

Cold Thermogenesis 3

Readers Summary

1. What is evolutionary strategy based upon?
2. Why is circadian biology critical?
3. How does circadian biology react in normal environments?
4. How do power laws determine ultimate survival?
5. Do we have an example in modern life of this that we are unaware of?
6. How might disrupted circadian biology lead to cancer?

Evolutionary strategy is based upon finding an environmental niche and exploiting it. Evolution is based upon change and the natural adaptations to it. Today, we are going to explore how some environmental triggers might open a “biochemical trap door.”

Why is circadian biology critical?

For evolution to work, a cell first must adapt to its environment. So the first thing any living cell would see in an earth day is a period of day and night. It also has to find food to make energy (ATP). In addition, it has to control its own cellular division. The epic battle for the cell is the circadian cycle has to “yoke” the metabolic cycle to its growth cycle. Most people know that the suprachiasmatic nucleus (SCN), is the circadian pacemaker that monitors this dance between darkness and light and the seasonal cold and hot temperatures in our environment. Evolution apparently agreed with this assessment, because we now know it to be true.

What most people do not know is how leptin plays a massive role in regulating it. Research has revealed that leptin can induce expression of a neuropeptide gene called vasoactive intestinal peptide (VIP) through the VIP cytokine response

element. VIP actually is what sets the circadian pacemaker to light. Leptin yokes metabolism and sleep to the light and dark cycle. When temperature becomes the dominant environmental trigger and not light cycles, leptin induces endothelial nitric oxide synthetase (eNOS), that shuts down the photic effects of VIP on the SCN. This means that leptin forces the SCN not to be able to use light any longer to yoke circadian cycles! Once temperature begins to yoke the circadian rhythms, some very special things happen to our biochemistry that normally does not occur in other environments. These are ancient epigenetic programs that are hardwired into the DNA of every descendant of a eutherian mammal. We are descended from these animals.

So what happens in normal environments you ask?

When it is night time, the interior of our cells become more reduced chemically and electrically. (A lower redox state like we saw in the mitochondrial series). During a low redox time, cells are usually recycling their components using autophagy during sleep. Autophagy is critical to health and longevity in a mammalian biochemistry. During the day, while energy is being made to explore the environment, the cell is more oxidized because of increased leakiness of the mitochondria at cytochrome one. Remember the more we leak, the faster we age, and the more neolithic disease we succumb to.

Another interesting coupling occurs between the circadian cycle with the cell cycle. **Size and shape of cells change before genomic changes occur.** They are linked together via the PER 1 and PER 2 genes and two cytoskeleton proteins called YAP/TAZ. PER 2 directly affects the cell cycle when the cell divides. Cell division is called mitosis. Mitosis is the phase in the cell that occurs just before cell division to

generate an offspring. The mammalian period 2 gene plays a key role in tumor growth in mice; Mice with a mPER2 knockout show a significant increase in tumor development and a significant decrease in apoptosis (levee 19). It should be clear because of these links that just a simple mismatch in circadian cycles can lead to the development of cancer and neolithic disease.

Circadian biology is crucial to optimal health. The real kicker, that no one until now has realized, is how biology accelerated time using the theory of relativity for ultimate survival. It appears Mother Nature used power laws to fuel explosive growth in the species that we were descended from. I will explain in a later blog why this is a very critical factor in tying things together, but the result of it is what you need to pay attention to now. Evolution figured out a way to speed up. The consequence of this was that it also sped up epigenomics. This relative increase fueled human evolution, but also made us more susceptible to neolithic diseases if we do things against our circadian biology or our paleolithic genes. This can be worked out mathematically with power laws. This implies we better pay attention to the factors that affect this equation. **This caused a logarithmic change in how cells are guaranteed to become more oxidized (age faster) to circadian cycle mismatches as time proceeds.**

When epigenetics speeds up rapidly, it also changes the phenotype of the species affected by it. This is how we got the human brain from a primate model so quickly in a small evolutionary window. The use of this biologic power law fueled the development of our large brains from chimps. When you couple a super faster epigenetic rate to a diet high in nutrients, you create the perfect storm for a biologic system to create disease. Modern humans fit this equation perfectly. Many of these mismatches are not diseases at all, and we remain unaware of it even today. This is why we can't cure most of them either. This is why medicine has many blind

spots.

How does cancer occur when the circadian cycles are off?

Time for some minor head hurting. I no longer think cancer is a strict disease either. I think cancer is also an ancient epigenetic program that help us become multicellular at one time. **It evolved to include tissue regeneration and repair.**

It was a way to extend life, not end it as we think today. I think the cancer program in us was a great evolutionary adaptation at one time. It is caused by an acceleration of growth signals when there are no more stem cells left for adequate replacement. The cell has two choices, death or immortality. Guess what life chooses, by default, when it faces this decision? Oncogenesis is that answer. Life is looking for an "out" to survive, but we have not evolved a proper answer for it as yet. I think this is why we have found no cure for cancer with the billions of dollars that have been spent on its research. Honestly, I think the answer lies in Factor X.

So how might this all occur you ask? This is thought to be caused by mPER2 circadian deregulation of common tumor suppression and cell cycle regulation genes. Such as: Cyclin D1, Cyclin A, Mdm-2, and Gadd45, as well as the transcription factor c-myc, which is directly controlled by circadian regulators through E box-mediated reactions.

Sorry about the head hurting, but I have to show you I am not mad. I am a maven of Mother Nature. I connect things together. It is fine if you do not know about all this. **The key thing to remember is these epigenetic signals because our DNA to malfunction when there is a problem between leptin and circadian cycles.** Defects in leptin biology are all linked to cancer generation and propagation. This means that sleep is also tied directly into cancer because it is wired into cell

cycle functioning directly as explained above. It also is linked to cell mediated immunity by evolutionary design as well! This means that lack of sleep causes sepsis and can cause cancer in mammals whose biology is out of sync with their world. Research clearly shows that mammalian immunity is destroyed when sleep is destroyed. It appears that sleep directly affects the chronic diseases of aging and likely plays a role in cancer development as well. Every bio hack in my office starts with a discussion of sleep.

Mother Nature also used power laws to guarantee survival of our ancestors who were cold adapted as well. These were the animals from which we evolved. Remember the currency of that biologic transaction is called epigenetics. This is controlled $100\{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6\}$ by the environment. Ten years ago, we did not know this. Eight years ago, I began thought experiments in my head about what this could do to a cell over time, if applied over millions of years. This is the basis of Factor X.

Power laws dictate that epigenetics had to speed up. It is required for ultimate survival. It created the perfect situation for the development of a large human brain rapidly. This is not too controversial. But this implies that we should not have a lot of fossil ancestors. And guess what? We do not. This is why we have found so few missing links. In fact, my theory says we are the missing link we are currently looking for! Radical? This is controversial. But, I believe it is based on firm science.

If you want to see a modern world example of power laws effecting biology, I want you think about the recent TV program that starred **Robb Wolf**, called I-caveman. We all saw how that program turned out. We know what happened. I bet Robb had no idea how power laws dictated how he would be able to take down a large game animal to ensure survival. It is the same plan that Mother Nature employs. We saw how some in the group gave up early. We saw how some of their decisions

subjugated their biology. Do you remember what the vegan women said? Do you remember the gung-ho kid that gave up too early?

Ultimate survival requires that out of the starting life forms,

80-90{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} will not make it because they die off or give up. Evolution does not ever give up. It adapts to what it's given. Just like the Apollo 13 astronauts did to survive. Just as the surviving passengers did in the Andes plane crash, survivors did in 1972 stranded on the top of a mountain. Ultimate survival follows this basic power law. It is a core to biology. Robb survived with his group because of its application. If this experiment was extended in real life, the others left behind would have died for sure. Robb would not have and his success would have been explosively selected for by his progeny. With Robb's success, it would have catapulted him to a new understanding of how to successfully hunt and hone while Mother Nature was rewiring his biochemistry to make the most efficient use of the resources he procured. From this efficiency, it would speed up epigenetic control of his genome to cause extreme changes to his biology, to mandate his success. This is how evolution speeds up, and how it is transmitted to our genome in present time, and eventually epigenetically transmitted to offspring. Maybe you have some insight why fat parents really make for fat infants now? It's a function of power laws.

Evolution uses epigenetics to determine adaptation to environments. We have discarded the strict definition of genetic determinism that came from Watson and Crick, as founders of DNA. We know today that the power of epigenetics dictates a lot more about newer generations adaptations than we even knew ten years ago. The implications of this information now makes us look at some of our own long standing assumptions about how living cells work in cold and warm

environments to see how our cells ACTUALLY react to a thermoplastic environment. That is the essence of what I have found.

I have put it all together in my mind and came up with three tests experiments to disprove it. The Leptin Rx reset was step one. The results speak for themselves. So I proved biologic plausibility with this experiment on myself, my family, and many of my patients now. I gave the world the Leptin Rx for free to test. I'd say that has been a success in my practice and on the Internet. Now the last two experiments were tougher to figure out, but I think I did it in 2012. The last two are steps in this ancient pathway that guaranteed success for survival. I have completed the other two. I did not disprove my theory either, but I do think I destroyed lots of modern day dogma we all still suffer from.

Getting back to the cancer issue

Is there a great recent, modern day example of my theory in action whose demise fits this theory today? Yes. We'll get to him soon enough. First, read this recent article and immerse your brain in it.

What does this article imply for us all, if this is true? Well, it is true in all mammalian biochemistry. There is not a mammal alive that does not have this wired into their hypothalamus. I'm going to tell you what it means to me today. As the SCN function declines, it slowly destroys the chemical clocks in our head. When we are adapted and eat a warm climate diet, it INCREASES the decline of our metabolism and causes the inside of our cells to oxidize. The interior oxidation pushes us toward a fork in our biologic road. That fork in the road is where cell suicide (apoptosis) or the choice of a cell to become immortal (oncogenesis), occurs. If stem cells remain available, our biology uses them first. If none are left in our tissue stroma, we become senescent (non

dividing with a poor functioning organ) or we become cancerous. This implies that if we replenish stem cells we may be able to alter the biology.

The goal of longevity is to protect your stem cell supply at all costs as a young mammal. So having a program of living that does this is important. When we live outside our circadian cycles, we force our cells to make this decision too often, and we deplete those stem cells. We travel that road utilizing lifestyle behaviors that subjugate our stem cells because we are unaware of how a circadian mismatch may deplete our stem cells and force that decision to come to us earlier in life as future generations are born. This is why we see much more childhood cancers today as we did 120 years ago. It is a transgenerational epigenetic effect of our modern life.

You need to go back and read what I wrote earlier in this blog about how circadian biology is yoked to cellular metabolism. If epigenetics has sped up, and you eat a warm climate diet, you by definition increase mitochondrial ROS that slowly kills you. As you age, it speeds up because epigenetics switches are designed to react fast and furious for change. This is why neolithic disease all increase as we age. Name one that does not?

Want more food for thought? Safe starches are in no way safe at all in a species that is derived from a cold adapted ancestor. Why? Re-read the NYT article. What are its implications given what I have just explained to you? This is more fuel or proof that the "metabolic trap door" I found makes all starches less safe when they are eaten outside of how our circadian biology accounts for them in our sped up systems. Evolution power laws have sped up too, simultaneously, to compound the issue. This explains why kids today are bigger than their preceding generations. It explains also why they reach puberty faster today. It explains that when you add carbs to their diet it speeds up neolithic disease generation in modern man faster. This is

why diabetes and cancer are now prevalent in younger age groups compared to 100 years ago. Colon cancer was the 37th leading cause of death in 1900. Today it is number two. Now you know why. CW is never going to answer these questions, because the manner in which they are approaching it is dead wrong.

Review it all again. When the body used carbs for fuel, it generates more ROS in mitochondria. When you add this to a long light cycle, due to artificial lights of technology over time, you are actually causing your endogenous decline because it destroys your SCN clock for light. However, if you used cold it does not use light. It uses a new signal (eNOS) that I will discuss in a later part of the series. That is not made unless carbs/starches are diminished in our diet. Carbs are a critical part of a warm adapted brain in the correct season, SUMMER. Biology says carbs can't grow in winter, when eNOS is selected to appear and the brain wiring I uncovered proves that! Biology is telling us that we should not eat these things out of cycle. If we do, it is at our peril. This implies that there are no safe starches out of a normal cycle. That season is a summer cycle.

In mammals, guess what signals that thermoplastic change of our environment? A gut hormone called VIP. Moreover, because of how this hormone is wired to the leptin receptor, it becomes the initial stimulus to the metabolic trap door opening for mammals. A gut hormone is what changes our entire metabolism in a few weeks. **And if you read my blog yesterday, you will see the start of all these processes begins first with a lot of dietary carb intake that stimulates PUFA increase into our cell membranes of all mammals. It's the giant circle of life. Last time I checked, we are all mammals.**

Now back to the original point of this section, cancer, oncogenesis, Apple, technology, carbohydrates, death, and

Steve Jobs, are a prime example of this theory in our modern world. Diet alone was not the sole cause of his demise. That is a very bad assumption many in the paleo-world are making. In fact, they are committing the same errors that a vegan does with their own dietary choices by using technology out of cycle as well.

The biologic effect of technology is buried far from their consciousness because they are eating a smarter diet for their biology, and they look and feel well on the outside while their cells slowly oxidize and age. This implies that the proof of my theory will be born out in the second half of their life with the insidious chronic uncoupling of their biology from circadian biology. We can measure the proof of my theory by checking their telomere lengths right now to see if what they believe today is in safe. If starches are safe, prove it. I put it to the test and they are not safe. Optimal is not Paleo by today's beliefs.

Radical Theory #6: Modern life is as bad to us as a vegan or SAD diet. Eating better than the rest of the world will only hide its effects from your consciousness longer until you realize it. This implies that what you think is really safe may not be safe at all. It means that your ultimate proof won't come until it's too late for reversal unless you prove it to yourself today. Can we do that? Yes. Why do I know this? Because I tried to disprove it in 2006, 2009, and in 2012.

On February 27th, I use my talk at the Paleo Summit with Sean Croxton to delve into these mismatches further for you to consider. We must begin to question all our basic assumption of diet and all modern life and how it effects on our biology. For example, are our neolithic brain's thoughts allowing us to live outside our biologic blueprint? How does this process manifest when you consider the effect of time with respect to epigenetic control of a modern mammal whose

ancestors are cold adapted, and living in a modern world that is warm adapted 24/7? How can we test it? Can it be reversed? Does it require us to optimize our diet as soon as we become aware of it, and limit ourselves to the exposure to technology at the wrong times to get to an optimal life?

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Cites

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