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# A New Era of Chronic Disease in America and what's behind it

August 2017: Richard Lear

All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident -- Arthur Schopenhauer

There has been a largely unrecognized explosion of chronic disease in the US. More than 170 million Americans are currently suffering from chronic, germless diseases. There is compelling evidence that these diseases are not caused by germs like bacteria or viruses. Instead they are triggered by a single molecule made in the body. This molecule is called peroxynitrite. Elevated levels of peroxynitrite have been associated with more than 60 chronic diseases. While thousands of scientists have long recognized the pivotal role of peroxynitrite in disease, few policy makers and physicians are aware of the connection. And the general public remains completely in the dark. The scope of the problem is extensive. The annual economic burden for just forty fast-growing chronic diseases and conditions in the US is more than \$2.5 trillion.

The quintessential paper on peroxynitrite was funded by the National Institutes of Health (NIH) and published in 2007. The study, "[Nitric Oxide and Peroxynitrite in Health and Disease](#),<sup>(1)</sup>" identifies more than 130 biological disruptions caused by peroxynitrite within the body, which, in turn, lead to dozens of diseases. A paper I published on ResearchGate last summer, "[The Root Cause in the Dramatic Rise in Chronic Disease](#),<sup>(2)</sup>" associates peroxynitrite with 40 of the fastest-growing diseases, all of which have more than doubled since 1990.

Many of these diseases and conditions were relatively unknown until the 1990s. Now most have become household names like autism, Alzheimer's, ADHD, fibromyalgia, irritable bowel syndrome, hypothyroidism, erectile dysfunction, bipolar disorder, just to name a few. Other more familiar diseases and conditions, including diabetes, hypertension, arthritis, melanoma, sleep apnea, asthma, depression, and leukemia, have also sky-rocketed in the US.

## Four New Categories of Disease

Statistics gathered from the CDC, NIH and NCBI confirm the real-world evidence of the massive toxicity peroxynitrite imposes and the resulting disease impacts on our society. The growth of so many chronic ailments is evidence of a new era of disease in the US. The 21<sup>st</sup> century model of chronic disease turns the old model upside down. The spotlight has long been on cancer and heart disease, which once were both growing exponentially. Now, among forty fast-growing diseases, the incidence of only three cancers and one cardiac-related condition are growing. In their place, four relatively new fast-growing disease groups have emerged: 1) neurological; 2) autoimmune; 3) inflammatory and 4) metabolic disease.

## Neurological

Neurological disease may be the most troubling. Thirteen neurological diseases and conditions have exploded since 1990 and there are now more than 198 million instances of these diseases and conditions in the US population today. In the past generation alone, autism has grown at 2094%, Psycho-social – attentional problems - 809%, Alzheimer’s - 299% and Bi-polar disorder in children, has increased by a staggering 10,833%. Please note that four conditions which are sometimes referred to as mental health conditions are included in the neurological category. While all four have a psychological component, each also shares the same biological underpinnings with the other neurological conditions. In particular, individuals experiencing neurological conditions listed here share a profound imbalance of neurotransmitters, including deficiencies in dopamine and serotonin. Additionally, pervasive neuron death, a hallmark of neurodegenerative diseases like Alzheimer’s and ALS, is also a chief characteristic of conditions like depression, bi-polar, ADD, anxiety and other psycho-social conditions. Here is a snapshot of the growth and magnitude of the societal impact from eleven neurological conditions:

Disease/ Condition	Total Affected	Generational Growth	Total Cost
ADD/ ADHD	5,312,000	139%	\$204.5 billion
Alzheimer's	4,700,000	299%	\$226.6 billion
Anxiety	40,000,000	104%	\$42.3 billion
Panic Disorder	6,000,000	263%	(included above)
Autism Spectrum	4,664,280	2094%	\$268.2 billion
Bipolar Disorder (children)	768,481	10833%	\$151 billion
Depression	20,304,560	280%	\$192.3 billion
Lupus	563,542	787%	\$9.9 billion
Sleep: apnea	47,835,000	430%	\$115 billion
Sleep: insomnia	61,228,800	123%	\$113 billion
Stroke	6,800,000	262%	34.3 billion
<b>TOTALS</b>	<b>198,176,663</b>		<b>\$1.36 trillion</b>

## ***Autoimmune***

Autoimmune disease is also on the rise. The term autoimmunity was barely known to the general public in 1990. Now it is commonplace and few are not touched by it. Autoimmune disease is notable for the multiplicity of symptoms associated with the disease. Sufferers report headaches, digestive problems, cognitive impacts, memory deficits, poor sleep, joint pain and muscle pain. Many contend that autoimmune disease arises from an individual's immune system attacking itself. Multiple biological systems seem to be affected including neurological, immune, digestive, musculoskeletal and skin.

According to the American Autoimmune Related Diseases Association (AARDA), more than 50 million Americans are affected by as many as 85 different autoimmune conditions.

The spectacular emergence of these diseases has not gone unnoticed by millions of Americans. There are now more than 704 million instances of just forty fast-growing diseases and chronic conditions in the US population. So far there has been very little media coverage about what appears to be an epidemic of chronic disease in America. Meanwhile, most still believe the US is the healthiest nation in the world. Yet, by all accounts the precise opposite may now be the case. The medical community has been slow to recognize or at least articulate the larger story. Few medical professionals seem to have made the key connections between so many chronic conditions. Instead medical research and treatment approaches are being pursued in silos.

While forty of the fastest growing chronic diseases all share in common high levels of peroxynitrite plus six identical bio-markers, the medical community and public seem to be blinded to these scientific insights. At the heart of it, there seems to be a breakdown in communication between the scientific community and the rest of us. Or it could be that there is deep skepticism over the "pure elegance" of there being a single unifying *chronic disease state*. It may be that it seems just too good to be true. Yet, who would guess that the underlying biological conditions for sleep disturbances and Alzheimer's are similar? Or that obesity, leukemia and panic disorder all arise from a single molecule and share the same six biological markers?

## **External Causes**

If peroxynitrite is the *internal cause* for the dramatic growth of chronic, germless disease in America, is there a single *external trigger*, or even a group of identifiable *external causes*? It turns out that a range of environmental toxins and chemicals are chiefly suspect. Dr. Stephanie Seneff, a senior research scientist at MIT, postulates one chemical which has become prolific, called glyphosate, as a chief candidate. This chemical, more popularly known as Roundup, has been increasingly added to the wheat supply in the past two decades. There is increasing

evidence that it triggers peroxynitrite and the destruction of aromatic amino acids like tyrosine, tryptophan and phenylalanine. Decreases in these amino acids leads to shortages in production of dopamine and serotonin and the increased prevalence of neurological disorders. Dr. Pal Pacher, the lead author on the landmark NIH paper on peroxynitrite, blames soft drinks and fast food diets, which include high fructose products. Others point to the growing prevalence of pesticides such as paraquat. This chemical synergizes with peroxynitrite to create Parkinson's-like symptoms in mice as a likely suspects.

### ***The role of our Intensifying Electrical Environment***

Most concerning is the potential threat from our electrical environment. There is growing scientific evidence that points to our intensifying electrical environment as the strongest link. As unsettling as this theory may be to most of us, there is now substantial science, showing that electrical pollution created by microwave radiation from wireless devices may be stealthily stealing our health.

In a recent study <sup>(3)</sup>, Dr. Martin Pall, Ph.D., winner of a 2013 Global Medical Research award, identifies the *bio-electrical* mechanism. Pall's paper outlines the process by which electrical energy from wireless technologies in the form of microwave signals activate systemic biological imbalances and unleashes disease. In this process, microwave radiation at frequencies like those used in cell phones and Wi-Fi disrupts the flow of calcium ion messengers, which in turn triggers other crucial biological changes. The result is increased levels of peroxynitrite, which then leads to biological chaos and ultimately to one, or more chronic conditions.

Not only has the biological mechanism, or more aptly, the chain of causation between electrical fields and high levels of peroxynitrite been identified, but there is now extensive theoretical and epidemiological science to back it up. International science connecting microwaves with biological effects has actually been established for more than forty years. In 1971, a U.S. Navy-commissioned report <sup>(4)</sup> surveyed the science, much of it culled from outside the US. The report cites more than 2,300 scientific studies that directly link microwave signals with 132 biological effects and chronic diseases. Notably, almost all of the biological underpinnings of the forty fastest-growing diseases and chronic conditions identified in the *Root Cause* paper are listed in this this seemingly prescient report.

More recently, the 2012 BioInitiative Report <sup>(5)</sup>, a 1,540-page study co-authored by a group of twenty-nine international scientists, cites more than 3,000 scientific studies that associate *low-level* exposures from electromagnetic radiation (EMR) with dozens of diseases and biological effects in humans such as autism, brain cancer, breast cancer, leukemia, oxidative damage, biochemical imbalances, blood-brain-barrier damage, and DNA/ chromosome damage. It

should be no surprise that peroxynitrite is associated with every major disease discussed in this paper.

As the above examples illustrate, the *science* connecting wireless signals and other forms of electromagnetic radiation (EMR) with biological effects and disease is substantial. Yet few are aware of the depth of the science. Despite the fact that there are now more than 6,000 scientific studies that link EMR with at least 185 biological impacts and more than 50 diseases, federal agencies like the Food and Drug Administration (FDA), which regulates cell phones, still contend the weight of the science is ‘inconclusive.’

## **Humans Are Electrical Creatures**

The idea that even low levels of electrical energy can affect our health should not be surprising. It is well established that humans are electrical creatures and our biological welfare depends critically on a delicate balance of electrical activity. Our brains and hearts depend on electrical impulses to function. Doctors use EKGs to measure the electrical activity of the heart and EEGs to gauge the electrical health of the brain. Trillions of cells exchange electrical messages sent across our nervous system, and these electrical messages coordinate and orchestrate our entire body chemistry.

The key components of these biological communications (neurons, neurotransmitters, ions) all depend *crucially* on low-level electrical energy. Even the cells in humans are electrical. When healthy, each human cell operates at around 25 millivolts. So, given the electrical nature of our bodies, it should be no surprise that biological disruptions to our bodies like the increased levels of *electrically-charged* calcium ions between cells occur.

## **A New Era of Chronic Disease**

Chronic disease statistics culled from the Centers for Disease Control (CDC), the National Institutes of Health (NIH), NCBI and PubMed are staggering. In the U.S. population of 322 million, the number of instances of 40 fast-growing chronic diseases and medical conditions has mushroomed beyond 700 million. That’s an average of more than 2.1 diseases and chronic conditions for every American! The accelerated growth of each of these forty conditions began around 1990. About the same time, the exponential growth of wireless devices was just beginning. At that time there were only about 16 million cell phones in the US. There are now about one billion wireless devices. That is a growth of over 6150% in just one generation.

## Conclusion

We're living in a new era of disease. Germs are no longer fully to blame for our ill health. Neurological, autoimmune, inflammatory, and metabolic diseases are growing out of control and crippling the US economy. Increased health costs and lost productivity are the direct results. Insurance companies are overwhelmed. The social, psychological and emotional costs to sufferers and families are incalculable. There are no vaccinations or cures. Chronic diseases are persistent and often last a lifetime.

The internal cause is already known. Scientists agree peroxynitrite sits at the heart of more than 60 major chronic diseases and conditions. Yet the public remains in the dark. Yet almost no US government-funded research is taking place. Several external triggers are also known. Some say chemicals in our diet are to blame, others point to our intensifying electrical environment.

We've quietly entered this new era of disease, where electrical energy creates both a benefit and a cost. Is the electrical energy around us creating biochemical chaos in our bodies by increasing levels of a single toxic molecule? If so, we either need to find ways to neutralize the molecule, or dial back the electrical energy around us. Or do both.

Few are aware of the chronic disease epidemic that is going on in the US right now. Fewer still have heard of the peroxynitrite connection. Almost no one recognizes the crucial role that the cell phone in our pocket may be playing with our health.

Until we realize that we've entered into a new era of chronic disease, we're unlikely to recognize the greater problem – it is likely self-imposed.

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