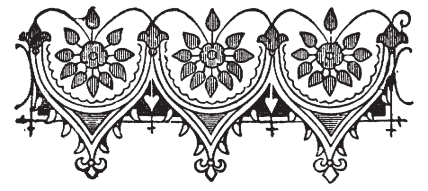


Health & Wellness



Roundup – Your Time’s Up!!



Dr. Kate Thomsen and Silky

Chances are you ate some today. You might have had some with your breakfast. You probably drank some today. There was probably some in your water. If you went outside in the spring or summer and walked in public spaces, you probably brought some into your house on the soles of your shoes. Your exposure to this insidious toxin is fairly guaranteed. And the independently conducted scientific research on what has been called a harmless herbicide, is starting to emerge. And it does not look good. Glyphosate, the active ingredient in Roundup, as well as all the glyphosate based herbicides may be on their way to being banned.

Glyphosate has been called, by the industry, a once-in-a-century herbicide. Introduced in 1974, it's mode of action was unique, it had no competition and it remains a VERY effective broad spectrum herbicide. It was touted as being toxicologically and environmentally safe. Through lax FDA policies at the time, Roundup was approved through Monsanto submitting its own data. The "independent" testing labs providing this evaluation for Monsanto were later investigated, prosecuted and convicted of submitting false data. Roundup has never required any regulatory agency testing or monitoring.

Roundup soon became the dominant herbicide worldwide. With it's patent running out in 2000, the manufacturer, Monsanto, discovered how to keep reaping glyphosate profits. In 1996 Monsanto introduced Roundup Ready crops. These crops have a bacterial gene inserted in them that protected them from the herbicide. This would allow massive spraying of fields – almost effortlessly killing every plant/weed the spray

hit – except the growing crop. These crops are called Genetically Modified (or Genetically Engineered) transgenic, glyphosate-resistant crops. Transgenic means 2 different gene pools were mixed. In this case, plants and bacteria. Currently Genetically Modified Roundup Ready Crops include: soy, corn, canola, beets, alfalfa, cotton and tobacco. Since these crops were introduced to the market glyphosate use has increased 15 fold. In 2015 89% of corn, 94% of soybeans and 89% of the cotton crops are genetically modified. Now glyphosate is contained in over 750 products in the US. These are mostly herbicides for GM crops but also products used in agriculture, forestry, urban and home applications. Glyphosate is also used for crop desiccation (drying) either pre- or post-harvest. This practice can increase crop yields and is used on cereal grains (wheat, barley, oats), oil seeds (rapeseed/canola, mustard seed, linseed), legumes (edible beans, peanuts), and orchards and vineyards. The practice also increases the sugar content in sugar cane before harvest. From this list, you can see that your exposure to glyphosate could be significant.

Glyphosate residues are found in the air, groundwater, drinking water, crops, food and animal feed. It is found in nonorganic cotton clothes, sterile gauze, and tampons. Farm workers will get exposure through the skin and by inhalation. The general population is probably most exposed through food and water. Field tests have shown that glyphosate residue was still present on lettuce, carrots and barley up to 1 year after the land was sprayed. If it is in the food, is it in us? In a 2015 nationwide UCSF study of 131 urine samples, 83% tested positive for glyphosate. The highest levels were found in children and in persons in the western US and the midwest. Only 2 years earlier, a European study showed 43% of urines tested were positive for glyphosate and at 1/3 the level found in 2015. The US is a heavy user of glyphosate but overall use keeps increasing every year as well.

So what does glyphosate do? It's unique action is to disable

the shikimate enzyme pathway – a pathway only found in bacteria, plants and fungi. This is the biologic process that makes aromatic amino acids in the plants and bacteria (which they share with us!!) Humans cannot make aromatic amino acids (AAA) and we call them "essential" meaning we must get them from our diet (or gut microbiome). Phenylalanine, tryptophan, histidine, tyrosine and folates (and even thyroxine, L-DOPA, and 5 –HTP) can become deficient in a person eating Glyphosate sprayed foods. The glyphosate residue can block the production of aromatic amino acids by your microbiome. These AAAs are components of your neurotransmitters, your thyroid function and methylation processes – generally functions you need to be working well for you. Glyphosate also chelates (binds tightly) minerals. Robbing the weeds of their minerals is another way they will die. But soils depleted of minerals and eating crops containing mineral binding compounds can be not helpful for our nutritional needs.

Safety testing by independent labs has shown conflicting results. Animal feeding studies that are shorter in duration and don't expose the animal while in utero have shown less significant health effects than studies done for longer time frames and including young developing animals. In addition, studies on Roundup, where there are multiple "inert" ingredients, in addition to the glyphosate, show much more toxicity. Animal studies with exposure to Roundup have shown an increased risk of kidney cancer, breast cancer, liver cancer, disruption in sex hormones, kidney dysfunction, and overgrowth of fungus. In 2015 the International Agency for Research on Cancer (IARC) of WHO classified glyphosate as a probable human carcinogen. In 2017 the state of California listed glyphosate in its Prop 65 registry, chemicals known to cause cancer.

Glyphosate robs us of some aromatic amino acids and minerals we need for our function. It replaces the amino acid glycine in some of our proteins making dysfunctional proteins that are more difficult to eliminate. It

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 INTEGRATIVE AND HOLISTIC HEALTH
 AND WELLNESS
**FOR GLYPHOSATE RESCUE—
 SINCE WE ARE ALL EXPOSED!!**

- Avoid Glyphosate and GBHs. Don't apply it; eat organic
- Organic diet, bentonite clay, sauerkraut juice, fulvic/humic acid
- Acetobacter – one of the few microbes that can metabolize glyphosate; found in Sauerkraut and apple cider vinegar
- Micronutrient diet high in pre/probiotics and polyphenols (brightly colored fruits and vegetables); organic eggs
- Replace minerals – bone broth; replace aromatic amino acids
- Replace sulfur: cruciferous vegetables, garlic, onions, seafood (clams, mussels, oysters)
- Polyphenols as sulfur transporters: parsley, cilantro, dandelion greens, thyme, basil, lipoic acid, MSM
- Epsom salts baths for sulfur if intolerant of sulfur foods and supplements
- Far Infrared Sauna



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kills beneficial bacteria in our gut allowing pathogenic bacteria to grow. It interferes with our liver detoxification systems. Glyphosate is an endocrine disruptor. The result of these initially unnoticeable changes that disrupt our homeostasis over time can be the manifestation of a wide range of chronic diseases: autoimmunity and allergy, celiac disease, inflammatory bowel disease and other gastrointestinal disorders, neurodegenerative diseases (ALS, MS, Parkinsons..) learning and memory impairment, anxiety, depression, autism, ADHD, obesity and diabetes, developmental and reproductive toxicity, cancer, chronic fatigue, muscle weakness, fungal infections, B12 deficiency – have all been proposed.

A very recently released study by the Environmental Working Group was titled, "Breakfast with a Dose of Roundup?" 45 samples of food products made with conventionally grown oats were examined. Three-quarters of these contained glyphosate levels higher than what EWG scientists consider protective of children's health. This includes Cheerios @ 700ppb glyphosate and Quaker Old Fashioned Oats @ 930ppb glyphosate. Sixteen products made with organically

grown oats were examined and 1/3 of these tested positive for glyphosate but well below the EWG health benchmark. This study has caused some alarm and rightly so.

In June 2018 a 46 yo man who was a heavy Roundup user as a school groundskeeper sued Monsanto for suppressing evidence that Roundup causes cancer. Mr. Dewayne Johnson has terminal non-Hodgkins Lymphoma. The jury concluded that Monsanto did indeed have evidence that Roundup can cause cancer and other health conditions and hid this information from the public (reminiscent of big Tobacco??). They awarded him \$289 million. There are about 4000 similar cases expected to follow. I think Roundup's time is up!!!

Dr. Kate Thomsen's office for holistic health care is located in Pennington, NJ. She is trained in Family Medicine, and Board Certified in Integrative Medicine, and is an Institute for Functional Medicine Certified Practitioner. She has been practicing Functional Medicine for 20 years. For more information see www.drkatethomsen.com or call the office at 609-818-9700.