CPC #4: Evolutionary Friend or Foe?

READERS SUMMARY:

WHY IS IRON IMPORTANT?

HOW DOES IT AFFECT LIFE AT A 30ft LEVEL MICROSCOPICALLY

HOW DOES IT AFFECT LIFE AT A 30,000 ft LEVEL IN OUR OCEANS

HOW DID EVOLUTION USE IRON TO PROTECT US AND OUR SPECIES?

HOW DID A PROTECTIVE EFFECT BECOME A DEADLY DISEASE IN 50 YEARS RIGHT UNDER OUR NOSES?

IS THIS ALL TIED TO FACTOR X TOO AT SOME LEVEL?

This blog was specifically designed for the people who just experienced my Factor X Webinar unveiling so it may not make total sense to those who did not attend. For those who did attend you now have the context to understand the following "few modern diseases" that just may not be diseases at all because of how an evolutionary bottleneck sped up epigenetics.

HEMOCHROMATOSIS:

Iron is an element that is vital for life. In fact, every form of life on this planet uses it to some degree to make sense out of the random chaos of the chemistry of atoms that life orders together to make the beautiful musical composition that is life. For humans, metabolism requires Iron. Iron carries oxygen to tissues in our cells but it can paradoxically make the ocean water crystal blue clear and devoid of life. When Iron is present in abundance the water is green and filled with life. Without iron our immunity

crashes, we become dazed and confused, cold, and very lethargic. Our metabolic rates can plummet.

Epi-paleo eating supports eating small fish with high omega three levels like anchovies. They concentrate omega 3's at the bottom of the marine food chain. They get their iron from dust storms of iron blown from land that concentrate on phytoplankton. In the ocean water where there is phytoplankton, there is zooplankton. Phytoplankton concentrates the power of the sun using photosynthesis to re-oxygenate our oceans. Without zooplankton, there are no anchovies or other small cold water fish. Without anchovies, we do not get big Ahi tuna who eat them. Without Ahi tuna, I get cranky and our brains shrink because our mitochondria become inefficient transferring energy and information.

If you think Iron is not amazing think about this geologic evolutionary trick that occurred since India crashed into Asia to form the Himalayas. Without the formation of the Mount Everest there would be no Sahara desert. The Sahara desert dumps billions of gallons of iron dust into the oceans to stimulate the phytoplankton that supports the marine life of the North Atlantic. This is also why the water in the North Atlantic is so green as well. But this iron dust also allows the ocean to become a massive sump to generate massive plant growth in the ocean that can absorb massive quantities of CO2 out of the atmosphere to offset all the CO2 humans have been releasing into the air since the Industrial revolution. (Geritol Solution)

So iron is a big factor for life in the seas. Most modern medicine men focus on low iron states. This leads to errors in judgement that makes us believe that more iron may be better for humans. This is precisely why modern processed foods like grains, flour and baby formula all have fortified iron in them. But iron in excess can be a very bad thing. In fact, parasites seek iron stores out in our body. Bacteria growth is stimulated to a great degree by iron. When serum

ferritin levels rise with LR or inflammtion you can bet the risk of a co morbid infection is not far away. Dr. Eugene Weinberg proved in the 1950s that all bacteria undergo explosive growth when in the presence of excessive iron. The reason is very counterintuitive. Iron increases anoxic photosynthesis that favors bacterial growth. The iron regulation in the body is extremely complex. When our skin defense are breached fluids like saliva, tears or mucous protect us by having metal chelators in them to protect iron stores from bacteria who seek out our iron. When we first get ill and our defenses are mobilized and iron is placed under "SECRET SERVICE" protection by proteins that protect our endogenous stores from bacterial invaders who need it to survive.

The same thing occurs when cells undergo oncogenesis and begin to spread. Cancer cells also have a huge hunger for iron. Drugs are designed to limit its availability when cancer is present. Some cancer patients are now instructed to cover their wounds with egg whites because the egg white protein protect the bodies iron stores from toxic use. Why? Eggs shells are porous to many things, so an egg has a white part to protect the more important yolk portion from attack. It is the immune system of the egg. Iron is a big deal.

THE BLACK DEATH: 1347-53

25 million people or half of Europe were wiped out by bubonic plague in two years from 1347 to 1349. The plague has actually serially infected modern Europeans in every century until the 20th century to cause major death and illness but the effect was greatest in 1347 because our genome was not adapted to it at that time. It is a bacterial disease caused by Yersina Pestis that collects in the lymphatic system and cause massive swelling of the lymph nodes of the body cause a gruesome disease. When the lymph node explodes through the skin the bacterial infection becomes lethal. When it is airborne it kills

95{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of people and it becomes rapidly contagious. It is believed the plague came to Europe by way of sailors on the sea who brought it to ports. As the death sentence raged through Europe observes noted that Jews during Passover did not get sick as often as others did. The reason is that they did not eat grains at this time. The grains in Europe at this time were infested with rats who carried the bacterial and transmitted it to humans. Others observed that the plague seemed to spare some and be deadly for others. Women and children also fared better than adult men, for example. In fact adult men, carried the highest risk of death from plague. Why was this the case?

New data pointed to iron levels as the real issue increasing their risk. Adult men had the highest iron content of humans alive in the 1300s. Women had lower iron levels due to pregnancy, lactation, and menstruation and children were often malnourished and this protected them from Yersina. Adult males carried the highest risk because their iron levels were greatest. This is precisely what the epidemiology of the plague showed occurred. **So what did evolution do to combat this epigenetic threat?**

It rapidly selected for men with the hemochromatosis genetic mutation to survive in Europe from 1347 all the way until 1900. This is why the incidence of hemochromatosis is so high in European Ancestral peoples even today by www.23andme.com testing. Hemochromatosis, a disease modern humans fear, actually is the work of natural selection to protect Europeans from Yersina Pestis that has chronically afflicted their population from 1347 until today. Hemochromatosis, put iron stores in “solitary confinement status” in visceral organs. Most of the iron is stored there so it can not wind up in the immune cells called macrophages in the liver and lymphatic system.

When macrophages lack iron in them they become ‘mafia like

killers' of those with Yersina Pestis bacteria. This one move protects the adult male from the ravages of bubonic plague and allows them to live another day. There is a trade off Mother Nature makes for this maneuver. With time, iron builds up in the viscera and causes organ failure, dysfunction and disease and possibly death but it happens slowly over a life span. This allows the human male to survive to reproductive fitness and provide progeny for the next generation. It is a highly protective **epigenetic advantage** that protects the adult European male from Bubonic Plague that has been chronically present in there environment for 500-800 years.

This sped up epigenetics is a result of retrotransposons in our genome that just 15 years ago we thought was "junk DNA". Today we know that 97{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of our DNA is used to alter our genome based upon epigenetic signaling. No other mammal on this planet has more junk DNA than humans. This means we are very responsive to environmental changes and can rapidly mutate our genome using retrotransposons that can jump to other parts of the genome. This essentially speds up genomic change using an epigenetic game plan. How did evolution come up with that idea? Survival is the short answer. As you saw in the Factor X webinar when faced with calamity what did evolutionary biology do to survive it? If you listened in to the Webinar you know precisely the answer now.

And where the junk DNA came from maybe more shocking. It seems it came from parasites, like viruses that we faced in our remote and recent past. This implies that infectious disease maybe a tool of evolution and not a disease state at all. They are the quickest mutators and fastest replicators in biology that we know of. Several billion years ago we usurped bacteria and turned them into mitochondria to make energy. It appears our recent ancestors have now usurped viral RNA and used reverse transcriptase to turn it into DNA and add it to our

genome when it was given the proper epigenetic signal from our environment. This helped us rapidly develop an fast acting immune system and also help speed evolution from our primate ancestors as well.

Today modern man looks at hemochromatosis as a disease…when in reality it might be the result of epigenetic iron protection strategy that evolution used to keep adult males alive to allow for modern humans to survive in Europe for the last 500 years. Today scientists realize that our 'junk DNA' seems to have the epigenetic information of the last 1000 years of our biology built into to it so that we can use it to defend against pathogens and events we have recently faced so that we can survive what ever life throws at us. It is our evolutionary bank account we save for a rainy day.

We now know that hemochromatosis was selected for by transgenerational epigenetics in the Viking men of the Northern coastline of Northern Europe. We believe that the harsh Tundra of the north was mineral deficient and that women with this genetic defect would have fared as better child bearers because they were able to absorb more iron to birth more children who also carried the hemochromatosis defect into the next generation. It is also believed that the Viking men might have survived the disease because their Gladiator type lifestyle was ferocious and they often faced serious blood loss that might have offset the iron defect. As Vikings settled down in Northern Europe the mutation grew by using the "founders effect" caused by inbreeding due to small population sizes. The founder effect means that any 'non lethal defects' are highly selected for and carried in the entire population of a people. It is believed that the 'Viking defect' was blended into the the populations of Northern and Western Europe over 500 years to provide a solution to the recurrent Yersina outbreaks that caused bubonic plague and almost extinguished humans in Europe. The chronicity of the infection was an 'epigentic signal phenomena' that allowed for

selection of the hemochromotosis gene to confer reproductive fitness over longevity while the Yersina remained active in the human population. This remained true for close to 500-800 years.

This "**irony**" may now explain why Ancient physicians were barbers and blood letters. We used to believe this practice was 'quackery' but we now know that it was survival of fittest in action. Blood letting had a major role in conferring more longevity to those with hemochromatosis of European descent. Until the 20th century bloodletting was standard practice. Then it was stopped and hemochromatosis became a modern disease. Canadian physiologist Norman Kasting found that blood letting also released the hormone vassopressin (ADH) from the posterior pituitary, and this reduced their fevers and increased their immune function to act faster. This find is clearly was not causation…but the correlation between bloodletting and fever reduction is massive in the human historical record. Bleeding them down may have helped fight infection when it was present.

It sounds crazy until you put on your Factor X lenses now. Consider that people in Africa live in a constant state of anemia because of malaria even today. In fact, if you replete them with iron to treat the anemia their rate of sepsis zooms higher. Do you think evolution knows something modern science may not?

Does this sound familiar to anyone who just listened to the Webinar?

Maybe Type 1 and 2 diabetes were initially epigenetic adaptations that also became disease in our current modern world?

<u>Consider the following:</u>

There is a huge difference in the prevalence of type 1 and type 2 diabetes even today based upon geography. Type 2

diabetes is more common in the developed modern world and 85{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} of those with it also have co morbid obesity from the SAD and environmental toxins. Consider these facts about Type 1 diabetes. It is much more common in in people of Northern European descent. Finland has the highest rate of juvenile diabetes in the world. Sweden is second and the UK and Norway are tied for third. As you head south the rate plummets. This disease is really uncommon in African, Asian, and Hispanic descent even today. **When a disease that is caused at least partially by genetics is significantly more likely to happen in a specific population, this is when the observant of us raise our evolutionary primal sense and begin to look for an ancient evolutionary link as to why it happened.**

The reason is simple. When we see this occur it suggests that some aspect of trait that causes a disease today likely helped our ancestors in our past to survive. In the case of diabetes, high blood glucose levels allows a person to deal better with extreme cold because it lowers the freezing point of blood! It is natural antifreeze that allows life to exist in the cold. Seawater does not freeze at 32 degrees. It freezes at 28 degrees. Vodka does not freeze at 32 degrees in your freezer even though it has 60{a7b724a0454d92c70890dedf5ec22a026af4df067c7b55aa6009b4d34d5da3c6} water in the alcohol. It freezes at minus 20 degrees. What about glucose in suspension? Ice wine does not freeze either at 32 degrees because of the sugar content of the wine hence its name. Alcohol, like sugar is a natural antifreeze. The higher the sugar content content in liquid the lower the freezing point is. Sugar is what makes Slurpees a slush…and why it never freezes! It took 7- Eleven 20 years to figure out how to make artificially sweetened slurpees with an indigestible sugar moiety.

To make Ice wine in late harvest around frost time, a grape begins to protect itself by rapidly reducing its water content

and by raising its sugar content. It tries to eliminate water when it gets cold. Now maybe you understand why you have the urge to urinate when you begin to use cold thermogenesis? You transiently are dumping water and raising your blood glucose levels just like a grape. But what happens in you is with longer adaptation you BG level drop as your fat mass shrinks. You eventually lose all your glucose stores and eventually just burn fat to survive. Humans have this ability as we evolved…..but the Neanderthals likely did not. Why you may ask?

Do ever wonder why they never won out in evolution against us? Modern science still struggles to figure out why? Could it be they could not become diabetic to survive the cold of the ancient past? After all we never find the Neanderthal skeletons in extreme Northern climates when the core ice samples show it was freezing cold? Coincidience or not? You decide.

The moral here is that we need to be aware of just how much we really are not even aware of it. I think the evolutionary story of hemochromotosis from 1347 until 1900 represents what an epigenetic modification can look like when it is matched into the world it evolves. When the defect no longer fits the environmental model it can be than thought of as a disease and its major selective advantage complete lost to the modern world because they become unaware of what protective advantages it provided since the environment has also changed.

If you heard my Factor X webinar you maybe connecting some dots to why I think Factor X is vitally important for the biologic sciences to understand. It is likely our Rosetta Stone or North Star in understanding how life makes sense out of the chaos that it is placed within. This story is eerily similar to the modern day plagues of diabetes and of cancer. Today modern medicine looks at both as disease states. In CT 2 and CT 3 I proposed that diabetes and cancer might not be diseases at all. They may be evidence of circadian mismatches

brought out by mismatches in our environment. Back in February this sounded radical. When you consider what I explained to you here today about hemochromatosis and marry that information to what you learned in the Webinar about Factor X, how radical are things now? Might it be ingenious way of how evolutionary biology uses epigenetics to control our biology to navigate life to get us to reproductive fitness to extend survival of our species? Inquiring minds will have much to ponder now.

Here is a teaser peek of for Type 1 diabetics to consider from:

Summary

The reasons for the uneven worldwide distribution of Type 1 diabetes mellitus have yet to be fully explained. Epidemiological studies have shown a higher prevalence of Type 1 diabetes in northern Europe, particularly in Scandinavian countries, and Sardinia. Recent animal research has uncovered the importance of the generation of elevated levels of glucose, glycerol and other sugar derivatives as a physiological means for cold adaptation. **You might not have heard this before but did you know that insulin does not work when it is cold? It is a thermoplastic protein for humans.** High concentrations of these substances depress the freezing point of body fluids and prevent the formation of ice crystals in cells through supercooling, thus acting as a cryoprotectant or antifreeze for vital organs as well as in their muscle tissue. In this paper, we hypothesize that factors predisposing to elevated levels of glucose, glycerol and other sugar derivatives may have been selected for, in part, as adaptive measures in exceedingly cold climates. This cryoprotective adaptation would have protected ancestral northern Europeans from the effects of suddenly increasingly colder climates, such as those believed to have arisen around 14,000 years ago and culminating in the Younger Dryas. When life expectancy was short, factors predisposing to Type 1

diabetes provided a survival advantage. However, deleterious consequences of this condition have become significant only in more modern times, as life expectancy has increased, thus outweighing their protective value. Examples of evolutionary adaptations conferring selection advantages against human pathogens that result in deleterious effects have been previously reported as epidemic pathogenic selection. Such proposed examples include the cystic fibrosis mutations in the CFTR gene bestowing resistance to Salmonella typhi and hemochromatosis mutations conferring protection against iron-seeking intracellular pathogens. This paper is one of the first accounts of a metabolic disorder providing a selection advantage not against a pathogenic stressor alone, but rather against a climatic change. We thus believe that the concept of EPS should now include environmental factors that may be nonorganismal in nature. **In so doing we propose that factors resulting in Type 1 diabetes be considered a result of environmental pathogenic selection** (EnPS).

Sound familiar to anyone? Sometimes when someone is real early with an idea they get branded a nut or a quack……..I like to think differently.

Want some more interesting facts: Look up the wood frog called Rana Sylvatica and researcher Ken Storey. The frog lives from the Arctic to the deep south in the USA. It freezes itself frozen solid in the winter but uses high blood glucose to keep it in suspended animation until spring comes and it and comes alive once again. Ken’s work was seminal to germ cell freezing and transplant medicine we use today. It appears that grapes, frogs and humans maybe able to all do this to some degree. I believe that Ancient humans may used this ability survive over Neanderthals when the environment became abruptly cold. The last time this appears to have happened was 13,000 years ago. It appears it helped our European Ancestors survive the dramatic violent cold of the Younger Dryas. Diabetes maybe evolution working its magic for survival even in us today. The

only problem is that we do not face a true winter today……we just eat like we might face one.

Many modern scientists believe the Young Dryas where the reason modern humans began to introduce modern agriculture to survive. How ironic is that notion to the paleo community?

It appears that the abrupt onset of severe cold in Europe 13,000 years ago (an epigenetic event) may have stimulated us to consider using agriculture to survive. When we did this what did we really do to ourselves? I think Dr. Loren Cordain previous research shows precisely how it hurt our species longer term, but the fact that we used agriculture initially to offset an environmental pressure is more interesting. Moreover, that previous 'evolutionary advantage' is now killing us because our modern environment has changed while epigenetics has sped up simultaneously in modern humans. This puts us more at risk to any of these biologic mismatches now. This sounds a lot like the hemochromatosis and diabetes story to me today I have laid out here in this blog. Maybe this explains why we are seeing disease of aging 100 years ago now showing up in teenagers? All questions for you to think about now. Much of this blog was excerpted in total to give you a precise idea of how a modern disease may have begun as a naturally selected survival strategy. Most people are unaware of this genetic defect actually protects us today. It came to be because of the rapid epigenetic pressures placed upon humans by the bacteria because of the massive killing effect in 1347. Because the K-T event used a sped up epigenetic signaling program to allow eutherian mammals to sense changes in their environment quickly and adapt, modern humans have the most adaptable and fastest ability to change epigenetic program on this planet today. We use junk DNA to first change DNA expression and with sustained pressure selected for the genomic change and expanded it in survivors. This is a great modern example of how a sped up epigenetics works in us. We need to think about the good and bad it can do. It is

definitely a double edged sword for modern humans.

I believe this gives biology and modern medicine an epistemologic foundation in evolution and should put practitioners back on track who understand these implications. For modern patients it gives you a new understanding and a way to view disease and health and save yourself from the current system.

I hope this stimulates some deeper thinking about the knowledge “you’re socialized” to believe is correct today. We are the only mammals that falls prey to socialization in this manner. I hope you become aware of just how much we really are not even aware of at all, because of factors we are not considering today. This is another way a neolithic belief can subjugate our paleolithic genome when we have things in our blind spot.

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