

Guillermou

When a molecule loses electrons we talk about oxidation and when it gains them we talk about reduction. The redox balance of the oxidation and reduction processes occurs when the set of these chemical reactions remains stable. This is what is observed in normal physiology. If, on the other hand, the body becomes unbalanced, the production of ROS accelerates. These molecules accumulate inside cells, oxidize the substances contained inside, such as lipids, proteins and DNA, and alter them. Redox balance is essential for cellular homeostasis. It moderates the production of reactive oxidative species (ROS), leading to their effects as second messengers.

However, overproduction of ROS and/or depletion of enzymatic and non-enzymatic antioxidant systems can lead to oxidative stress (OS) and its consequences. On the other hand, the excess of reducing equivalents resulting from an elevation in the GSH/GSSG and/or NAD/NADH + ratio or the overexpression of antioxidant enzyme systems can deplete all ROS that drive cells to RS. Excess reducing equivalents can regulate cell signaling pathways, modify transcriptional activity, induce alterations in the formation of disulfide bonds in proteins, reduce mitochondrial function, decrease cellular metabolism and contribute to the development of some diseases in which NF- B, a redox agent involved sensitive transcription factor.

Diseases in which an inflammatory condition is associated with RS. Some of these diseases are protein aggregation cardiomyopathy, hypertrophic cardiomyopathy, muscular dystrophy, pulmonary hypertension, rheumatoid arthritis, Alzheimer's disease and metabolic syndrome, among others. There are environmental factors that intervene in the appearance of redox imbalance, such as a sedentary lifestyle, obesity, inadequate diet, smoking and environmental pollution, which also induce it. Stress, diet, exercise: common environmental factors and their impact on epigenetic age

Posted On 04/07/2024

Guillermou

Cellular repair and the antioxidant system work together to counteract the damage caused by ROS. The endogenous ones are generally enzymes, such as peroxidases and catalases. Among exogenous ones, the optimal ratio of pro- and antioxidant molecules is important for proper cellular functioning. The data reviewed show that long-lasting deviations from this redox state generate oxidative or reductive stress, which is responsible for inflammation, allergic and autoimmune reactions, and also contributes to aging. The vasculature is mainly affected, along with internal organs such as the kidney, heart, brain and liver, as well as bone and adipose tissues, which are directly or indirectly exposed to harmful influences through the circulation.

Physical exercises stimulate the secretion of irisin, which is revealed as a powerful protector of the aforementioned organs and tissues. Together with melatonin, it can promote redox homeostasis. Physical exercise induces, to a variable degree, metabolic and mechanical stress that can cause an imbalance in oxidant/antioxidant homeostasis in favor of oxidant compounds. Recent publications also show ROS as compounds essentially linked to positive effects in relation to the athlete's health.

The anti-inflammatory effect associated with exercise, muscle biogenesis from mechanisms sensitive to redox status, an improvement in glycogen restitution, and even an increase in contractility and muscle strength, are some of the positive effects of the cellular signals exerted by the ROS.

www.mdpi.com/.../1126 (2023).-- www.sciencedirect.com/.../S1568163723001150 (2023).--
www.sciencedirect.com/science/article/abs/pii/S2212429223000111 (2023).--
[www.cell.com/.../S1550-4131\(23\)00012-8](http://www.cell.com/.../S1550-4131(23)00012-8) (2023).— link.springer.com/.../s00204-023-03562-9 (2023).-- www.liebertpub.com/.../ars.2019.7803 (2020).--

Posted On 04/07/2024

juststeve

Looks like its back in school Gui. Ashley's & sister efforts so far appears to me easier to absorb than much of today's interview. Despite over a century of informational lockout and lockdown achieved and maintained by Rockefeller and friends, it's all been leaking out piece by piece and a fuller picture of the puzzle is taking full shape. An example of We have to build it or the same old, same old players will build it for their own self-interest.

Posted On 04/07/2024

stoneharbor

Thanks Gui for focusing on exercise as a complimentary but essential element in reduction of oxidative stress. As the saying goes, man lives "not on bread alone" and exercise is the other major factor that must be considered for health. Not only does it release endorphins and cause better cellular cleansing, but it is required to even power the movement of nourishment via the lymph system. No bodily movement and you will never even drop important nourishing long-chain fats, including DHA, EPA, and cholecalciferol (vitamin D3) into circulation for DAYS.

The average person, with some low level of exercise may still have these essential fats tied up in the lymph system for 4 days, unavailable for use in the body. But people in very inactive states or even bed-ridden may have vital nutrients like fats and also gastrointestinal hormones (and also toxins that need to be eliminated) tied up in a sluggish lymph system for weeks. Looked at this way, exercise is critical just for proper nourishment and toxin removal.

www.sciencedirect.com/science/article/abs/pii/S0031938411002150

Posted On 04/07/2024

Guillermou

Thanks Just and stoneharbor. A variety of phenomena throughout the human life (e.g., nutrition, diseases, infections, physical exercise, environmental conditions, etc.) produce oxidative stress, modify redox homeostasis and generate metabolic adaptations and epigenetic changes that in turn directly affect everyone. cells and tissues. Several metabolic intermediates generated during glycolysis, tricarboxylic acid (TCA) cycle flux, and mitochondrial oxidative phosphorylation (OXPHOS) connect cellular metabolism to the regulation of gene expression through epigenetic mechanisms.

Regular physical exercise, together with a balanced diet and a healthy lifestyle, is established as an important health factor and is generally recommended for its positive effects on the immune system, the musculoskeletal system and essential metabolic functions. Inflammation is also a physiological response of the body to harmful stimuli, but when it persists and becomes chronic it can cause cellular and tissue damage. It is important to highlight that both oxidative stress and inflammation are two closely related and interdependent processes.

Physical exercise, one of the main adaptive physiological processes, has been shown to be one of the strategies to improve antioxidant defenses, therefore physical exercise is recommended to prevent or reduce several pathological disorders. Analogously, physical exercise has been shown to reduce inflammation (i.e., interleukin-6 (IL-6)) at the cellular and tissue level due to the anti-inflammatory effect (i.e., interleukin-10 (IL-10)) of regular vitamin and moderate exercise.

Posted On 04/07/2024

Guillermou

Physical activity has been proposed as a beneficial intervention for several chronic diseases of the pulmonary and cardiovascular system, metabolic disorders, diseases related to muscle, bone and joint injuries, and cancer, as well as neuropsychiatric disorders, among others. However, intensive exercise can cause fatigue, stagnation and reduced performance along with metabolic alterations. Furthermore, exhaustive and extreme amounts of exercise have been associated with negative effects leading to muscle and joint injuries and even disease, partly induced by excessive oxidative stress, inflammation, and profound metabolic changes. In any case, the genetic background, metabolic control and epigenetic control of specific mechanisms that can facilitate physiological adaptations during physical exercise appear to be carefully orchestrated and, therefore, different training protocols must be studied in detail to understand the factors epigenetics.

induce metabolic adaptation processes that take place during physical exercise. As shown in this review, oxidative stress, the glycolytic mechanism and the Krebs cycle are closely interconnected with the epigenetic machinery. In fact, some of these important systems involved in adaptation to physical exercise are specific epigenetic mechanisms that use metabolic intermediaries, including oxygen, to regulate epigenetic signals.

Posted On 04/07/2024

Guillermou

Epigenetic modifications and many epigenetic enzymes potentially depend on changes in the levels of intermediate metabolites and products of glycolysis and the TCA cycle) as well as other metabolic intermediates of fatty acid oxidation such as -hydroxybutyrate. Furthermore, at least mitochondrial TCA cycle enzymes can translocate to the nucleus under some conditions to produce a nuclear TCA cycle, which can provide the epigenetic machinery with appropriate substrates for epigenetic modifications. In summary, this is an exciting field and in the coming years we will have relevant information on how physical exercise can modulate epigenetic machinery and substrates and how they depend not only on the intensity and duration of exercise, but also on age.

, physical fitness and health status of the person carrying out the physical activity.

www.sciencedirect.com/.../S089158492400008X (2024).--- www.scopus.com/record/display.uri?eid=2-s2.0-85104924125&origin=in.. (2021).— link.springer.com/.../s13102-021-00375-0 (2021) www.frontiersin.org/journals/physiology/articles/10.3389/fphys.2019.01.. (2020).-- bpspubs.onlinelibrary.wiley.com/doi/10.1111/j.1476-5381.2012.01970.x (2012).--- journals.lww.com/nsca-jscr/fulltext/2012/12000/physical_exercise_as_an.. (2012).-- www.nature.com/.../s41573-021-00233-1 (2021).-- www.scopus.com/record/display.uri?eid=2-s2.0-84974623781&origin=in.. (2016).— www.nature.com/.../nri3041 (2011).-- www.cmaj.ca/.../801.short (2006).--

Posted On 04/07/2024

forbiddenhealing

We tend to ignore the power of mental/emotional states over the entire function of the body...as well as personal cravings and avoidances....If it's clean, organic, whole, fresh and seasonal; all foods in immense variety come to my table...If something is disagreeable or upsets digestion I skip it...and if it is abundant I tend to gorge. As far as breathing I always felt my best when snorkel diving, hyperventilation/breath hold/hyperventilation....as with chi, yogic and Iceman breathing. Shifting O2/CO2 and pH seems refreshing.....So experience and mindfulness are critical to me...and the tastiest most satisfying traditional/ancestral foods keep me happy...and isn't that the goal?

Posted On 04/07/2024

Guillermou

Good practices Randall. Each person must experiment with food but the truth is that raw foods are energy-dense. Solar radiation produces anti-inflammatory, analgesic and modulating effects. It stimulates cells and regulates the production of hormones and neurotransmitters. Through the skin we absorb between 25-30% of solar photons. The raw foods we eat not only provide calories, proteins, vitamins or minerals, but they literally transfer sunlight to the body. This light is essential because it provides physical coherence, order, and organizational capacity, which is essential for all living beings. The vitality and quality of a food can be determined from the intensity and coherence of its biophotonic emission.

Fritz-Albert Popp has proven that the emission of biophotons can be distinguished from fresh vegetables, grown with ecological methods and free of harmful residues. Organic, raw and grated vegetables provide the greatest amount of coherent biophotons to the body. Biophotons: a modern interpretation of the traditional "Qi" concept*. www.sciencedirect.com/.../S1887836913700887 .----
Dr Norman Cousins cites in "Creating Peace by Being Peace" the biophoton readings of people on sharply varying diets. The average reading of a person eating live or raw wild foods was about 83,000 units, while a person eating a junk food diet only had a reading of roughly 1,000 units of biophotonic radiation.

It should be of great interest to learn that increased biophotons in food have the power to order and regulate cells in that it can elevate an organism to a higher oscillation or order of vibration manifesting as a feeling of vitality and mental well-being. This is why eating naturally locally grown fresh sun-ripened fruits and vegetables rich in light energy or biophotons possess energizing and healing properties. alisabattaglia.com/2021/07/15/biophotonic-nutrition-the-benefits-of-ea.. (2021)

Posted On 04/07/2024

HealthNutNews

As a former, vegan diagnosed by Mayo Clinic with a collagen connectivity disorder, this is very interesting. I think switching to meat that is more or mostly connective tissue may not solve the issue, but it sure can't hurt. Erin :)

Posted On 04/07/2024

Guillermou

In this sense of promoting the entry of collagen and its formation, fish, especially its skin and scales, are an excellent source of collagen. Collagen derived from fish, known as marine collagen, has high bioavailability. Marine collagen is primarily composed of type I collagen, which promotes the health and elasticity of skin, bones, tendons, and other tissues. For those following a Pescatarian or semi-vegetarian diet, fish offers a viable option for obtaining collagen naturally, providing a good alternative to beef or chicken. Oysters, although less common in collagen discussions, play a vital role in collagen production. It contains a lot of zinc which is a fundamental component in the creation and repair of collagen, promoting skin health and healing.

Additionally, oysters are rich in amino acids such as glycine and proline, the main components of collagen proteins. Also consider broccoli and berries rich in vitamin C blueberries, raspberries, strawberries or blackberries. They are all a great way to add vitamin C to your diet, a nutrient that helps your body produce collagen. It does not need to be consumed at the same time as collagen-rich foods or collagen supplement. Including both in your diet throughout the day is enough. Low doses of aloe increased collagen content in the dermis layer of the skin (the middle layer).

One study claims that a daily oral intake of 40 micrograms of aloe helped increase skin barrier function, moisture and elasticity. Garlic does not contain collagen itself, but it contributes to collagen production in the body. Garlic is rich in sulfur, which may play a role in collagen production and prevent its breakdown in the body. Garlic also contains taurine and lipid acid, compounds that help rebuild damaged collagen fibers. BEST FOODS TO EAT FOR A COLLAGEN BOOST

www.eatingwell.com/article/7896640/best-foods-to-eat-for-a-collagen-bo.. .--

www.health.com/foods-high-in-collagen-7972020 .--

Posted On 04/07/2024

MoMac46

Erin - what would be an alternative to the effects of glycine or bone broth for a vegetarian? Most on the site are meat eaters, as is Dr Mercola and most of the interviewees also. Its always interesting articles and health advice Dr. Mercola gives out and has helped alot over the years, except being vegetarian for over 40 odd years some things aren't covered.

Posted On 04/07/2024

pecanroll

Hi Erin! Loved your story on the Vaxx bus.

Posted On 04/07/2024

stoneharbor

It's very interesting to listen to Brad Marshall explain his health improvement by switching the protein element of his diet from high muscle meat to high connective tissue, which is about 28% glycine. He goes on into talking about reductive stress for another hour which he admits is very involved and confusing, but I can't help thinking about that diet change that he made in his protein source. He has a lot of expertise in certain aspects of physiology, but there's one thing I will add here that he did not mention, regarding anyone getting off of muscle meats and substituting connective tissue that provides collagen, which is over 25% glycine, at least for a good while.

Here's the issue. Man evolved eating "head to tail", meaning the whole animal. When Western civilization changed to large scale, outside-the-home butchering, it made diets based on just muscle meat very easy and inexpensive. And toxic. It happens that the amino acid Methionine, although an essential protein, is too high in muscle meat, and damages the human body and shortens lifespan.

You need to be eating enough connective tissue, or at least collagen (even as a supplement or from bone broth) to be healthy. There are many good things that come from the collagen, but a very important one is the simplest amino acid, Glycine. It happens that you always need Glycine to get rid of excess Methionine. If you don't get the Glycine from eating enough collagen (or taking it as just a Glycine supplement), you are going to suffer from "Methionine poisoning", often showing as high levels of Homocystine, a known cardiovascular threat.

www.healthline.com/.../methionine-vs-glycine Here's more on Glycine as an inflammation regulator:
www.theguthealthprotocol.com/wp/glycine-the-most-important-inflammatio.. So I'm mentioning this alternate theory of why eating connective tissue is key to a healthy protein balance via the amino acids provided, but not involving branched chain ones.

Posted On 04/07/2024

Guillermou

Good references. As Dr. Mercola has reported, the methionine/glycine ratio is essential. Inflammation is a common factor in cancer, cardiovascular disease and diabetes, as well as arthritis and other inflammatory diseases. Studies establish an inverse association of plasma glycine levels between patients with insulin resistance and diabetes, cardiovascular disease and cancer. This suggests that low levels of glycine in the blood can generate a hyperinflammatory state, predisposing the body to the spectrum of chronic diseases including cancer. Plasma levels of glycine in human populations, although may be adequate for the biochemical functions of glycine, including protein synthesis, may not be sufficient for the cellular physiological function of glycine in membrane voltage stabilization, cell activation in macrophages and other cells.

Glycine comprises one-third of the molar fraction of collagen, and it is postulated that such chronic diseases have been on the rise because the consumption of glycine-rich bones and connective tissues has decreased in recent decades. Amino acid metabolism suggests a more complex relationship between glycine and methionine, the latter of which is abundant in muscle meats. Specifically, glycine is the only substrate for glycine-N-methyltransferase, which comprises the only major methionine elimination pathway.

Triggered by the absorption of a methionine-rich meal, elimination of excess methionine requires two to three molar equivalents of glycine per mole of methionine. Therefore, one could hypothesize that high consumption of connective tissue-depleted, methionine-rich, glycine-poor muscle meats as staple foods causes a net reduction in plasma glycine levels. This hypothesis among the participants of the EPIC study in the United Kingdom. Carnivores consuming high methionine and low glycine had the lowest plasma levels of glycine than other diets.

Posted On 04/07/2024

Guillermou

Observational studies, a clinical trial in Mexico City a decade ago reported the reversal of type 2 diabetes with the consumption of 15 g/day of supplemental glycine for 90 days. Glycine decreases proinflammatory cytokines and increases interferon- in patients with type 2 diabetes. Observationally, the inverse association of type 2 diabetes and prediabetes with plasma glycine has been abundantly documented, as demonstrated by the recent SRMA of 46 studies.

www.ncbi.nlm.nih.gov/.../PMC4839172 (2016)----- www.ncbi.nlm.nih.gov/.../PMC4859380 (2016).---

-- analyticalsciencejournals.onlinelibrary.wiley.com/doi/abs/10.1002/bmc... (2017).-----

[www.jbc.org/.../S0021-9258\(17\)30753-6/fulltext](http://www.jbc.org/.../S0021-9258(17)30753-6/fulltext) (2009).--- www.nature.com/.../ejcn2015144

(2015).--- link.springer.com/.../BF03346417 (2008).----- www.bmj.com/.../rr-1 (2018).---

Glycine administration modulates dietary amino acid levels especially methionine, which may increase healthy lifespan in mice and provide a basis for further investigation of the effects of diet on aging and diseases of old age.

onlinelibrary.wiley.com/.../acel.12953 (2019) GLYNAC (GLYCINE AND N-ACETYLCYSTEINE) SUPPLEMENTATION IMPROVES IMPAIRED MITOCHONDRIAL FUEL OXIDATION AND LOWERS INSULIN RESISTANCE IN PATIENTS WITH TYPE 2 DIABETES. www.mdpi.com/.../154 (2022)

Posted On 04/07/2024

Guillermou

Methionine is an essential amino acid with many key functions in mammalian metabolism, such as protein synthesis, DNA methylation, and polyamine synthesis. Methionine restriction may be an important strategy in controlling cancer growth, particularly in cancers that exhibit dependence on methionine for survival and proliferation. Methionine dependence in cancer may be due to one or a combination of lesions, polymorphisms, or alterations in gene expression in the de novo and salvage methionine pathways. Cancer cells with these defects cannot regenerate methionine through these pathways. Defects in folate metabolism may also contribute to the methionine-dependent phenotype in cancer.

Selective methionine-dependent killing of cancer cells has been demonstrated in coculture with normal cells using methionine-deficient culture media. Several animal studies using a methionine-restricted diet have reported inhibition of cancer growth and extension of healthy lifespan. In humans, vegan diets, which may be low in methionine, may be a useful nutritional strategy in controlling cancer growth. www.sciencedirect.com/science/article/abs/pii/S0305737212000059 (2012) Data indicate that dietary methionine restriction leads to a reduction in cancer growth. Although the exact mechanism causing this paradox is poorly understood, some research indicates that methionine restriction causes increased autophagy.

Methionine is also thought to signal through mTOR, a protein kinase, to promote cell growth and inhibit autophagy. In this project, a wild-type melanoma cell line with autophagy-deficient knockouts of the Atg5 gene was used. Normal fibroblast cell lines were used as controls. It was found that mTOR and autophagy do not appear to affect each other. By further investigating the mechanisms that cancer cells use to grow, therapies can be developed that take advantage of these mechanisms. scholarlycommons.obu.edu/.../881 (2023)

Posted On 04/07/2024

bpm4539

Regarding taking glycine supplement, I take Dr Mercola's Glycine. But taking 1 or 2 grams a day as capsule is probably no where near our need. Elsewhere, Dr M has mentioned we need at 18 grams or so, which is not practical to get from capsules. We need to take it by tablespoons. Safely packaged organ meats are hard to find. Any suggestions other suggestions on having more glycine? Also, can Dr do an article on how to make bone broth?

Posted On 04/07/2024

lpioch

So how does one eat more "high connective tissue"? That is, I'm meal planning for me family. What's available to me is muscle meats, be it beef, pork, chicken, yak, fish, etc. What do I purchase (and WHERE!) to daily make meals for the family food "high connective tissue"? Personally I already supplement with glycine and collagen. But my family doesn't (and won't). Put this is practical daily grocery shopping and living for the average American, please??

Posted On 04/07/2024

stoneharbor

Thanks Gui for the details on how Glycine is not just necessary for minimizing inflammation, but may be unable to even provide that one protective function if excess Methionine, needing to be reduced, can sap most plasma Glycine from the system, thus causing a rising tide of inflammation and mitochondrial malfunction. Sad that all this seems to result just from the diet of modern man, but it's true, and well worth pointing out. I talk to so many people about the need for consuming more collagen, and there's little interest in making bone broth, and also little interest in taking a heavy dose of a collagen supplement every day.

Yet the people want to eat a lot of muscle meat every day, and see no obvious problem with it. I've been supplementing with a heaping teaspoon of Glycine daily for 4 years, and still I make bone broth from organic chicken bones/skin every couple of weeks. I have no idea what my circulating Glycine level is, but I hope it is sufficient to keep healthy. One thing we can remember, that Brad Marshall suggests, is that we can certainly eat less muscle meat.

That by itself may be a key to longevity, as there are studies that show that both calorie restriction and protein restriction can increase longevity, and there is a theory at least that claims it's actually the Methionine and Cysteine restriction accomplished by a low protein diet that gives the longevity gains. joshmitteldorf.scienceblog.com/2013/05/13/could-cutting-this-one-nutri..

Posted On 04/07/2024

jef9075

Hello bpm. Bulk glycine is the way to go when taken in higher amounts. There are a number of reputable bulk companies out there. I use bulksupplements.com and use both glycine and NAC which are sold separately. The NAC has a fairly strong sulfur smell but when mixed in water it's not too bad. The glycine serving size is 3 grams per teaspoon and has a mildly sweet taste, so no problems there. So if you wanted to take 18 grams of glycine a day, that could be achieved by taking 1 TABLESPOON... twice/day. I agree with you that it can be quite difficult sourcing clean, safe organ "meats". I use Dr. M's organ complex capsules which is probably the next best thing to fresh.

Posted On 04/07/2024

jef9075

hello ipioch. You might just want to purchase some of the less expensive, less desirable meats that are high in gristle (sp?). You could slow cook this in a crock pot or other vehicle to release the valuable connective tissue ingredients that are high in collagen. If still difficult to chew... just drink the broth.

Posted On 04/07/2024

kev8395

@bpm4539. It is very easy to buy glycine powder online. Here is an example from amazon UK. 1KG of pure glycine for GBP16.00 which is about \$20 if you are in the USA. I agree that capsules are not sufficient for glycine, we need lots more, especially vegetarians. Good luck.

Posted On 04/07/2024

Kevchat

Glycine supplementing is very tasty! In powdered form it's like sweet sugar crystals. Cow hide collagen can contain toxins, so I think fish collagen is better. Fish and marine creatures used for collagen production undergo rigorous quality control measures to minimize contamination from heavy metals and toxins, ensuring a safer and purer source of collagen compared to some land-based counterparts. Mercola's collagen products are safe and excellent quality.

Posted On 04/07/2024

yon3943

Hurray! Dr. M, Ashley, Brad consulting, etc. I'm completely in favor of a plan to destroy the commercial agriculture/food system we have now.

Posted On 04/08/2024

PithHelmut

My instincts tell me science is all wrong because it is compartmentalized. Specialization sees the body in parts instead of the whole. This isolated way of thinking is endemic in modern culture. I feel I even know why but that's a very controversial subject which I'll leave for another time. It's clear that with all the knowledge of medical science, they still don't know how to fix things. As for food, we need diversity and that is again, antithetical to these diets that say eat this, don't eat that, etc. It hasn't helped humanity overall. Perhaps it helps individuals for some years, but overall it's so clear to see that we are sicker and more debilitated than ever before.

I see this in my lifetime. And when one goes to the doctor, they are wrong more than 60% of the time and give out the same advice over and over making us like cookie cutter people. There probably is something universally wrong and we could find it - perhaps it's something as simple as diversity and enjoying food and enjoying life. Instead we are always focused on the negative, that x is bad for us or y is good for us and we look at things in pixels instead of trying to see the whole picture.

Posted On 04/07/2024

well4life

I totally agree with what you've said! There's always some 'better' way of eating or better diet being promoted.

Posted On 04/13/2024

bobsmyk

Grow-ops seek to grow hogs quickly on the cheapest foods and are not concerned about hog longevity or muscular performance and we now discover some observations of these "hands on workers". Animal foods are selections from the "cheapest foods" industry and this confines their food choices to the feed industry products. Consumers that are wary of purchasing seed oils and contaminants now realize that livestock grown for consumption are fed the very same substances that many try to avoid in their diets.

Posted On 04/07/2024

Boondock

This is converging on The Perfect Health Diet by Paul Jaminet. Although he has stopped posting, the website at perfecthealthdiet.com is still up and has a wealth of information. He was ahead of his time and that site and his book is still one of the health sources I find to be most reliable. He coined the term "safe starches" and has a good discussion on his blog of the problems with the Ray Peat fruit-centric approach.

Posted On 04/07/2024

Cabocho

Thanks for the reminder, Boondock. Jaminet's "Perfect Health Diet" (2013), pp. 162-165 discusses (rather than dictating) what may be the healthiest fibres including resistant starch, pectin and what he calls the "Goldilocks" or optimal amount of fibre in the human diet. What makes sense is that precious word "balance" - the one concept that orthodox medicine got right: humans need a balanced diet, but so do our gut bacteria!

Posted On 04/08/2024

ldg9170

Excellent! Thank you, Dr. Mercola! I have been learning from his videos for the last two years. It definitely is a hard concept to grasp and Brad explains it in a way that is easy to understand.

Posted On 04/08/2024

nsnogren

This is fascinating but it goes to show that tradition contains vastly greater wisdom than we can understand. In the Orthodox Christian Church, for 2,000 years, we have many periods of fasting from all meat, dairy, eggs, oil, and alcohol. The goal as relates to our spiritual life is to strengthen the spirit over the body, but we can see how everything is linked, that this practice also rejuvenates the body. We also have a couple times in the year where we fast from all food and water for 1 or 3 days. We also have a common tradition of fasting from food until 3 pm, and ideally eating one meal a day. Over the years it's been amazing to see science catching back up to these ideas. Thank you for your research Dr. Mercola! You were recommended to me about 15 years ago by an Orthodox Christian monk.

Posted On 04/07/2024

sukeywt

This video would have been helped by showing a nice diagram from a biochemistry text with a Krebs cycle graphic.

Posted On 04/07/2024

Brad Marshall talks about elevated branched-chain amino acids (BCAA) in plasma as a sign of T2D, insulin resistance, and cellular stress. "So, insulin lowers the amount of fat that can enter the mitochondria. Interestingly, it also lowers the amount of branched-chain amino acids that are circulating." It happens that mitochondria not only burn glucose and fats, but also rid the body of excess BCAA. So he didn't say it, but it happens if you have any deficiencies in mitochondrial health, you will tend to accumulate too many BCAAs in the plasma. It's obviously a marker of insulin resistance, because where there's resistance, even though there is insulin, you are not going to get cells to take in the BCAA and dispose/utilize them.

It's just a part of the metabolic syndrome. So what is the solution? It seems the solution is to at times, both by fasting and also by, and aided by exercise, get all the circulating glucose out of the plasma and into cells. This finally allows insulin to drop in the circulation, which finally allows fatty acids and ketones to be absorbed into cells and their mitochondria, and it is the consumption and signaling of ketones that allow mitochondrial health to be built up via mitochondrial replication. By doing this fasting daily, humans can keep mitochondria healthy, and the chain reaction is that insulin will be responded to, and not just glucose, but BCAAs will be more easily brought out of circulation and consumed.

Here: www.nature.com/.../s41387-022-00213-3 it says "people with insulin resistance and patients with T2D feature low muscle mitochondrial oxidative capacity" and yet "Catabolism of all three BCAA, leucine, isoleucine and valine, is located inside the mitochondria..." So obviously, if mitochondria are lacking, or are weak, you will end up with elevated circulating BCCA, and also insulin resistance. From other sources, it seems that periodic fasting to allow ketone usage is key to mitochondrial regeneration.

Posted On 04/07/2024

Guillermou

Several studies revealed an alternative phenotype in which elevated BCAA delivery was associated with improved glucose homeostasis due to elevated mitochondrial biogenesis and energy expenditure, reduced gluconeogenesis, and/or enhanced hormone release (e.g. , insulin, adiponectin, GLP-1). According to published studies, excessive administration of BCAAs alone does not meet the criteria for the development of metabolic diseases, since in healthy individuals this can be compensated by an increase in oxidative metabolism and increased energy expenditure. In such circumstances, BCAAs can improve, for example, glucose tolerance and stimulate skeletal muscle mass gain.

When energy balance is no longer maintained (e.g., obesity), cellular mitochondria are unable to cope with upregulated substrate availability, leading to increased secretion of BCAAs, glucose, or fatty acids into the circulation. and its tissue deposition, which is a reliable predictor for insulin signaling. disability. Therefore, the genetic and/or metabolic background of an individual can discriminate between the phenotype developed in response to BCAA level modulation.

www.tandfonline.com/.../10408398.2021.1977910 (2021).--- www.frontiersin.org/.../full (2023).--

Posted On 04/07/2024

Guillermou

Complex situation. BCAAs are fundamental constituents of the diet and determine the maintenance of adequate function of organs and tissues. Excessive BCAA accumulation is a well-established metabolic characteristic associated with obesity and an early risk factor for insulin resistance, NAFLD, or the development of type 2 diabetes. Several processes contribute to this phenotype, including increased substrate intake. that interfere with the degradation of BCAAs, an altered relationship between tissues that catabolize BCAAs (i.e., mitochondrial dysfunction and insufficient flux through the TCA cycle prevents interorgan compensation of amino acid turnover), an alteration Insulin-mediated suppression of protein degradation and/or attenuated amino acid-mediated protein synthesis.

BCAA accumulation impairs insulin signaling through mTORC1 activation, causing hyperinsulinemia which, together with the accumulation of toxic amino acid metabolites, leads to pancreatic β -cell dysfunction. Furthermore, BCAAs and their metabolites alter mitochondrial function and transendothelial fatty acid transport, which may promote ectopic lipid storage along with inflammation and induction of oxidative stress affecting both insulin signal transduction and metabolism.

of BCAAs. High rates of BCAA oxidation impair lipid export, in the form of acyl-glycine complexes, from skeletal muscle, resulting in acyl-CoA accumulation. Another negative outcome is the competition between BCAAs and other essential amino acids to cross the blood-brain barrier which impairs the synthesis of neurotransmitters (i.e. serotonin, dopamine) and increases the risk of depression during obesity.

Posted On 04/07/2024

ba85301

For Dr Mercola, a point about electrons and direction and why they are confusing By long-time convention, electricity (electrons) direction is marked as from + to -. But the real direction is from - to + (which I learnt from college many years ago). Most of the time this doesn't make any difference, as long everyone uses the convention. However, in the discussion here the direction is important and may be the reason why Dr Marshall sees electrons going one way, and Mr Mercola another?

Posted On 04/07/2024

jchathe

I tried this high starch way of eating as you suggest and it sent my blood sugar sky rocketing and brought back all the arthritic pains in my fingers, knees, ankles and back. I don't understand why you have reverted to these old ways of thinking. It's not for me.

Posted On 04/07/2024

sunshine9998

Are supplements NRF2 and NAD+ worthwhile using as published in PubMed?

Posted On 04/07/2024

blu48748

Listen to "She Blinded me with Science" Thomas Dolby...oh yeah!

Posted On 04/07/2024
