury prevalence data from the Centers for Disease Control and Prevention, we found that between 316,588 and 637,233 children each year have cord blood mercury levels > 5.8 μg/L, a level associated with loss of IQ. The resulting loss of intelligence causes diminished economic productivity that persists over the entire lifetime of these children.

This lost productivity is the major cost of methyl mercury toxicity, and it amounts to $8.7 billion annually (range, $2.2–43.8 billion; all costs are in 2000 US$). Of this total, $1.3 billion (range, $0.1–6.5 billion) each year is attributable to mercury emissions from American power plants. This significant toll threatens the economic health and security of the United States and should be considered in the debate on mercury pollution controls.
Mercury and autism: Accelerating Evidence?
Joachim Mutter, Johannes Naumann, Rainer Schneider, Harald Walach & Boyd Haley
Institute for Environmental Medicine and Hospital Epidemiology, University Hospital Freiburg

Abstract The causes of autism and neurodevelopmental disorders are unknown. Genetic and environmental risk factors seem to be involved. Because of an observed increase in autism in the last decades, which parallels cumulative mercury exposure, it was proposed that autism may be in part caused by mercury. We review the evidence for this proposal. Several epidemiological studies failed to find a correlation between mercury exposure through thimerosal, a preservative used in vaccines, and the risk of autism. Recently, it was found that autistic children had a higher mercury exposure during pregnancy due to maternal dental amalgam and thimerosal-containing immunoglobulin shots. It was hypothesized that children with autism have a decreased detoxification capacity due to genetic polymorphisms.

In vitro, mercury and thimerosal in levels found several days after vaccination inhibit methionine synthetase (MS) by 50%. Normal function of MS is crucial in biochemical steps necessary for brain development, attention and production of glutathione, an important antioxidative and detoxifying agent. Repetitive doses of thimerosal leads to neurobehavioral deteriorations in autoimmune susceptible mice, increased oxidative stress and decreased intracellular levels of glutathione in vitro. Subsequently, autistic children have significantly decreased levels of reduced glutathione. Promising treatments of autism involve detoxification of mercury, and supplementation of deficient metabolites.
The association of autism spectrum disorders with oxidative stress, redox imbalance, and mitochondrial dysfunction has become increasingly recognized. In this study, extracellular flux analysis was used to compare mitochondrial respiration in lymphoblastoid cell lines (LCLs) from individuals with autism and unaffected controls exposed to ethylmercury, an environmental toxin known to deplete glutathione and induce oxidative stress and mitochondrial dysfunction. We also tested whether pretreating the autism LCLs with N-acetyl cysteine (NAC) to increase glutathione concentrations conferred protection from ethylmercury. Examination of 16 autism/control LCL pairs revealed that a subgroup (31%) of autism LCLs exhibited a greater reduction in ATP-linked respiration, maximal respiratory capacity, and reserve capacity when exposed to ethylmercury, compared to control LCLs. These respiratory parameters were significantly elevated at baseline in the ethylmercury-sensitive autism subgroup as compared to control LCLs. NAC pretreatment of the sensitive subgroup reduced (normalized) baseline respiratory parameters and blunted the exaggerated ethylmercury-induced reserve capacity depletion. These findings suggest that the epidemiological link between environmental mercury exposure and an increased risk of developing autism may be mediated through mitochondrial dysfunction and support the notion that a subset of individuals with autism may be vulnerable to environmental influences with detrimental effects on development through mitochondrial dysfunction.

Dental amalgam is a mercury-based filling containing approximately 50% of metallic mercury (Hg(0)). Human placenta does not represent a real barrier to the transport of Hg(0); hence, fetal exposure occurs as a result of maternal exposure to Hg, with possible subsequent neurodevelopmental disabilities in infants. This study represents a sub-study of the international NIH-funded project "Early Childhood Development and polychlorinated biphenyls Exposure in Slovakia". The main aim of this analysis was to assess the relationship between maternal dental amalgam fillings and exposure of the developing fetus to Hg. The study subjects were mother-child pairs (N=99). Questionnaires were administered after delivery, and chemical analyses of Hg were performed in the samples of maternal and cord blood using atomic absorption spectrometry with amalgamation technique. The median values of Hg concentrations were 0.63 mug/l (range 0.14-2.9 mug/l) and 0.80 mug/l (range 0.15-2.54 mug/l) for maternal and cord blood, respectively. None of the cord blood Hg concentrations reached the level considered to be hazardous for neurodevelopmental effects in children exposed to Hg in utero (EPA reference dose for Hg of 5.8 mug/l in cord blood). A strong positive correlation between maternal and cord blood Hg levels was found (rho=0.79; P<0.001).

Levels of Hg in the cord blood were significantly associated with the number of maternal amalgam fillings (rho=0.46, P<0.001) and with the number of years since the last filling (rho=-0.37, P<0.001).

These associations remained significant after adjustment for maternal age and education. Dental amalgam fillings in girls and women of reproductive age should be used with caution, to avoid increased prenatal Hg exposure.
Mercury toxicity causing „CFIDS“, insomnia and memory problems

This is what mom had in her mouth when she was pregnant. The child was diagnosed with ASD at age 2.
Mercury compartmentalizes in a sheep after placement of several amalgam fillings (Vimy, Lorscheider et al)
AUTISTS SEEM LESS CAPABLE OF EXCRETING MERCURY AS INFANTS.

Avoid unnecessary vaccines! Avoid vaccines given before the 2nd birthday!

**Neurotoxic Effects of Postnatal thimerosal are mouse strain dependent**

*Mol Psychiatry* 2004 Sep.;9(9): 833-45

Horning M, Chian D, Lipkin WI., Jerome L. and Dawn - Columbia University, New York

- Autoimmune propensity influences outcomes in Mice following thimerosal challenges that mimic routine childhood immunizations
- Mice show growth delay
- Reduced locomotion
- Exaggerated response to novelty
- Densely packed hippocampal neurons with altered glutamate receptors and transporters

Other findings:

- After the Am. College of Pediatrics recommended a vaccine schedule in 1989 considered by many insane, a sharp raise in new autism cases resulted across the US, not in other western countries that did not follow the US lead. After the college recommended to reduce the amount of thimerosal in the vaccines in 1999, a sharp drop in new autism cases was observed
- There is no autism in the Amish population. There are no vaccinations in the Amish. The only rare cases of autism in the Amish were found in members of the few families that did vaccinate

**Monitoring methylmercury during pregnancy: maternal hair predicts fetal brain exposure.**

*Neurotoxicology.* 1995 Winter;16(4):705-10

Cernichiari E, Brewer R, Myers GJ, Marsh DO, Lapham LW, Cox C, Shamlaye CF, Berlin M, Davidson PW, Clarkson TW.
ABSTRACT: Autism is a complex developmental neurological disorder causing impaired function and structure of brain development. According to a recent report from the Centers for Disease Control and Prevention (CDC), autism is estimated to affect 1 in 88 children in USA. In spite of several reports linking prenatal exposure to environmental toxins and to microbial agents via infections to a spectrum of autism and autism-like disorders, to date, neither the associated risk factor nor the pathophysiological mechanisms have been established unequivocally. The impact of these environmental agents is believed to be similar to that of other neuropsychiatric disorders. Earlier, we have reported the impact and immunological implications of mercury and viral infections in autism. In this review, we highlight the current incidence of autism, discuss brain development in autism, present the prominent features of neuroanatomy in autism, describe neurodegenerative findings in autistic individuals, summarize the hypotheses to explain autism, and provide a perspective of the molecular events in autism and autism spectrum disorders (ASD). The early events that trigger this complex cluster of neurological disorders may involve the breach of cellular interface, which leads to the influx of water which in turn damages the developing neurons during the early stages of brain development. Alternatively, neurodegenerative disorders can be caused by the interaction of environmental agents like heavy metals with transport proteins like aquaporins and gap junction protein complexes embedded in the neuronal network during synaptogenesis.

KEYWORDS: environmental chemicals, toxins, microbial infections, autism
Mercury and other sulfhydryl affinitive metals (lead, cadmium, copper etc.).
Mercury destroys the brain of the fetus and young child in multiple ways. Maybe most importantly: Myelin sheets bind heavy metals. Mercury destroys the tubulin inside the nerve and renders it dysfunctional.
Metals bind to sulfur (SH) groups and change their configuration. Such cells are recognized by immune system as “foreign” and are attacked.

Own cells

✓ Does not stimulate the immune system

Changed cells

→ S-Hg, S-Ag, S-Au, S-Ni, S-Ti

Stimulates the immune system

→ Allergy

→ Autoimmunity

007... With license to kill!
Mineral Famine: From the Earth to Your Body

Figure 3.1  Average mineral content in selected vegetables, 1914–1997. Sums of averages of calcium, magnesium, and iron in cabbage, lettuce, tomatoes, and spinach. (Sources: Lindlahr, 1914; Hamaker, 1982; and U.S. Department of Agriculture, 1963 and 1997)
Comparison of Chelating Agents DMPS, DMSA and EDTA for the Diagnosis and Treatment of Chronic Metal Exposure

E. Blaurock-Busch and Y. M. Busch

International Board of Clinical Metal Toxicology, Netherlands.

ABSTRACT

Several chelating agents are presently used among environmental physicians to diagnose and treat a chronic metal overexposure. We evaluated and compared the binding capacity of the most common chelating agents DMPS (2, 3-dimercapto-1-propanesulfonic acid), DMSA (dimercaptosuccinic acid), also called Succimer) and EDTA (ethylene diamine tetraacetetic acid) for the potentially toxic metals Antimony (Sb), Arsenic (As), Cadmium (Cd), Lead (Pb) and Mercury (Hg). Secondly, we evaluated how the nutrient elements Calcium (Ca), Copper (Cu) and Zinc (Zn) are affected by the chelating agents tested.

Results: The intravenous application of DMPS is most suitable for the diagnosis and treatment of a single or multiple metal exposure, involving the metals Sb, As and Hg. Both EDTAs (NaCaEDTA and NaEDTA), administered intravenously, are the agents of choice for Cd, while Pb can be chelated using DMSA, DMPS, or the EDTAs. Both EDTAs have a strong Zn binding ability, but only NaEDTA is suitable for binding appreciable amounts of Ca. DMPS best binds Cu.

Conclusion: The intravenous application of DMPS is most useful for the diagnosis of multiple metal overexposure. It is also the treatment of choice for Sb, As and Hg and has the strongest Cu binding ability of the chelators tested.

Keywords: DMPS; DMSA; EDTA, arsenic; cadmium; copper; lead; mercury.
Chlorella in pregnant and breastfeeding mothers

• Effect of chlorella pyrenoidosa on fecal excretion and liver accumulastion of polychlorinated dibenzo-p-dioxin in mice  Chemosphere 2005;59  297-304

• Maternal-fetal distribution and transfer of dioxins in pregnant women in Japan, and attempts to reduce maternal transfer with Chlorella (Chlorella pyrenoidosa) supplements  
  S.Nakano et al  Chemosphere,  April 2005

• Chlorella Pyreneidosa supplementation decreases Dioxin and increases Immunoglobulin A concentrations in breast milk  
  Shiro Nakano et al  J Med Food 10 (1) 2007, 134-142)
Chlorella and Metal Binding

Cadmium


Uranium


Lead

Protective effects of chlorella vulgaris in lead exposed mice infected with Listeria monocytogenes M. Queiroz et al International Immunopharmacology 3 (2003) 889-900

Mercury


Klinghardt, D : Algenpraeparat hilfreich bei der Amalgamausleitung
Erfahrungsheilkunde Band 48, Heft 7, Juli 1999


Parachlorella beyerinckii CK-5 is found to accelerate excretion of methyl-mercury both into feces and urine: “Japan Society for Bioscience, Biotechnology and Agro-chemistry” (JSBBA: http://www.jsbba.or.jp) Meeting in Nagoya City, Japan, March 29~30, 2008.
Cilantro: Toxic metal ions in urine and hair - after provocation with 15 drops BioPureUS.com energized cilantro tincture tid for 6 weeks and the ionic foot bath 20 min per day (Dr. Margarita Griess-Brisson)
Autism is a neurodevelopmental disorder that according to the Centers for Disease Control and Prevention (CDC) affects 1 in 150 children in the United States. Autism is characterized by impairments in social relatedness and communication, repetitive behaviors, abnormal movements, and sensory dysfunction. Recently emerging evidence suggests that mercury, especially from childhood vaccines, appears to be a factor in the development of the autistic disorders, and that autistic children have higher than normal body-burdens of mercury. In considering mercury toxicity, it has previously been shown that testosterone significantly potentates mercury toxicity, whereas estrogen is protective. Examination of autistic children has shown that the severity of autistic disorders correlates with the amount of testosterone present in the amniotic fluid, and an examination of a case-series of autistic children has shown that some have plasma testosterone levels that were significantly elevated in comparison neurotypical control children. A review of some of the current biomedical therapies for autistics, such as glutathione and cysteine, chelation, secretin, and growth hormone, suggests that they may in fact lower testosterone levels. We put forward the medical hypothesis that autistic disorders, in fact, represent a form of testosterone mercury toxicity, and based upon this observation, one can design novel treatments for autistics directed towards higher testosterone levels in autistic children. We suggest a series of experiments that need to be conducted in order to evaluate the exact mechanisms for mercury-testosterone toxicity, and various types of clinical manipulations that may be employed to control testosterone levels.
Melatonin clears the brain at night of toxins
It is the most potent brain anti-oxidant and detox agent

1. Melatonin induces sleep. We only heal and detoxify in deep non-rem sleep. Without melatonin no regeneration and no detoxification

2. Melatonin is the most effective and potent neuroprotective chemical in the CNS and prevents damage from mercury, lead, aluminum, chemicals, mycotoxins, viruses, cigarette smoke, bacterial and parasitic endo-and exotoxins (Lyme, clostridia, ascaris) outgasing of carpets and new car plastics, etc.

- Sener, G.et al: “Melatonin protects against mercury induced oxidative tissue damage”. Basic and Clinical Pharmacology & Toxicology Vol 93, Dec 2003, pp 290-296
Abstract
The results suggested that immunotoxicity induced by lead [Pb, as Pb(NO(3))(2)] was significantly restored or prevented by melatonin (MLT). MLT (10 or 50 mg/kg) was orally administered to ICR mice daily for 28 days, and Pb was also administered at 35 mg/kg in the same way 2 h after the administration of MLT, and the normal mice were given vehicle. Within the Pb plus MLT-treated group, the body weight gains and the relative thymus weights were significantly increased when compared with the treatment of Pb alone. The relative spleen and liver weights were increased by the treatment of Pb alone, and then restored to normal value by MLT treatment. Hemagglutination (HA) titer, plaque-forming cell response to sheep red blood cell (SRBC), and secondary IgG antibody response to BSA were significantly enhanced in the Pb plus MLT-treated mice, as opposed to when compared with the treatment of Pb alone. The mitogenic response of splenic T cell to concanavalin A and that of B cells to lipopolysaccharide was remarkably increased by MLT treatment when compared with treatment of Pb alone. Splenic CD4(+) cells were significantly increased by MLT treatment when compared with treatment of Pb alone. In case of CD8(+) cells, the slight enhancement was observed in MLT treatment. Splenic T and B cells were significantly increased by MLT treatment when compared with the treatment of Pb alone. The natural killer cell, phagocytic activity and the number of peripheral leukocytes were significantly enhanced in Pb plus MLT-treated mice when compared with the treatment of Pb alone.
Cellular and biochemical actions of melatonin which protect against free radicals: role in neurodegenerative disorders.

Abstract

Molecular oxygen is toxic for anaerobic organisms but it is also obvious that oxygen is poisonous to aerobic organisms as well, since oxygen plays an essential role for inducing molecular damage. Molecular oxygen is a triplet radical in its ground-stage (.O-O.) and has two unpaired electrons that can undergo consecutive reductions of one electron and generates other more reactive forms of oxygen known as free radicals and reactive oxygen species. These reactants (including superoxide radicals, hydroxyl radicals) possess variable degrees of toxicity. Nitric oxide (NO*) contains one unpaired electron and is, therefore, a radical. NO* is generated in biological tissues by specific nitric oxide synthases and acts as an important biological signal. Excessive nitric oxide production, under pathological conditions, leads to detrimental effects of this molecule on tissues, which can be attributed to its diffusion-limited reaction with superoxide to form the powerful and toxic oxidant, peroxynitrite. Reactive oxygen and nitrogen species are molecular "renegades"; these highly unstable products tend to react rapidly with adjacent molecules, donating, abstracting, or even sharing their outer orbital electron(s). This reaction not only changes the target molecule, but often passes the unpaired electron along to the target, generating a second free radical, which can then go on to react with a new target amplifying their effects. This review describes the mechanisms of oxidative damage and its relationship with the most highly studied neurodegenerative diseases and the roles of melatonin as free radical scavenger and neurocytoskeletal protector.
Abstract

That free radical destruction of macromolecules is a basis of aging and age-related diseases has considerable experimental support. Melatonin, a hormone produced in organisms as diverse as algae and humans, is believed to have evolved coincident with aerobic metabolism. In all organisms melatonin is produced primarily during the daily period of darkness, with only small amounts being synthesized during the day. In mammals including man, melatonin is produced by and secreted from the pineal gland during the night; however, the night-time production of melatonin falls markedly with aging such that in senescent animals a night-time melatonin rise is barely measurable. This may be significant in terms of aging in the light of recent observations which show that melatonin is a highly efficient free radical scavenger and antioxidant both in vitro and in vivo. In vitro, melatonin has been shown to directly scavenge both the hydroxyl and peroxyl radical, and it does so more efficiently than other known antioxidants. Furthermore, melatonin greatly potentiates the efficiency of previously-discovered endogenous and exogenous antioxidants. In vivo, both physiological and pharmacological levels of melatonin reportedly counteract the devastatingly destructive actions of free radical generating chemicals. For example, melatonin effectively combats DNA damage in rats given massive doses of the chemical carcinogen safrole, and the indole overcomes much of the genomic damage inflicted by ionizing radiation. Also, lipid peroxidation induced by either paraquat, bacterial lipopolysaccharide or H2O2 is highly significantly reduced by concurrent melatonin administration. Finally, cataracts produced in newborn rats by the depletion of the endogenous antioxidant glutathione are prevented by melatonin. These findings provide evidence that melatonin is operative in the cell nucleus, in the aqueous cytosol and in lipid-rich cellular membranes as an antioxidant. Considering this, the loss of this potent antioxidant during aging may be consequential in terms of cellular and organismal aging as well as the onset of age-related diseases. These experimental results from a variety of sources suggest that a more determined approach to the study of melatonin as an anti-aging factor is warranted.
Influence of melatonin on immunotoxicity of cadmium.
Kim YO, Ahn YK, Kim JH.

Abstract

The results suggested that immunotoxicity induced by Cd was significantly restored or prevented by MLT. MLT (10 or 50 mg/kg) was orally administered to ICR mice daily for 28 consecutive days, and cadmium (Cd, as [Cd(AC)(2)]) was also administered at 25 mg/kg by the same route 2 h after the administration of MLT, and the normal mice were given vehicle. Within the Cd plus MLT-treated group, the body weight gains and relative thymus weights were significantly increased when compared with the treatment of Cd alone. The relative spleen and liver weights were increased by treatment of Cd alone, then restored to normal value by MLT treatment. Hemagglutination (HA) titer, primary IgM antibody response to SRBC, and secondary IgG antibody response to BSA was significantly increased with the Cd plus MLT-treated mice, as opposed to when compared with treatment of Cd alone. The NK cell and phagocytic activity used for evaluation of non-specific immunocompetence was significantly increased in Cd plus MLT-treated mice when compared with the treatment of Cd alone. The number of peripheral leukocytes was significantly increased in Cd plus MLT-treated mice when compared with treatment of Cd alone.
Diminished brain resilience syndrome: A modern day neurological pathology of increased susceptibility to mild brain trauma, concussion, and downstream neurodegeneration

Wendy A. Morley and Stephanie Seneff

Abstract

The number of sports-related concussions has been steadily rising in recent years. Diminished brain resilience syndrome is a term coined by the lead author to describe a particular physiological state of nutrient functional deficiency and disrupted homeostatic mechanisms leading to increased susceptibility to previously considered innocuous concussion. We discuss how modern day environmental toxicant exposure, along with major changes in our food supply and lifestyle practices, profoundly reduce the bioavailability of neuro-critical nutrients such that the normal processes of homeostatic balance and resilience are no longer functional. Their diminished capacity triggers physiological and biochemical ‘work around’ processes that result in undesirable downstream consequences. Exposure to certain environmental chemicals, particularly glyphosate, the active ingredient in the herbicide, Roundup®, may disrupt the body’s innate switching mechanism, which normally turns off the immune response to brain injury once danger has been removed. Deficiencies in serotonin, due to disruption of the shikimate pathway, may lead to impaired melatonin supply, which reduces the resiliency of the brain through reduced antioxidant capacity and alterations in the cerebrospinal fluid, reducing critical protective buffering mechanisms in impact trauma. Depletion of certain rare minerals, overuse of sunscreen and/or overprotection from sun exposure, as well as overindulgence in heavily processed, nutrient deficient foods, further compromise the brain’s resilience. Modifications to lifestyle practices, if widely implemented, could significantly reduce this trend of neurological damage.

Keywords: Chronic traumatic encephalopathy, glyphosate, neurotoxins, postconcussion syndrome, sports-related concussion
Treatment for Mercury Toxicity

• Prevention of mercury toxicity: mother should have mercury-amalgam fillings removed long before getting pregnant with aggressive treatment (complexing and detox agents), using DMPS, DMSA, D-Penicillamine, curcumin, chlorella, cilantro, melatonin etc.

• During pregnancy and lactation: do not remove fillings or root canal filled teeth! Use chlorella as primary fetus-protective strategy

• Hg detox: always supplement nanonized minerals (“MicroMinerals” and electrolyte (“Matrix Electrolyte”) to keep kidneys open and fill the vacant sites with minerals after toxic metals leave their binding sites

• Bedtime: lipo-melatonin (1-8 mg), chlorella (250 mg tbl, 10-25) and other binders at night (ZeoClear, MicroSilica)

• Daytime: chlorella, microsilica, cilantro, DMPS, DMSA, Homeo-K Clear (BioPure.EU)

• To lower testosterone: use both high potency homeopathic testosterone and DHEA (www.sophiaNutrition.com), high dose Vit A and/or Ketoconazole (Nizoral)

• Ionic foot bath with oral cilantro
How to make Liposomal melatonin

Ingredients: 1. Lipo-Health, Biopure 2. Melatonin capsules with minimal fillers, we use BioTech or a compounding pharmacy 3. Organic Coconut oil 4. Organic Honey 5. Water, filtered 6. Blender; a Magic Bullet/NutriBullet works well 7. Ultrasonic jewelry cleaner (not the one that you use to clean your own jewelry with); we use www.biopure.eu 8. Glass container like a custard cup or ramekin that fits inside the jewelry cleaner

Put into the blender, in order: 2 tsp water, 2 tablespoon room temperature coconut oil, 2 tsp Lipo-Health, 7-10 days worth of melatonin (open appropriate number of capsules into blender; see below for example calculation), and 1.5 tsp honey or to taste. Blend until well mixed. You want it to look a little gelatinous and thick enough that it still pours, but slowly. Add water as needed to make product blendable. Add coconut oil if too fluid. Put into a glass container in ultrasonic jewelry cleaner that is filled with water. Following instructions for cleaner, run for 20 minutes. Place in refrigerator, where it should thicken up to resemble butter. After it has thickened, cut into slices like a pie, so that each slice is your desired dose.

How to take: let it absorb through your mouth by moving it around to coat insides of cheeks, roof of mouth, etc. for several minutes. Avoid brushing teeth, eating, drinking, or taking other supplements for at least 15 minutes.

- This is more potent than non-liposomal melatonin. Start your dose low or as your doctor recommends. The sign of having taken too much is drowsiness the next day.
- Honey here also acts as an emulsifier, so it is preferred over other sweeteners
- Simple dosing calculation example: if your dose is 2mg/night, and you are going to cut the product into 8 slices (one slice/night), you need to add 16mg to the formula. If your melatonin is 5mg/capsule, open 3 capsules into the blender, for a total of 15mg/batch, or just under 2mg/dose.
Peter M, 6 year old autistic boy
Positive to methyl Hg and Ni. Before and after 6 week Chlorella/Cilantro detox

Inorganic Hg
Ethyl-Hg
Methyl-Hg
Thimerosal
Aluminium
Nickel

Stimulation index

Antigens in culture
PRESS RELEASE N° 240 26 October 2015

IARC Monographs evaluate consumption of red meat and processed meat

**Lyon, France, 26 October 2015** – The International Agency for Research on Cancer (IARC), the cancer agency of the World Health Organization, has evaluated the carcinogenicity of the consumption of red meat and processed meat.

**Red meat**

After thoroughly reviewing the accumulated scientific literature, a Working Group of 22 experts from 10 countries convened by the IARC Monographs Programme classified the consumption of red meat as **probably carcinogenic to humans (Group 2A)**, based on *limited evidence* that the consumption of red meat causes cancer in humans and *strong* mechanistic evidence supporting a carcinogenic effect. This association was observed mainly for colorectal cancer, but associations were also seen for pancreatic cancer and prostate cancer.

**Processed meat**

Processed meat was classified as **carcinogenic to humans (Group 1)**, based on *sufficient evidence* in humans that the consumption of processed meat causes colorectal cancer.

**Meat consumption and its effects**

The consumption of meat varies greatly between countries, with from a few percent up to 100% of people eating red meat, depending on the country, and somewhat lower proportions eating processed meat. The experts concluded that each 50 gram portion of processed meat eaten daily increases the risk of colorectal cancer by 18%.

“For an individual, the risk of developing colorectal cancer because of their consumption of processed meat remains small, but this risk increases with the amount of meat consumed,” says Dr Kurt Straif, Head of the IARC Monographs Programme. “In view of the large number of people who consume processed meat, the global impact on cancer incidence is of public health importance.”

The IARC Working Group considered more than 800 studies that investigated associations of more than a dozen types of cancer with the consumption of red meat or processed meat in many countries and populations with diverse diets. The most influential evidence came from large prospective cohort studies conducted over the past 20 years.

**Public health**

“These findings further support current public health recommendations to limit intake of meat,” says Dr Christopher Wild, Director of IARC. “At the same time, red meat has nutritional value. Therefore, these results are important in enabling governments and international regulatory agencies to conduct risk assessments, in order to balance the risks and benefits of eating red meat and processed meat and to...
Carcinogenicity of consumption of red and processed meat
Véronique Bouvard, Dana Loomis, Kathryn Z Guyton, Yann Grosse, Fatiha El Ghissassi, Lamia Benbrahim-Tallaa, Neela Guha, Heidi Mattock, Kurt Straif

• On behalf of the International Agency for Research on Cancer Monograph Working Group
• In October, 2015, 22 scientists from ten countries met at the International Agency for Research on Cancer (IARC) in Lyon, France, to evaluate the carcinogenicity of the consumption of red meat and processed meat. These assessments will be published in volume 114 of the IARC Monographs.1