

Benefits For Individuals To Adopt An Insulin Friendly Healthy Lifestyle

By Charles E. Harris, J.D., June 2018

In an earlier memo, I stated that adopting an Insulin Friendly Healthy Lifestyle (“IFL”) as a national policy would benefit governments and people around the world (see memo “Benefits For All Nations To Adopt An Insulin Friendly Lifestyle” dated June 2018) as countries struggle to confront the current world-wide health crisis. But, what are the benefits for an individual? Why follow an IFL?

The answer? To release the repair and restoration powers of a hormone called glucagon. Following an IFL lowers insulin levels (both the amount in the blood and how long it hovers above a normal level for a healthy person) and this lowered insulin level in turn mediates the release of glucagon. Hippocrates was correct when he said, “Let food be thy medicine and medicine be thy food.” (~460-~370 BC). It is just as true today as it was thousands of years ago. By watching what and when we eat, along with the other insulin affecting factors like beverages, exercise, and stress management, we can keep insulin levels low and release the miracle “drug” glucagon ... unsurpassed by any other medication in modern medicine for the treatment and prevention of chronic diseases.

1) Controlling Insulin Allows Glucagon To Function: Keeping insulin levels at baseline stimulates the body to release glucagon. In other words, when insulin falls back to healthy normal levels, glucagon “wakes up” and starts to activate. The pancreas senses low insulin levels and releases glucagon into the blood. Many health experts believe glucagon’s function is limited to maintaining glucose levels, but in reality, glucagon does much more. Glucagon helps us survive in between meals, keeps our basal metabolic rate from going down, recycles and repairs our cells, and keeps our organs in top operating condition until we can feast on food again. In short, in my opinion, glucagon is the most powerful medicine to ever exist and, in many cases, it is the only medicine (man-made or natural) that is available to maximize our health and longevity.

2) Glucagon Repairs & Restores Bodily Functions: Glucagon (which I call “GG” for short) should be on the minds of every human being. Taking

poetic license, as this memo is just an overview and cannot explain the intricate and complicated signaling, transcription factors, and biological pathways involved, everyone would be pleased to know that during the times that GG is active, what I call “GG” or “GG time” in my lectures, is the time in which the body repairs DNA, recycles proteins (autophagy), restores cell and mitochondrial function, removes fat from the liver and pancreas, and helps these organs to function normally. GG helps to control weight by signaling the liver to use energy from glucose and stored fat (triglycerides). GG reduces small dense atherogenic lipoproteins (called “sdLDL” ... the dangerous oxidized and glycated sub-fraction of the larger buoyant LDL particle) circulating in the blood. For those who want to lose weight, only a low normal level of insulin can signal the body to release stored fat (actually, an enzyme called hormone-sensitive lipase “HSL” frees triglycerides from fat only when insulin levels are low; i.e., when HSL cannot sense that insulin is elevated). For women who suffer from Polycystic Ovarian Syndrome (PCOS), it is GG which restores the balance among various hormones, including estrogen, progesterone, follicle stimulating hormone (FSH), luteinizing hormone (LH), and testosterone. GG restores every organ in the body. The brain can protect itself from Alzheimer’s disease (which some doctors call Type III diabetes) by repairing or recycling proteins and fats essential for cognitive function. In truth, just about every chronic disease, and even the most dreaded cancers (considered by many to be driven by metabolic dysfunction), can be avoided by allowing GG to be as active as much as possible. GG starves cancer growths of its food, energy, and building supplies (glucose, glutamine, and other amino acids), prevents the growth of blood vessels to feed the growths, and targets rogue cells for destruction and recycling before they can take over and start spreading. For each chronic disease, there are well-documented pathways explaining why insulin levels are the single most important factor driving the problem, no matter where the dysfunction is first diagnosed. Why? Because it is all the same disease – chronic elevated insulin.

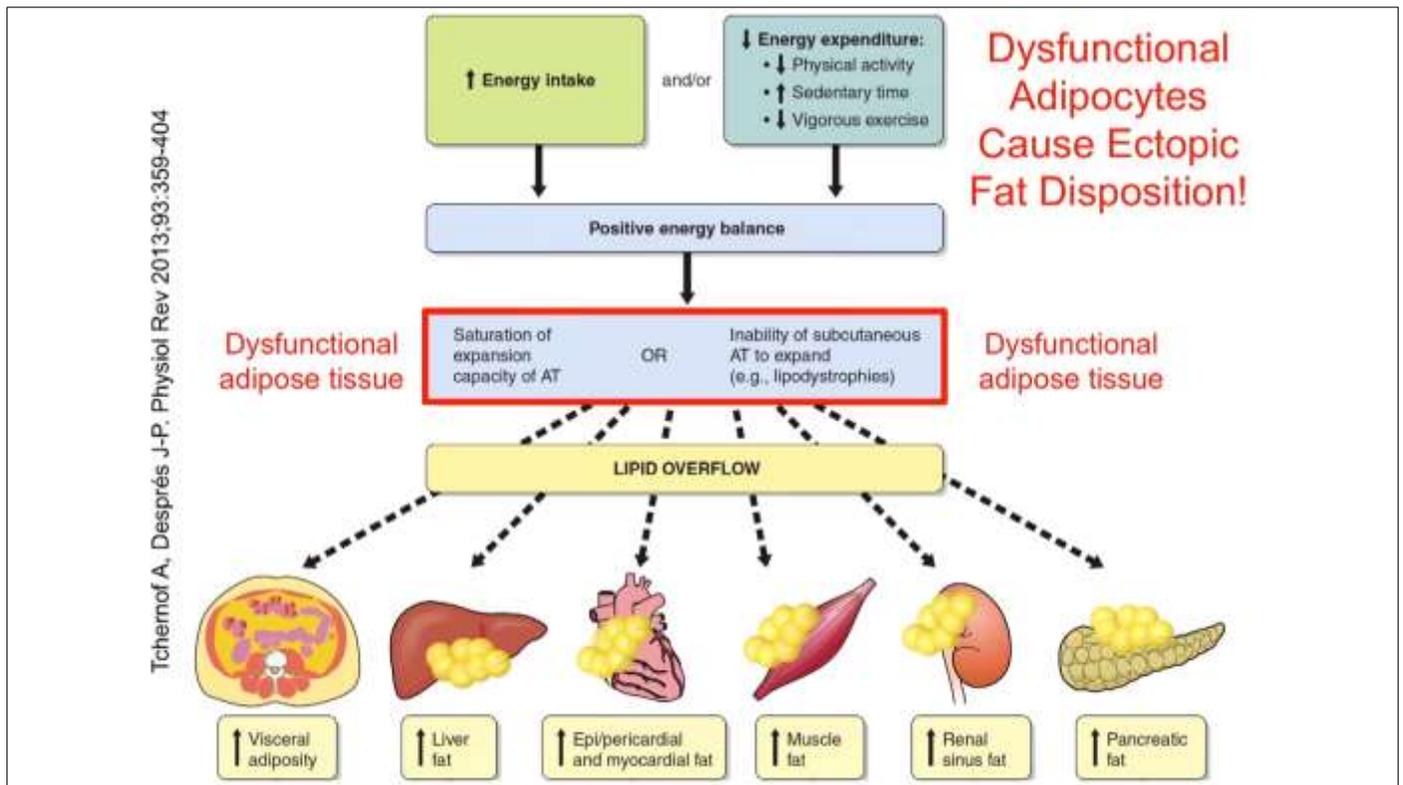
3) Glucagon Stops Working When Insulin Is Elevated: When insulin levels rise after we eat something, all GG repair and restoration efforts stop. GG goes to “sleep” and waits for insulin levels to drop back down again before the pancreas once again sends GG out into the blood. If insulin is chronically elevated because we are insulin resistant, GG may never have a chance to “go to work.” Even though GG is the most important repair and restoration

“medicine” known to man, little information of its curative effects are found in the medical literature and GG’s powers are unknown to most medical practitioners. Unfortunately, multi-variable studies comparing multiple lifestyle factors, i.e., “real world” studies, are impossible and randomized double blind placebo controlled (RDBPC) studies are still considered the “gold standard” for lifestyle interventions and recommendations.

4) Chronic Elevated Insulin Levels Lead to Fatty Liver: Failure to maintain normal insulin levels leads to weight gain, fatty liver, and every other chronic disease. In fact, as the adipose tissues fill up with fat (principally from de novo lipogenesis), the fat cells end up sending it back to other organs and inundating them with fatty deposits (known as visceral fat) ... mainly to the liver first, and then the heart, kidneys, pancreas, etc., causing multiple metabolic dysfunctions throughout the body. Experts estimate that in the United States greater than 30-40% of the general population has fatty liver disease (NAFLD) and for those who are overweight or suffer from Type II diabetes, the percentages of those with fatty liver is even higher ... 60% for overweight individuals and 70-90% for diabetics. Research shows that it is the liver’s inability to respond to insulin (insulin resistance and NAFLD being one and the same) which causes elevated glucose levels in the blood ... much the same way as a false negative feedback loop activates hormone-sensitive lipase in adipose tissues leading to a cyclic formation of triglycerides and free fatty acids in a never ending circle. The greater the metabolic dysfunction, the harder and longer GG must work to restore health. In other words, the time in between meals, along with other factors promoting an IFL, must be long enough to keep GG active and allow the body to run on ketones. Some experts have promoted “nutritional ketosis” to extend the time and level of ketones. They promote “ketogenic” meals which hardly elevate insulin at all.¹ While running on ketones and extending GG time is one hallmark of IFL, I believe one should choose as many “insulin friendly” lifestyle choices as possible.

¹ Some medical experts have placed patients on “nutritional ketosis” to extend the time and level of ketones in the body in an effort to reverse diabetes, fatty liver, and metabolic syndrome. See Virta Health, <https://www.virtahealth.com/>. Keeping insulin at a bare minimum for a long period of time is, they argue, just “what the doctor ordered.” Some, including myself, may view several of their dietary recommendations as extreme or even “unfriendly” to insulin. For example, IFL promotes consuming whole real natural foods and eschews refined carbs and oils (“RCOs”). IFL integrates exercise and stress management to modulate insulin levels, too. But they state that such measures justify the end result of reversing Type 2 Diabetes, even for those people on insulin therapy for years. This is no surprise. GG can work miracles! No drug or medication can treat fatty liver or restore metabolic function as successfully as GG. But still, I believe that IFL is a comprehensive approach and leads to long term health benefits while at the same time, sending a positive message.

Below: As fat builds up in the liver, the liver tries to send it out to the rest of the body for storage in the adipose tissues. As the adipose tissues fill up, they send the fat back to the liver, then to the other organs. The start of this whole chain reaction is elevated insulin levels leading to insulin resistance (as well as leptin, mTOR, and a whole host of other metabolic pathways in the “insulin symphony” described in my lectures).

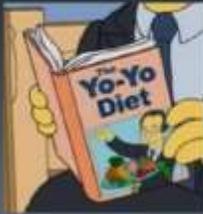


Dr. Nicolai Worm - 'Nutrition Therapy of Non-Alcoholic Fatty Liver Disease

PowerPoint Slides: Below are several slides from my PowerPoint presentations which highlight some of GG’s functions. As seen in the slides, GG acts like the conductor of its own “symphony orchestra” (insulin has its own symphony, too) signaling various other hormones, cell receptors, metabolites, proteins (including specialized enzymes), gene expression, etc., to start “playing” and repair and restore the body:

Glucagon (“GG”) Signaling

- GG Receptors On Many Cells
- Active Only When Insulin Is Low
- Controls Weight & Hunger
- Keeps Systems In Optimal Condition
- Not ... “Eat Less & Exercise More” or “Starvation Diet” ... 98% Failure



Glucagon Symphony



GG ... The Survival Hormone

- Basal Metabolic Rate (BMR)
- Energy From Stored Fat
 - Liver: Ketones
- DNA & Cell Repair
- Longevity Metabolites

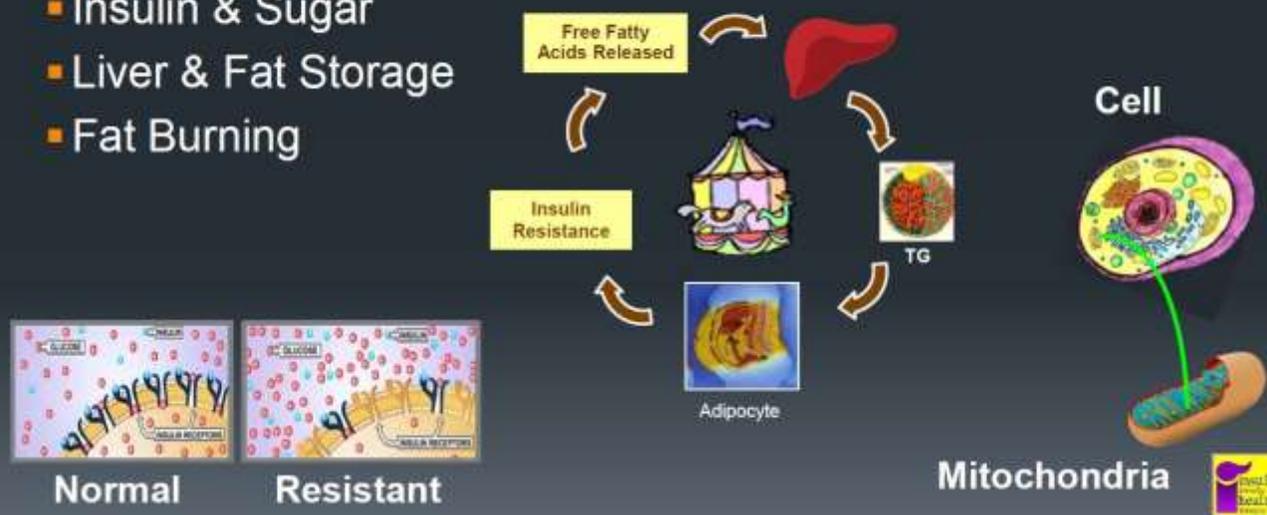


GG ... Keeps Us Young



Forever Yo-Yo

- Insulin & Sugar
- Liver & Fat Storage
- Fat Burning



5) Glucagon Is The Best Medicine: Speaking for my own health odyssey over the past 20 years, it has been GG (not willpower or self-discipline) which helped me lose weight and keep it off. It has been GG which gave me a new lease on life and a younger body. No more losing and gaining weight (the yoyo syndrome). Perhaps more important, GG got rid of the fat in my liver (comparing before and after ultrasound results) and reduced my triglycerides (TG) from 252 to an average of 55 (mg/dL). GG reduced those dangerous plaque-forming sdLDL particles and increased my HDL levels. GG - this “medical miracle” natural hormone - transformed me from a tired 55 year-old man to an energetic 65 year-old fellow – with the vitality and stamina of a younger man half my age. By “turning on” GG during times of low insulin, I could modulate both insulin and GG during different times of the day to not only slow down aging, but to “reverse” it. And, not to forget, this rejuvenation happened without any medications of any kind.

6) Glucagon Takes Time To Restore Health: If you want to look and feel years younger, stay fit and firm, repair and restore your brain, heart, liver, kidneys, etc., then give GG a chance to help by following an insulin friendly healthy lifestyle (“IFL”). But, nothing happens instantly. Many people will notice GG restoring function within months. For some, the full power of GG can take years. Even though it is the best medicine, it works slowly and naturally at the body’s own pace. GG must help your body to adapt and restore

metabolic function.² This involves transcription factors, epigenetics³ (such as FOXO3a DNA repairing and gene expression), autophagy, restoring cell receptors and signaling pathways, mTOR, leptin and other hormones, uric acid, etc. Any health practitioner who lets patients know about GG (and IFL, of course) will give them a powerful remedy in the quest for health and longevity.

7) Living an Insulin Friendly Healthy Lifestyle – My Story:

Over the past 10 years, I have pieced together thousands of opinions and studies from as many doctors, researchers, and professors from around the world to define an insulin friendly healthy lifestyle. I have experimented with combinations of different foods and beverages. I have come to value how plants and animals are raised and what they are fed. I have learned how to prepare food and when to consume it – to maximize the time that GG is active. I have developed exercise routines which lower insulin levels and improve insulin sensitivity – to maximize “GG time.” Sadly, stress management is easier said than done even though I know the enormous impact stress has on insulin and its duration as it reacts to other signals like cortisol (the so-called “fight or flight” hormone). I have summarized many of the basic steps of implementing an insulin friendly lifestyle in a 12-hour YouTube video series (the first, one of seven: <https://www.youtube.com/watch?v=hOdNFtgDI5A&t=1175s>) I made in 2014. In the videos, I spoke at length about insulin and glucagon and the prevention of chronic diseases. However, it was not until two years later, while visiting the director of a health sciences research institute at a local university, that I came up with the phrase “insulin friendly healthy lifestyle.” On that day in his office at the institute, the director Dr. Sakda Pruenglampoo asked me to summarize my “theory” and lifestyle ... to boil it down as simply as I could. I answered, “To live a life, as much as possible, in a way that was friendly to insulin.” In the following days, I kept thinking about the idea of being friendly to insulin. I liked the idea and the concept stuck. A few months later, at Dr.

² Disclosure and Warning: I am not a medical doctor and I do not intend by anything I have stated in this memo to offer any medical advice or medical treatment to anyone for any existing illness. For those suffering from any disease, I recommend consulting a medical doctor before making any lifestyle changes, especially for those who are under the care of a physician and taking medications. Taking medications and suddenly adopting a healthy lifestyle can cause life-threatening situations. For example, taking medications to lower blood pressure or blood sugar levels and then starting a healthy lifestyle could cause a serious medical emergency or even sudden death. Always get a complete medical check-up before adopting any healthy lifestyle changes and exercise routines.

³ Epigenetics plays a pivotal role in pancreatic dysfunction and loss of insulin production by the Beta cells. Only GG can reverse the “environmental factors” which led to Beta cell abnormalities and restore proper gene expression and signaling allowing the pancreas to start producing insulin again.

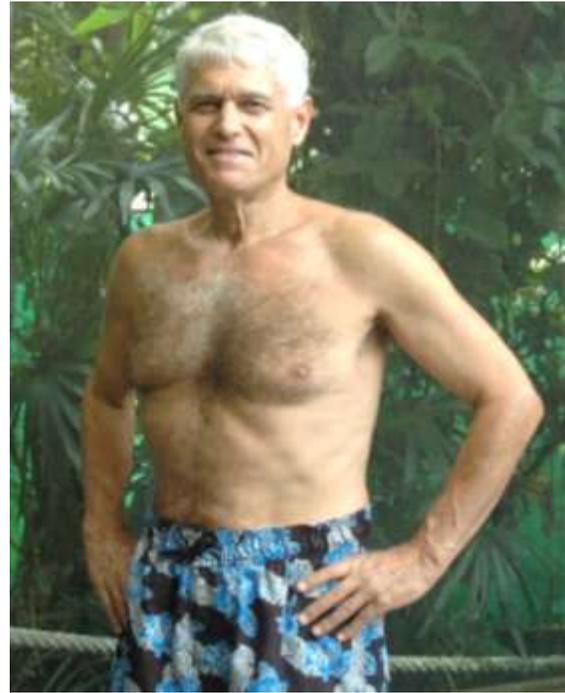
Sakda's suggestion, I presented my "insulin friendly" lifestyle as a "case study" (of one) at the 2016 Thai National Nutrition Conference. An updated copy of the poster presentation is reproduced below. Since the conference, I have prepared a couple of PowerPoint presentations explaining how to implement an insulin friendly lifestyle, one a three or four-hour overview and another a 25-hour lecture series which is structured to be presented over a number of weeks, complete with examples of "insulin friendly" foods, beverages, exercise, and ways to deal with stress.⁴ Whether one follows a vegetarian diet or one of the popular dietary regimes (Traditional Diet, Low Carb High Fat, or High Fat Low Carb, Paleo, Primal, Plant-Based, etc.), focusing on insulin levels is the key to a long and healthy life.

Below are two pictures of myself showing my "before and after" transition to an insulin friendly healthy lifestyle. In the picture on the left, in 2008, my weight was over 220 pounds and I was diagnosed with a fatty liver. Within several years, my weight returned to normal and I no longer had a fatty liver. Losing weight is hard enough for some, but keeping it off permanently and restoring health are the real goals. In the picture on the right, taken in 2016, my weight is still 160 pounds and my liver function is still operating normally.

The main point is that in the 30 or so years leading up to my diagnosis of a fatty liver in 2008, had I known and focused on insulin levels and included them in my routine medical examinations, I could have discussed the results with my doctor and adjusted my lifestyle ... decades earlier! My weight would never have been out of control, not to mention getting a fatty liver, etc.

Excluding alcohol abuse, chronic elevated insulin levels are the main cause of a fatty liver and weight gain, and in time, every other chronic disease.

⁴ Stress management requires paying attention to all factors which affect insulin levels – all of our activities in our daily lives, not the least of which is our environment, need for sound sleep, pollution, EMF, etc. Even the use of modern electronic devices has an enormous effect upon insulin, for example WiFi connections, blue light, etc., which prevent us from sleeping raise insulin levels. As much as possible, we need to engage in a "photon fast" and turn everything off before sleep (if not an hour or so before).



Above: Charles Harris in 2008 (left) and 2016 (right)

Below: My poster presentation at the 2016 Thailand National Nutrition Conference



Below: Poster Presentation

Insulin Function and Its Effect On Metabolism & Basal Metabolic Rate To Improve Weight Control & Better Health: A Case Study

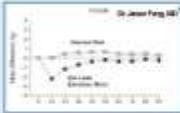
Charles Harris

Medical Center at the Thailand House of Parliament

Introduction

Reducing weight and visceral fat is difficult because the body can go into "survival mode" and reduce basal metabolic rate (BMR) and satiety.

Studies: "Eat Less & Exercise More" Diets Fail 98% Of The Time.



Women's Health Initiative Dietary Modification Trial ... Almost 58,000 Women in the USA²

Weight Loss After 7.5 Years ... Only 8.4 kg HDL & Triglycerides (TG) Virtually The Same

Previous "Eat Less & Exercise More" Diets Failed



Insulin Levels, Visceral Fat, Liver Function, Hunger Cravings, and Basal Metabolic Rate ... "Out of Control"

Objectives

1. To investigate if controlling insulin levels might help control BMR and satiety.
2. To determine if measures "friendly" to insulin could eliminate hunger cravings, improve liver function and metabolism, boost energy levels, and help lose weight permanently.



Methods

"Insulin Friendly" Healthy Lifestyle:

- An obese 58-year-old man (now 64), suffering from fatigue, mild fatty liver, and metabolic dysfunction, following many Thai Health Promotion Foundation recommendations, experimented with diet, exercise, and various healthy lifestyle measures to mimic cycles of "feast or famine" to lower insulin levels and improve metabolism;
- No medications or supplements were used;
- "Insulin Friendly" measures included healthy whole natural foods, food preparation methods, and scheduling of meals and exercises;
- Such measures were compared to previously failed diets – one losing 30 kg (which he regained) and another losing only 10 kg; and,
- Blood tests and disease risks were also compared over a 19-year period. The prior diets never addressed insulin levels.

"Insulin Friendly" ... Healthy Food, Beverage, & Exercise

Ozonated Drinking Water Daily Exercise In Chemical-Free Ozone Pool

Results

The subject's waist/height ratio, TG/HDL ratio, liver function, and visceral fat returned to normal levels. He lost 20 kg (in addition to the 10 kg mentioned above) ... down to normal weight. Compared to previously failed diets, he no longer had hunger cravings and his BMR was stable. He noted increased energy levels and immune function. Fasting blood glucose and blood pressure levels were (as since youth) normal, about 90 and 107/68, respectively.



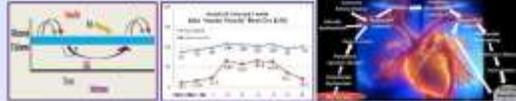
"Insulin Friendly" Healthy Lifestyle

Date	Data from Medical Records*				
	2007	08/14	2008	2014	2015
Waist (cm)	101	103	110	91	85
BMI (kg/m ²)	34	34	36	27	22
ALT (U/L)	54	54	86	37	28
AST (U/L)	54	54	86	39	28
GGT (U/L)	54	54	86	39	28
Fasting Blood Glucose (mg/dL)	90	90	90	90	90
Blood Pressure (mmHg)	107/68	107/68	107/68	107/68	107/68

*Health Records: Endocrinology & Metabolism, Medical Center at the Thailand House of Parliament

Discussion

Chronic elevated insulin contributes to oxidation, inflammation, aging, obesity, metabolic syndrome, diabetes, heart disease, and other NCDs.⁴⁻⁵ This case study showed that controlling insulin levels might be able to improve health by helping to stabilize BMR, reduce oxidation and inflammation, improve metabolism and liver function, and improve lipid levels.



Above: Permanent weight loss results from keeping insulin levels low, using stored energy from fat, and maintaining a normal BMR ... a process mediated by glucagon (GG) ... the "survival" hormone. Elevated insulin inhibits GG and prevents "burning" fat for energy, as well as preventing other survival signaling pathways such as DNA and cell repair, leptin sensitivity, and the expression of many longevity metabolites.



Chronic Elevated Insulin Is The Leading Cause of Chronic Diseases ... "The NCD of All NCDs"

Conclusions

This case study illustrates the benefits of following an "insulin friendly" healthy lifestyle to improve metabolism, stabilize BMR, control weight, and reduce body fat. Hunger cravings were eliminated. Liver function returned to normal. To validate these findings, more study subjects and optimal study designs need to be done in future research.



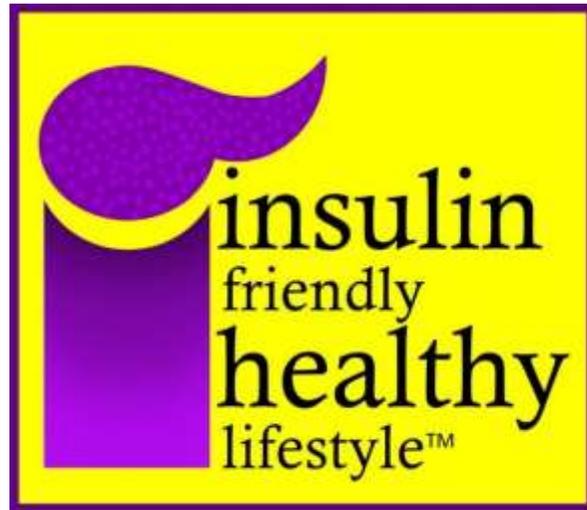
For A Long & Healthy Life

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7. Dr. Joseph R. Packer, MD, Dr. Jeffrey Carver, MD, Dr. Tim Neases, MD, and Ken Cummings, DHE - Diabetes & Risk of Hypertension.

Acknowledgements

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 3. My partners and self in Blue Diamond Water Resources, L.P., Chiang Rai, my family, and my friends for making, preparing, and supplying the ozone water treatment systems for drinking water and chemical-free ozone exercise pools, organic farm and whole grain sourdough bread bakery products, superfoods, and meals used in this study.
- [For additional information, please contact Charles Harris by email: Charles@insulinfriendly.com]



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