

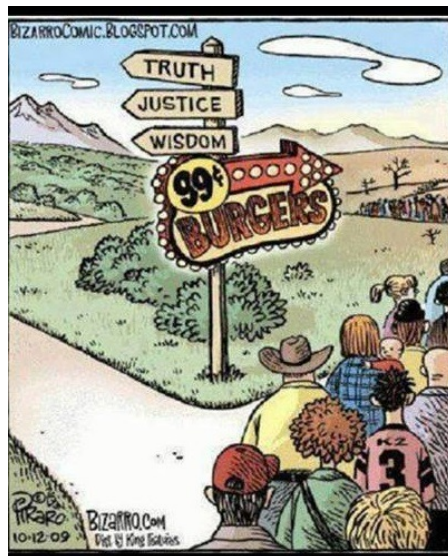
**Glyphosate: How a simple molecule
can cause so much destruction:
Part II**

Stephanie Seneff
MIT CSAIL

WAPF Wise Traditions Workshop
November 17, 2018

Download these slides

[people.csail.mit.edu/seneff/2018/
Seneff_WAPF_2018_Part2.pptx](http://people.csail.mit.edu/seneff/2018/Seneff_WAPF_2018_Part2.pptx)



“For the first time in two centuries, the current generation of children in America may have shorter life expectancies than their parents.”

The New England Journal of Medicine

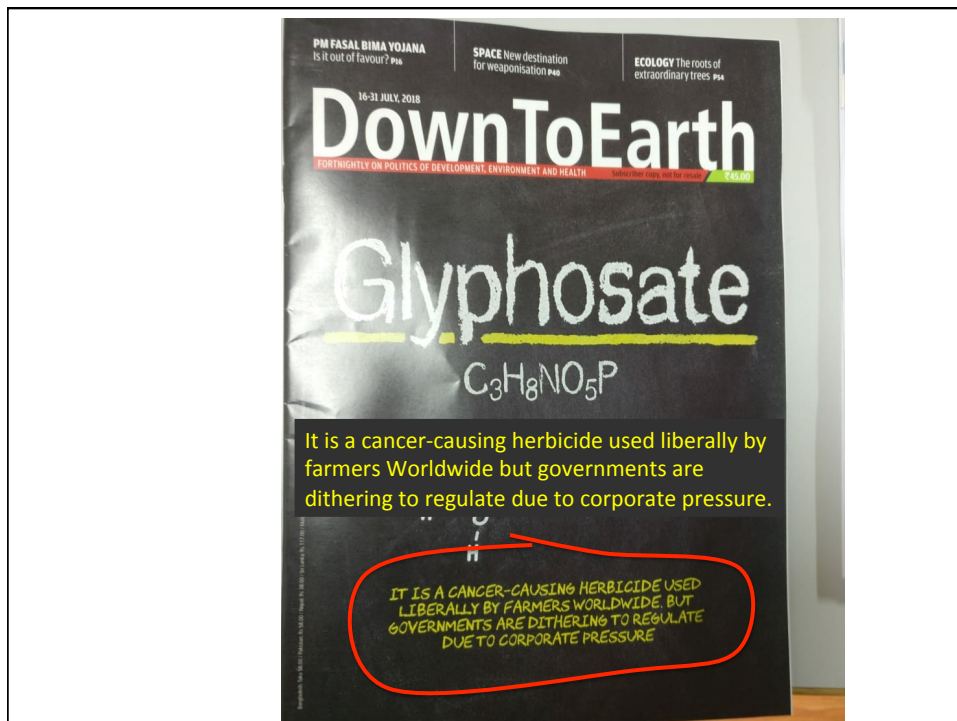
Outline

- Immunity, Inflammation and Cancer
- Prescription Drugs
- Glyphosate and Vaccines
- How Much More Evidence Do We Need?
- Fighting Back
- How to Stay Healthy in a Toxic World

Immunity, Inflammation and Cancer

Section Outline

- Overview
- Excessive Calcium Uptake
- Nucleoporin 98 (Nup98)
- Activation Induced Deaminase (AID)
- Tumor suppressors and DNA Repair



The Evidence

- Glyphosate exposure is linked to non-Hodgkin’s lymphoma and a California lawsuit resulted in a \$289 million settlement (later reduced to \$78M)
- Rates of pancreatic cancer, thyroid cancer and bladder cancer are going up exponentially, in step with the rise in glyphosate usage on core crops
- The WHO IARC issued a statement that glyphosate is a “probably carcinogen” in Spring 2015. California added it to its list of probable carcinogens

An Article I published on GreenMedInfo

Genetically Modified Children (FREE VIEWING - LIMITED TIME)

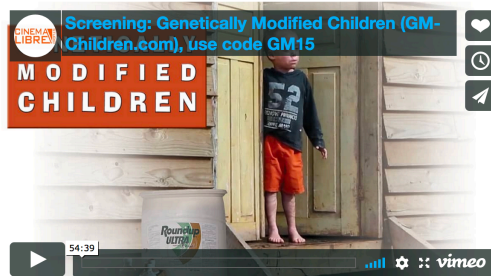
3.2k Shares 2.9k 65 20

Posted on: Tuesday, October 2nd 2018 at 1:30 pm

Written By: [Stephanie Seneff](#)

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Key Research Topics

Disease

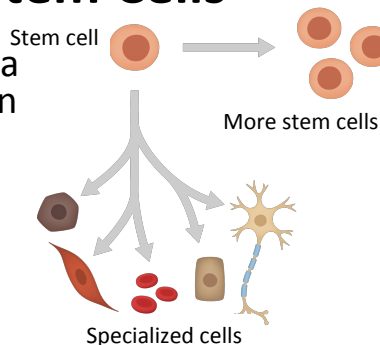
- Acute Myeloid Leukemia
- Epilepsy
- Hydrocephalus
- Lymphoma
- Ichthyosis
- Mental Disorders
- Non-Hodgkin Lymphoma
- Obesity
- Oxidative Stress
- Cancers

Toxic Ingredients

- Wheat
- Glyphosate
- Tobacco
- Herbicide
- Roundup

Cancer Cells and Stem Cells*

- Uncontrolled self-renewal plays a direct function in the progression of different types of cancers
- Cancer stem cells resemble normal stem cells in many ways
 - Both express OCT4, NANOG and SOX2, which are key proteins to induce pluripotency
 - Many types of cancer cells (e.g., bladder, colon, prostate cancer, etc.) express these proteins, which induce a proliferative state
 - DNA demethylation is a critical step towards pluripotency/cancer induction



*S Amini et al. Anatomy & Cell Biology 2014;47:1-11.

The Big Picture

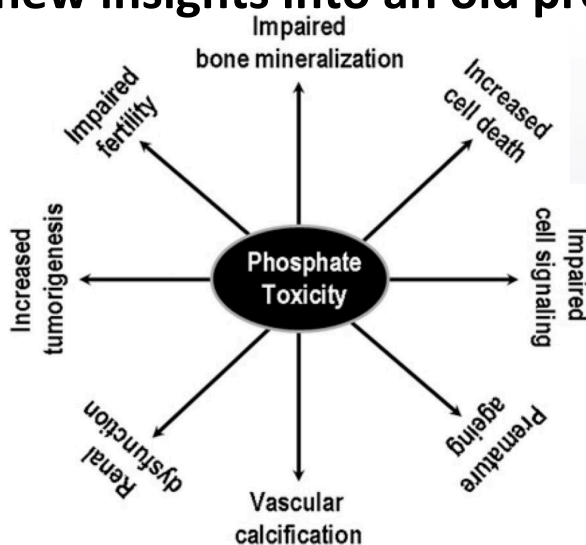
- Glyphosate induces excessive calcium uptake which activates NF- κ B through phosphorylation in many cell types
 - NF- κ B regulates the transcription of genes that control inflammation, immune cell development, cell cycle, proliferation, and cell death
 - Disregulated NF- κ B is linked to many diseases
- Glyphosate induces a runaway phosphorylation cascade that alters protein behaviors, inducing mitosis (cell division) and genetic mutations
 - Excessive phosphorylation is a factor in many diseases, including cancer, heart disease and neurodegeneration
- Glyphosate substitution for glycine in DNA repair enzymes would lead to high mutation rate

Excessive Phosphorylation due to Glyphosate Substitution for Glycine*

- Kinases are enzymes that *add* phosphates
 - Glyphosate substitution for critical glycines would be predicted to *increase* their activity
- Phosphatases are enzymes that *remove* phosphates
 - Glyphosate substitution for critical glycines would be predicted to *decrease* their activity
- Overall result is excessive phosphorylation of multiple proteins in the cell, leading to aberrant behavior

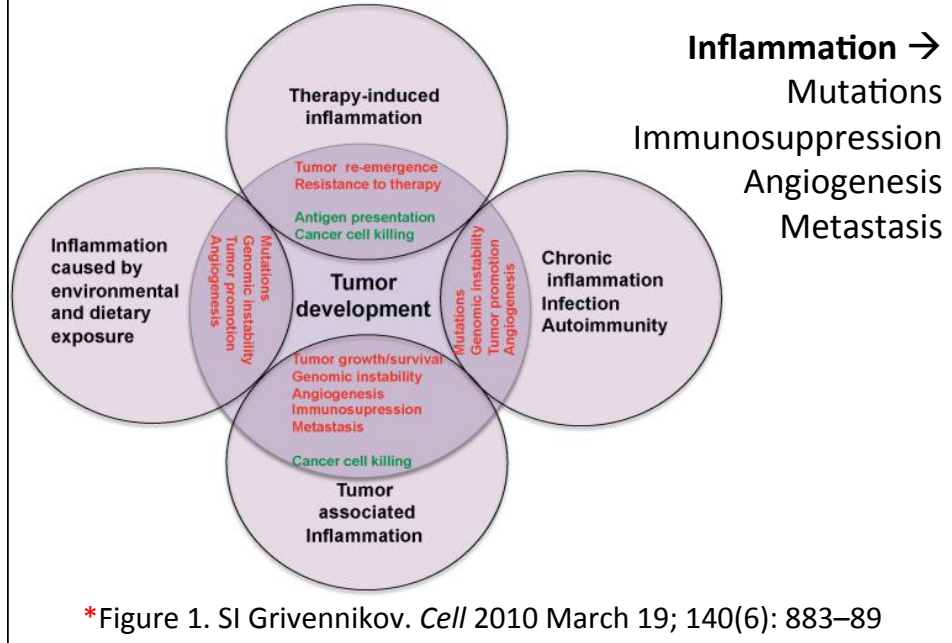
*A Samsel and S Seneff. Journal of Biological Physics and Chemistry 2016;16:9-46..

“Phosphate toxicity: new insights into an old problem”*



*MS Razzaque. Clin Sci (Lond). 2011; 120(3): 91–97.

Immunity, Inflammation, and Cancer*

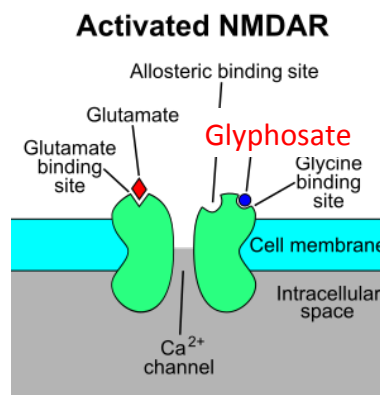


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Glyphosate and Glutamate*

- Acute exposure to the hippocampus in the brain activates *NMDA receptors* and voltage-dependent *calcium channels*
 - Oxidative stress and neural cell death
 - Increased glutamate release into the synaptic cleft → *neurotoxicity*



Calcium uptake
Through calcium
channels

*D. Cattani et al. / Toxicology 320 (2014) 34–45

Free Radical Biology and Medicine 65 (2013) 335–346

Contents lists available at ScienceDirect



Free Radical Biology and Medicine

journal homepage: www.elsevier.com/locate/fr



Original Contribution

Roundup disrupts male reproductive functions by triggering calcium-mediated cell death in rat testis and Sertoli cells



Vera Lúcia de Liz Oliveira Cavalli^a, Daiane Cattani^a, Carla Elise Heinz Rieg^a,
Paula Pierozan^b, Leila Zanatta^a, Eduardo Benedetti Parisotto^c, Danilo Wilhelm Filho^c,
Fátima Regina Mena Barreto Silva^a, Regina Pessoa-Pureur^b, Ariane Zamoner^{a,*}

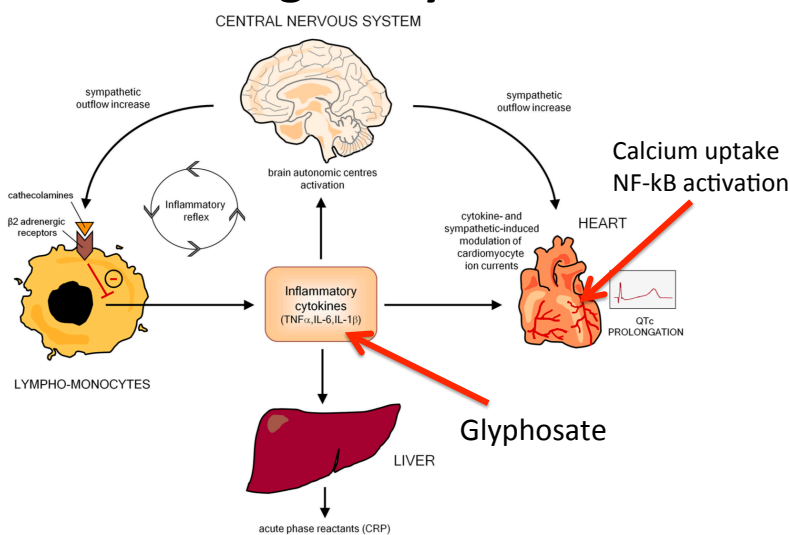
"The pesticide increased intracellular Ca²⁺ concentration by opening L-type voltage-dependent Ca²⁺ channels ..., leading to Ca²⁺ overload within the cells, which set off oxidative stress and necrotic cell death."

Cardiotoxic Electrophysiological Effects of the Herbicide Roundup® in Rat and Rabbit Ventricular Myocardium In Vitro

Steeve Gress · Sandrine Lemoine · Paolo-Emilio Puddu ·
 Gilles-Eric Seralini · René Rouet

"In GBH [glyphosate-based herbicide]-poisoned persons, a high incidence of *QTc interval prolongation* Long-QT Syndrome! conduction blocks (from normal to high grade) were reported along with arrhythmias, longer QTc and older age predicting mortality "

Inflammatory Cytokines Induce Long-QT Syndrome*



*PE Lazzarini et al. Frontiers in Cardiovascular Medicine 2015;2:26.

Inflammatory Cytokines Induce Long-QT Syndrome*

Increased risk to long QT syndrome associated with:

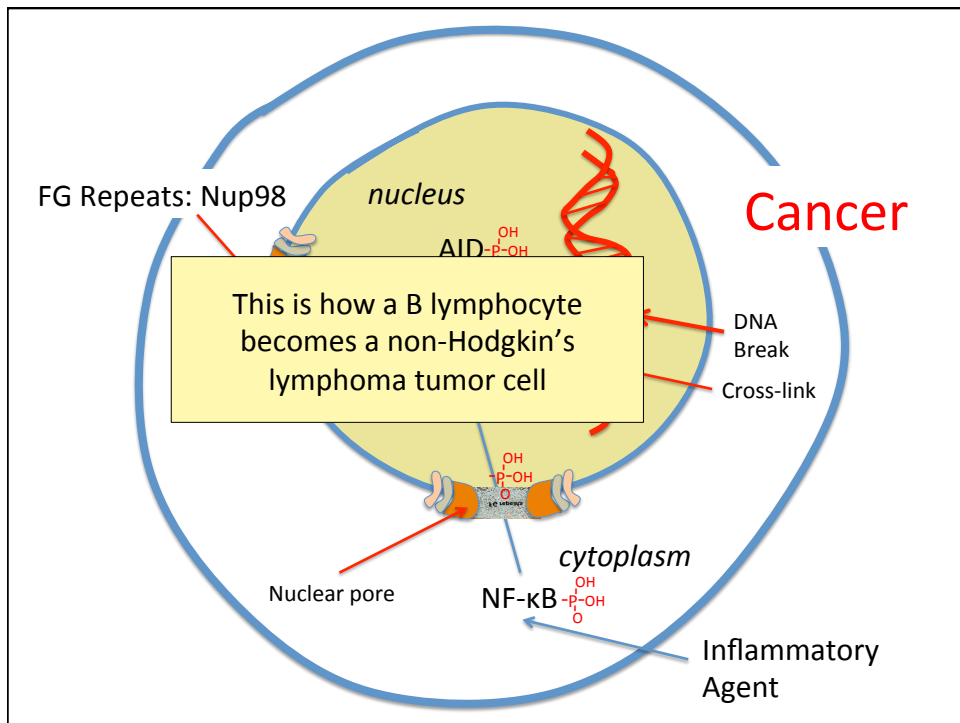
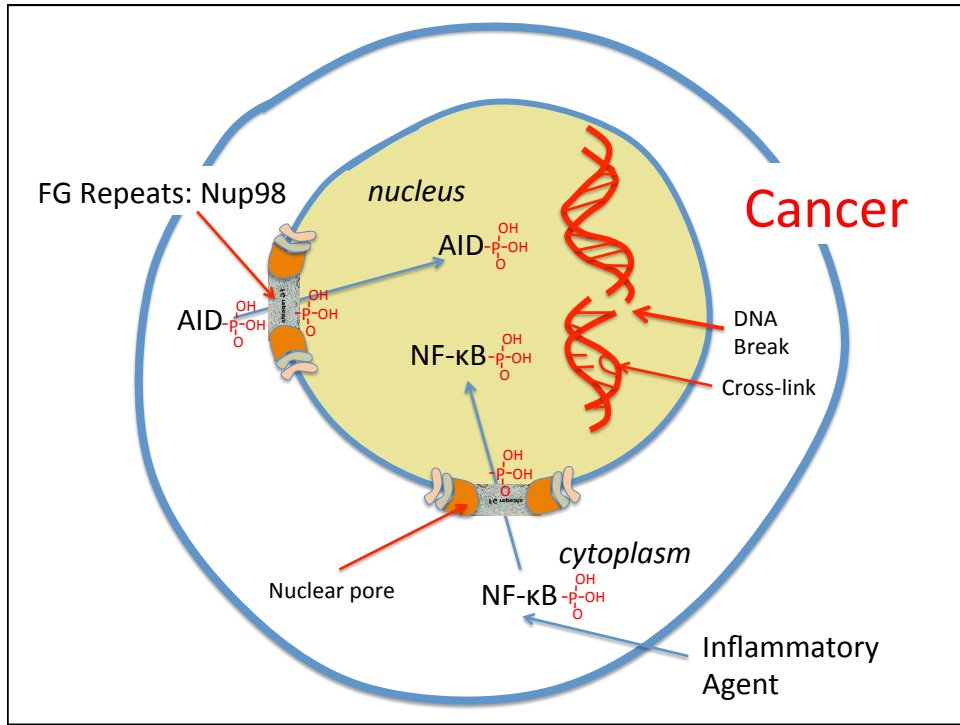
- Rheumatoid arthritis
- Connective tissue disease
- Autoimmune antibodies
- End-stage liver disease
- Neuropathy
- HIV infection

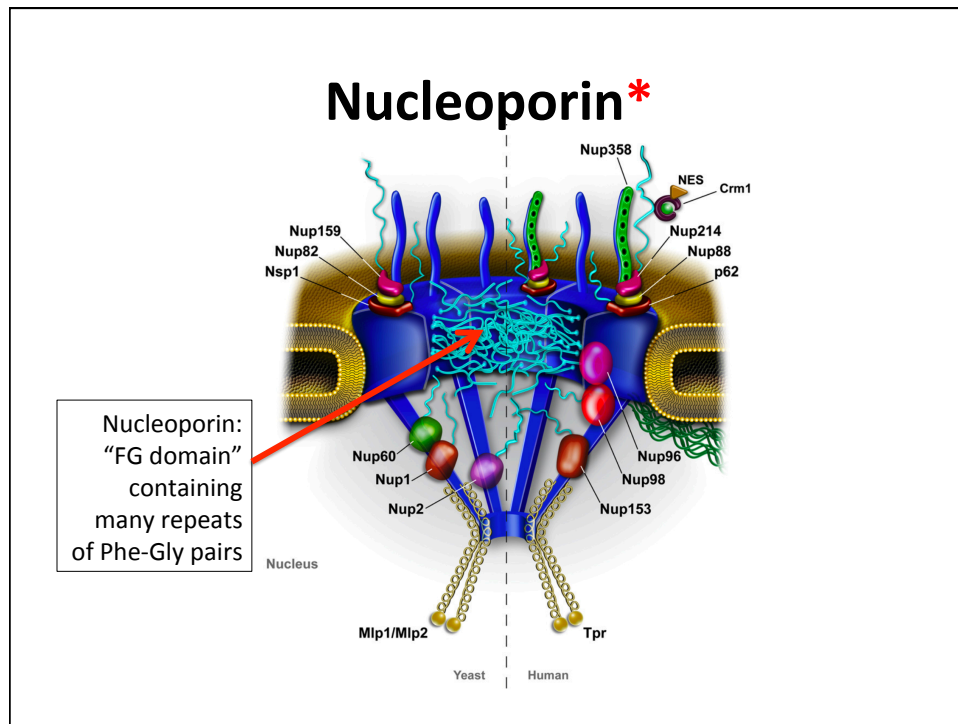
All of these diseases
can be linked to
glyphosate exposure

*PE Lazzerini et al. Frontiers in Cardiovascular Medicine 2015;2:26.

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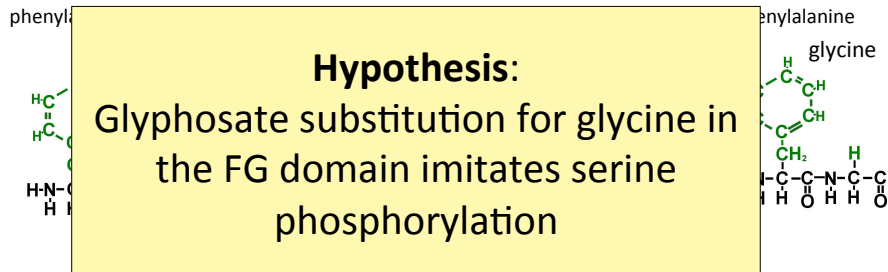


Gene Regulation by Nucleoporins and Links to Cancer

- Nucleoporins are related to a "bewildering" array of diseases
 - Neurological disorders
 - Neuroendocrine disorders
 - Cardiac disorders
 - Autoimmune diseases

*A. Kohler and E Hurt. Molecular Cell 2010;38: 6-15.

FG Repeats: phenylalanine-glycine

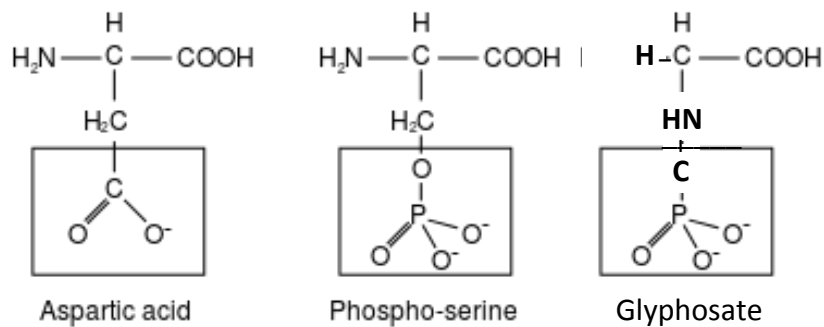


The FG repeat domain has multiple serines that can get phosphorylated, drastically changing its behavior

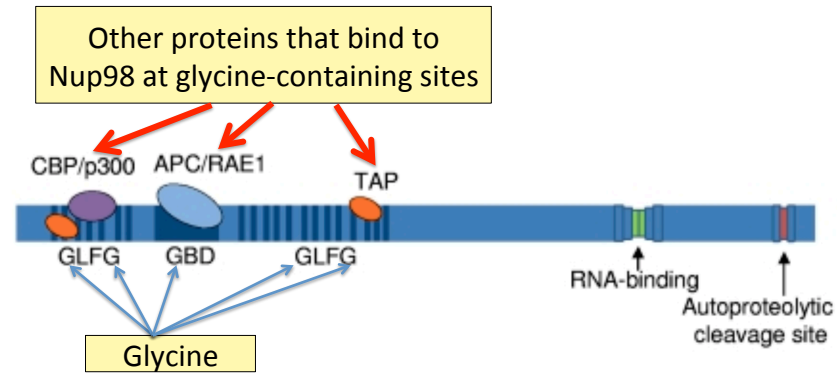
Phosphomimetics!

WIKI:

Phosphomimetics are amino acid substitutions that mimic a phosphorylated protein, thereby activating (or deactivating) it.



Nup98: A Nucleoporin with many critical glycine residues*



*SM Gough et al. Blood 2011; 118(24): 6247–6257.

Nup98 and Cancer

- Nup98 is a core component of the plug that blocks nuclear pores
- When Nup98 is phosphorylated within its FG domain, it breaks away from the plug and the plug disintegrates
 - Replacement of some of its glycines for glyphosate will have a similar effect
- This gives free access to the nucleus of proteins that are normally retained in the cytoplasm
 - One of these is Activation Induced Deaminase (AID)
- Phosphorylated AID in the nucleus:
 - Strips DNA of its methyl groups
 - Initiates DNA double strand breaks
 - Induces expression of proteins that lead to tumorigenesis

Section Outline

- Excessive Calcium Uptake
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Activation-induced cytidine deaminase (AID)

- AID is a genome-mutating enzyme that initiates class switch recombination and somatic hypermutation of antibodies during immune system maturation
- AID can become a rogue protein if it is hyperphosphorylated and allowed to gain prolonged access to the nucleus
 - Can induce multiple DNA mutations in proteins related to cancer
 - Can strip DNA of its methyl groups, leading to a pluripotent state (stem-cell-like cancer cell)

Rogue TGF- β receptor \rightarrow AID*

- TGF- β is a cytokine that induces AID
 - The TGF- β receptor has a specific peptide sequence where phosphorylation of serines takes place to activate it
- These serines are surrounded by glycines
 - Ser-Gly-Ser-Gly-Ser-Gly
- Substitution of glyphosate for any of these glycines would lead to false activation

*S Souchelnytskyi et al. The EMBO Journal 1995;15(22):6231-6240.

Phosphorylation and Negative Charge*

- AID protein becomes able to create double strand DNA breaks only after it is phosphorylated on serine 38
- Zebrafish have a version of AID that is missing serine (cannot be phosphorylated) yet it is active anyway
 - Hypothesis is that this is due to a nearby negatively charged amino acid (aspartate)
- Analogously, substituting a negatively charged amino acid near the serine residue in human AID caused it to be constitutionally active
- A highly conserved glycine at residue 47 would become negatively charged if substituted by glyphosate

*U Basu et al. Mol Cell. 2008 October 24; 32(2): 285–291.

Phosphorylation and Negative Charge*

- AID protein becomes able to create double strand DNA breaks only after it is phosphorylated on serine 38
- A study on people living in northern Ecuador near the border to Colombia who were exposed to aerial sprayed glyphosate showed that they had a significant increase in DNA double-strand breaks in blood samples.**
- A highly conserved glycine at residue 47 would become negatively charged if substituted by glyphosate

*U Basu et al. Mol Cell. 2008 October 24; 32(2): 285–291.

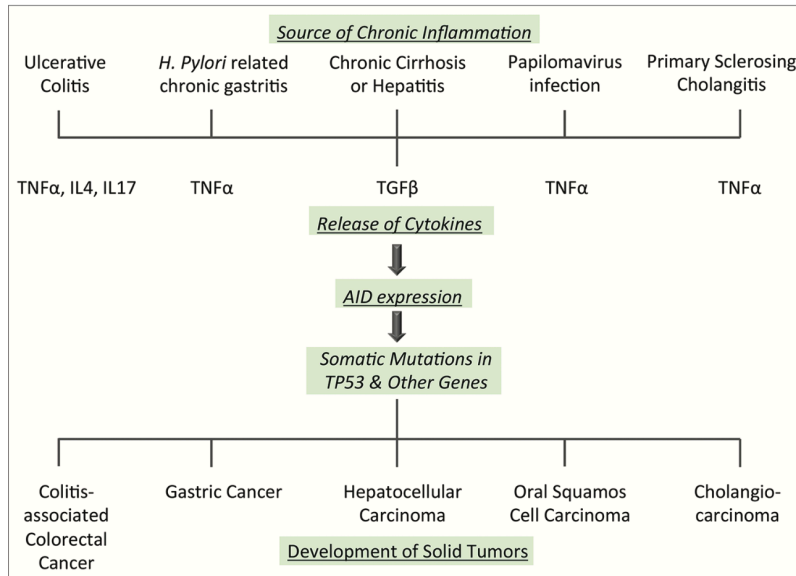
**C Paz-y-Mino et al. Genetics and Molecular Biology 2007; 30(2): 456-460.

AID: 7 conserved glycines*

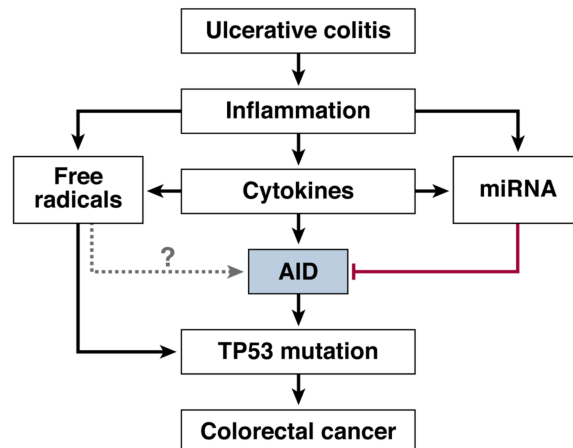


*EM Quinlan et al. Mol Cell Biol. 2017 Sep 26;37(20)

Inflammation, AID and Cancer*



AID and Colon Cancer*



*S Perwez Hussain. Gastroenterology 2008 Sep; 135(3): 736–737.

Mutant p53 linked to lung cancer: glycine-334 mutated to valine*

- Alpha helices become beta sheets
- Mutant protein forms tetramers with normal protein that precipitate out as amyloid fibrils
- Mutant can't bind to DNA and can't protect from proliferation (tumor growth)
- Misfolding process analogous to what happens with amyloid beta in Alzheimer's disease
- Over half of all cancers are linked to mutated p53

B Human p53



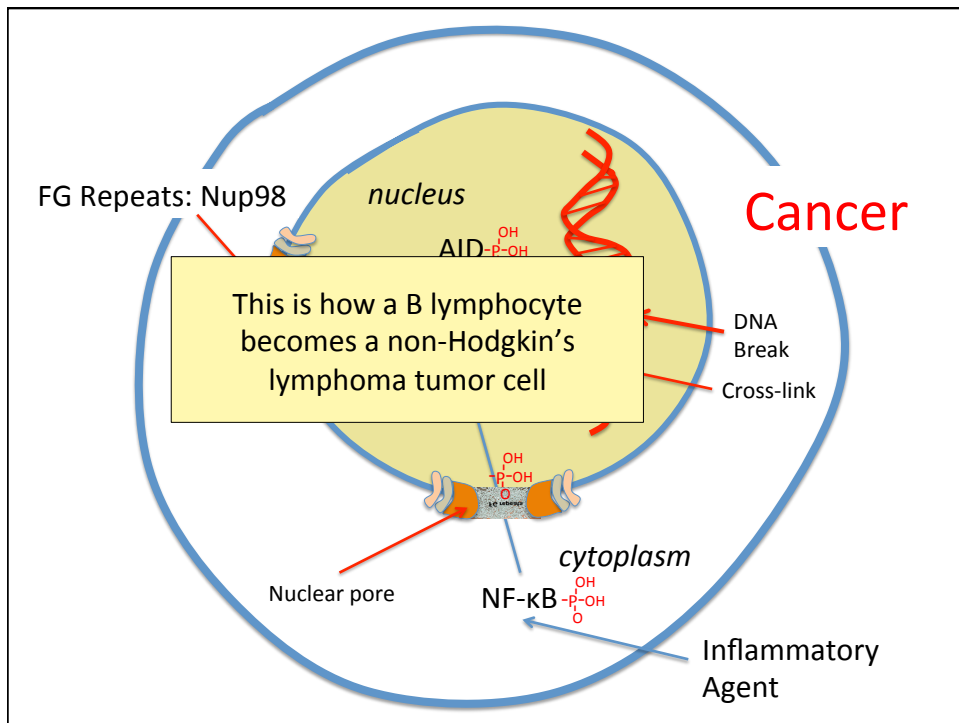
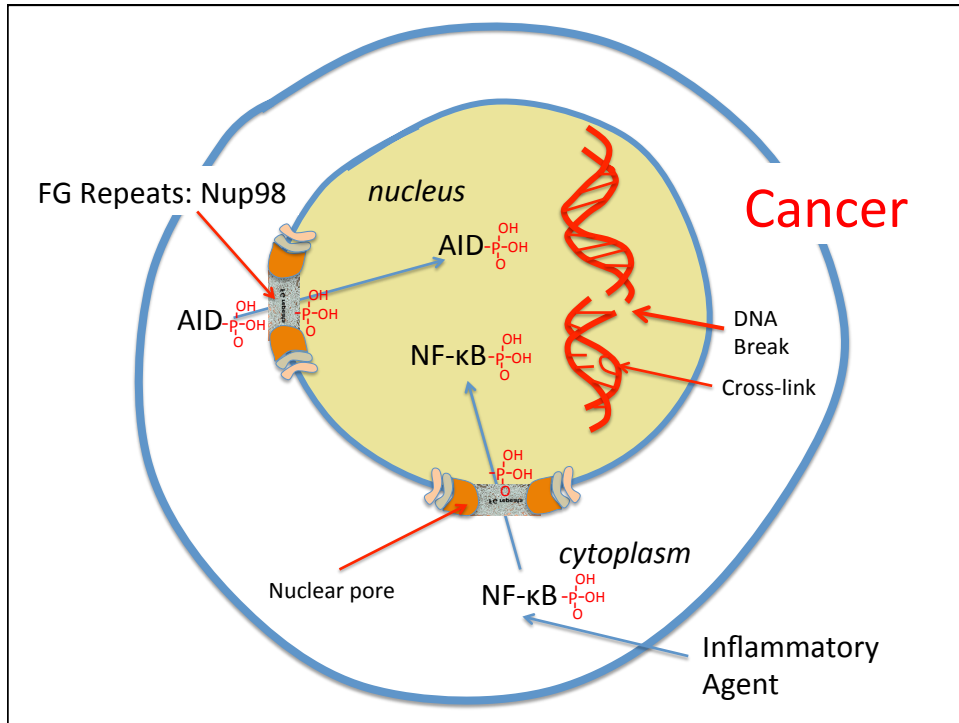
*Y Higashimoto et al. Biochemistry 2006; 45(6): 1608-1619.

MRE11: DNA repair enzyme*



- MRE11 is overexpressed in breast cancer cells, probably because they are experiencing excessive numbers of DNA double-strand breaks
 - This in turn is likely due to constitutively active AID with both hyperphosphorylation and glycosylation substitution for glycine generating negative charge
- MRE11 is expected to be defective with glycosylation substitution for its own glycines in the glycine-arginine domain.

*U Dery et al. Molecular and Cellular Biology 2008; 28(9): 3058–3069.



Recapitulation

- A B-cell will evolve into a cancer cell through aberrant processes induced by chronic glyphosate exposure
- Excessive calcium entry induces inflammatory response that stimulates excessive phosphorylation of multiple proteins
 - Glyphosate substitution leads to both excessive phosphorylation and excessive “pseudo-phosphorylation”
- Excessive phosphorylation of NF- κ B, TGF- β , AID and Nup98 in particular will lead to DNA breaks and DNA damage
 - Glyphosate substitution in DNA repair enzymes will cause higher mutation rates
- Mutations eventually turn the cell into a tumor cell, with regression to stem-cell like characteristics and runaway proliferation
 - Non-Hodgkin’s Lymphoma and other cancers

Prescription Drugs

Over the past 20 years...*

- 20-fold rise in statin drugs
- 7-fold for antihypertensives
- 4-fold for diabetes meds



The number of people taking 5 or more different drugs has quadrupled and includes over half of those 65 and over

*J le Fanu. BMJ 2018;361:k2794.

And “the risk of ill” from this massive upswing in prescribing?*

“A hidden epidemic of immiserating symptoms such as fatigue, muscular aches and pains, insomnia, and general decrepitude, a 75% rise in emergency admissions to hospital for adverse drug reactions ..., and almost certainly a contributory factor to the recently noted decline in life expectancy”



*J le Fanu. BMJ 2018;361:k2794.

Drug Saf (2015) 38:437–453
DOI 10.1007/s40264-015-0281-0

REVIEW ARTICLE

Epidemiology of Adverse Drug Reactions in Europe: A Review of Recent Observational Studies

Jacoline C. Bouvy^{1,2} · Marie L. De Bruin¹ · Marc A. Koopmanschap²

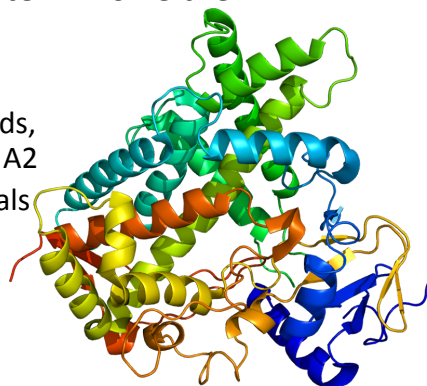
“This review indicates that, in Europe, approximately 3.6 % of all hospital admissions are caused by ADRs [Adverse Drug Reactions], and up to 10% of patients in European hospitals experience an ADR during their stay.”

The Effect of Cytochrome P450 Metabolism on Drug Response, Interactions, and Adverse Effects*

TOM LYNCH, PharmD, and AMY PRICE, MD, *Eastern Virginia Medical School, Norfolk, Virginia*

“Interactions with warfarin, antidepressants, antiepileptic drugs, and statins often involve the cytochrome P450 enzymes”

- CYPs are essential for the:
 - Production of cholesterol, steroids, prostacyclins, and thromboxane A2
 - Detoxification of foreign chemicals
 - Metabolism of drugs



*American Academy of Family Physicians. 2017
<https://www.aafp.org/afp/2007/0801/p391.html>

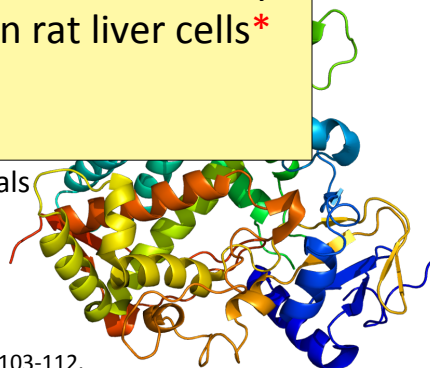
The Effect of Cytochrome P450 Metabolism on Drug Response, Interactions, and Adverse Effects*

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Glyphosate has been shown to severely suppress CYP enzymes in rat liver cells*

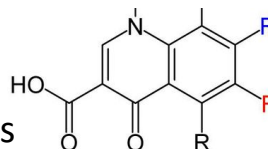
- Detoxification of foreign chemicals
- Metabolism of drugs



*E Hietanen. Acta pharmacol. et Toxicol. 1983; 53: 103-112.

Fluoroquinolone Antibiotics and Oxalate Overload*

- Fluoroquinolones kill *Oxalobacter formigenes*
- *Oxalobacter* metabolizes oxalates
- High oxalates lead to low sulfate through flushing out at the kidneys
- Low sulfate causes many problems: Circulation, immune function, detox
- High oxalates cause kidney stones and can crystallize in the muscles and brain, causing pain, muscle weakness, and brain fog



*<https://floxiehope.com/2016/03/23/fluoroquinolone-antibiotics-and-oxalate-overload/>

Ciprofloxacin has dramatic effects on the mitochondrial genome*

- Mitochondrial DNA depends on topoisomerases

Glyphosate works synergistically with Cipro to cause mitochondrial damage**

depleting mitochondrial DNA

- This may account for many of the side effects of Cipro, including tendon rupture, permanent nerve damage and depression

*A Hangas et al. Nucleic Acids Res. 2018 Aug 31. doi: 10.1093/nar/gky793. [Epub ahead of print]

**AG Pereira et al. Chemosphere 2018;209:353-362.

Statins stimulate atherosclerosis and heart failure*

- Epidemic in heart failure and atherosclerosis that plagues modern world may paradoxically be aggravated by pervasive use of statin drugs
 - Statins increase coronary artery calcification
 - Statins are mitochondrial toxins: deplete coenzyme Q10
 - Statins inhibit synthesis of vitamin K2, cofactor for matrix Gla-protein activation (protects from calcification)
- Statins inhibit synthesis of selenium-containing proteins
 - Includes glutathione peroxidase which suppresses oxidative stress
 - Reminiscent of dilated cardiomyopathies seen in selenium deficiency

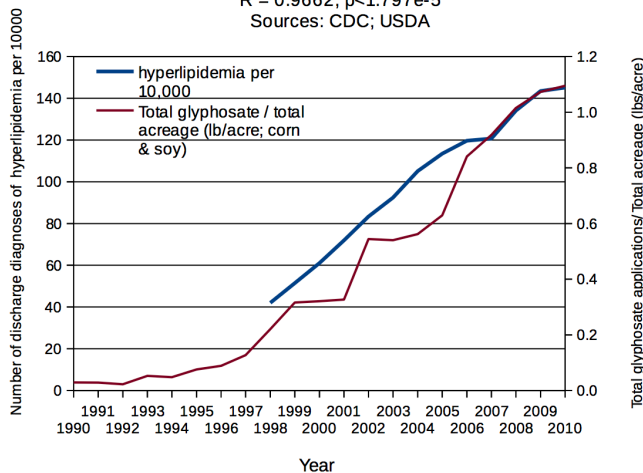
*H Okuyama et al. Expert Rev Clin Pharmacol. 2015;8(2):189-99.

Glyphosate and Serum Cholesterol*

Hospital Discharge Diagnoses of Hyperlipidemia (ICD 272.0-4)
& Glyphosate applied to corn & soy crops

$R = 0.9662$, $p < 1.797e-5$

Sources: CDC; USDA



*<https://www.westonaprice.org/health-topics/modern-diseases/cholesterol-sulfate-deficiency-coronary-heart-disease/>

Drugs with Depression as a Side Effect*

- Cross-sectional survey study based on National Health and Nutrition Examination Survey (NHANES) (26,192 adults)
- Adults in the United States use more than 200 medications that have been associated with depression
 - Includes antihypertensives (e.g., beta blockers), proton pump inhibitors, analgesics, and hormonal contraceptives
 - 37% of adults take one or more of these drugs
- 15% of those taking 3 or more of these drugs were depressed, vs. 4.7% for those not using such medications
- Findings persisted in analyses restricted to adults with hypertension and after excluding users of any psychotropic medications
- Glyphosate likely increases risk to depression due to interference with serotonin synthesis via shikimate pathway

*D M Qato et al. JAMA. 2018;319(22):2289-2298.

Antidepressant Withdrawal Symptoms*

- Percentage of adult population taking antidepressants has increased by 160% since 2000 in the US and the UK
- More than half of people experience withdrawal symptoms when they try to quit
 - Symptoms include anxiety, flu-like symptoms, insomnia, nausea, imbalance, dizziness, brain zaps, diarrhea, headaches, muscle spasms and tremors, agitation, hallucinations, confusion, malaise, sweating and irritability.

* J Davies and J Read. Addictive Behaviors 2018 [Epub ahead of print]

Glyphosate in Drugs?*

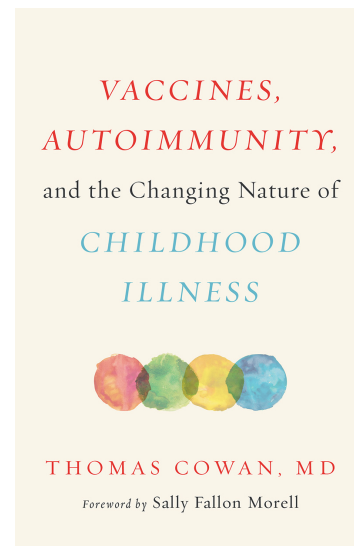
- Trasylol (aprotinin) is a protein derived from *bovine lung* used to reduce bleeding during open heart surgery
- Rare acute reaction to Trasylol involves precipitous drop in blood pressure, acute kidney failure, and sudden death
 - Piglets injected with glyphosate salts had similar acute reaction with high mortality rate
- Cows fed GMO Roundup-Ready feed had highest residue levels of glyphosate in lungs
- Several other biological drugs are also suspect
 - Protamine sulfate derived from sturgeon testes

*S Seneff et al., Agricultural Sciences 2015; 6:1472-1501.

Glyphosate and Vaccines

Dr. Thomas Cowan's New Book

- Currently,
 - 1 in 11 American children has asthma
 - 1 in 2.5 has an allergy
 - 1 in 13 has severe food allergies
 - 1 in 36 has autism
- Vaccines are an ineffective and harmful attempt to shortcut a complex immune response
- Risks to autoimmune disease are inherent in antibody induction through vaccination
- Authoritarian approach by medical establishment robs parents of informed consent



Dr. Thomas Cowan's New Book

- Currently,
– 1 in 11 American children has asthma

Glyphosate likely disrupts the protein that orchestrates perfection of antibody matching to antigen (AID), causing antibodies induced by vaccines to misrecognize human proteins and attack them instead of or in addition to the target protein

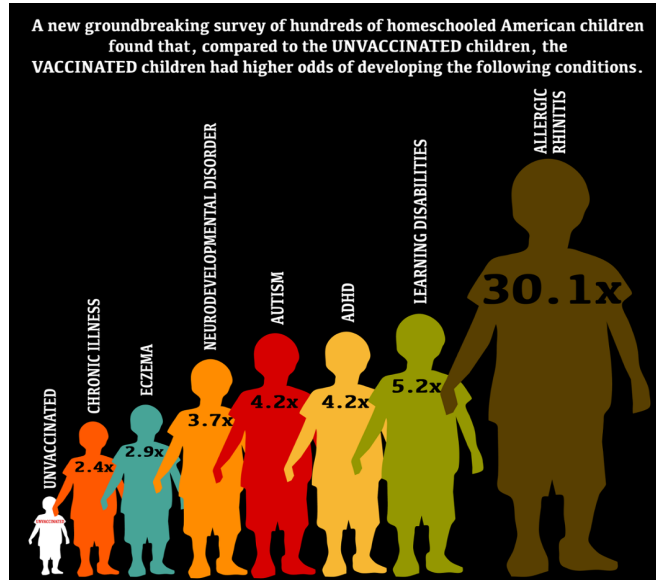
- Authoritarian approach by medical establishment robs parents of informed consent

THOMAS COWAN, MD

Foreword by Sally Fallon Morell



The Unvaccinated Population is Healthier*



*AR Mawson et al. J Transl Sci 2017; 3. DOI: 10.15761/JTS.1000186

Prof. Zimmerman's Testimony*

- Hannah Poling was a child who was injured by vaccines, regressing into autism
- Her Father, John Poling, collaborated with Prof. Zimmerman at John's Hopkins as fellow neurologists
- Prof. Zimmerman became convinced that, in Hannah Poling's case, a preexisting mitochondrial disorder could have led to an adverse reaction to vaccines that caused her to regress into autism
 - It is estimated *that 30% to 50%* of autistic kids have preexisting mitochondrial disorders.
- The vaccine court committed fraud and obstruction of justice in suppressing the fact that Zimmerman believed vaccines could cause autism under certain circumstances
- Over 5000 children were denied justice as a consequence

*JB Handley. How to End the Autism Epidemic.

Big Pharma Mitochondrial Iatrogenocide: Toxic Environmental Chemicals, Drugs and Vaccines are Destroying Mitochondria*

"The avarice of these industries for larger market-share, higher share price, bigger profits, lower wages and more aggressive wealth extraction knows no bounds, and their brain-disabling products makes their goals ever easier to attain."

*Gary Kohls, MD.

waronwethepeople.com/

[big-pharma-iatrogenocide-mass-population-poisoning-by-mitochondrial-disruption](#)

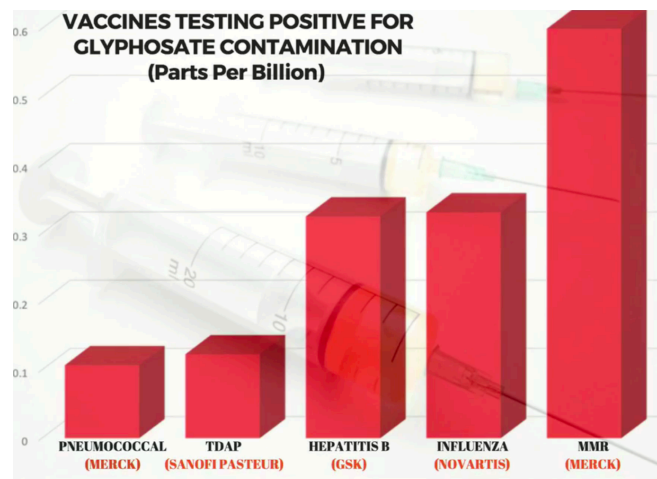
Glyphosate and Mitochondrial Damage*

"Our results show that GBH [glyphosate-based herbicides] induced in zebrafish brain a decrease in cell viability, inhibited *mitochondrial* complex enzymatic activity, modulated gene expression related to *mitochondrial* complexes, ..., promoted hyperpolarization of *mitochondrial* membrane, and induced behavioral impairments... This study pointed to the *mitochondria as an important target of GBH*.


*AG Pereira et al. Chemosphere 2018;209:353-362.



Glyphosate in Vaccines*



*<https://www.facebook.com/HighWireTalk/videos/2157052507846542/>



Journal of Developing Drugs

Arumugham, J Develop Drugs 2015, 4:4
<http://dx.doi.org/10.4172/2329-6631.1000137>

Case Report
Open Access

Evidence that Food Proteins in Vaccines Cause the Development of Food Allergies and Its Implications for Vaccine Policy

Vinu Arumugham*
 San Jose, CA, USA

Abstract

Nobel Laureate Charles Richet demonstrated over a hundred years ago that injecting a protein into animals or humans causes immune system sensitization to that protein. Subsequent exposure to the protein can result in allergic reactions or anaphylaxis. This fact has since been demonstrated over and over again in humans and animal models.

Injecting a protein into animals or humans causes immune system sensitization to that protein. Subsequent exposure to the protein can result in allergic reactions or anaphylaxis. This fact has since been demonstrated over and over again ...

Large Proteins in Vaccines: Allergenic*

“Vaccines clog our lymphatic system and lymph nodes with *large protein molecules* which have not been adequately broken down by our digestive processes, since *vaccines bypass digestion* with injections. This is why vaccines are linked to *allergies*, because they contain large proteins which as circulating immune complexes (CICs) or 'klinkers' cause our body to become allergic.”

*Dave Mihalovic, ND, http://whale.to/v/vaccines_cause_allergies.ht

Measles Virus and Hemagglutinin*

- The measles virus synthesizes the protein hemagglutinin
 - Antibodies to hemagglutinin are essential following MMR vaccination to induce immunity
- Hemagglutinin bears a sequence resemblance to myelin basic protein (MBP) → potential for autoimmune reaction
- MBP is essential for the formation of the myelin sheath surrounding nerve fibers
- Autoantibodies to MBP along with excessive levels of antibodies to measles hemagglutinin are linked to autism**

*Oldstone, MBA, Ed. Molecular mimicry: Infection inducing autoimmune disease. Springer Berlin Heidelberg; January 9, 2006.

**VK Singh et al., J Biomed Sci 2002;9(4):359-64.

Autism and Measles Hemagglutinin*

- 125 autistic children and 92 control children
- 60% of the children with autism had high levels of antibodies to measles hemagglutinin specific to the MMR vaccine
 - 90% of these had autoantibodies to myelin basic protein (MBP)
- 0% of the control children had high antibody titers to either hemagglutinin or MBP
- There were no elevations in antibodies detected against any proteins in the mumps or rubella viruses

*VK Singh et al., J Biomed Sci 2002;9(4):359-64.

Measles Vaccine: an Epidemiological Nightmare*

- Measles vaccine shifted the distribution of disease from children aged 5 to 9 (least vulnerable group) to infants (most vulnerable), teenagers and adults
- In 1963, less than 0.5% of measles cases were infants
- By 1992, at least 28% of all measles cases were infants
- Blood serum from women with natural immunity neutralizes many more strains of measles virus than blood serum from vaccinated women
- 90% of 200 deaths that occurred during a measles outbreak from 1989 to 1990 in the US occurred among children under 5
- Eliminating the natural immunity passed from mother to child has resulted in an epidemiological nightmare

*Neil Miller, Vaccine Safety Manual; CDC; J of Med Virology

Hep-B at Birth: A Dangerous Vaccine*

- Hepatitis B vaccine (HBV) is administered to more than 70% of neonates worldwide
- HBV induces impairments in behavior and in hippocampal neurogenesis, mediated in part by the cytokines IL-4 and IL-6.

“These findings suggest that clinical events involving *neonatal IL-4 over-exposure*, including neonatal hepatitis B vaccination and asthma in human infants, may have adverse effects on neurobehavioral development.”

*X Wang et al. Cytokine 110 (2018) 137–149.

How Aluminum Works*

- Aluminum hydroxide stimulates immune cells to produce proinflammatory cytokines that activate T cells.
- Activated T cells release IL-4 which increases expression of antigen-presenting molecules to enhance immune response

My Conclusion:

- IL-4 expressed in response to Hep-B at birth is due to its aluminum hydroxide adjuvant

* M Ulanova et al. Infection and Immunity 2001; 69(2): 1151-1159.

Autistic Brains have High Aluminum Levels*

"I did not see a role for aluminum in autism. And I didn't see a role for aluminum in vaccines in autism. I have to change my mind now on both of these. I have to change my mind that aluminum has a role in autism. I believe it now does."

– Dr Chris Exley, 2017.

* <http://vaccinepapers.org/high-aluminum-content-autistic-brains>

Sheep Exposed to Aluminum Adjuvant

- Aluminum-containing vaccines may be responsible for a strange new neurological disease in sheep
- A study exposed lambs to multiple injections of either an Al-containing vaccine or aluminum alone*
 - Compared to controls, both groups showed anxiety and antisocial behavior
- A separate study demonstrated that aluminum had accumulated in granulomas that formed in the lymph nodes of the exposed sheep**

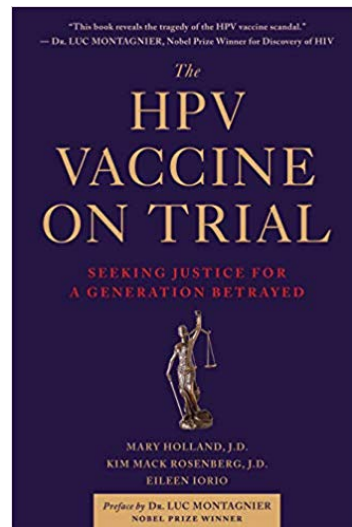


*J Asín et al. Pharmacological Research Nov 3, 2018 [Epub ahead of print]

**J Asin et al. Veterinary Pathology Oct 31, 2018 [Epub ahead of print]

New Book on Dangers of HPV Vaccine

"A Groundbreaking Exposé to the HPV Vaccine and the Science, Safety, and Business Behind It" by Mary Holland, Kim Mack Rosenberg, and Eileen Iorio.



“A lowered probability of pregnancy in females in the USA aged 25–29 who received a human papillomavirus vaccine injection”*

“For married women, 75% of the group not exposed to the HPV vaccine conceived, while only 50% of the exposed group had been pregnant at least once. Results suggest if 100% of the females in this study had received the HPV shot, the number of women who had ever been pregnant would have fallen by 2 million.”

- Data obtained from National Health and Nutrition Examination Survey (NHANES)
- An observed adverse reaction to HPV vaccination is primary ovarian failure

*G. DeLong. Journal of Toxicology and Environmental Health, Part A 2018 [Epub ahead of print]

Vaccines and Anti-phospholipid Syndrome (APS)*,**

- APS is an autoimmune disease causing venous thrombosis, fertility issues and pregnancy complications
- Molecular mimicry of microbial antigens leads to production of pathogenic autoantibodies in lupus and APS
- Experimentally, tetanus toxoid plus aluminum adjuvant induces antibodies associated with APS
- Many of the adverse reactions to Gardasil are symptoms of APS

*L Dimitrijevic et al. Lupus (2012) 21, 195–202

**P Cruz-Tapias et al. Curr Opin Rheumatol. 2012 Jul;24(4):389-93.

“Cancer immunology, bioinformatics and chemokine evidence link vaccines contaminated with animal proteins to autoimmune disease: a detailed look at Crohn’s disease and Vitiligo”*

”Abstract: ... The above findings add to the growing evidence of vaccines inducing autoimmune diseases. Autoantibody and autoreactive T cell levels can vary from person to person.

Not everyone will develop overt disease. For every case of diagnosed autoimmune disease, there are numerous subclinical cases. These subclinical diseases could shave decades off your life. So `rare' diagnosed vaccine adverse events are the tip of the iceberg."

*V Arumugham and MV Trushin. J. Pharm. Sci. & Res. 2018; 10(8): 2106-2110.

**How Much More Evidence
Do We Need?**

“Is Agriculture’s Use of Glyphosate Feeding Lake O’s Explosive Algae Blooms?”*

- Sugar cane agriculture is extensive all around Lake Okeechobee in S. Florida, and glyphosate is used both to control weeds and as a desiccant



- Cyanobacteria can break down the C-P bond in glyphosate and use its phosphorus atom as a fuel source**

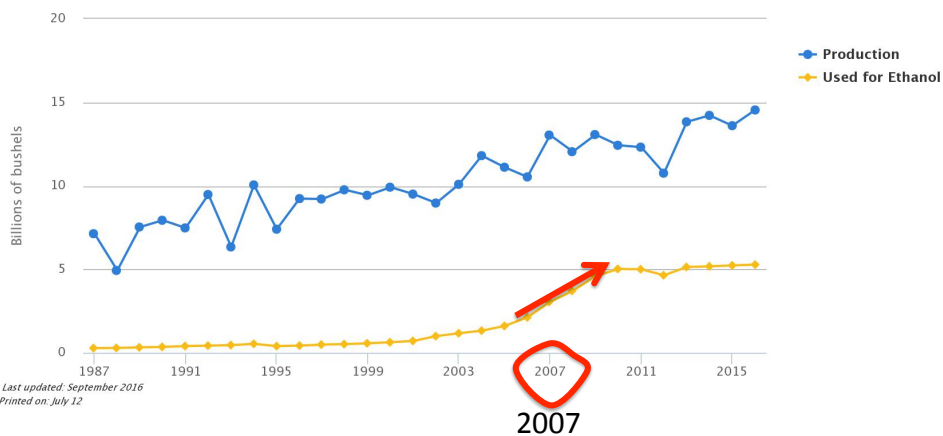
*Prof. Geoffrey Norris.

<https://jacquithurlowlippisch.com/tag/is-sugarcane-field-glyphosate-feeding-lake-os-blue-green-algae-blloms>

**D Drzyzga et al. Environ Microbiol 2017 Mar;19(3):1065-1076

Corn for Ethanol Production*

U.S. Total Corn Production and Corn Used for Fuel Ethanol Production



Last updated: September 2016
Printed on: July 12

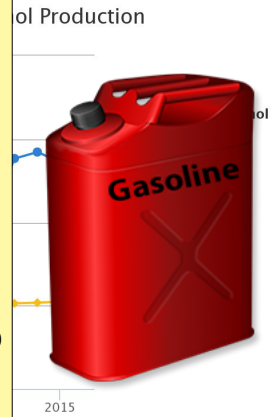
Karen Perry Stillerman, July 17, 2018

<https://blog.ucsusa.org/karen-perry-stillerman/the-midwests-food-system-is-failing-heres-why>

Corn for Ethanol Production*


“Today’s corn crop is mainly used for biofuels (roughly 40 percent of U.S. corn is used for ethanol) and as animal feed (roughly 36 percent of U.S. corn, plus distillers grains left over from ethanol production, is fed to cattle, pigs and chickens). Much of the rest is exported. Only a tiny fraction of the national corn crop is directly used for food for Americans, much of that for high-fructose corn syrup.”

Billions of bushels
Last Prints




Karen Perry Stillerman, July 17, 2018

<https://blog.ucsusa.org/karen-perry-stillerman/the-midwest-food-system-is-failing-heres-why>



hanol Production*



<https://blog.ucsusa.org/karen-perry-stillerman/the-midwest-food-system-is-failing-heres-why>

Why are dead lobsters, crabs and herring washing up along this Nova Scotia shore? *

December 27, 2016

Boxing Day find comes after weeks of reports of dead herring washing up along shores

By Michael Gorman, CBC News Posted: Dec 27, 2016 11:48 AM AT | Last Updated: Dec 27, 2016 12:26 PM AT



Dead Whale

“A marine mystery is confounding residents of southwest Nova Scotia who are watching thousands of dead fish, starfish, crabs, clams, scallops and lobster wash up on the shore.”

[*www.cbc.ca/news/canada/nova-scotia/fish-kill-off-st-marys-bay-lobster-clams-crabs-beach-1.3913265](http://www.cbc.ca/news/canada/nova-scotia/fish-kill-off-st-marys-bay-lobster-clams-crabs-beach-1.3913265)

The Answer to the Mystery!

Nova Scotia gives OK to spray hundreds of hectares of woodland with glyphosate

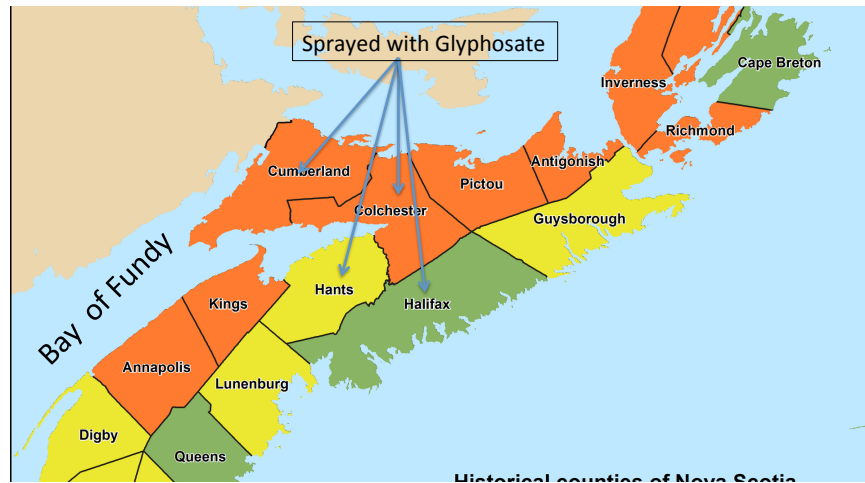
The province has approved the applications of Northern Pulp and five other companies to spray more than 2,600 hectares of woodland with VisionMax, a herbicide containing the active ingredient glyphosate. Northern Pulp will be carrying out about half of the spraying, which is intended to choke out hardwoods and provide for the unimpeded growth of coniferous trees.

11K

shares

Aug 31, 2016 9:05 PM by: Francis Campbell

Counties in Nova Scotia Where Forests Were Sprayed with Glyphosate



ENVIRONMENT FEATURED

Glyphosate spraying resumes in Nova Scotia forests

By Robert Devet - August 6, 2018

Approvals Issued for Spraying Environment

August 3, **August 3, 2018**

The Department of Environment has issued six new approvals for pesticide spraying covering about 1,351 hectares.

The approvals are all for forestry. Three are for aerial and three are for ground spraying.

Three previously issued multi-year approvals also allow spraying this year.



*<https://novascotia.ca/news/release/?id=20180803004>

Warning of 'ecological Armageddon' after dramatic plunge in insect numbers

Three-quarters of flying insects in nature reserves across Germany have vanished in 25 years, with serious implications for all life on Earth, scientists say



▲ Flying insects caught in a malaise trap, used by entomologists to collect samples. Photograph: Courtesy of Entomologischer Verein Krefeld

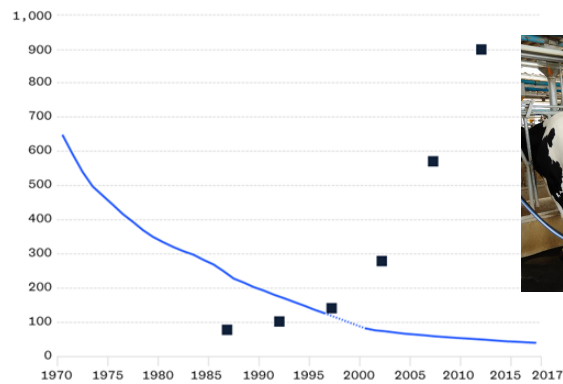
<https://www.theguardian.com/environment/2017/oct/18/warning-of-ecological-armageddon-after-dramatic-plunge-in-insect-numbers>

CAFO Cows are Now the Norm*

The fall of small dairy

And the rise of commercial farming.

■ U.S. Dairy Farms (thousands) ■ Cows per Farm (Median)



Source: USDA



<https://www.nbcnews.com/news/us-news/best-advice-u-s-dairy-farmers-sell-out-fast-you-n887941>

GMO Roundup-Ready Bentgrass*

"Agribusiness companies are very quick to sue farmers when their fields are found to contain their genetically engineered plants, ... but somehow they never seem to suffer from the same problem in reverse when their engineered products threaten the produce of farmers who do not want their products."



"What happens when American agricultural products are so tainted with GMO contaminated crops of plants that countries with stricter regulations quit buying from the USA altogether?"

*gizadeathstar.com/2018/07/the-gmo-bentgrass-problem-growing-out-of-control/

Glyphosate Resistant Weeds



Alternative Herbicides?

- New on the market: Dicamba-resistant soy
- 4% of all soy grown in the US was destroyed by dicamba *drift* last year.
- Dicamba drift is also killing trees, other crops and flowering plants in private gardens
- *What is it doing to humans?*



Fighting Back

MOMS ACROSS AMERICA

America is in a Health Crisis 

- 1 out of 2 children have a chronic illness
- 1 out of 2 males and 1 out of 3 females are expected to get cancer
- 1 out of 5 have a mental illness
- 1 out of 6 has a learning disorder

WE CAN DO BETTER!

HOW?

Reduce exposure

Take steps in 5 areas restore health to your family.


Be UNSTOPPABLE for health, freedom, and the future of our country!



Zen Honeycutt



Tony Mitra




To: Maneka Gandhi
Minister - Women & Child Development, Government of India.
gandhim@sansad.nic.in
Date: Sunday, September 16, 2018

Subject: Glyphosate, birth defects and mass poisoning of India

Minister Gandhi,

I am an Indian-born Canadian citizen, holding an overseas citizen of India status. I am a retired engineer and a food security activist currently visiting India. I have reason to suspect India might be getting mass poisoned through man made toxins in food, water and environment. This has the potential to simultaneously collapse India's healthcare system and agriculture, unless the danger signs are taken note of and corrective measures implemented immediately. ~~That is why I write to you.~~



I had been particularly concerned about glyphosate, the active ingredient in the popular weed killer Roundup. Glyphosate is far and away the most used herbicide in the planet including in India, and also the most controversial. No country was testing foods for presence of this systemic herbicide and antibiotic. People who long suspected it to be linked to a runaway increase of a series of autoimmune and other diseases did not have means to figure out which foods were contaminated and which were not.

I had, after years of struggle with the Canadian Government, finally gotten it to test several thousand samples of foods grown locally and also imported, for presence of glyphosate, and to hand me all the results. Analysis of those results proved what many were already suspecting - that North America produced the most poisonous foods on earth because of high glyphosate contamination. I had the analyzed data published in a 400 page book titled Poison Foods of North America, on Amazon.

Tony Mitra



"I am an Indian-born Canadian citizen, holding an overseas citizen of India status. I am a retired engineer and a food security activist currently visiting India. I have reason to suspect India might be getting mass poisoned through man made toxins in food, water and environment. This has the potential to simultaneously collapse India's healthcare system and agriculture, unless the danger signs are taken note of and corrective measures implemented immediately."

Article in Newspaper in India

Imported lentils laced with weed killer

S.N.V. SUDHIR | DC
VIJAYAWADA, JULY 18

Indians are consuming highly toxic lentils (masoor dal) and moong dal that are imported from Canada and Australia respectively. The lentils and moong dal are induced with the herbicide Glyphosate, that is being used by Canadian and Australian farmers indiscriminately to clear weeds.

Tests conducted by the Canadian Food Inspection Agency (CFIA) on thousands of samples of these lentils and moong dal grown by farmers in Canada and Australia found an average 282 parts per billion (PPB) and 1,000 parts per billion of glyphosate respectively, which is extremely high on any standards.

Some lentils that were imported from India by some Canadian restaurants showed 25 parts per billion of glyphosate. India has been traditionally the biggest producer and consumer of pulses.

Recently, it has also become a huge importer of pulses.

On an average, India has been importing 5 to 7 million tonnes of pulses annually. Almost half this quantity is imported from Canada and Australia and the rest from Myanmar, Ukraine, Russia and some African countries. Glyphosate is known to be highly toxic and harmful to health. It can adversely

Farmers warned against using glyphosate without proper gear

DC CORRESPONDENT
VIJAYAWADA, JULY 18

Food safety and agricultural scientists are warning that the use of glyphosate may prove lethal. They are citing the example of Sri Lanka, where many sugarcane farmers died due to

affect immunity to serious diseases and the absorption of mineral and vitamin nutrients, apart from disrupting protein-related functions.

"India appears to import a lot of pulses from Canada, Australia and Myanmar. I have seen test records of Canadian grown pulses which are all desiccated by glyphosate. I also have seen results of test on Australian moong dal (known as moong beans in Canada) as tested by the CFIA which also had over 1,000 parts per billion of glyphosate." Indian-born Canadian food security activist Tony Mitra, who made the CFIA test on these pulses for Glyphosate told this newspaper.

"India is also importing these pulses. Consumers do not seem to know if or when

renal failure after being overexposed to the herbicide.

Glyphosate is a popular herbicide among farmers in the Telugu speaking states. Glyphosate is officially allowed to be used in only tea gardens, but is available across the coun-

try under various names and brands. "While farmers have to wear astronaut suit kind of gear while using glyphosate, it's not the case in countries such as India and Sri Lanka," said Mr. Tony Mitra, Indian born Canadian food security activist.

"While it is mandatory to label organic products, imported pulses are not labelled. It's very difficult to find out if we are consuming Canadian pulses or locally grown ones, if they are sold in loose. In some supermarkets, they label the country of origin where we will have a choice whether to buy the packet or not," said Dr G.V. Ramanjaneyulu, agricultural scientist and founder of Centre for Sustainable Agriculture.

"At the entry points, these imported pulses are not being checked for glyphosate residue due to which pulses induced the highly toxic chemical from other countries are making their way into India and ultimately into the stomachs of Indians," he said.

ACTIVIST FORCES CANADA TO TEST FOOD SAMPLES

DC CORRESPONDENT
VIJAYAWADA, JULY 18

An India-born Canadian citizen, Mr Tony Mitra, has made the Canadian government test food samples for glyphosate, a dangerous herbicide. It took years of effort for Mr Mitra, a retired marine engineer and has turned food security activist, before the Canadian government agreed.

The testing revealed that pulses that are imported to India from Canada and Australia are highly toxic. "It took almost five years to make the Canada government test food items and agricultural products imported from outside for glyphosate."

He said the CFIA had collected thousands of samples and the results were shocking. "That is how I came to know that extremely toxic pulses, grown in Canada and Australia, are being imported by India," Mr Mitra said.

He said the people in India need to find ways to force their government to initiate broad-based testing of food. "This is the only way Indian consumers will know how much of glyphosate they are consuming daily from their food," he said.

Tony Mitra speaking to crowds of Indian Farmers and Villagers



Villagers in Bankura, West Bengal, India.

North Dinajpur in Northern Bengal, India.



@Tonymitra

BJD seeks shield against contaminated pulses

Post News Network — Updated: July 30th, 2018, 22:23 IST

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SHARES VIEWS

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New Delhi: Biju Janata Dal (BJD) MP Bhartruhari Mahtab Monday sought strict import policy to protect citizens of the country from contaminated pulses which are being imported from other countries.

<http://www.orissapost.com/bjd-seeks-shield-against-contaminated-pulses/>

Local Activism*



Photo: Beth Nakanuza For The Intercept

HOW A RAGTAG GROUP OF OREGON LOCALS TOOK ON THE BIGGEST CHEMICAL COMPANIES IN WORLD — AND WON



Sharon Lerner

September 15 2018, 9:00 a.m.

*<https://theintercept.com/2018/09/15/oregon-pesticides-aerial-spray-ban/>

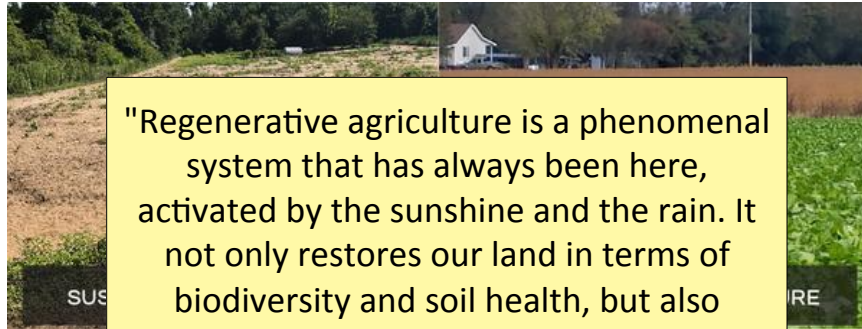
Regenerative Agriculture*



- The Goal: Improving soil health
- The more plants that grow, the better the soil
- Use adaptive high stock density grazing, the way the bison did it

*<https://joyce-farms.com/blogs/news/joyce-farms-regenerative-agriculture-program-an-introduction>

Regenerative Agriculture*



"Regenerative agriculture is a phenomenal system that has always been here, activated by the sunshine and the rain. It not only restores our land in terms of biodiversity and soil health, but also produces incredibly nutrient dense, vibrantly flavored food."

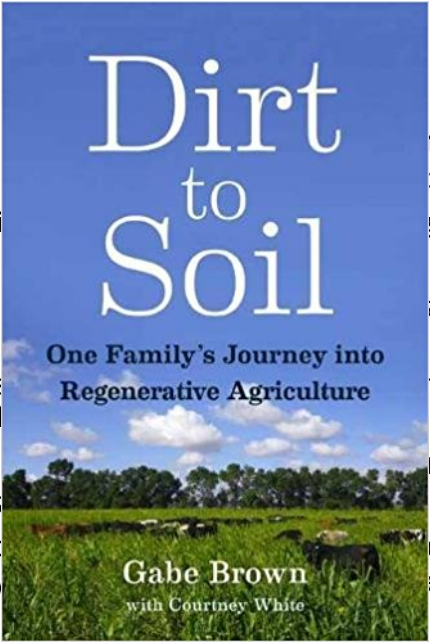
- The Go
- The more plants that grow, the better the soil
- Use adaptive high stock density grazing, the way the bison did it

*<https://joyce-farms.com/blogs/news/joyce-farms-regenerative-agriculture-program-an-introduction>

Dirt to Soil*

- Gabe Brown inherited a 5,000 acre farm from his father-in-law that grew wheat, oats and barley, conventionally
 - His crop failed due to drought for four straight years
 - He let it lie fallow and let the weeds grow
 - The soil improved dramatically: earthworms started to appear
 - He used less glyphosate to control weeds only because he couldn't afford it
- He eventually converted it to a certified organic farm, with animals playing a central role
 - Profitable organic farm produces beef, lamb, eggs, broilers, pigs, honey, vegetables, fruit , corn, and wheat.

*Gabe Brown. Dirt to Soil. Chelsea green Oct. 11, 2018.



Dirt to Soil
One Family's Journey into Regenerative Agriculture
Gabe Brown with Courtney White

- Gabe Brown from his father-in-law that g conventionally
 - His crop fai ght years
 - He let it lie
 - The soil im s started to appear
 - He used les ily because he couldn't aff
- He eventuall rganic farm, with animals
 - Profitable c , eggs, broilers, pigs, honey eat.

*Gabe Brown. Dirt to Soil. Chelsea green Oct. 11, 2018.

Five Principles of Agriculture*

- 1. Limit mechanical, chemical, and physical disturbance of the soil**
 - Tillage diminishes complex mycorrhizal fungi networks
- 2. Maintain Armor on the soil surface**
 - Grow a high-carbon cover crop
- 3. Build Diversity**
 - A six-species blend yields 2 to 3 times as much biomass as a single-species cover crop
- 4. Keep Living Roots in the Soil**
 - It is critically important to have as many roots in the soil as long as possible throughout the year.
- 5. Practice Animal Integration**
 - A plant that has been grazed will photosynthesize more and pump much more liquid carbon into the soil

*Gabe Brown. Dirt to Soil. Chelsea green Oct. 11, 2018.

Management of Soil Mulch in Weed Suppression and Sugarcane Productivity*

- Growing a cover crop during the off season:
 - Increases macro and micronutrients
 - Increases organic matter
 - Increases nitrogen availability
 - Suppresses weeds
- Mashing the cover crop down ("mechanical topple") results in improved crop yield (sugar cane) 60 days after planting, compared to using glyphosate to kill the cover crop



*DCO de Cerqueira et al. Journal of Agricultural Science 2018; 10(8): 125-132.

How to Stay Healthy in a Toxic World



Eat Natural Probiotic Foods

- Sauerkraut and apple cider vinegar contain acetobacter, one of the very few microbes that can metabolize glyphosate
- Kombucha and kimchi do too!



Kefir: Natural Probiotics*

- Kefir is a fermented milk product originating in the Caucasus mountains centuries ago
- Can be made from milk from cows, sheep and goats
- Slightly sour and carbonated
- One of the most potent probiotic foods available



*<https://chriskresser.com/kefir-the-not-quite-paleo-superfood/>

Making Bone Broth a Staple in Your Diet May Be the Key to Improving Your Health*



*articles.mercola.com/sites/articles/archive/2014/09/21/hilary-boynton-mary-brackett-gaps-cookbook-interview.aspx

Beneficial Effects of the Amino Acid Glycine*

- Glycine is a precursor to heme synthesis and supplies methyl groups to methyl folate
- Glycine is one of the amino acids in glutathione
- Glycine is an inhibitory neurotransmitter at the GABA receptor and an excitatory neurotransmitter at the NMDA receptor
- Glycine is one of the 20 or so coding amino acids assembled into proteins
- *Glyphosate's disruption of glycine-dependent metabolic pathways may necessitate increased demand for glycine*

*I Pérez-Torres et al. Mini-Reviews in Medicinal Chemistry 2017;17(1):15-32.

Mitochondrial Dysfunction and Chronic Disease: Treatment With Natural Supplements

Garth L. Nicolson, PhD

"Combinations of these supplements can reduce significantly the fatigue and other symptoms associated with chronic disease and can naturally restore mitochondrial function, even in long-term patients with intractable fatigue."

1. L-carnitine
2. α -lipoic acid
3. coenzyme Q10
4. membrane phospholipids
5. nicotinamide adenine dinucleotide (NADH)

*GL Nicolson. Integrative Medicine 2014;13(4):35-43.

Some Other Important Nutrients

- Curcumin
- Garlic
- Vitamin C
- Methyl tetrahydrofolate
- Cobalamin
- Glutathione
- Taurine
- Epsom salt baths



Biochar, Bentonite and Zeolite to maintain healthy microbial distribution in poultry*



*TP Prasai et al. PLoS ONE 11(4): e0154061.

Anecdotal Evidence of Benefits of Fulvic Acid*

*"In the last year I have become increasingly sick with ataxia, balance problems, muscle weakness, numbness in the hands and feet and a 'foggy' brain ... To cut a long story short, Jim suggested **Fulvic Acid** as a detox.*

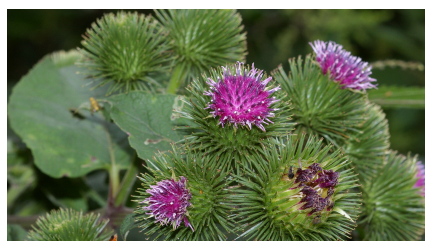
At 10 days the effects started to 'kick in' and by 14 days it was as if a fog had been lifted from my brain. My muscle weakness has gone, I can walk for 2 hours and I can swim in the sea."

"It is a miracle."

*Shared by Nico DaVinci, personal communication concerning a patient

Extracts from Common Plants Can Treat Glyphosate Poisoning*

- Roundup is toxic to hepatic and embryonic cells at doses far below those used in agriculture and at residue levels present in some GM food.
- Extracts from common plants such as dandelions, barberry, and burdock can protect from damage, especially if administered prior to exposure.



*C Gasnier et al. Journal of Occupational Medicine and Toxicology 2011, 6:3

Waterfalls are Therapeutic!*

Waterfalls produce inhalable, *negatively charged* nano-water particles known as “Lenard ions” or ballo-electric ions

“Conclusions: Our study provides new data, which strongly support an “added value” of exposure to waterfall microclimate when combined with a therapeutic sojourn at high altitude including regular physical activity.”



*C Grafetstätter et al. Physiol Anthropol. 2017; 36: 10.

Conclusions

- We are at a crossroads where we can choose to get sicker and sicker while destroying the ecosystem, or we can choose to drastically change our agricultural methods towards renewable organic solutions
- Grass roots bottom-up activities will institute a dramatic shift in food choices towards nutrient-dense organic whole foods instead of chemical-contaminated impoverished processed foods
- A market-driven economy will force farmers to switch to organic methods if they want to sell their crops to informed and health-conscious consumers
- This will lead to a dramatic reduction in health care costs and a vast improvement in the health of the population as a whole, of the nation, and of the earth