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## Some Ramblings on Stress and Immune System Issues

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I grew up on a small family farm in Central Texas about three quarters of a century ago, during the 1940s and 1950s. At the time of my ninth birthday, on June 10, 1950, approximately 16% of the US population still lived on farms, and 15.3% of us were actually farmers. Today, less than 2% of the US population still farms. Back then, when we went to town (usually on Saturdays), we bought a few items such as flour, salt, sugar, and coffee, and maybe a few canned goods, if the items in those cans were items we didn't grow, or were out of season. Sometimes we'd buy feed or supplements for the livestock, if we needed them.



**The family farm with Wayne's father in 1956**

In those days, almost every small town had a movie theater. If my brothers and sisters and I could talk our parents into it, we would be able to watch a movie, while our parents went about their business in town. I don't remember the exact admission price, but as best I can recall, it was somewhere in the \$0.15-\$0.25 range.

### **We raised most of the food that we ate.**

We grew a big garden, had our own fruit trees, processed our own meat (chicken, beef, pork, and occasionally lamb), and we stored our potato crop under the house, where it stayed cooler, and the potatoes would stay fresh until we used them all. When we needed meat, our neighbors would help us butcher and process a hog or two, or a fat calf. We had a smoke house, where we cured and stored our pork sausage and bacon, and kept our lard for cooking in lard cans (10 gallon metal containers with lids). World War II was finally over, and all that lingered was the sadness in the eyes of parents who had lost sons in that war — sadness that would never be erased. Other than that, life was good.

My maternal grandmother, who lived in town, bought the first TV set we ever saw, and when we visited on Sundays (most weekends), we would usually watch a few TV shows. There were no cell phones — they were still about 40 or 50 years away. And there were no computers, at least not for civilians.

**Doctors made house calls in those days.**

The only time I recall ever seeing a doctor, outside of the obligatory vaccinations, was one night when I was about 12 or 13, and I had a much worse than usual asthma attack. Sometime after midnight, my parents called the local doctor, who promptly made a house call, at one or two o'clock in the morning, although we lived 7 miles outside of town. Doctor Sunbury gave me a cortisone injection in my arm, and in a few minutes, I was able to breathe much more easily. My parents later told me that the reason they called the doctor was because I was turning blue from lack of oxygen. Did my asthma play a role in the later development of my microscopic colitis (MC)?



**Wayne at 5 years old**

**Even as a young child, apparently I was constipated most of the time.**

I never had a serious problem with this, but bowel movements were usually irregular/infrequent, and more difficult than they should have been. Did I have a chronic magnesium deficiency? Did this eventually play a part in the development of my MC, in my late 50s? I suspect the answer to both of these questions is yes.

Many authorities claim that increasing allergy problems these days are due to inadequate immune system challenges while we are young.

But when I was an infant, I played in the dirt, with the dogs and cats, and growing up on a farm, I was exposed to all sorts of pathogens. I played in a sandbox that the cats probably used for other purposes. Although I don't remember my exact age (I was probably about three or four years old), I distinctly remember the occasion when my mother gave me some sort of medication to de-worm me. And I can still remember the smile of satisfaction on her face when she looked in the pot, after I finished, and saw a worm, that looked like it was about a foot long.

But during my latter teen years, my asthma segued into hay fever, as I began to react to ragweed pollen, and eventually most types of yellow pollen. And decades later, allergy sensitivities to various other pollen sources, including trees, grass, etc., have developed. For most of my life, my skin has been very sensitive to the stems and leaves of many plants, and contact with them quickly causes a severe rash, sometimes hives, and intense itching. So much for the theory of inadequate immune system challenges.

**The world didn't seem as stressful back then.**

Although we were exposed to many stressful situations, somehow, the world didn't seem as stressful back in those days. Most of the stressful situations tended to impose a simpler kind of stress than we typically encounter today. It was stress such as, "The rain washed the water gaps out, and the cows are out, so we need to go round them up, and close those water gaps." Once the water gaps were closed, and the cows were safely back in the pasture, this kind of stress was completely resolved, unlike most of the stress that we have to deal with today, that never seems to be resolved, or seems to take

forever to resolve.

**Today, stress seems to be omnipresent — it never lets up.**

The complex world we live in today seems to present us with additional reasons to feel stressed, much more frequently than it did decades ago. Surely, the almost instantaneous access to around-the-world news



coverage, available on TV, and social media on smartphones, are responsible for our increased stress exposure. Because that level of news exposure was unavailable when our paleo ancestors evolved, our bodies did not evolve to be able to handle that volume of stressful news, especially when we're exposed to it all day long.

**The handwriting is on the wall.**

Need more evidence that our society is overstressed? Just look at all the irrational (antisocial) behavior today. As a society, we're (some of us, at least) behaving like overcrowded rats in a cage. Overcrowded, overstressed rats in a cage, tend to fight, and try to kill each other. According to the American Psychological Association, based on a recent Harris Poll, over 70% of American adults feel stressed, and about two thirds of Americans report money as a source of stress.<sup>1</sup>

**And sadly, virtually all of this type of stress exposure is unnecessary.**

This type of stress is artificial. If an event is happening on the other side of the world, we can't do anything about it anyway, so why should we be so concerned? The fact that we're concerned, proves that we take the news seriously. And the fact that we access it so frequently suggests that we may be obsessed by such news. That also applies to events that happen in other parts of the country we live in, and other cities. And logically, it probably applies to events that happen on the other side of the town we live in. We're very unlikely to even try to do anything about it, anyway, but we still follow it. The fact that we appear to be obsessed with keeping up with such news may seem like an innocent pastime, but unfortunately, our evolution has programmed our bodies to automatically convert this habitual routine into unnecessary stress, automatically, whether we like it or not.

**Our paleo ancestors developed the fight or flight response.**

As our paleo ancestors evolved, they developed a strong physiological response to certain situations that were perceived as dangerous, because they often needed to be able to either fight for their lives, or escape from being attacked and eaten by large predators, or some other unexpected dangerous situation. Because many of these situations typically resulted in loss of limb or life, the response they developed was as physically robust as they could possibly muster. As the response developed, over many generations, eventually, a stressful situation automatically triggered a high heart rate, high blood pressure, and rapid breathing, in order to supply the muscles with as much oxygen as possible, to increase their chances of either defending themselves, or successfully escaping by running away. All unessential body processes, such as digestion, were automatically shut down, to conserve energy, in case the escape required running a great distance, or running for hours at a maximum capability level. In the world we live in today, such

physical responses to stress are virtually never needed. But unfortunately, that atavistic “fight or flight” response doesn't seem to have devolved — it's our body's automatic default response, whether we like it or not. And most of us have become well aware of the elevated relapse risk that chronic stress can impose on us as (MC) patients.

### **Humans don't have the market cornered on stress.**

Every species on the planet has to learn to deal with stress, because every species on the planet faces some type of stress every day. Plants, animals, birds, reptiles, insects, bacteria, viruses, molds — you name it, we're all trying to find our place, and our space, on this planet, and our common goals often clash.

As far as I'm aware, no species has ever demonstrated that their instinctive response to stressful events has deteriorated over time. So it's not likely that our “fight or flight” response to stressful situations is likely to change anytime soon.

### **Excessive stress tends to dominate our thoughts.**

Stress is the feeling of being overwhelmed, and unable to cope with the issues that we're facing. Stress makes us feel anxious, and we may be unable to think clearly, because our problems are always dominating our thoughts. Stress can prevent our brain from relaxing, so that we're unable to get to sleep at night, and when we do get to sleep, we tend to wake up often, and have difficulty getting back to sleep. And if we're unable to resolve it (or just let it go), stress tends to become a chronic condition (Felman, A. (2020, March 12).<sup>2</sup> Because published medical research shows that stress causes inflammation, stress is usually a major factor in the initial development of chronic disease (Liu, Wang, & Jiang, 2017).<sup>3</sup> Obviously, the inflammatory bowel diseases (IBDs), including MC, are chronic diseases.

As discussed above, our body's reaction to stress tends to be determined by our evolution, and so it automatically occurs, whether we realize it or not. Stress causes our body to be flooded with hormones that prepare us for a “fight or flight situation”. Obviously, if this is occurring too often, or continually, the physiological pressures on our body are going to be more than we evolved to be able to handle, and our health is likely to suffer.

### **Some of my attempted solutions have been counterproductive.**

First, let me explain why one solution suggested by the first article that I cited above didn't work for me.

These days, many Americans wear smartwatches that monitor their activity level, the quality of their sleep, their heart rate, and various other parameters. So researchers at UCLA developed a smartwatch capable of measuring cortisol levels in sweat. Probably, there exists a subset of individuals that will find this feature to be helpful in their management of stress. But here's the downside of using that type of technology: Over the years, I've tried at least three or four different smartwatches, and today they're all lying on my desk, unused, and unwanted. I wore each one for at least several weeks. I tried hard to make them work for me, especially after I had a stroke, a little over five years ago. Obviously, my experience does not reflect on the UCLA project, because none of my smartwatches measured cortisol levels. But while they were all nifty gadgets, I quit using them,

because they were sources of frequent stress.



### **Here's what I experienced:**

I was frequently checking the watch to see how my heart was doing. If I woke up in the middle of the night, I would try to get my eyes to focus well enough to see those tiny numbers so I could check my heart rate, or my sleep quality. And guess what? If either one was an unexpected result (which they frequently were), I would wonder what was wrong, and I wouldn't be able to get back to sleep for hours. If I noticed that my heart rate was higher or lower than I expected at some point during the day, my anxiety level would go up, because I would wonder what was wrong.

### **Silly me, I thought that a watch should display the time.**

But here's the main reason I quit using those gadgets, and the problem was due to the software, not the watch, itself. If I simply wanted to check the time at some point during the afternoon, or at night, or whenever, about half the time I wouldn't be able to do so, because either the battery would be dead, or the watch had decided that my activity level had been too low (or too high) to suit it, so it was displaying enough physiological data and exercise recommendations to drive a professional athlete crazy, let alone a lazy old codger like me, and no matter which buttons I pushed, it couldn't be persuaded to show me the time, until it finished advising me on how to become a great athlete, a goal I've never even considered, and certainly don't intend to pursue, at my age. Maybe I just picked the three or four worst selections on the market. Most other people probably fall in love with those smartwatches, but as far as I'm concerned, they're more trouble than they're worth, and more likely to increase my stress level, than to decrease it.

### **Apparently that old saying, “ignorance is bliss”, is right on target.**

I found that every one of those smartwatches tended to raise my stress level. And I discovered that every time I discontinued the use of one of those watches, I felt a sense of relief. My two happiest moments were when I initially purchased the watch, and when I quit using it. Trying to lower my stress level by continuously monitoring the way my body is functioning, doesn't work for me. Your mileage may vary.

### **I'll share another unhappy experience with you.**

When I began to have arrhythmias, again, about a year after I had my stroke, on the advice of my doctor, I bought a smart phone app that allowed me to see an instant electrocardiogram of my heartbeat pattern, when I placed both forefinger tips on small pads. It seemed to work fine when everything was normal. But alas, one morning when everything wasn't normal, I made the mistake of trying to use it, and of course, when the chips were down, and I was afraid I might be having a heart attack, naturally, it wouldn't work. All it would tell me was that the app wouldn't work, because my heart rate was over 100 beats per minute (bpm) (which is exactly the reason why I wanted to use the app in the first place — duh!). More money down a rat hole. And you can easily imagine what that experience did to my stress level, and my blood pressure.

### **Apps aren't always what they appear to be.**

I suppose the take away message here is, “Despite implied benefit claims in their advertising copy, most smartphone apps are written for normal, healthy people, even those that focus on specific health issues.” Hopefully, apps written for medical professionals are exceptions to that general rule. The “school of hard knocks” has taught me that obsessing over my current stress level, or trying too hard to monitor my vital signs, is likely to increase my stress level, unnecessarily. Stress propagates stress, and simply being aware that we might be carrying more stress than we can safely handle, will probably increase our stress level.

### **Stress was probably the final trigger that corrupted my digestive system.**

In my own case, intense stress, that was almost constantly present while I was trying to grow a small business from interstate to intrastate sales, under especially difficult business conditions, probably triggered my disease. And, of course, once the clinical symptoms started, my business capabilities became increasingly handicapped.

### **My formal training was in mechanical engineering.**

So I tend to look at problems from an engineering perspective. Obviously, stress (mental stress, not stress associated with strength of materials), is not a normal engineering problem, but that doesn't mean that engineering principles can't be used to analyze and resolve problems of this sort.

A chronic disease, such as microscopic colitis, will be an intimate part of our life, for the rest of our life. In view of that fact, we need to redesign our lifestyle to recognize and accept that fact. An engineering analysis would begin by sorting out the information associated with the problem into appropriate categories, such as:

- 1. Issues that are beyond our control.*
- 2. Issues that are within our control.*

With the issues sorted out this way, it's relatively easy to see that in order to resolve the problem (of relieving the stress), we need to:

- 1. Modify our attitude and behavior toward the issues that are beyond our control, by altering our perception of them, so that they will present the least amount of stress. In other words, as others have pointed out, we need to learn to embrace the issues that we cannot change, and learn to live with them. We need to incorporate them into our lifestyle, without prejudice. If we do this, the stress will melt away.*
- 2. Explore the options for changing the issues that are within our control, and choose the best option, or options, for making those changes.*

### **Note that even when an attempted change is unsuccessful, just having a plan in place, will significantly reduce our stress level.**

For example, sure, microscopic colitis is a cruel, disgusting and oppressive disease, but whether we like it or not, it has become our intimate companion, for the rest of our life. The sooner we learn to embrace it, and stop wasting our time dwelling on it (or denying it), the sooner all the stress that's associated with it will fade away.

### **Look at the bright side.**

After making the necessary diet changes, in order to stop the reactions, most of us are eating a much healthier diet than we were before. Many of us have lost weight (that we needed to lose) because of the nutriment malabsorption issues (whenever the disease is active) and the diet changes needed to accommodate the disease. Consequently, unless we happen to be the unlucky victim of some unfortunate accident, most of us will probably be able to enjoy a longer lifespan, and we'll probably be healthier in future years. Were it not for MC, most of us would have never made those diet changes. Living with MC eventually becomes second nature, and although it will never become totally invisible, living with it will no longer be associated with the severe chronic stress that the disease caused when it first developed. We become able to walk down the aisles of supermarkets without the mere sight of certain off-limit foods bringing tears to our eyes.

### **There are many conventional ways to lower stress.**

Some of the most effective, and popular methods include the following. We won't go into the details of each one here, since discussions about the advantages and disadvantages of these techniques are so commonly available from so many sources.



*Exercise*

*Yoga*

*Practicing mindfulness*

*Visiting with friends*

*Spending time with one of our favorite hobbies*

*Reading*

*Listening to recordings of soothing music, audiobooks, podcasts, or something else that we find relaxing*

*Anything that will force our mind to focus on something other than the stressful issues that it would otherwise choose to dwell upon*

### **Get rid of stress as quickly as we can, whenever it arises.**

Whenever we feel that stress is becoming a problem, regardless of the source of that stress, for our health's sake, we shouldn't allow ourselves to dwell on it. We need to decide on a course of action as soon as we possibly can. As described above, we can determine the issues that are beyond our control and plan how we can alter our lifestyle to accommodate them. Then we can make plans for attempting to change the issues that may be within our control so that they'll be more to our advantage. We can't afford to allow stress to fester — it will only get worse.

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