



Impact of Glyphosate on Human Health



Leslie Embersits
Executive Director & CEO

Nutrition | Public Cooking Demonstrations



Ghee | Helen Padarin



Grain-free Bread | Jo Whitton



Bone Broth Soup | Soulla Chamberlain



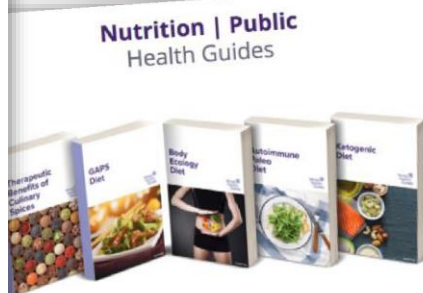
Bone Broth | Helen Padarin



Feed Your Mitochondria | Helen Padarin & Charlotte



Mindd HEALTH HUB



Gluten Free/Casein Free Therapeutic Diet Plan



Download & Resources

Mindd Health E-Guide Gluten Free Casein Free Diet



GAPS Therapeutic Diet Plan

Video Lectures Mindd TV Articles Discussion & Comments

Functional Medicine | Practitioner Video Lectures

Functional Medicine is a patient-centred, preventative approach to health care that focuses on treating the underlying cause of disease in the individual.

Functional practitioners understand and avoid the limitations of conventional medicine which focuses on labels and symptoms. From a functional perspective, aspirin is not the solution for a headache if it's a thorn in the foot causing the headache.

Functional practitioners also understand that the same condition can be caused by different reasons in different people. ADHD symptoms in some may be caused by mineral deficiencies and in others by toxins or infections.

Functional medicine offers hope and real solutions.

Functional Medicine	Conventional Medicine
Eliminates root cause	Symptom treatment
Treats the individual	Treats the Disease
Preventative	Reactive
Patient-Practitioner Partnership	Doctor as "expert", one-way communication
Cost-effective	Expensive
In sync with nature (human health > planet health)	Toll on natural resources and environment

The following video lectures by top Functional Paediatricians provides invaluable clinical insights and tips.

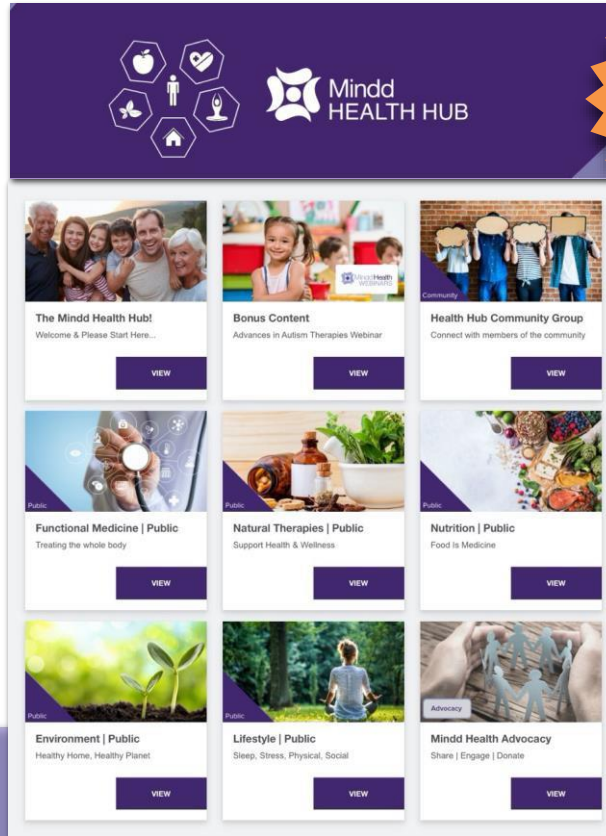


Complex Chronic Illness: The New Normal | Dr Elizabeth Mumper



Mindd Health Hub

Cutting edge learning,
discovery, training
videos and online
community resources



Family Resources

Mindd
goes
digital

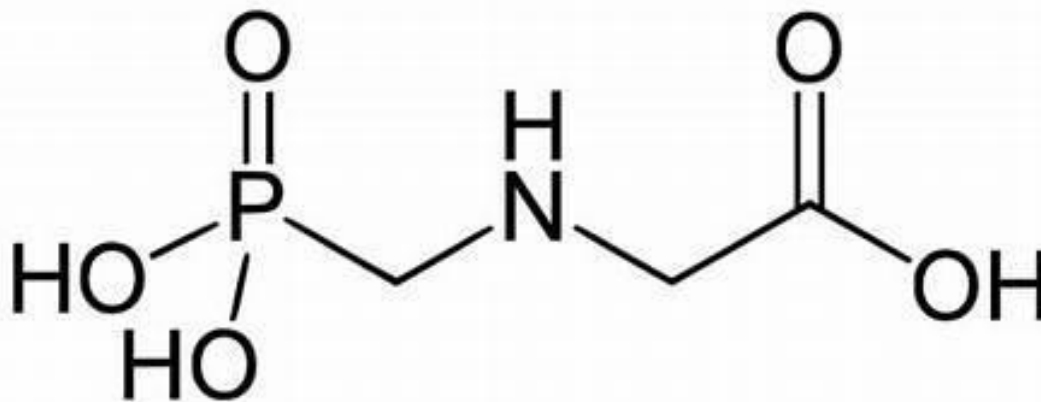


Practitioner Training (CPD points...)

What is Glyphosate?

Professor Stephanie Seneff of MIT calls it a “fascinating molecule” with “disastrous” consequences to human health

- Glyphosate is a popular herbicide or weed killer produced by the biotech conglomerate Monsanto
- Its an organophosphate that is water-soluble so, it tends to go everywhere
- It's a chelating agent so it depletes minerals in the food supply
- “Non-selective” herbicide that kills most plants



Where is it used?

Glyphosate was classified by The World Health Organisation's team as a "likely carcinogen" in 2015. Response varies by country.

- an estimated 5 billion pounds of Roundup continue to be used in more than 160 countries each year
- used heavily on numerous vegetable crops in the U.S., Australia and Canada (Europe & Russia have tighter regulation)
- used on 85% of U.S. soy, corn and cotton crops. also used extensively on sugar, canola, beet, oat and legumes crops in U.S. for weed control
- Over 80% of US wheat is sprayed to dry it out quickly for more efficient harvesting
- In 2018 Carex Canada reported 176 products contained glyphosate (34 registered for domestic use) and an average of 25,000,000 kg of "active ingredient" per annum.
- used in 100s of millions of homes globally to kill household weeds
- sprayed in local parks & golf courses in US & Australia
- Sri Lanka and Bermuda have banned it. France and Germany are phasing it out. Dozens of countries in South America, Asia and Europe have placed restrictions on sale and usage. Russia limits use. There are no restrictions in the U.S. and limited local restrictions in Australia and Canada.

Harms human health

Glyphosate Potential Harm

- Disruption of uptake and transport of essential minerals such as copper, zinc, phosphorous, selenium, iron, molybdenum both through chelating minerals from the plant as well as disrupting uptake of minerals in the human body
- Broad Spectrum antibiotic ⑦ Leaky Gut ⑦ autoimmune disorders, ADHD, Allergies, Autism, anxiety, Alzheimer's, depression, diabetes, celiac, ALS, MS, PANDAS/PANS
- Develops antibiotic resistance in people and livestock
- Alters the balance between pathogens and beneficial biota in the gut” or “gut dysbiosis” - ⑦ growth of harmful opportunistic infections like Clostridia Difficile, Bacteroides, Staphylococcus, Salmonella, Strep, Candida ⑦ many gut disorders; IBS, IBD, Celiac, constipation
- Impairs sulfate supply to the tissue which compromises our ability to detoxify – a key component of glyphosate's toxicity to humans.
- Inhibits enzyme function responsible for thousands of vital biological functions throughout the body in all organ systems

Harms human health

Glyphosate Potential Harm

- Joins with proteins and creates intolerances and allergies - milk, wheat, peanuts, sprayed w wheat, wine
- Damages endothelial cells that seal-in and protect the gut, the brain and the vascular system. “Leaky body”
- Endocrine disruption ⑦ Breast cancer, reproductive issues, obesity, thyroid
- Disrupts defenses to chemicals ⑦ cancer
- Dehydration ⑦ rapid ageing
- Glycine disrupts metabolism and results in slow poisoning ⑦ hundreds of diseases, amyloid plaque build-up in macular degeneration, Alzheimer’s, heart disease, food allergies

Harms planet health

- EPA research found that glyphosate could kill 93% of endangered species
[_https://www.epa.gov/endangered-species/draft-national-level-listed-species-biological-evaluation-glyphosate#executive-summary](https://www.epa.gov/endangered-species/draft-national-level-listed-species-biological-evaluation-glyphosate#executive-summary)
- Destroys soil biome rendering it unable to sequester carbon
- Association with dying off of dozens of insects and animals including pollinating bees that humans need for our food chain
- It is associated with algal blooms and marine life losses
- It disrupts the shikimate pathway in plants which in humans is equivalent to the gut microbiome

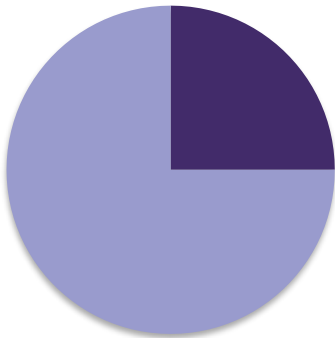


Chronic Illness

US Chronic illness trends - Children

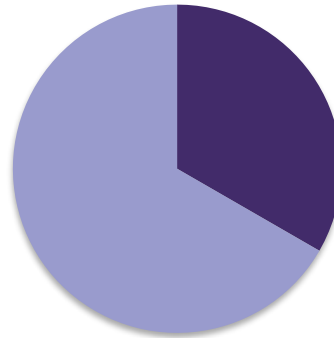
1 in 3

Anxiety]



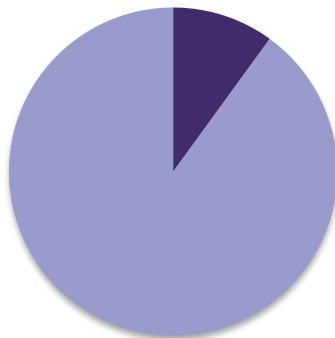
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Have allergies [2]



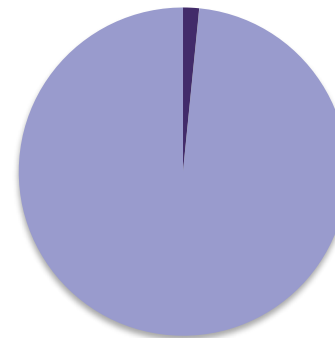
1 in 8

Have ADHD [4]



1 in 36

Have autism [5]

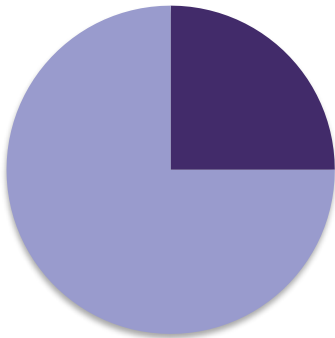


Chronic Illness

Chronic illness trends - Children

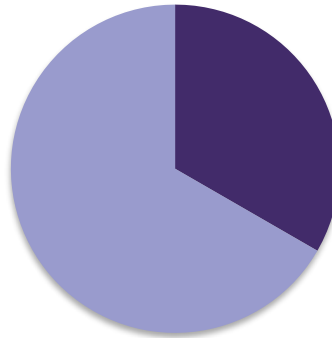
1 in 4

Have a mental condition [1]



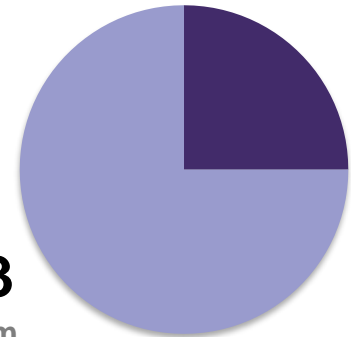
1 in 3

Have allergies [2]



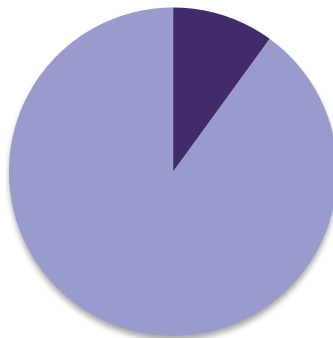
1 in 4

Have asthma [3]



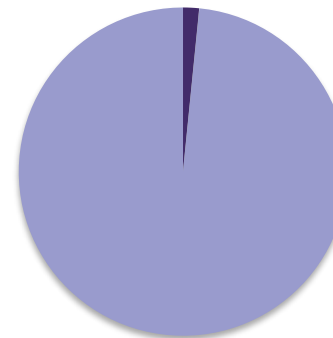
1 in 10

Have ADHD [4]



1 in 63

Have autism



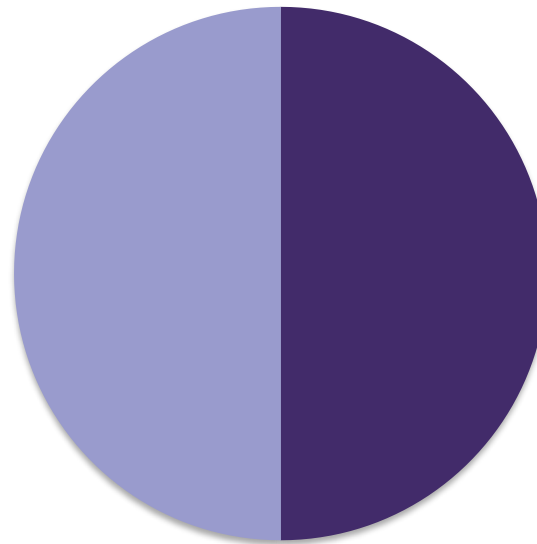
Childhood cancer, diabetes, obesity and depression have each more than doubled over the past 2

Chronic Illness

Chronic illness trends - Adults

1 in 2

1 in every 2 Australian adults (50%) have at least one prominent chronic disease



The Rise of Autism

*Autism Rates per U.S.A. Center for Disease Control



Disease Trends

56% of US children are struggling with chronic illnesses that in the past were considered adult disease.

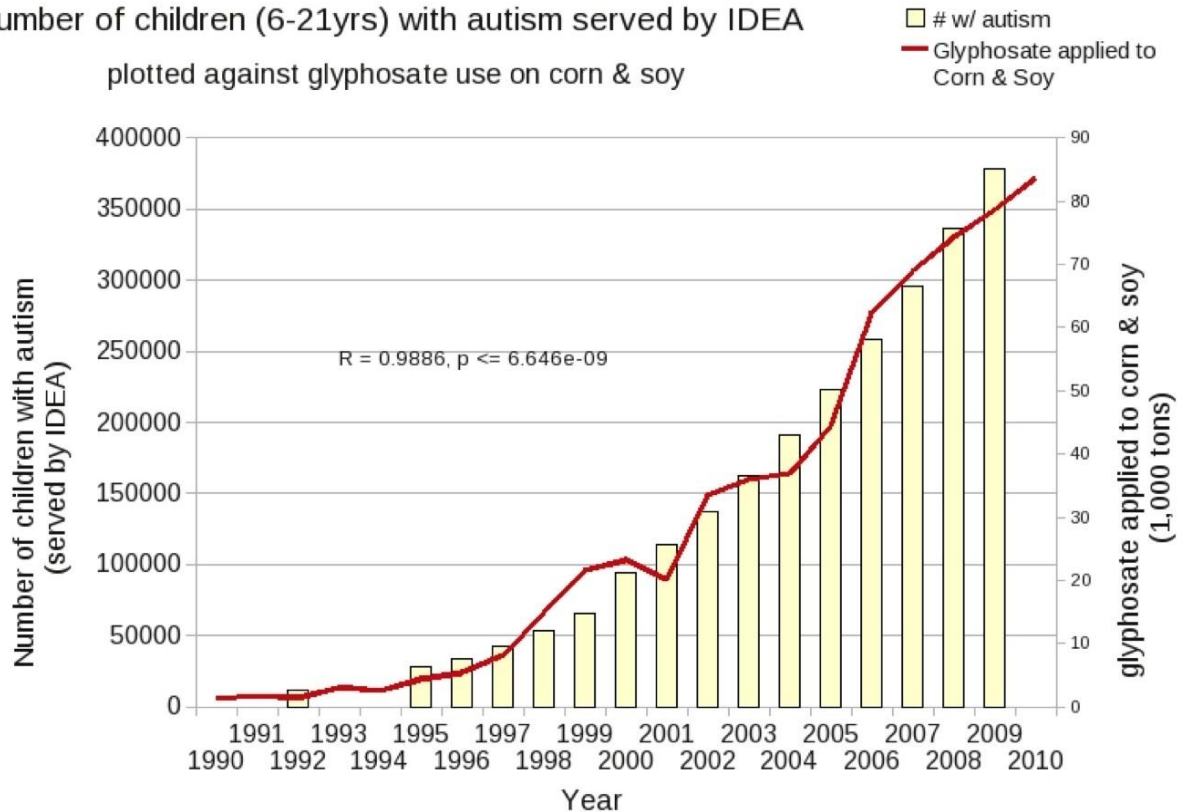
Many studies show a strong link between glyphosate and the epidemic of chronic illness that has skyrocketed over the past 2 decades that includes;

Autism	Cancer
ADHD	Chronic Fatigue
Alzheimers	Food Allergies
Anxiety, Depression	IBS, IBD, Crohns
Cancer	Auto Immune Disease

Autism

Glyphosate and Autism*

Number of children (6-21yrs) with autism served by IDEA
plotted against glyphosate use on corn & soy



Pearson Correlation Coefficient = 0.985

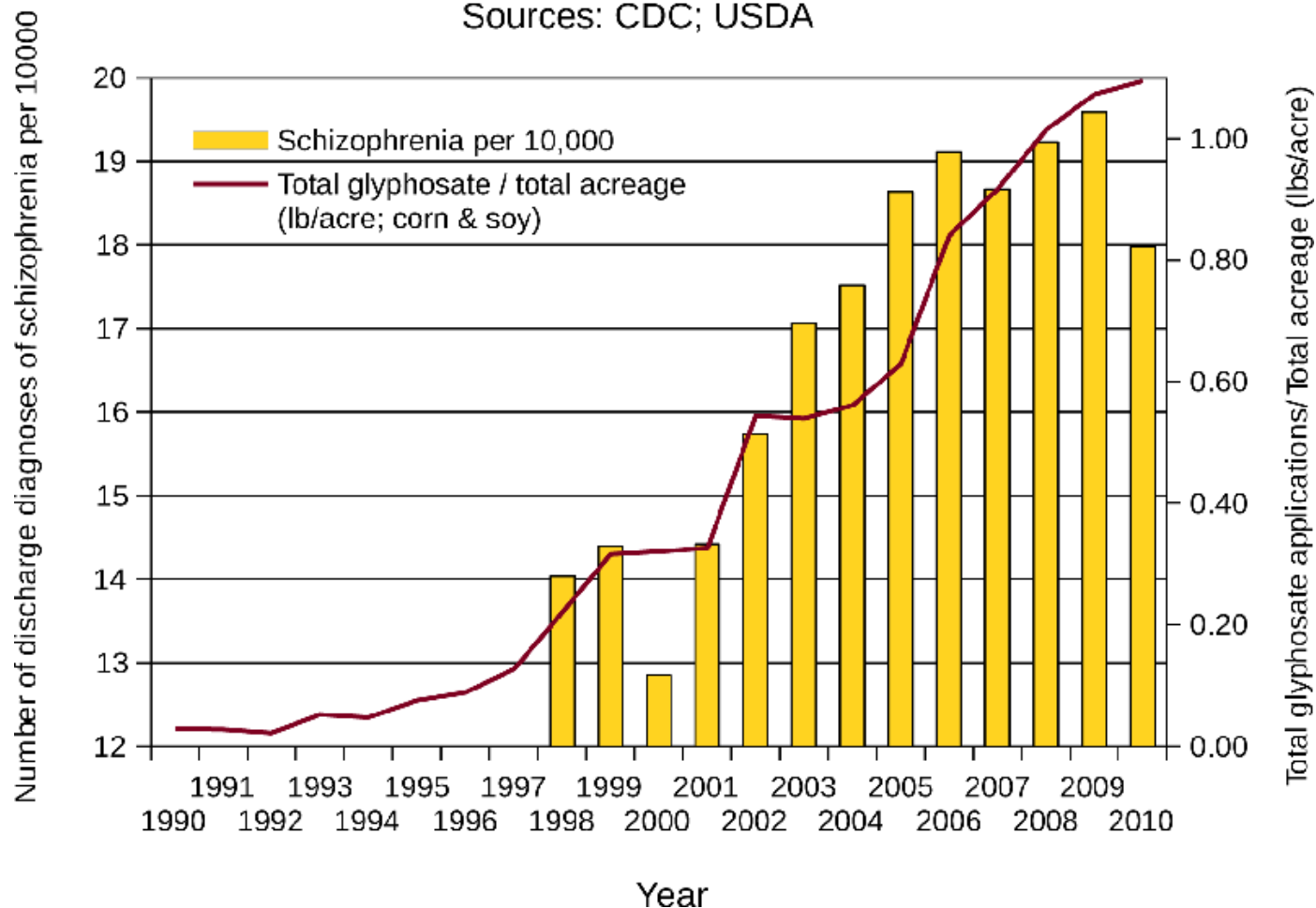
*Nancy Swanson, <http://www.examiner.com/article/data-show-correlations-between-increase-neurological-diseases-and-gmos>

Schizophrenia

Hospital Discharge Diagnoses of Schizophrenia (ICD 295) & Glyphosate applied to corn & soy crops

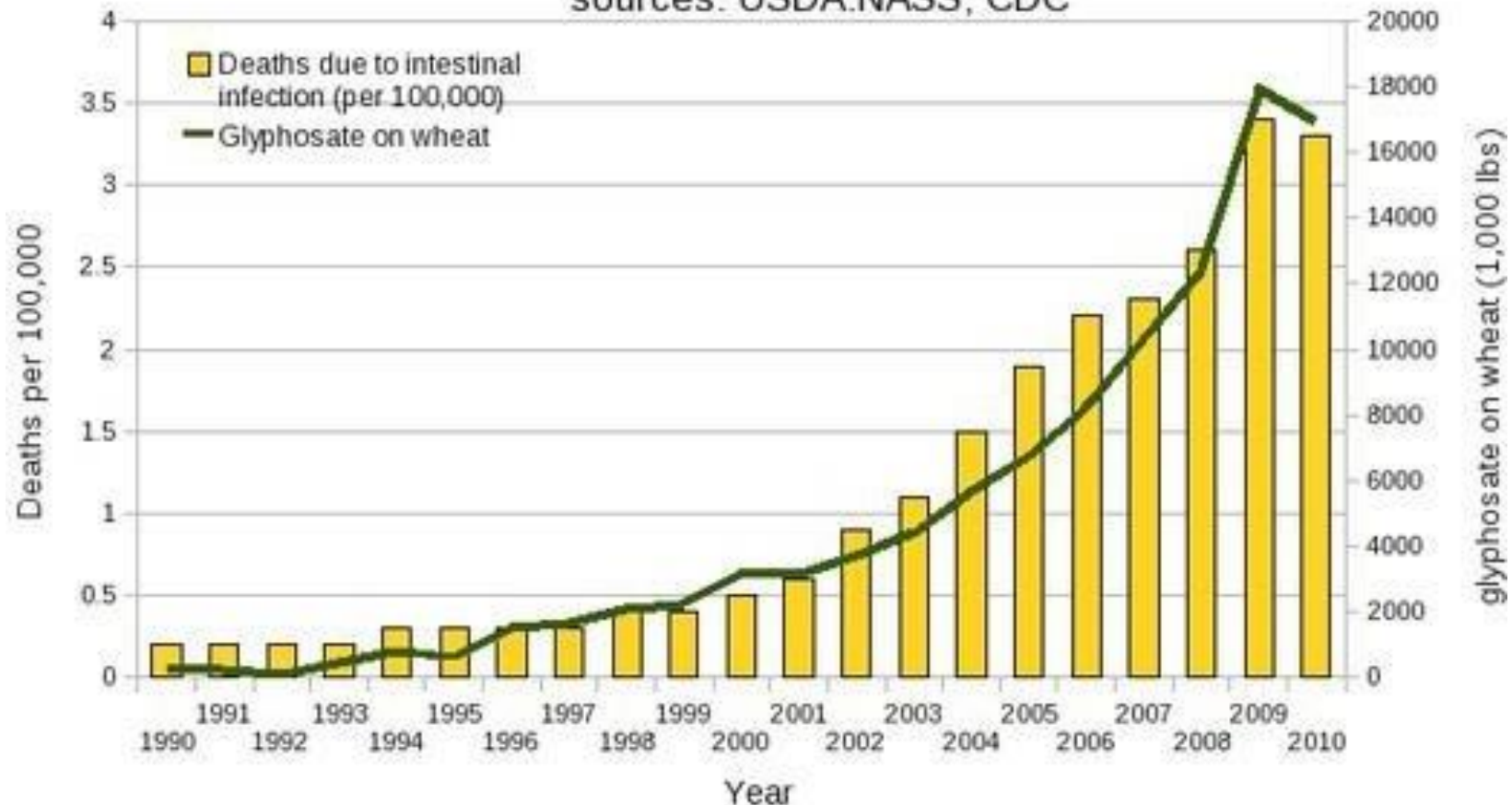
$R = 0.883$, $p \leq 0.00025$

Sources: CDC; USDA



Intestinal Infections

Deaths due to intestinal infections ICD A04, A09, 004, 009
with glyphosate applications to wheat ($R = 0.9834$, $p \leq 3.975e-09$)
sources: USDA:NASS; CDC



Celiac

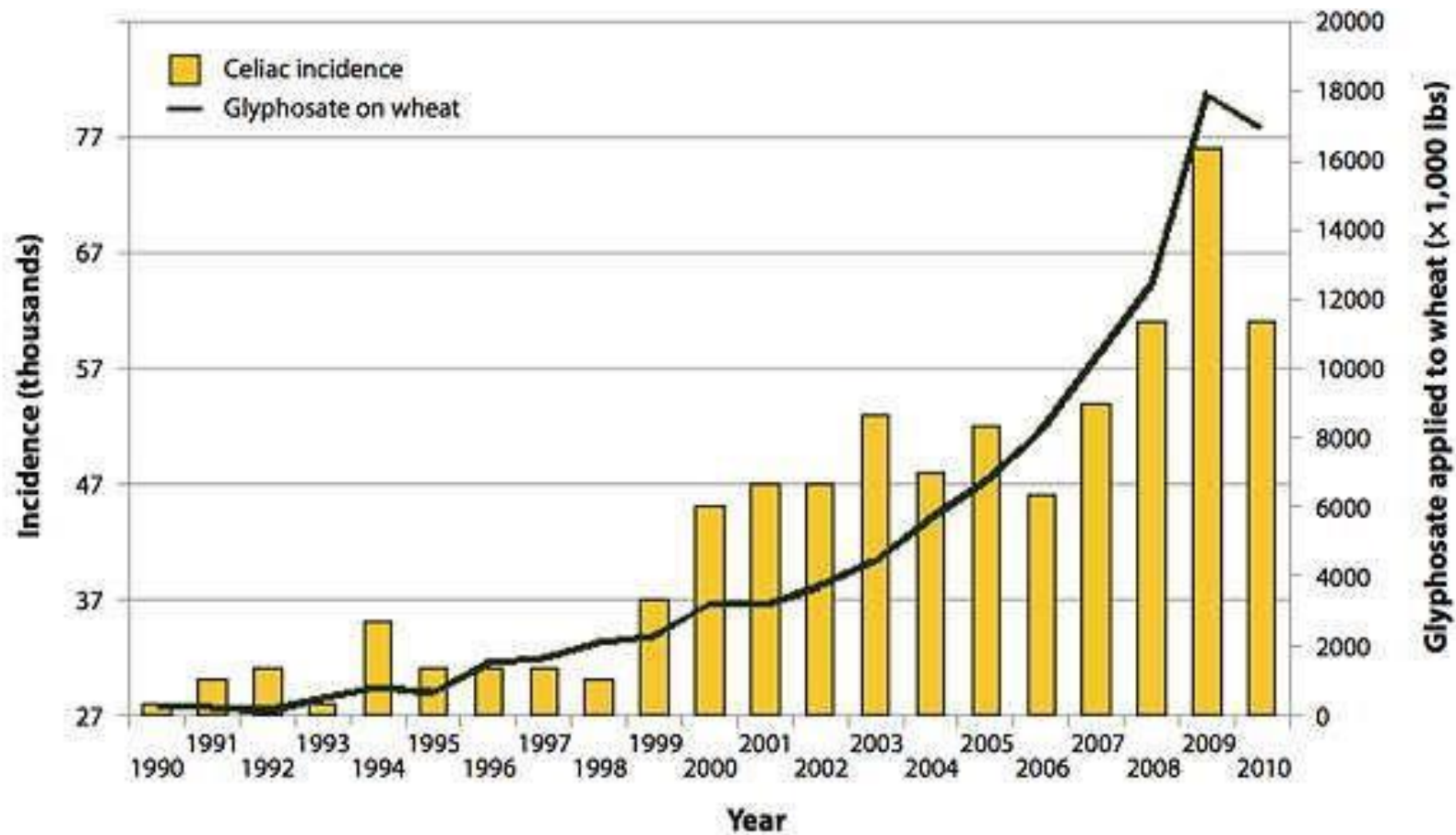


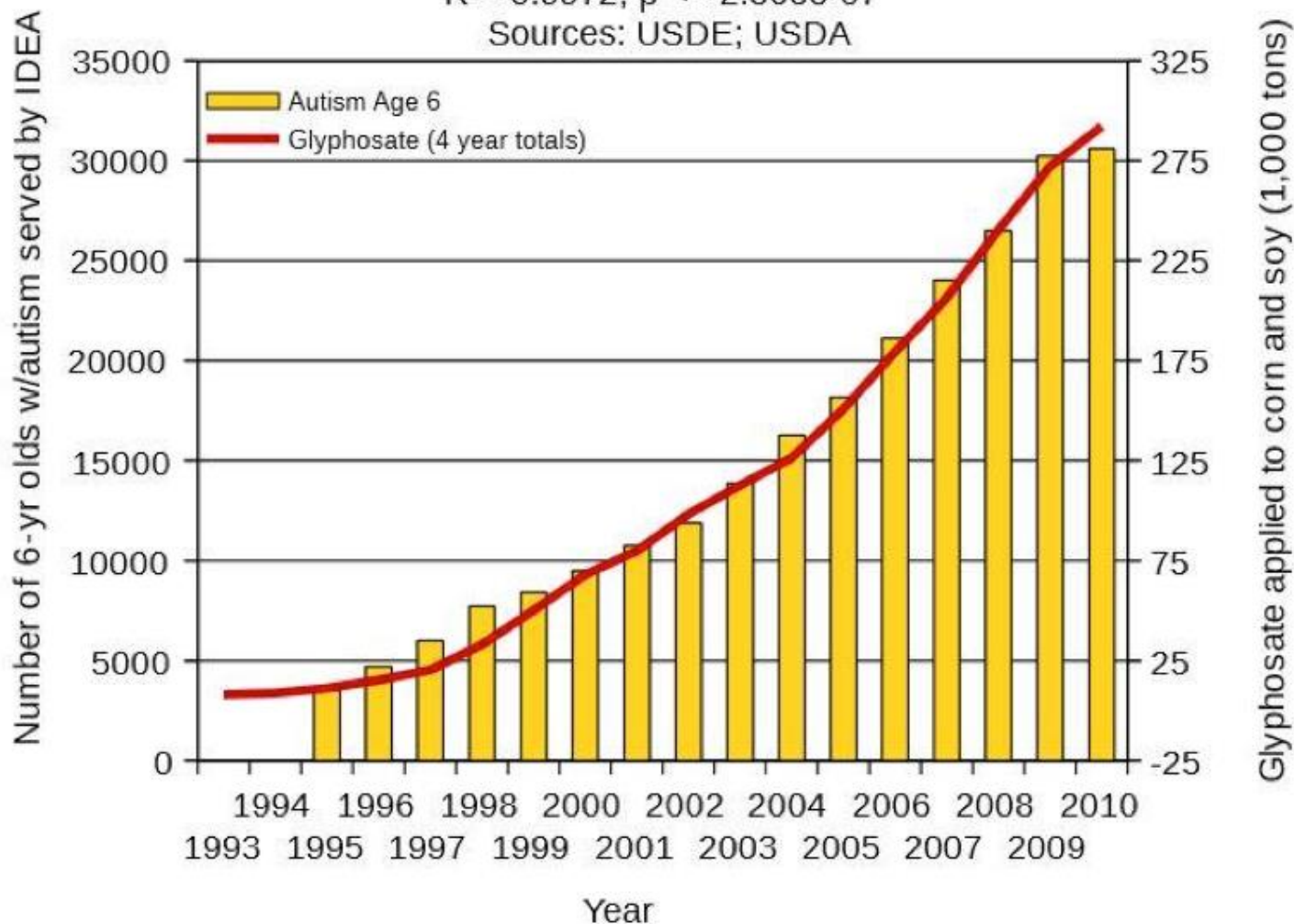
Figure 1. Hospital discharge diagnosis (any) of celiac disease ICD-9 579 and glyphosate applications to wheat ($R=0.9759$, $p \leq 1.862e-06$). Sources: USDA:NASS; CDC. (Figure courtesy of Nancy Swanson).

Autism

Autism Prevalence 6 yr-olds
& Glyphosate applied to corn & soy crops
glyphosate is total of year indicated + 3 previous years

$R = 0.9972$, $p \leq 2.366e-07$

Sources: USDE; USDA



COVID

Glyphosate Damage May Be a Factor in Severe COVID-19

“If you've accumulated a lot of glyphosate in your tissues, you're not going to do well with COVID-19, and that's because [your body] is trying to repair the mitochondria in the immune cells so that the immune cells can actually clear the virus. If they can't make ATP, they can't do their job, and the virus flourishes.”

Stephanie Seneff, PhD, MIT



Solutions

Eat & Drink Consciously

- 1.eat certified organic foods
- 2.eat fermented foods that help restore the microbiome and heal the gut
- 3.drink apple cider vinegar (reported to break down glyphosate in your body)
- 4.eat Sulphur-rich foods like eggs and seafood
- 5.eat mineral-rich foods like sea salt
- 6.enjoy Epsom Salt baths rich in sulphur
- 7.drink Glacier water - Deuterium deplete water
- 8.eat Deuterium low food - Organic grass-fed milk and butter, animal fats

Solutions

Ideas to run by your Integrative Practitioner

1. take high quality, clean supplements to offset deficiencies
2. supplement with fulvic and humic acid; bentonite clay, sauerkraut juice
3. Supplement with Restore by Dr Zac Bush
4. Take molecular hydrogen
5. Supplement with glycine - *“It makes sense because it's basically going to outnumber the glyphosate molecules,”* Seneff says. *“Remember, glyphosate’s going to compete with glycine in building the protein. If there's a lot of glycine around, then it's much less likely that glyphosate will get in there.”*

Mindd Health recommends working with a certified Integrative practitioner

Advocacy



S. Seneff PhD

“glyphosate will go down in history as the worst synthetic chemical this planet has ever faced, as a consequence of its perceived non-toxicity to humans and its massive use in agriculture and on people’s lawns with careless handling due to lack of awareness of its insidious, cumulative toxicity. “

“Inserts itself in protein chains as a substitute for glycine which disrupts the shikimate pathway (among many other resulting problems). This is a slow poisoning, an insidious and accumulative mechanism of toxicity that results in various acute illnesses depending on what protein chain it disrupts and the state of the individual’s microbiome.”

Stephanie Seneff, PhD, MIT



Zac Bush, MD

The rate of repair is hopeful, so my hope is really steeped in the speed at which biology responds to just a little break. So, if we can just stop the injury for a moment, Mother Earth and biology itself has such a resilient nature. Life itself is resilient, and will repair.

“I went from that world of chemotherapy and drug concepts and drug development to the sudden realization that there had never been a cancer caused by a lack of chemotherapy,” Bush told me. “And so, no matter how good I got at making chemotherapy, I was always going to be missing the point, missing the root cause of the situation.”

I'd say Roundup is our public enemy number one probably, but that's one of 260 chemicals that are now prevalent in our food system. So, we have completely chemicalized the human experience

<https://www.youtube.com/watch?v=4tBTv0I5-qk>

<https://www.salon.com/2019/10/14/why-dr-zach-bush-believes-herbicides-could-end-life-on-earth/>

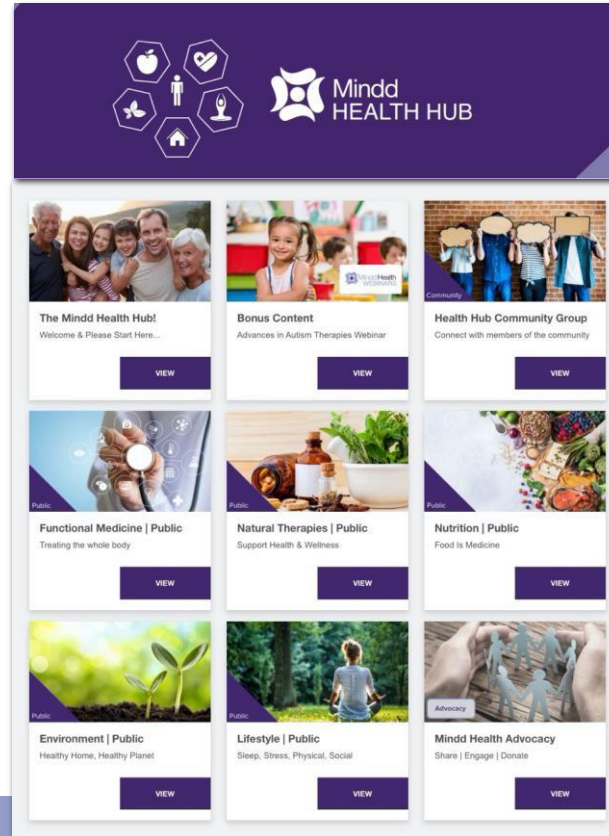




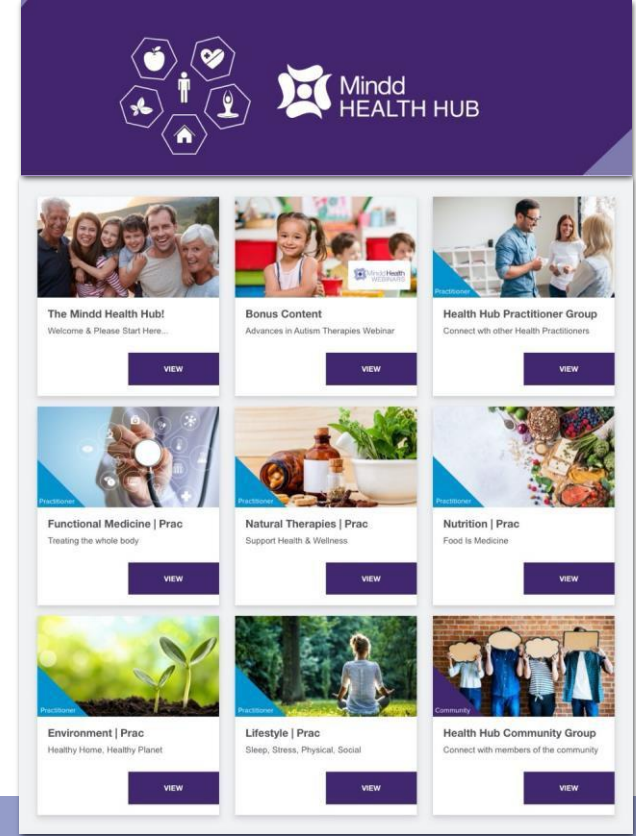
**EDUCATION
+
COMMUNITY
SUPPORT
+
ADVOCACY
=
HOPE**

Mindd Health Hub

Cutting edge learning, discovery, training videos and online community resources



Family Resources



Practitioner Training

Functional Medicine Support Practitioner Training & Public Education

**Clinic-focused training by 2 expert Functional Paediatricians and
a Functional Naturopath_Drs N. O'Hara & L. Mumper**



Research

Studies on ASD and the Glyphosate Threat

From the studies mentioned above:

1. **Is there a link between autism and glyphosate-formulated herbicides? 2016**

Authors James E. Beecham¹ and Stephanie Seneff^{2*}

Here the authors stated:

‘This paper presents a hypothesis that glyphosate exposure in utero can cause developmental defects leading to autism due in part to impaired thyroid function in the mother and in the foetus.’

‘Many different factors have purported to be linked to autism. These have included, among others, genetic factors, iodine deficiency, vitamin D deficiency, and toxic exposures to a variety of substances, including lead, mercury, aluminium, thimerosal, fluoride, particulate matter in air pollution, to name a few. Whether, and to what magnitude, glyphosate/GFH have a place on the list is still debatable.’

2. **Clostridium Bacteria and Autism Spectrum Conditions: A Systematic Review and Hypothetical Contribution of Environmental Glyphosate Levels 2018**

Authors Argou-Cardozo I, Zeidán-Chuliá F

Here the authors asked:

‘Is there an interrelation between clostridium bacteria colonization of the intestinal tract and the neurological symptoms associated with ASD patients?’

Their conclusions stated:

The results of the present systematic review demonstrate an association between Clostridium bacteria colonization of the intestinal tract and ASD. In addition, we also postulate about how environmental GLY levels may deleteriously influence the gut-brain axis by boosting the growth of Clostridium bacteria in these patients.

3. **Prenatal and infant exposure to ambient pesticides and autism spectrum disorder in children: population-based case-control study June 25, 2019**

Their conclusions stated:

Research

Further References and Research

Prenatal and infant exposure to ambient pesticides and autism spectrum disorder in children: a population-based case-control study

BMJ 2019; 364 doi: <https://doi.org/10.1136/bmj.l962> (Published 20 March 2019)

<https://www.bmj.com/content/364/bmj.l962>

Is there a link between autism and glyphosate-formulated herbicides?

James E. Beecham¹ and Stephanie Seneff^{2*}

MIT Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, USA.

Clostridium Bacteria and Autism Spectrum Conditions: A Systematic Review and Hypothetical Contribution of Environmental Glyphosate Levels

Isadora Argou-Cardozo and Fares Zeidán-Chuliá

Study Says 50% of Children in US Will Be Born With Autism by 2025

MIT Research Glyphosate Herbicide Will Cause Half of All Children to Have Autism by 2025.

(2017) <http://winewaterwatch.org/2018/04/mit-researcher-glyphosate-herbicide-will-cause-half-of-all-children-to-have-autism-by-2025>

Animal Studies

1. According to The Lancet's paper on the carcinogenicity of the weed killer glyphosate, animal studies have produced sufficient evidence to support a link between Roundup and LHC (7).

2. A 2016 meta-analysis also supported the hypothesis that glyphosate exposure decreased sperm concentration in rodents. Therefore, it was concluded that glyphosate is toxic to male rodent's reproductive system (9).

3. A 2018 study observed the effect of glyphosate on oxidative stress via assessing reactive oxygen species (ROS), glutathione (GSH) level and the activity of glutathione peroxidase and found it to be detrimental. Glyphosate intervention also resulted in significantly higher primary DNA damage in the liver cells and leukocytes (10).

4. Also in animal studies, the weed killer glyphosate has been found to disrupt beneficial gut bacteria. Not only that, it was found to block the shikimate pathway. The shikimate pathway is a crucial player in the synthesis of the ever-so-important amino acids phenylalanine, tyrosine, and tryptophan. Considering these amino acids are critical for the proper functioning of our immune, digestive, neurological systems and more, it is crucial that there is no interference with their synthesis. (11)(12).

5. A glyphosate altered gut microbiome has also been shown to induce behavioural impairments in a 2018 study, such as an increased likelihood of anxiety and depression. There is an extensive amount of literature now linking the gastrointestinal tract and the brain via the gut-brain axis. Thus, the researchers involved in this study are hypothesising the mechanism of action as the microbiota's role in mediating neurological health (13).

These regulatory, epidemiological and animal studies show that the weed killer glyphosate has great potential to cause serious adverse effects and points to a need to change the approach to risk assessment.

Research Links

Reference list:

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4947579/>
2. <https://res.mdpi.com/sustainability/sustainability.../sustainability-10-00950.pdf?>
3. <https://www.ewg.org/release/roundup-breakfast-part-2-new-tests-weed-killer-found-all-kids-cereals-sampled>
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5. <https://www.iarc.fr/wp-content/uploads/2018/07/MonographVolume112-1.pdf>
6. <https://www.ncbi.nlm.nih.gov/pubmed/27015139>
7. [https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(15\)70134-8/fulltext](https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(15)70134-8/fulltext)
8. <https://www.ncbi.nlm.nih.gov/pubmed/27677668>
9. <https://www.ncbi.nlm.nih.gov/pubmed/28846991>
10. <https://www.ncbi.nlm.nih.gov/pubmed/29990293>
11. <https://www.healthlicom/nutrition/roundup-glyphosate-and-health#section1>
12. <https://articles.mercola.com/sites/articles/archive/2013/05/14/glyphosate.aspx>
13. <https://www.sciencedirect.com/science/article/pii/S0892036218300254>
14. <https://www.ecowatch.com/do-tampons-contain-glyphosate-1882112780.html>
15. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5787249/>
16. <https://www.abc.net.au/news/2016-02-16/councils-still-using-herbicide-that-probably-causes-cancer/7168464>
17. <https://draxe.com/glyphosate-in-cereal/>

Thank You!

