MERCOLA
Take Control of Your Health

## Guillermou

Article that has a great projection for health. Nutritional Genomics that focuses on the interaction between the bioactive components of food and the genome. Nutrigenetics and Nutrigenomics. The influence of nutrients on the expression of f genes is called nutrigenomics, while the heterogeneous response of gene variants to nutrients, dietary components and developing nutraceuticals is called nutrigenetics. The ideal is that we would have the possibility of evaluating our genetic variants and polymorphisms, which can reveal diseases or a predisposition to suffer from them and in this way have more information for better personalization of the diet.

We can also apply the phrase “experience is the mother of science” Genetic variation affects dietary tolerances among human subpopulations and may also influence dietary requirements and increase the possibility of individualizing nutritional intake for optimal health and disease prevention based on an individual's genome. By analyzing the potential genetic response of an individual to a set of nutrients, it will be possible to recommend an ideal treatment diet that acts synergistically as an adjuvant in the inhibition of processes associated with specific neoplasms. In the first article: “Role of Key Micronutrients from Nutrigenetic and Nutrigenomic Perspectives in Cancer Prevention” whose objective of this review is to evaluate and present the effects that some key components of micronutrients (vitamin A, vitamin C, vitamin D and selenium) and some Macronutrients (polyunsaturated fatty acids, prebiotics and probiotics) can be used in prevention and/or therapy.

of different types of cancer. -www.mdpi.com/.../283 (2020).----
www.taylorfrancis.com/chapters/edit/10.1201/9781003415381-8/micronutri.. (2024).---
academic.oup.com/nutritionreviews/advance-article-abstract/doi/10.1093.. (2023)

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### Guillermou

This article will provide updated information on the fundamentals of personalized nutrition, specifically emphasizing the complex triangulation interaction between the microbiota, dietary metabolites and genes. Furthermore, it highlights the unique composition of the intestinal microbiota, its influence on nutrigenomics and the adaptation of dietary suggestions. link.springer.com/.../s40246-023-00561-w (2023).--- This review article demonstrates how adequate probiotic intake enhances beneficial bacteria and can relieve irritable bowel syndrome and prevent colorectal cancer in the long term.

We also show how a diet rich in folic acid is essential for methylenetetrahydrofolate reductase (MTHFR) function, which reduces the risk of colorectal cancer. Additionally, we discuss how certain diets were associated with the development of certain cancers. For example, red and processed meats are highly associated with colorectal and prostate cancer. Modifying these diets significantly reduced the risk and improved the prognosis of these cancers, among many others. We also examine how micronutrients play a role in cancer prevention. Furthermore, we show how folic acid prevents DNA mutations by improving protein methylation processes.

Finally, after a systematic review of countless articles on cancer etiology and prevention, we believe that diet should be a crucial feature in cancer prevention and treatment programs. In the future, healthy diets and micronutrients could even successively alter the probability of suffering from cancer-causing genetic mutations. It will also play a role in boosting treatment and improving the prognosis of diagnosed cancers. link.springer.com/.../s43141-023-00599-2 (2023).----

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### juststeve

Gui, while for the most part there is an amount of basic foundational nutritional food source diet serving most, and yet also there is a One Size Does Not Fit All, What Size Does Fits Me. On a personal note, there are so many things just fine for most, but they cause me grief. Certain Vit's and minerals, foods can lift me way up, or sit me on the floor. So often, too often med's generally safe for most can tear me down. The search for what fits me is a constant journey. I've learned to listen when the body talks. It's a constant learning process and sometimes a long-used thing can be affected by the introduction of something new, in either way, better or worse. It's a reason when I try new things too watch for a few days, weeks sometimes months. To take a short fast of taking them then depending on what is experienced to determine to continue, or adjust, or flat drop either old routines or the new addition.

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### stoneharbor

Thanks Gui and Just for mentioning that " individualizing nutritional intake" is important and "One Size Does Not Fit All". I found this to be my case. I also found that speaking about particular genes and their effect on human metabolism, such as what people call MTHFR genetics, may be an unnecessary distraction to people who are trying to connect their physical condition, especially mental conditions and energetics, with their genetics. Methylation and certain enzyme/metabolism pathways are very complex. They perform as a result of genetics, nutrition, and also epigenetics. Thus, there's just no way to know how to diagnose a situation from knowing even all of these in detail. It actually requires blood tests plus an in-depth personal interview and possibly some experimentation with foods and supplements (and even detoxifications) to ever improve many methylation (MTHFR) issues.

To get a great overview of what can go wrong, and how it can be fixed, regarding methylation, and without ever having to get into genetics, I recommend the Dr. William Walsh book "Nutrient Power". This deals with how one can do much better at self diagnosis by only requesting a half dozen regular blood tests and also looking at the characteristics of their symptoms and features of their personality. There's often no need to know genetics to fix methylation issues, though genetics may be used to confirm the results indicated by the blood tests.

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### Guillermou

Perfect Just!!, you are always on the right track. Listen to your body and conduct research based on the properties of foods and Nutritional Genomics. To date, more than 8000 phenolic compounds (PPs), secondary metabolites of plants, have been studied and classified into stilbenes, phenolic acids, flavonoids and lignans. Many of them have been identified in human nutrition; in fact, they are the most abundant plant-derived phytochemicals in our diet. Some polyphenols (PPs), such as quercetin, are found in most plant sources (fruits and vegetables), while others are less ubiquitous. For example, citrus fruits are rich in flavanones and apples contain high amounts of phloridzin.

Polyphenols are known for their various biological activities such as antiradical, antibacterial, anticancer, antioxidant and anti-inflammatory properties. According to several reports, crude plant extracts containing a large amount of the above-mentioned substances could have the same or even greater health-promoting effect than their isolated individual components. The present review comprehensively covers the updated research on the interaction of polyphenols with the intestinal microbiota and mitochondria, on their metabolism and role in cognitive diseases and obesity. onlinelibrary.wiley.com/.../mnfr.202100670 (2022)

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### Guillermou

Thank you stoneharbor for your interesting reference. Regarding Dr. Mercola's report of SIBO and thiamine. In many cases chronic upper constipation and gastroesophageal reflux disease (GERD) are misdiagnosed as an overgrowth of bacteria. Unfortunately, they often do not respond to antimicrobial treatments. However, sometimes the problems are solved within a few days of replenishing vitamin B1. This has shown me that many times, small intestinal bacterial overgrowth (SIBO) is simply a symptom of an underlying vitamin B1 or thiamine deficiency. The gastrointestinal (GI) tract is one of the main systems affected by a thiamine deficiency. Clinically, a severe deficiency of this nutrient can produce a condition called “gastrointestinal beriberi,” which in my experience is greatly underdiagnosed and often confused with SIBO or irritable bowel syndrome with constipation (IBS-C).

Symptoms may include GERD, gastroparesis, slow or paralyzed gastrointestinal motility, inability to digest food, extreme abdominal pain, bloating, and gas. People with this condition often experience negligible benefits from gut-focused protocols, probiotics, or antimicrobial treatments. They also depend on betaine HCL, digestive enzymes, and prokinetics or laxatives. To understand how thiamine affects intestinal function, we must understand the gastrointestinal tract. in the link www.hormonesmatter.com/sibo-ibs-constipation-thiamine-deficiency/

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Addressing vitamin B1 deficiency and stimulating the vagus nerve can improve intestinal activity and motility, helping with conditions such as SIBO, IBS, and other intestinal disorders. The vagus nerve connects the intestine directly to the brain, controls the entire autonomic nervous system, and transmits information from the intestine to peripheral organs. A thiamine deficiency can affect the body as a whole, with symptoms originating primarily in the nervous system. Thiamine deficiency can lead to a loss of sphincter control, stomach acid production, and compromised stomach emptying, causing symptoms such as bloating, reflux, and gastroparesis. eightify.app/summary/health-and-medicine/improving-gut-health-addressi..

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### stoneharbor

Very interesting about SIBO often being the diagnosis when the fix may just be supplementing vitamin B1 as it's really a deficiency of that vitamin! This is so intriguing when you mention "Thiamine deficiency can lead to a loss of sphincter control, stomach acid production, and compromised stomach emptying,...." Yes! This causes many SIBO symptoms. This is quite valuable information Gui! I will investigate more on this subject now.

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### btryan1

The simple fact is humanity is now a target and the more that we can avoid that government throws at us and better off we will be. We need to stop the onslaught on our air, land, food and water and the majority of chemicals our doctors push that they call health care. Mankind is falling fast and unless we act NOW as a united force there is little hope we will survive these comprehensive attacks against us.

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### karmana

Great article to read and archive, although difficult to listen to the 'weeds' in the interview. It's so important to learn to 'listen' to your own body every day and implement nutrition decisions based on that daily feedback, even when you may not like the 'information'. I've been able to make significant progress with this strategy with just a few lab tests. There seems to be a mindset that there is so much food, and such a variety of foods always available. Couple that abundance with the idea that we should be able to 'have it all'. That may be an unhelpful mindset.

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### Barbara Charis

When people turn to other people for answers...how valid can the answers be? Most of the information coming from "educated" authorities has totally messed up the whole world . Most researchers are employed by those who are out to make money. There is little research being done today - for the sake of knowledge alone or to uplift humanity.  We live in an ultra commercial world! It's all about money!

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### srg03462

Exactly why one size doesn't fit all.....and in food and MEDICINE.

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### pipblanc

This is really interesting but as I cannot afford genetic sequencing testing I had to work out some things for myself such as the MTFHR gene mutation which affects histamine and MCAS in particular (which is why I got hives for 2 years with Covid) and also the alcohol metabolism - clearly lacking in DAO and allele-1 gene mutation which means I am "allergic" to alcohol. Actually it is not the alcohol, but the phase II detox of acetaldehyde which builds up in the blood stream and then the brain. I had no idea of my susceptibility until alcohol became a problem for me; if I overdid it then my body appeared to be going into massive withdrawal but actually it was the effect of the by products of the alcohol.

Even in hospital they would tell me I would be there for weeks and then send me home 3 days later. The blood alcohol level was low relative to my reaction. I describe how I learnt my lesson in my book. My point is that you can work these things out empirically over time. I am not good on nightshades either though I love baked potato. When I do not drink I am much more tolerant of a wider range of foods, probably because my digestive enzymes are not being nuked! Everyone needs to tweak their diet in my opinion. I love this time of year for the nettles and the dandelions - they are so cleansing. Really interesting article, thank you Dr Mercola.

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### Guillermou

Good morning PIP. About 40 percent of people in the United States carry or are affected by the MTHFR mutation. It is an enzyme responsible for transforming folate (vitamin B9) into its active form. Folate plays a role in the breakdown of homocysteine, a toxic amino acid in higher concentrations, into methionine, a useful amino acid. Depending on the type of MTHFR mutation and the number of copies a person carries, the function of the MTHFR enzyme may be moderately or severely reduced. This can put a person at higher risk for folate deficiencies, which also increases a person's risk for severe COVID-19, so homocysteine levels have been directly predictive of worse COVID-19 outcomes. www.ncbi.nlm.nih.gov/.../PMC6630484 www.theepochtimes.com/health/6-main-factors-increase-risk-of-covid-19-.. 2022-10-21&utm_medium=email&est=s41nig%2BL8obtioQn02%2FTnt3rX0j90fcTVPnZhQ%2FTIa2%2BMsCR5AyGOIr69AK4UwSJ (10/20/2022) In addition, elevated plasma homocysteine concentrations are considered an independent risk factor for coronary heart disease, peripheral vascular, cerebrovascular and neurodegenerative disease and therefore also for severe Covid.

The metabolism of homocysteine depends on the influence of the concentration of homocysteine. folic acid, vitamin B6 and vitamin B12 in their active forms methyl folate, pyridoxal-5-phosphate (P-5-P) and methylcobalamin.

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Elevated plasma homocysteine levels may result from disorders in trans-sulfuration or metabolic remethylation of homocysteine, which have genetic or diet-related origins. The metabolism of homocysteine has an intrinsic relationship with the activity of Methylenetetrahydrofolate reductase (MTHFR), an enzyme that catalyzes the change of 5,10-MTHFR to 5-MTHFR, the predominant form of folate derived from dietary intake, which serves substrate in conjunction with vitamin B12 in its active form as a cofactor, for the remethylation of homocysteine to methionine.

A common mutation in the gene encoding MTHFR is the substitution of alanine for valine (A223V) in the enzyme molecule. The MTHFR polymorphism is manifested by variants with a homozygous (677TT) or heterozygous (C677T) genotype. This polymorphism depends on the breed. These variants cause the enzyme to be thermolabile and its activity is reduced, which can cause an increase in plasma concentrations of homocysteine. www.elsevier.es/es-revista-medicina-clinica-2-articulo-implicacion-los.. www.bago.com/.../bbfweb55.htm .---- www.epistemonikos.org/es/documents/aef0634e716530653c7a9857f332f9abdf1.. .--- www.drmarcos.net/methylcobalamina-vit-b12.html .----------EFFECT MODIFICATION BY POPULATION DIETARY FOLATE ON THE ASSOCIATION BETWEEN MTHFR GENOTYPE, HOMOCYSTEINE, AND STROKE RISK: A META-ANALYSIS OF GENETIC STUDIES AND RANDOMISED TRIALS pubmed.ncbi.nlm.nih.gov/21803414

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### epi-cure

rumble.com/v46xuhq-the-great-setup-with-dr.-david-martin-part-1-the-pr.. I like history and even if I didn't, these links should be required viewing www.bitchute.com/.../p2jRq9w3sVKH

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### DennisJames

EXCELLENT! Tell me who are the PERPETRATOR's? Not big pharma since Ivermectin ,even though found to save millions of lives, was dropped by Dr Andrew Hill UNDER PRESSURE from NIH.....SO who in the NIH was that? That is the ? we need to answer! So Bart Classen(Virologist/immunologist who worked at NIH from 1988-91 UNDER Falsy has the answer to THE ? that NO ONE is asking!

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### DennisJames

P 2 EXCELLENT!

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### epi-cure

Right, Dennis. I like that no bowtie Dave look. He looks right at home in that easy chair, kinda like a fireside chat without the flame which isn't really necessary as the incendiary content is more than an adequate surrogate. You said Ivermectin and likewise its 'cousin' hydroxychloroquine made popular by Johns Hopkins of the eponymous university as treatment for malaria was ironically suddenly during the plandemic declared a dangerous drug for treatment of covid. I think the irony extends to the no shortage of iron-knees found in those many rank and file yes men because that's where they spent so much of their time (on their knees) but of course, with compensation.

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### stoneharbor

Great David Martin link. Every minute revealing, and worth taking in.

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### rrealrose

Hi epi-cure and everyone - - Posted by Atty Tom Renz yesterday: "Project NextGen - Disease X & the COVID Jabs Part 2" - - tomrenz.substack.com/.../project-nextgen-disease-x-and-the - - $5 Billion taxpayer investment on more clot/kill shots, this is why most of the covid baloney is still in place. They have no shame, no critical review of the extent of harms and death they have caused the American people. On and on it goes?

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### Segstar

Epi and those iron knees are almost always paired with them "sweet" lips of cherries...They go hand in hand like truck and trailer, ring and finger, stamp on a leather... Yet in the abundance of water the ill informed is still thirsty, same with food he's always hungry..Time for a small glass whilst the lamb leg is slowly roasting..Cheers..

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### epi-cure

Hi rose ! . . . . with your not so rosy news. Thank you, Tom Renz. How many lawsuits have you filed to date and are you gettin' any traction? The only success stories I recall are from CHD and the ICAN. It looks like this covid sham is gonna be a bleed out until all the sheep have been shorn. I learned long ago from Nancy Reagan to "Just Say NO". And about that $5 billion "taxpayer" liability, buried in these 91 minutes the guest tells how the revenue actually flows. If you don't have time to listen then I'll reveal the message. www.youtube.com/watch ********** A wink and a nod to you Seg and wine sublime while you Seg that leg :- )

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### rrealrose

epi-cure, what are you smoking? This is hardly the beginning for the WHO, found a list of approx 150 shots they have in planning or in development since 2014, many for zoonotic jumps. They includes the CDC, several other US research facilities, Chinese bsl labs we have never heard of, and several in the EU. The projects in China are being funded by the usual suspects: NIH, CDC, USAID, and NIAID. Looks like there was hardly a pause under the Obama administration. - - - - - meanwhile, Tom Renz is a solo practitioner! Aaron Siri has 23 or 24 attorneys on staff, all on vaccn injury work. Del is busy funding this work.  BTW, suspect everyone will want to listen/watch this documentary: "Broken Truth. Exposing Fraud and Corruption Since 2020" - - Epidemic of Fraud - - https://brokentruth.com/  - - this was shared today by Dr Sabine Hazen on TwitterX. Need to login to view this documentary.

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### epi-cure

rose, my point is that their plans are not my/our plans and the entire exhibit reposted by Tom Renz, we know, is based on a mountain of lies. He has my utmost respect and admiration but as I've said so often, it's up to us the natural men and women to resist and salvage, not the Dels, Aarons, RFKs, etc. As for the rest, I'm too old to smoke so I've hired someone to do it for me :- )

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### billstri

Obviously, most Americans do not understand PUFA's. I am trying to understand. It is an abbreviated form of "polyunsaturated Fatty Acids" or "Polyunsaturated Fat" or Linoleic Acid or LA. Sometimes it is stated in "Percent Daily Value", sometimes just percent. Very confusing. Sometimes it is stated in grams per serving or grams, which is what I wish to see. Now I am wondering what the maximum number of grams per average day is allowed? Also it is hard to read labels on things like protein bars or vegan bars.

It may say Total Fat is 9g and Saturated Fat is 3g. So I wonder if I can take 9g - 3g = 6g are LA or PUFA? But then there is Monounsaturated Fat. I find it confusing what a doctor in an article says to limit PUFA's to less than 10% daily. I don't understand what they are talking about (10% of total calories or 10% of total fat?). While I am going on about PUFA's, I also find lots of trouble in the sugar world as well. SolSpring Chocolate A2 Milk sold by MercolaMarket has 20g of sugar cane sugar in each serving.

That is a lot. Takes more like milk flavored sugar rather than chocolate milk I thought I was getting for my smoothie. The white milk of that same brand is sugar free. I have found that cane sugar is 4.2g per teaspoon. So an 8 ounce glass of that organic chocolate milk has about 5 teaspoons of sugar. If you drank 3 cups of this milk in one day, you would get 15 teaspoons of sugar! Seems like coming from a health conscious source that it would not have added sugar in it, that if you want sugar, you can add your own.

Yes, you need to always read labels no matter the source, even if it comes from MercolaMarket. So for my smoothies, I am now adding both chocolate and white milk along with some added organic cocoa to reduce the sugar and exaggerated sweetness as the fruit I put in makes it sweet enough without having to add sugar. Sugar is not just empty calories, but it is quick release form of 50% glucose and 50% fructose, fruit is not quick release.

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## Arlen1

The issue with polyunsaturated fats and even monounsaturated fats is that they oxidize rapidly! In fact, they start oxidizing as soon as they are exposed to air and sunlight! That's why commercial cooking oil manufacturers modify these oils with hydrogen. They basically attach hydrogen atoms where oxygen would normally attach. This is called hydrogenation. This stabilizes the oil and prevents it from oxidizing. The problem with this is transfats (man-made fats). Research has shown that transfats are worse than any other fat you can consume.

When you cook with these hydrogenated vegetable oils the hydrogen bonds break down and the oil oxidizes anyway. So, now your getting transfats and oxidized vegetable oils (double whammy). That doesn't make lard and tallow perfect either. Both contain a small amount of PUFA. Organic lard is about 45% saturated, 45% monounsaturated, and 10% polyunsaturated fat. Keeping lard in a cool dark place (refrigerator) helps prevent the polyunsaturated and monounsaturated oils from breaking down.

One reason tallow and lard are more stable is because the saturated fat in both helps prevent the monounsaturated and polyunsaturated fats from oxidizing. I make my own lard. So, I know nothing has been added. I keep the temperature at 300 or lower when I cook with it and it never breaks down. If you start deep frying with it at Temps over 350 it will deteriorate. I cook my eggs over easy in lard and I keep the skillet under 275 degrees. I like using freshly rendered lard for my eggs because it contains a lot of collagen!

The egg white absorbs this collagen and enhances the egg's flavor. That's why I keep the temp low. High temperatures destroy collagen. An egg will cook at 200 degrees. So the lower the temp is, the longer it takes to cook the egg, and the more collagen it absorbs from the fresh lard. After using twice to cook eggs, I transfer that fresh lard to my used lard. The used lard is now clarified and ready for higher temp cooking.

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### Guillermou

From Dr. Mercola: "Many now understand that your omega-6 to omega-3 ratio is very important, and should be 1 to 1 or possibly even 4 to 1, but simply increasing your omega-3 intake won't "It will counteract the damage caused by excess linoic acid (LA). You really need to minimize omega-6 to prevent damage from occurring." "Ideally, consider reducing LA to less than 7 grams per day, which is close to what our ancestors used to consume before all of these chronic health conditions, such as obesity, diabetes, heart disease and cancer, became widespread "Consider cooking with suet or lard." The problem with seed oils is that they are incredibly pro-inflammatory 14 and increase excessive oxidative damage in your body.

This oxidative stress, in turn, triggers mitochondrial damage and dysfunction which then drives the disease process. OXLAMs (LA metabolites) are also cytotoxic, genotoxic, mutagenic, carcinogenic, thrombogenic, atherogenic and obesogenic. Then, there is the issue of the direct toxicity of pesticides and herbicides. Most vegetable oils produced today, especially from canola, corn, and soybeans, are made from genetically modified crops and are therefore a major source of exposure to toxic glyphosate. According to Knobbe, the reason these oils have been able to remain in the food supply, despite their high toxicity, is because they are not acute biological poisons, but chronic ones.

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### Guillermou

Dr. Mercola advises not consuming more than 7 grams of omega 6. From a report by Dr. Mercola: 1- Organic grass-fed lard: This is probably the best fat for cooking. 2.- Coconut oil: It is another excellent cooking oil loaded with benefits. 3.- Organic butter: (preferably made with organic, unpasteurized, grass-fed milk) instead of margarines and vegetable-based spreads. Butter is a complete and healthy food that has had a bad and unjustified reputation. 4.-- Organic ghee is even better as it eliminates the milk solids that many have problems with.

Ghee consists of pure fat with no carbohydrates and, personally, that is what I use. The best way to prepare it is by placing a glass container in a dehydrator and heating it to a temperature below 100F to preserve its quality. Dr. Mercola has published omega 6 content tables for nuts, seeds, and other sources. They are now in the substack library .----------LINOLEIC ACID — THE MOST DESTRUCTIVE INGREDIENT IN YOUR DIET takecontrol.substack.com/.../linoleic-acid

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### Guillermou

In Spain, the most marketed variety of oil is Picual and Arbequina. The Arbequina Variety and many others are high in linoic acid (up to 22%), but one of the most notable characteristics of the Picual Olive is its high oleic acid content, 80% of the total composition. This, together with its low omega 6 content (less than 5%), makes picual olive oil one of the most permissive oils with regard to oxidation and rancidity. This gives it certain ideal characteristics, such as its great resistance to oxidation during exposure to high temperatures. Raw it has an intense flavor and a certain bitterness that is sought after by many consumers.

Always consume cold pressed and organic. In addition to the peak-shaped shape of the Picual Olive fruit and how Picual extra virgin olive oil is perceived in the mouth and nose, it is worth highlighting its nutritional properties and the numerous benefits it brings to health, such as its high content of oleic acid, capable of reducing “bad” cholesterol (LDL) levels; the abundance of polyphenols, which help reduce the oxidation of fats in the bloodstream and prevent blockages, among other benefits- Picual extra virgin olive oil is very stable to oxidative processes and resists exposure to high temperatures and frying better than any other variety, without losing its properties.

The olive oil obtained from the Picual olive helps, according to recent studies, to alleviate the appearance of different types of cancer. Specifically, it protects us against the appearance of bowel and colon, pancreas, endometrium, prostate and breast cancer. olivadelsur.com/.../picual-olive-oil-b104.html .--- web.ujaen.es/.../jja-0007-01-15-M1.pdf .---- www.researchgate.net/publication/350279924_Experimental_Carcinogenesis.. (2021).----

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### vmt6498

All this is well and good but extremely difficult to manage. We don't know what we don't know. There is a certain amount of hubris to believe we can manage all these individual reactions with current technology. A better method will be to determine what the 57% of non-human cells are in our bodies and delineate the chemicals they produce and how they affect the human cells. The era of AI should introduce this to us. Then we can analyze the micro flora of healthy people, probably varied, and establish base lines of microflora for all people.

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## Guillermou

A new study by experts at Harvard University revealed a new way to measure the biological age of cells. Beyond chronological age measured in years from birth, the body also goes through changes at the epigenetic level that accelerate or slow down aging. This “clock,” designed by a group of researchers at Brigham and Women’s Hospital, affiliated with Harvard, is an intelligent machine learning model, as reported in a press release. “Our clocks distinguish between changes that accelerate and counteract aging to predict biological age and evaluate the effectiveness of anti-aging interventions,” commented Vadim Gladyshev, the principal investigator of the study that was published in the journal Nature Aging.

He also explained that, although there are already clocks capable of correlating methylation patterns and traits that have to do with aging, they are not able to identify which of these traits age and which slow down aging. Kejun (Albert) Ying, a student in Gladyshev's laboratory, found causal relationships between DNA structures and observable traits in more than 20,000 CpG sites according to eight characteristics: “Lifespan, extreme longevity (defined as survival beyond the percentile 90), health span (age of first incidence of a major age-related disease), frailty index (a measure of each person's frailty based on the accumulation of health deficits over a lifetime), self-rated health and three broad aging-related measures that incorporate family history, socioeconomic status, and other health factors.” CAUSALITY-ENRICHED EPIGENETIC AGE UNCOUPLES DAMAGE AND ADAPTATION www.nature.com/.../s43587-023-00557-0 (2024).--- www.youtube.com/watch (2024) www.biorxiv.org/.../2022.10.07.511382v2.full.pdf (2024).--

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**stoneharbor**

I'm glad to encounter this article. I really like the point that Chris Masterjohn makes right at the beginning, that we should not look at our genetics as "deterministic". He gives some good personal examples of this. I have some examples from my own case. It's best to be aware right from the point of reading this article though, that in the future you are going to be reading a lot about the "science" and how drug/health companies are hell-bent to discover some "fixes" for certain genetic "conditions" that are just polymorphisms of one or two genes, and most of these studies will turn out to be unproductive, wild goose chases because we would have been wiped out as a species if just single genes controlled so much and our bodies didn't have epigenetics to measurably reduce the effects of certain genetic deterministic features (the bad polymorphism).

Besides epigenetics to help save us, we should know also that many easily identified genetic weaknesses in one particular gene are already offset by a mutation in one or two or several OTHER genes.

You can never look at just how one single gene is set in your physiology and take that as a "determining" factor. This is what I found in my case on viewing the results, and 2nd party analysis of my 23andme test. I had several genetic polymorphisms upon which my "methylation" status depended (often called MTHFR status). MTHFR is a great example of how you can get lost in the woods by reading any amount about the genetics.

And it's because there are so many genes (possibly over a half dozen) that have an effect on your methylation, or how your energy production cycles work. You can get "advice" from thousands of sources, doctors, and studies now on this and probably they will all mislead you. The final answer now is, it's best to observe your body and how it works with different foods. Most people who are interested in health, as are the typical Dr. Mercola followers, have studied how their bodies react to different diets.

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**stoneharbor**

It is best to take your diet, test results (both blood and genetic), and health outcomes into consideration and decide what you might do to supplement your current diet or change it otherwise. In my case, because I had certain known MTHFR mutations, I read a lot on what the physiological symptoms are from these. I found that people can be either undermethylated (the more usual case) or overmethylated, (or have no methylation problem at all). Yet they may have some of the same mutations as others with methylation problems, yet some people have totally offsetting mutations in other genes that either remedy the problem, or cause opposite effects!

For example, it happens that undermethylated people my need special forms of the B vitamins, like methyl-B12. If I take a methyl-B12 though, I immediately get anxiety which I normally never have. I don't need extra methyl of anything. My personality tests show that I am folate-deficient (overmethylated). I actually didn't need any genetic testing to show this, (though the genetic results somewhat confirm it.) What most doctors though will still prescribe for me, finding that I have many "methylation" mutations, will drive me quickly insane. All that I need, by personal study, is to eat plenty of green leafy vegetables daily.

With an otherwise healthy diet, I am a happy camper. I already had found this to be the case though, many years before the genetic testing. I went down into the rabbit hole and back out of studying genetics with no damage. So I just want to join Dr. Mercola in warning that you can waste a lot of time on studying your genetic results and still not get the answers that you need. Maybe not also from an ignorant doctor. Yet you may already have determined what your "genetics" indicate you need, if you've been studying yourself for a dozen or more years.

Posted On 03/03/2024

**stoneharbor**

Another well known gene that people focus on is the Alzheimer gene: APOE4. Most don't have a mutation there (and yet they can still get Alzheimers but have a less frequent chance of having it -- less than 9% of this population). Some people, myself included, have one gene mutation in APOE4 and this 25% of the American population has a resultant 30% risk of getting Alzheimers. But even the 2-3% of the population that is homozygous (both genes) APOE4 still only tests out to suffer from Alzheimers 50% of the time. And these are the averages from the past. If you read the book "The end of Alzheimers" by Dalee Bredesen, MD, you can find out how to eat and live to definitely reduce your chances of getting Alzheimers, no matter what your genetics are.

Further, the book has a couple of dozen blood tests that show how you are improving your situation in different ways as you improve your nutrition, etc. This is good for people who already may show some symptoms of senility and wish to see if they are actually improving their indicators. So epigenetics actually works. What I found by reading the Alzheimer book and studying it's tests was that I already know that I test very high in most of those metrics, and therefore I am probably running along in good shape to beat the "averages" for those with one APOE4 mutation.

I probably now have far less than the 30% risk that is tied to the average person with my genetics. So just take my two examples here to show that one need not succumb to the mantra that genetics is a "determinism" that seals your fate. It totally is just a science that is in it's infancy, and though it may seem to hold hope for certain corporations to make a lot of money, it really need not concern the average person who still knows how to eat to be healthy.

Posted On 03/03/2024

## Guillermou

Thanks stoneharbor. An increasing number of studies implicate abnormal DNA methylation in cancer and many non-malignant diseases. This is consistent with numerous findings on differentiation-associated changes in DNA methylation at promoters, enhancers, gene bodies, and sites controlling higher-order chromatin structure. Abnormal increases or decreases in DNA methylation contribute to or are markers of cancer formation and tumor progression. Aberrant DNA methylation is also associated with neurological diseases, immunological diseases, atherosclerosis and osteoporosis.

In these reviews, DNA hypermethylation in the disease and its interrelationships with normal development are analyzed. www.ncbi.nlm.nih.gov/.../PMC6791695 (2019).--- www.sciencedirect.com/science/article/abs/pii/S0304419X06000564 (2007).--- www.sciencedirect.com/.../S0002916523021706 (2011).-- www.nature.com/.../s41380-021-01079-0 (2021).-- bmcbioinformatics.biomedcentral.com/articles/10.1186/s12859-024-05673-.. (2024).-- This study aimed to systematically review the existing literature on physical exercise (PE) and DNA methylation (DNAm) in healthy adults.

Aerobic exercise (AE) appears to induce more DNA hypermethylation than hypomethylation, while anaerobic exercise (AN) appears to induce more DNA hypomethylation than hypermethylation. Aerobic exercise induced a higher percentage of methylation changes on chromosome 6, while AN and mixed type (MT) on chromosome 1. We identified 19 core genes among the differently methylated DMG genes, all related to the metabolism of proteins. journals.lww.com/nsca-jscr/abstract/2024/02000/physical_exercise_induc.. (2024).---

Posted On 03/03/2024

## Guillermou

Overmethylation and undermethylation can lead to complications in daily functioning, increasing the risk of physical and mental health problems. Undermethylation is most commonly treated with supplements that help with methylation, including methylfolate and vitamin B12. It is also recommended to choose a high-quality methylfolate supplement, such as the Methylfolate range, and eat a diet rich in nutrients that support methylation. Treating overmethylation may involve controlling the body's histamine levels to prevent elevated levels of serotonin, dopamine, and norepinephrine. NAC, glutathione and nicotinic acid have methylfolate metabolizing effects.

Common symptoms of overmethylation, also called histapenia, include depression, paranoia, headache and neck pain, and the tendency to ruminate on thoughts. Overmethylated patients have elevated serotonin, dopamine, and norepinephrine levels, low whole blood histamine levels, and low absolute basophils. Anxiety and depression are the main symptoms of overmethylation, sometimes the symptoms can be severe enough to cause a state of confusion. Overmethylation is an equally worrying problem in another group of people. Depression can also be a symptom of undermethylation.

Those who are overmethylators may exhibit the following symptoms indicated in the link. --- 1) Anxiety--- 2) Poor concentration--- 3).Panic disorders--- 4) Low motivation--- 5) Insomnia--- 6) Hyperactivity.--- 7) Food/chemical sensitivities.-- 8) High pain threshold.-- 9) Tinnitu.-- 10) Depression.- 11) histamine intolerance.--- methyl-life.com/.../mthfr-overmethylation-symptoms www.mensahmedical.com/common-symptoms-of-overmethylation .---- blog.designsforhealth.com/.../910 .---- https://www.casi.org/node/910 - e-hod.org/.../methylation_EN_final.pdf .-- danpursermd.com/overmethylation.----

Posted On 03/03/2024

### Guillermou

An altered gut microbiota has been identified during psychological stress, causing serious health problems worldwide. The integrity of the intestinal barrier and the blood-brain barrier regulates the process of bacterial translocation. Psychological stress reduced brain and intestinal levels of tight junction proteins, including claudin5, occludin, -actin, and ZO-1. Microbiota analysis revealed high microbial diversity and fecal proportions of Intestinimonas, Catenisphaera and Globicatella in the model group. The association between compromised gut and blood-brain barriers and altered fecal microbiota under psychological stress improves our understanding of the gut-brain axis. Here, signals converge to control basic developmental processes in the gut and brain, such as barrier function.

This study provides new directions for investigating the pathogenesis of emotional disorders. www.frontiersin.org/.../full (2020) Psychological stress alters the gut microbiota and predisposes people to an increased risk of enteric infections and chronic intestinal conditions. Intestinal epithelial cells (IECs) are responsible for maintaining homeostatic interactions between the intestinal microbiota and its host. Psychological stress disrupts intestinal epithelial cell function and mucosal integrity through microbe- and host-directed processes. www.tandfonline.com/.../19490976.2022.2035661 (2021)

Posted On 03/03/2024

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### stoneharbor

Thanks for a lot more on methylation issues Gui. Here's even more: Most important, due to the mental issues that are often tied to methylation, is that all doctors or anyone authorized to prescribe medicine should never prescribe SSRI medication to overmethylated patients. There is a very high correlation between SSRI's given to overmethyllated individuals and resultant homicidal/suicidal behavior. This is almost always the situation when a mass murder occurs. But this fact (even that the perpetrator was on medication) is always hidden by the media. Yep, drug companies protecting their turf. There should be state laws that bring doctors up for prosecution for being an accomplice to the murders and suicides if they prescribe SSRIs to anyone who's blood test shows they were overmethylated.

So prescriptions should always require a blood test. Also, in my case, there are strong positives for being overmethylated: I don't have any problem with homocystine levels as many with certain genes do, however I seem to create high levels of Glutathione and have always had a very strong immune system. The symptoms you mention for overmethylation don't match my personality except for " ruminate on thoughts", and " 7) Food/chemical sensitivities.-- 8) High pain threshold." There are just all kinds of manifestations of MTHFR genetic mutations. When many don't appear, I think you can attribute that to epigenetics.

Posted On 03/03/2024

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### epi-cure

Remember Mattias Desmit's Mass Formation Psychosis? This time it appears to have captured an entire legion of prominent scientists doing M.S. 'research'. "Previous studies have identified 233 genetic variants that increased the risk of developing M.S.", results that "astonished us all". Are these whitecoats looking for genes to pair with diseases or vice versa? You got da gene Jean/Gene so you're high risk for cancer. Example: Its proactive double mastectomy for her and prostate invasiveness for him.

One of J. Stalin's henchmen infamously said bring me the man and I'll show you the crime. Similarly, this 'research' bias indicates you got a disease we'll find you some genes, 233 of 'em; a veritable keyhole you can drive a truck through. The possibilities are endless and imagine the fun you can have with that ! rumble.com/v4aktn3-multiple-sclerosis-causes-and-treatment-13124.html Start around 4:30. The power of directed mission oriented research funding . . . . . .

Posted On 03/03/2024

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### stoneharbor

Thanks epi-cure. I listened to the Dr. Thom Cowan explanation of how the giant study showing some correlation of 233 different genes with Multiple Sclerosis is just "nothing" in terms of being some help in identifying who might end up with MS or what a solution to the disease might be. Yes, he's right. When you end up with hundreds of possible causative agents, you've not helped the case of any MS patient whatsoever, or even helped determine a cure for one patient. But this is a very good example of how a lot of stupid money can be spent to prove that the genetic research was of no value after all.

I'd say that this will be the case for most genetic studies: too many possible genetic conditions are related to a symptom to be able to determine anything that helps any case. Let them do the research. After all, it's usually a lucrative, speculative drug company that pays for the research. Maybe in one study out of a thousand something valuable will be learned, and then it all may boil down to the best solution being a simple diet or environment change that will be the best solution. And it may help some parents decide not to have a child based on their own genetics.

Posted On 03/03/2024

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### airsurfer

As long as you have a nose and a tonge, no need for fancy genetic typing. While I agree any science can be used for good, it can also be used for bad. People are equipped to heal themselves just by taste and smell. Beware of those who want to help where no help is wanted. Later it can (will) lead to forbidden foods, because 'our analysis' says you do not have the right to eat this or that, or to do this or that, because you genetic profile says you will do this and that. It's a hidden path to slavery, it always starts like that, to make us fall into the trap they make it appealing in the extreme, as many laymen (of health too) believe gene therapy will be the solution to everything, while it's just an excuse for biological tyranny.

Nutrition should always be individual (I find it hard eating exactly the same as others, to me that concept is as crazy as going to the toilet at the same time, feeling the same, thinking the same etc). But that individuality should never relay on a test, on science dictated by some outside authority who pretends to know better than your senses. Give us more natural food and less techno prisons, we'll fare better.

Posted On 03/04/2024

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### SimpleMan2

Fascinating interview, but is basic human nutrition really meant to be this complicated? How do all the rest of the animals in the world get by without having their genes mapped, and their oddball polymorphisms detected? And even if animals, from crickets to elephants, were to know their defects, how would they go about fixing them? A simple man wants to know...

Posted On 03/04/2024

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### elg9144

I have subscribed to Masterjohn newsletter for a few years now. I remember one which was against methylene blue which I was hoping Dr. Mercola would address as he is very pro mb.

Posted On 03/03/2024

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### Arlen1

Well, that was clear as mud! While he never criticized vegan diets, he did promote collagen from animal sources. He really pushed the beef-based bone broth/collagen. If animal-based collagen from ORGANIC sources is so important, then why is pork constantly left out of the discussion? Wild hogs are literally taking over our country. They compete with deer and other animals for the same food. Hogs reproduce any time of the year. There's no mating season! They have 8 or more piglets each time and they do it 2 times a year! This is why their population is exploding. Pigs are a great source of collagen. You can help control the hog population and fulfill your protein and collagen needs by hunting hogs. It is my #1 protein source. There is no "hunting season" for hogs. They are considered an invasive species. Anyone who wants to be able to get their ORGANIC meat supply without going to a grocery store should consider hog hunting.

Posted On 03/03/2024

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### brianallen1

There is a night and day difference between Wild Hogs and the pig parts they sell in the store. Even organically fed pigs will still eat everything else in their path.

Posted On 03/03/2024

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### tukwut

Guillermou and DennisJames - Ever feel like a complete idiot because you didn't connect two things? That's me right now. I've been preliminarily diagnosed with VVS (tilt table test is at the end of this month). I've been having Syncope events since my teens and when I had an injury that was best resolved with a Chiropractor, they started going away. Came back years after stopping my appts (lack of insurance that allowed Chiropractic) and then went away again when I was able to go back for adjustments. My Chiropractor unfortunately passed on almost 10 years ago and I have not found a good replacement. The past 3+ years, I've been having more and more syncope events, to a point that I've lost sight in 1 eye and they can't consistently bring the pressure down in that eye and just feel not well over all. I can't help but wonder if finding a good chiropractor might not help with it.

Posted On 03/03/2024

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### DennisJames

THANK YOU Gui SO much for the research on the Vagus nerve! WOW! PLUS chiropractic's role in helping with its optimal function via manipulation.....

Posted On 03/03/2024

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### DennisJames

GUI: stimulating the vagus nerve Me as a chiropractor tell us other than manipulating the 3rd cervical vertebrae(vagus N) can we stimulate it? Which is basically the parasympathetics as well as S3(sacrum) People really need to know this, especially me other than manipulation. THANKS!

Posted On 03/03/2024

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### Guillermou

Very interesting to collect your experience Dr. DennisJames as a chiropractor in vagus nerve stimulation. Yes, the vagus nerve controls several vital functions in the body, including heart rate, digestion, and breathing. It plays a crucial role in regulating the immune system and its damage or dysfunction can lead to many health problems. One of the most common conditions that affect the vagus nerve is obesity. Obesity can cause the nerve to become damaged and dysfunctional. This can lead to several health problems, such as heart disease, high blood pressure, and diabetes.

Another common condition that affects the vagus nerve is stress. Stress can cause the nerve to work too hard and damage its function. This can result in other health problems, such as anxiety and depression. Damage to the vagus nerve can cause a wide range of health problems, including: Chiropractors help vagus nerve health by realigning the spine and correcting misalignments. When the spine is aligned, it puts less pressure on nerves, including the vagus nerve. This can help reduce or prevent symptoms of vagus nerve damage, such as heartburn, indigestion, and GERD. Chiropractors can also help the function of the vagus nerve by helping to improve communication between the brain and gut.

This can help improve digestion and overall gut health. Chiropractic adjustments can also help improve blood flow and nerve oxygenation, promoting healing. The vagus nerve plays an essential role in the autonomic nervous system by innervating the heart, lungs, and digestive tract. The vagus nerve also affects the central nervous system, regulating mood, stress, appetite and sleep. accidentcarechiropractic.com/chiropractic-care-for-vagus-nerve-damage/ (2023).--

Posted On 03/03/2024

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## Guillermou

19 WAYS TO STIMULATE YOUR VAGUS NERVE + FUNCTIONS & DISORDERS selfhacked.com/blog/32-ways-to-stimulate-your-vagus-nerve-and-all-you-.. (2020) .--------32 SCIENCE-BACKED WAYS TO STIMULATE YOUR VAGUS NERVE www.well-beingsecrets.com/vagus-nerve-stimulation (2018).-------- RECENT ADVANCES IN DEVICES FOR VAGUS NERVE STIMULATION www.researchgate.net/profile/Kristl_Vonck/publication/326795342_Recent.. (2018) Current Directions in the Auricular Vagus Nerve Stimulation I A Physiological Perspective www.frontiersin.org/.../full (2019) .----A 12month pilot study outcomes of vagus nerve stimulation in Crohn's disease onlinelibrary.wiley.com/.../nmo.13911 (2020).---------- Electrical stimulation of the vagus nerve has shown promise in controlling inflammation, and clinical trials have shown its efficacy for treating inflammatory disorders by reducing levels of inflammatory cytokines.

SPECIFIC VAGUS NERVE STIMULATION PARAMETERS ALTER SERUM CYTOKINE LEVELS IN THE ABSENCE OF INFLAMMATION. bioelecmed.biomedcentral.com/articles/10.1186/s42234-020-00042-8 (2020)

Posted On 03/03/2024