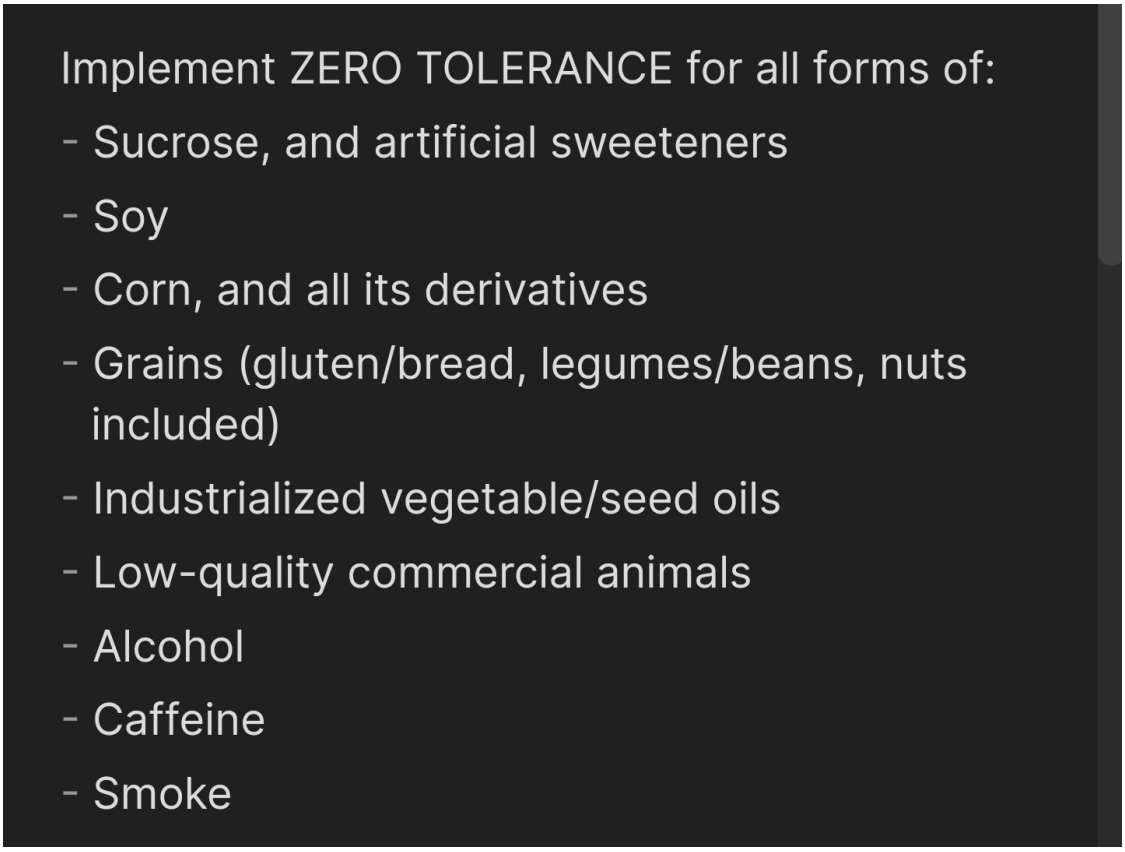
Bear Nation

Biological hibernation patterns, obesity, and bipolar seasonality

Drew Schorno
Aug 26 16 5

I think it's pretty obvious to everyone that there's something wrong with the standard American diet. But without a true understanding of what the root problems are, we are left with a dazzling variety of contradictory theories about "healthy eating". We are presented with a series of diets, each more restrictive than the last, that claim to cure our problems… with *middling* results.

One of my Twitter friends recently posted this image of a simple, yet brutally restrictive diet he was going to try:



A couple days later, he reported back that it was already working remarkably well:

> *I've been doing this zero tolerance thing + sunlight + magnesium and feel great*
>
> *so far I've consumed: pork rinds, orange juice, coconut water, beef salad, kimchi, kefir, fried eggs, kale, chicken, bacon, avocado, tons of fruits and veggies*
>
> *yesterday I struggled to hit 2k cals*

Unlike more advanced fields like chemistry, nutrition science is still relatively primitive in many ways, similar to *alchemy* in ancient times. There's a chance that we are still centuries away from a true picture of the way foods affect our bodies.

But even with highly flawed mental models of the underlying physical reality, alchemists were able to accomplish very interesting results: such as when Hennig Brand managed to synthesize 120 grams of 'cold fire' (aka the glowing element phosphorus) out of 1500 gallons of human urine.

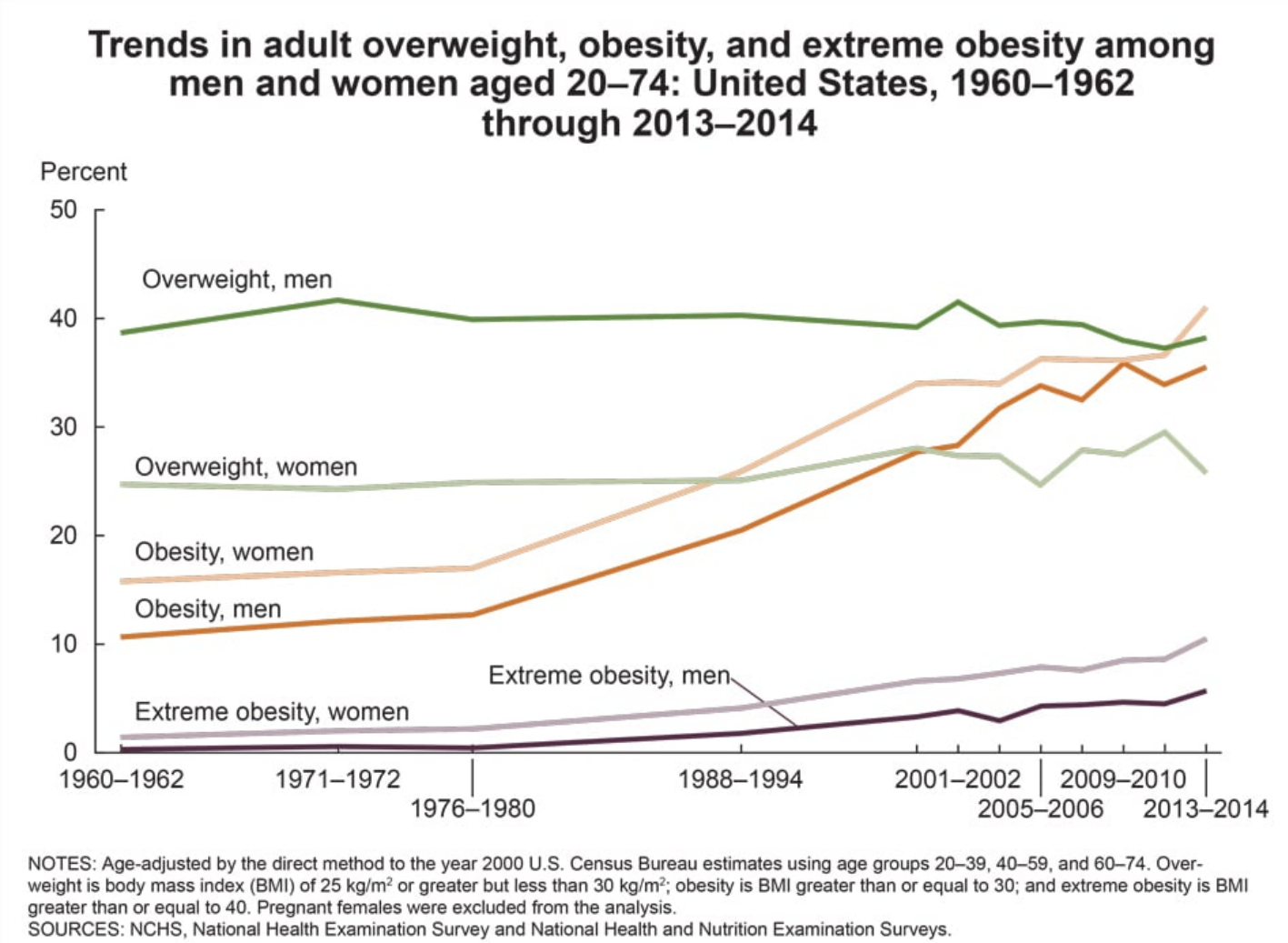
His process could have produced many times more phosphorus had he known to grind up the salt residue.

Likewise, some diets appear to work fairly well, but it's hard to tell exactly why or in what ways they can be improved. If *only* we had a good theory to underpin our efforts.

The Obesity Epidemic

First things first, it's time to address the elephants in the room: why are modern humans, and modern Americans in particular, getting fatter and fatter and fatter?

(*Wait, I thought this essay was going to be about bears?*)



Apparently sometime in the late '70s there was a turning point, and American bellies began to expand rapidly, like that girl in Willie Wonka who turned into a blueberry. Despite the fact that *the obesity epidemic* has been brought up less in the media in the past few years, as if it were a solved problem, that trendline is still heading straight up.

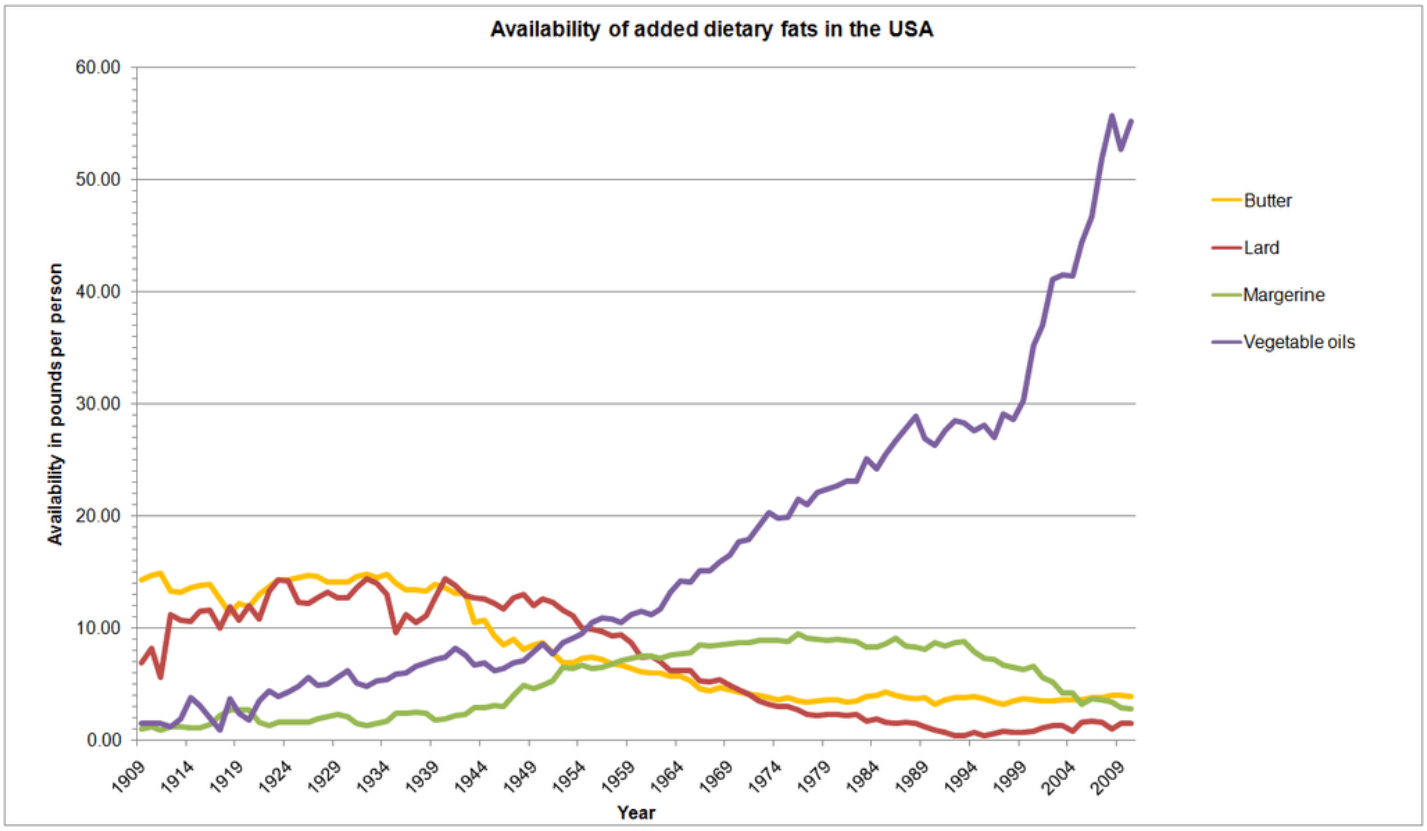
This is widely regarded as a failure of modern nutrition science:

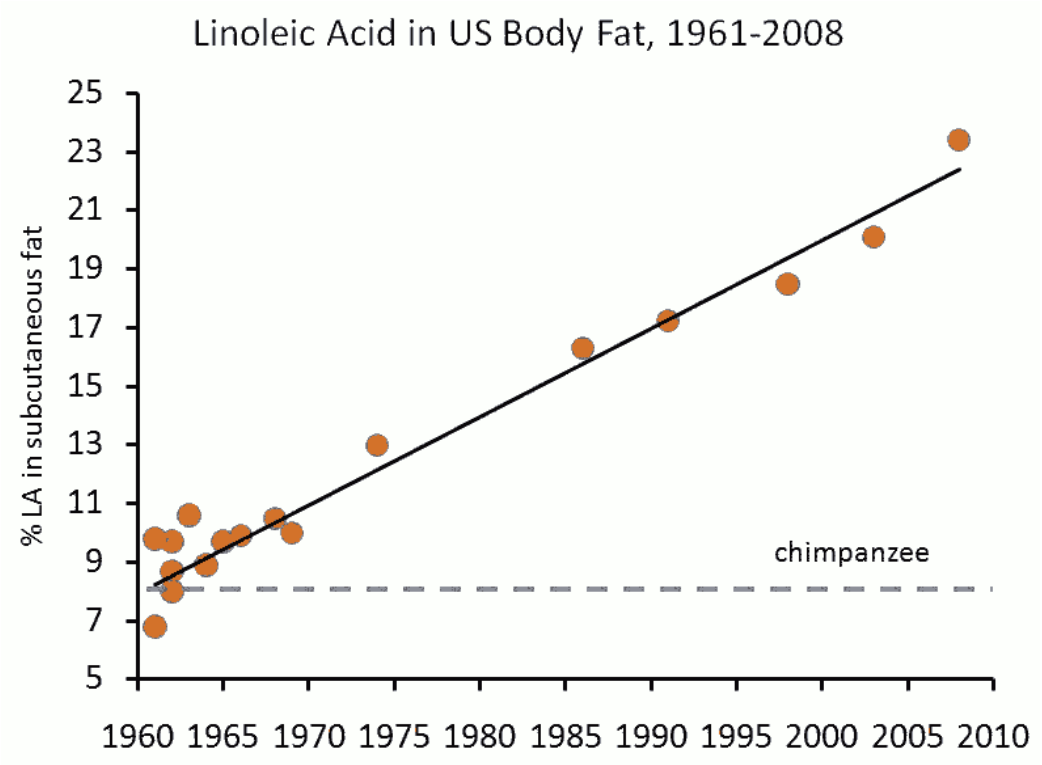
> *"[…] Scientific studies dating from the late 1940s showed a correlation between high-fat diets and high-cholesterol levels, suggesting that a low-fat diet might prevent heart disease in high-risk patients. By the 1960s, the low-fat diet began to be touted not just for high-risk heart patients, but as good for the whole nation. After 1980, the low-fat approach became an overarching ideology, promoted by physicians, the federal government, the food industry, and the popular health media. Many Americans subscribed to the ideology of low fat, even though there was no clear evidence that it prevented heart disease or promoted weight loss. Ironically, in the same decades that the low-fat approach assumed ideological status, Americans in the aggregate were getting fatter, leading to what many called an obesity epidemic. […]"*
>
> -**Ann F. La Berge**, https://academic.oup.com/jhmas/article/63/2/139/772615

That was written in 2008, and in the 13 years since saturated fat consumption has continued to fall, and Americans have continued to grow. The idea that the nutrition experts could be wrong about saturated fats is not a new idea at all: even as early as 1973 our dear friend Woody Allen released the movie *Sleeper,* which was set in the year 2173 and presented saturated fats as health foods.

> ***Dr. Melik:*** *This morning for breakfast he requested something called "wheat germ, organic honey and tiger's milk."*
>
> ***Dr. Aragon:*** *[chuckling] Oh, yes. Those are the charmed substances that some years ago were thought to contain life-preserving properties.*
>
> ***Dr. Melik:*** *You mean there was no deep fat? No steak or cream pies or… hot fudge?*
>
> ***Dr. Aragon:*** *Those were thought to be unhealthy… precisely the opposite of what we now know to be true.*
>
> ***Dr. Melik:*** *Incredible.*

But our authorities continue to barrel onwards, promoting "heart-healthy" Polyunsaturated Fatty Acids (PUFAs) and Monounsaturated Fatty Acids (MUFAs) in the place of saturated fats:





The Evolution of a Counterculture

The concept of the Paleolithic diet started in the 1970s, but it didn't emerge into the public consciousness until a book called "*The Paleo Diet: Lose Weight and Get Healthy by Eating the*

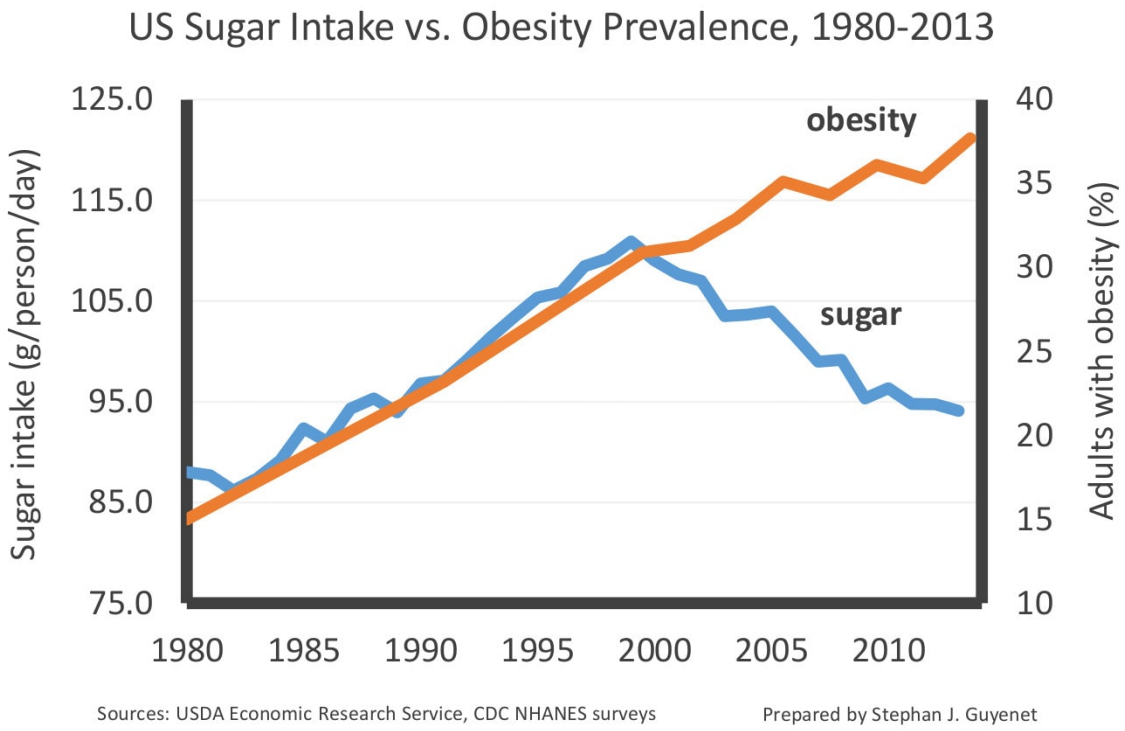
Foods You Were Designed to Eat" by Loren Cordain was released in 2002.

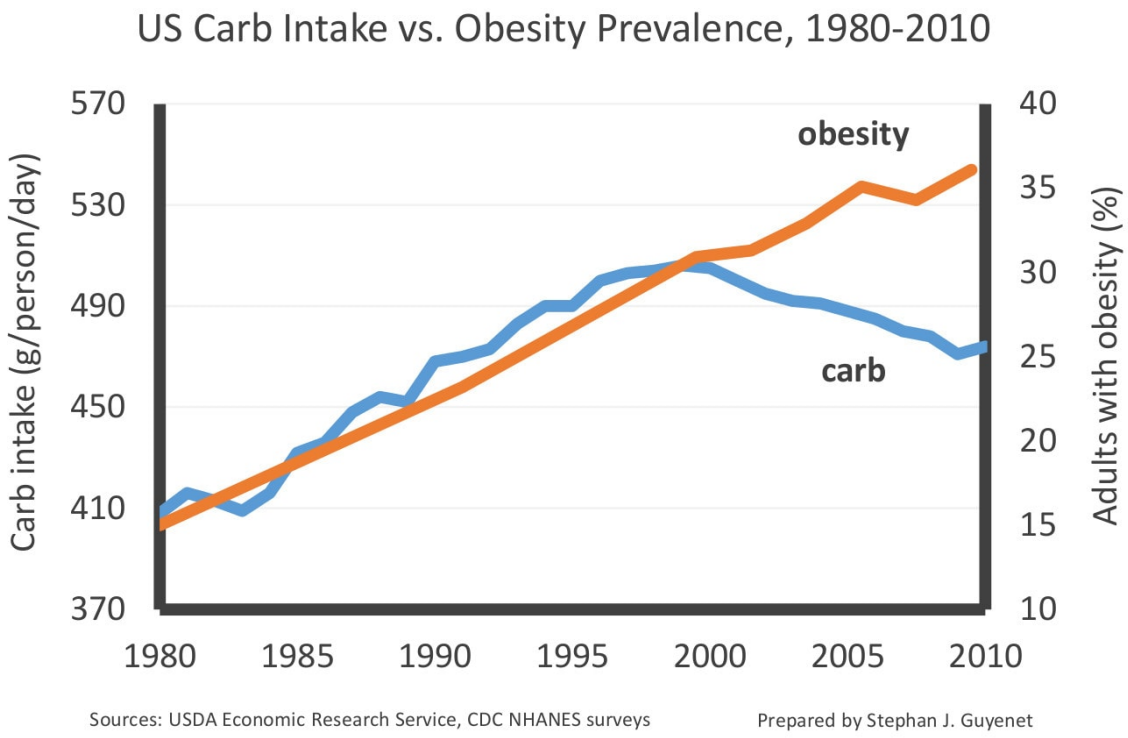
At that time, the consumption of sugar and carbohydrates had also been rising steadily along with PUFAs, so they were a prime candidate as the cause of the obesity crisis. The Paleo diet pursued a shotgun strategy: "*let's just bring everything back to the stone age*". They cut out *anything* that might plausibly be the problem: seed oils—the primary source of PUFAs in the American diet—sugar, flour, gluten… beans for some reason… all sorts of stuff.

And it seemed to work pretty well.

The idea that *sugar* or *refined carbohydrates* were the primary drivers of the obesity epidemic was a palatable possibility for the reigning nutritional experts, who were able to save face without reversing course. So a new campaign was launched to reduce these things, and consumer demand for *low-sugar* & *gluten-free* foods skyrocketed.

This has, unfortunately, not had an obvious effect:





Paleo and its spiritual descendants, who are united around "low carb" ideology, are still relatively effective. But that may be because they actually also do a very good job of reducing the amount of seed oil/PUFAs consumed. Some of these descendants include:

- **AIP** (Autoimmune protocol), which is basically just a way stricter version of paleo aimed at cutting out more food groups. This is primarily marketed as a way to find subtle dietary sensitivities, but it works well for weight loss too: obesity and inflammation seem to go hand in hand. Unlike regular Paleo, they don't allow the consumption of *nuts* (which are high in PUFAs).
- **Keto**, which is technically older than Paleo in medical contexts but newer in terms of "diet crazes", goes all-in on carbs and *ketosis* as an explanation for why Paleo was working. Avoiding carbs means that you avoid modern bread (lots of seed oils), "processed foods" (lots of seed oils), and nuts. But Keto doesn't explicitly limit seed oils themselves: luckily, many proponents coming from the Paleo world brought habits along with them like using coconut oil and ghee for cooking, and stricter variants that manage to cut out things like *mayonnaise* are known to have better results.
- **Carnivore**, which was invented by people still not satisfied with the results from keto generally, is a diet that eliminates *everything but meat*. In the strictest form, proponents only eat cuts of grass-fed beef and beef fat. I don't 100% know how they justify this to themselves (other than having the practical sense to pursue what seems to be working), but I imagine the idea is staying in ketosis and eliminating a bunch of other potential

compounds that they deem suspicious—seed oils included. This diet by all accounts is very effective, but it is not very practical for most people. There are some questions (at least in my mind) about nutritional deficits, and it seems like it would be really *expensive* and *boring* to eat like this (not a great combo).

So there's obviously a tradeoff here between what you're allowed to eat on these diets and the results that you get. But in this intellectual tradition, based mostly on historical happenstance, there is an ideological commitment to *eliminating carbs*. "Carbs are the enemy" here replaces the state nutrition science consensus that "fat is the enemy". Both seem to ignore the fact that most people in recorded history primarily subsisted on some combination of starchy foods and animal fats without being overweight.

All of these diets seem to work well, but despite the wide variety of theoretical justifications the actual proponents rely upon, their successes could all plausibly be explained by reducing the intake of PUFAs.

Enter the "Croissant Diet"

Brad Marshall was a molecular biologist and cancer researcher, who left the field to go to french culinary school and study historical french cuisine, who left THAT field to raise pigs and become a butcher.

He also just generally looks like a crazy untamed mountain man, which I obviously relate to. Here is him before and after one month of eating only butter croissants to prove a point:

Brad had previously had some success with a keto-based approach to dieting, but he was particularly confused by the so-called “French paradox”: french people in the ’60s and ‘70s consumed a diet made up of primarily *white flour*, *white sugar*, *meat*, and *full-fat dairy*, and still managed to be rail thin.

Inspired heavily by another even less approachable researcher named Petro Dobromylskyj writing over at the "Hyperlipid" blog, Brad identified a plausible working theory of specific metabolic pathways that would lead linoleic acid (*aka* omega-6 *aka* the main PUFA in seed oils) to induce obesity, and how increasing the ratio of saturated fat in your diet might lead to weight loss. This theory is called the "ROS/SCD1 theory" after some key players in the mechanism.

(If you ask me this is not a very catchy name. Nor do I think that “The Croissant Diet” is ultimately a very good name because I think it makes it sound like one of those *fad diets* the nutrition experts always warned us about.)

Now, crucially, there is no equivalent mechanism to the ROS/SCD1 theory for how saturated fats could induce obesity that is plausible. That perspective relied on entirely on flawed correlational studies. This theory also fits all of the existing data, resolving the many unexplained “paradoxes”.

With this in mind, Brad reexamined historical diets and realized that there is no particular reason why consuming starch would be bad *necessarily*. Starch is basically directly converted to saturated fat in the body (through a process called *de novo lipogenesis*). There are some nuances to this but I really am not qualified or interested in summarizing this whole theory so if you're curious just go to Brad's blog (https://fireinabottle.net/)

So to test this out, he decided to eat a stunt diet primarily of croissants (which are 40% white flour, 60% butter) with some additional saturated fat in the form of Stearic acid. He was able to confirm that it induced weight loss over the course of a month, with comparable if not better results than keto/carnivore.

He expanded these general principles out to the so-called "Croissant Diet" (TCD), which is a shockingly loosey-goosey set of principles to avoid seed oils and consume relatively more saturated fats.

The rules:

- Don't cook with vegetable oil. Don't consume stuff that has vegetable oil in it. Replace with saturated alternatives like coconut/MCT oil, clarified butter/ghee, or beef tallow/suet.
    - The state nutrition apparatus recently has mostly switched to promoting "monounsaturated" fats, such that can be found in avocado/olive oil. It's really better to cut these out as well, or consume in very limited quantities.
    - Unfortunately, the vast majority of commercial bread and baked goods are made with vegetable oil.
    - Don't be surprised to find added seed oils in weird places, like in your oat milk.
    - This alone makes it relatively challenging to eat out, but burgers can be ok. Or get a steak with a baked potato and extra butter. Restaurants love to put it in everything so be vigilant.
- Avoid nuts and oily seeds like peanuts/edamame.
    - If you like peanut butter, you can get powdered peanut butter and mix it with MCT oil or ghee for a very comparable product. The problem is in the oil/fat content.

    - Historically Native Americans, who ate a lot of acorns, would go to great efforts to boil their acorns to remove the oil, and would replace it with bear fat from bears hunted when their linoleic acid levels were lowest.

- Avoid pork and chicken fat, unless you can confirm they did not have soy beans, high-oil Dried Distillers Grains (DDGS), or corn in their diet. There is basically no commercially produced pork/chicken that meets these criteria.

    - Pigs fed DDGS have been found to have as much PUFAs in their fat as canola oil, chicken is no better. Whatever they eat, they essentially just pass along to us.
    - Beef and other ruminant animals like goat/lamb are fine because they, conveniently, metabolize PUFAs into saturated fat.
    - You can still enjoy lean cuts of pork/chicken coated liberally in butter.

- Find ways to add saturated fats, particularly *Stearic Acid* (which is the most well studied) into your diet. This means butter and full-fat dairy, beef tallow, and grass-fed beef suet (the gold standard). For a vegan option, cocoa butter is excellent. You can also just buy food-grade stearic acid, which is mostly sourced from palm oil (don't eat palm oil though it's 10% linoleic acid dummy).

    - The reason why you are adding more saturated fat is that your body is always consuming roughly 50% stored fat at any given time, so if you have a lot of stored linoleic acid (hint: you do) then you have to overcompensate in your diet to get the right ratio.

[Edit: Just to make this more clear, here is a chart of common cooking oils and their linoleic acid content (HT: @GarrettPetersen)

Name	% Linoleic acid†
Safflower oil	78%
Grape seed oil	73%
Poppyseed oil	70%
Sunflower oil	68%
Hemp oil	60%
Corn oil	59%
Wheat germ oil	55%
Cottonseed oil	54%
Soybean oil	51%
Walnut oil	51%
Sesame oil	45%
Rice bran oil	39%
Pistachio oil	32.7%
Peanut oil	32%
Canola oil	21%
Egg yolk	16%
Linseed oil	15%
Lard	10%
Olive oil	10%
Palm oil	10%
Cocoa butter	3%
Macadamia oil	2%
Butter	2%
Coconut oil	2%
	†average val

(Commercial Lard is actually closer to 15-20% LA)

So as you can see, olive oil isn't THAT BAD here. Much better than the soybean oil that's in everything. But the name of the game is minimizing linoleic acid consumption and maximizing stearic acid (SA) consumption, so why eat olive oil (2% SA) when you can eat butter (10% SA), beef tallow (19% SA), cocoa butter (33% SA), etc

Also, depending on who you ask, monounsaturated fats (like the rest of what olive oil is made of, oleic acid) are either unhelpful at best, or harmful to the cause at worst. Best to avoid imo.]

Full specification here, with a lot more in the way of tips and tricks: https://fireinabottle.net/the-croissant-diet-specification/

That's basically it. Sugar still isn't great (particularly fructose), but historically people could eat as much as 20% of their calories from sugar and turn out ok. It's probably better to avoid artificial sweeteners because they still manage to spike insulin, so there's no real benefit to

using them. He also recommends white flour/rice over their supposedly healthier brown equivalents.

Ok so also I will drop in here that the smarter keto folks all know about this PUFA/saturated ratio stuff and agree, yet still think cutting out carbs is net better for weight management. I think Brad's argument here is that carbs are *not that bad*, not that they are required, and that *ketosis* is not the primary driver of the effectiveness of these diets. And the interesting thing about TCD is that you can overlay it onto stricter dieting techniques to see faster results: plenty of people in the r/SaturatedFat subreddit are still following keto/carnivore restrictions, and Brad is currently testing out a "fasting-mimicking" variant of this diet where he mostly fasts every other day.

The croissant diet was posted in December 2019, and a personal trainer type guy named David Tillman is now first to market with pushing these ideas on youtube. He claims to have personally lost 40 pounds and has convinced about 20 people in his personal circle to start the diet, to apparent success. He eats, among other things, a croissant sandwich and pint of Häagen-Dazs ice cream every day which seems fun.

Supplements

Scott Alexander, on the other hand, claims to have tried the diet and only lost a modest amount of weight before plateauing. Unfortunately this diet doesn't necessarily work *better* than other diets like strict keto, it just replicates their *sometimes modest* effects with fewer restrictions. It turns out that just cutting out seed oils from your diet doesn't immediately reverse the damage done from 30 years of eating seed oils overnight.

Earlier I said that I wasn't going to get into this, mostly because I'm too low-IQ to fully understand it, but roughly: linoleic acid indirectly leads to the upregulation of SCD1, which is an enzyme that converts saturated fat into unsaturated fat. SCD1 is also suppressed by leptin (which drives fat burning), and upregulated by insulin (which drives fat storage). Some of the products that SCD1 produces slightly upregulate SCD1 as well, so after a certain threshold of activity is passed, SCD1 gets caught in a runaway loop of upregulating itself.

So this is the trap that keeps people obese, and causes people who lose weight to eventually gain it all back. Some people, in addition to eliminating the source of the problem (seed oil consumption), find success in adding supplements that directly affect the ROS/SCD1 processes to break the cycle.

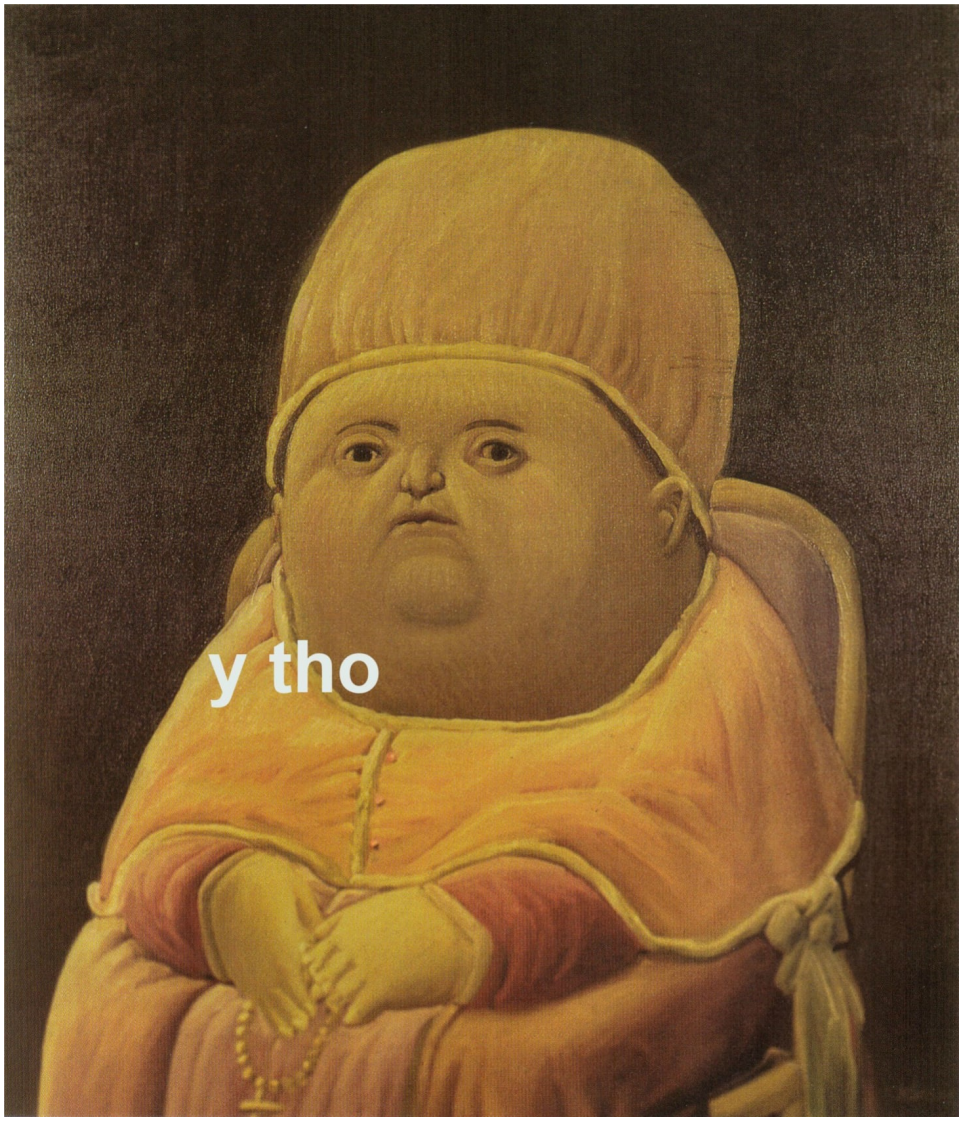
Brad gets into the nitty-gritty here, but TLDR the stack is:

- **Sterculia oil** 1200 mg
    - Note: Brad is currently the only one in North America importing this stuff for sale. You could maybe try *Conjugated Linoleic Acid (CLA)*, which is a more standard bodybuilder supplement.
    - *Pu-Erh Tea* is also helpful here (the category is direct SCD1 inhibitors)
- **Astaxanthin** 12mg
    - The effects of this are similar to *Berberine*, or to the prescription *Metformin.*
    - Basically promotes fat burning: "Step on the gas!"
- **Hesperidin** 500mg & **Resveratrol** 500mg
    - These are both "antioxidants" but it's complicated: ROS (Reactive Oxygen Species) are technically *pro*-oxidants that, in this theory, act as a signal to our cells to increase leptin sensitivity and decrease insulin sensitivity*.
    - Basically *prevent the preventio*n of fat burning: "Let off the brakes!"

* (And yes, in the context of diabetes insulin resistance is bad. But there's some distinction being made here between "Physiological" and "Pathological" insulin resistance, where basically there is a version of insulin resisting that is a normal part of the functioning of our cells—"adaptive glucose sparing"—vs the *pathological* version seen in diabetes where cells are unable to respond to insulin due to being overloaded.)

A Unifying Theory for the Unifying Theory

Ok so yes, the underlying mechanism is potentially identified which is a big breakthrough. But like, *why* though.



A new theory on the scene, that Brad started advocating for earlier this year, is that this deadly self-reinforcing loop that SCD1 gets itself caught in is not "dysregulation" but is actually a natural state that was very important to our ancient animal ancestors: namely, torpor.

Torpor is the way that animals prepare themselves for hibernation. Squirrels, as one example of many animals in our family tree that hibernate, are omnivores who eat a variety of bulbs, tree shoots, buds, fungi, roots, eggs, small insects, caterpillars, small animals, and even young snakes. But as winter begins to approach, squirrels famously switch to a diet high in *acorns*. The linoleic acid in the acorns acts as a trigger for their fat cells to begin packing on pounds in preparation for hibernation.

This study shows that squirrels who fail to consume enough linoleic acid (LA) are unable to hibernate and quickly die in the cold. 12 squirrels were split into diets of either 5% coconut oil (low LA), corn oil (medium LA), or sunflower oil (high LA). When the researchers dropped the temperatures, the first group failed to enter hibernation at all, the second group only entered hibernation temporarily, and only the third group was successful. The squirrels needed about 8% of their calories to come from linoleic acid to be able to enter hibernation.

The standard American diet meanwhile, passed the 8% linoleic acid threshold sometime between 1960–1990, right around the same time that the obesity epidemic began.

Another compelling argument that Americans have accidentally memed themselves into a state of pre-hibernation is body temperature: did you know that average American body temperatures now are reliably 1 degree colder than they were 100 years ago? This is a lot of evidence for this, but it leaves the researchers very confused.

"Perhaps there are less infections now..." yeah, sure dude.

Torpor, as an alternate explanation, is known to reduce the body temperature of animals because *burning fat generates heat*. People on the croissant diet who are taking the supplements, for what it's worth, typically report higher temperatures.

[**Edit:** Since I have been called out on this, it's important to note that *leading researchers have evaluated a variety of different explanations for this phenomenon and currently believe that an increase in sanitation leading to fewer infections is the most likely cause, although one compelling paper admits that "several lines of evidence suggest that these changes alone are insufficient". I, as a clown school graduate, am not qualified enough to casually dismiss this hypothesis just because I find it "self-evidently weird & unconvincing". Please feel free to read Brad Marshall's full arguments about this here*]

So today, the story goes, our society's default dietary choices increasingly end with us in torpor: with every dude sporting a dad-bod, or becoming a "bear". Apparently since 2010 you

don't even need to be gay to be considered a bear. Girls can be bears too: haven't you ever seen a Charmin commercial?

(This is like the part of the movie where they pause and then say the title of the movie: *"It's almost as if we're a... **nation of bears**."*)

Bears, as in the actual animal, are constantly in a state of torpor, and there's not a lot of evidence that they ever really leave it. It may be easy to induce torpor, but it is less clear if there's a reliable way out. If it turns out that we're stuck like this forever, it probably makes sense not to get too upset about it.

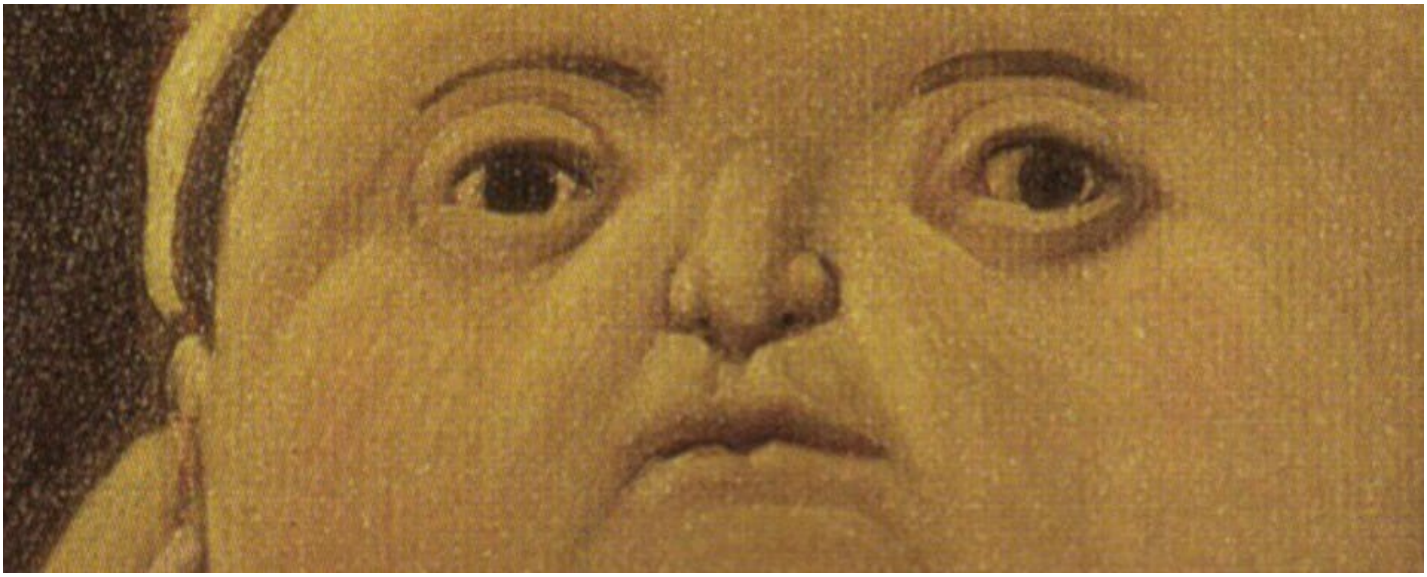
I am not smart enough to tell if all of this is actually true, but brad argues for it pretty convincingly. Also, more importantly, it seems funny. It seems *right* and it makes me laugh, what more could you ask for in a theory? It's certainly a more satisfying explanation for our current weight situation than "calories in, calories out".

"Calories in, calories out", or CICO, is trivially true in the sense that *all the calories you use and store come from the food that you eat*. I for one believe in the conservation of energy principle from physics: so yes, we have been consuming relatively more calories on average in the past few decades. It is simple enough to lose weight through starvation, or to gain weight through force-feeding, but your body will work hard to bring you back to where it wants you to be. It is well within your body's capability to make you hungrier and lazier to gain weight; or to make you hot, jittery, and excitable to lose weight. It always seems to win eventually.

On the other hand, I'm sure there are plenty of people out there who remain thin for years through the sheer force of their intense willpower, to which I say: congratulations, seriously.

The problem with CICO as a thought-terminating cliche, though, is that it doesn't explain *why* most Americans since 1980 have decided en masse to eat more food or burn less calories in the first place. Are our foods today really more "hyper-palatable" than *french pastries*, or are we just eating more because we're hungrier (because we're in torpor)?

Some people eat tons of food and never seem to gain any weight. "Oh I just have a fast metabolism…" exactly! Why do some people have *fast metabolisms* and some people have *slow metabolisms*? *Why* would that be the case?



Walking on Sunshine

So here's where we exit from Brad's thought sphere and enter into some of my own speculations. Dream with me:

Seasonal Affective Disorder is a condition where people become depressed during the winter, presumably named this way so that the acronym would be "SAD". The standard, very effective treatment for SAD is light therapy, wherein you sit under a bright full-spectrum light every morning for a half-hour or so. A quick google search suggests that many people have made the argument that SAD is related in some way to vestigial hibernation patterns, so I got a bit curious if light therapy has ever been linked to weight loss. I found a paper that seems like reasonably strong support of that idea: https://www.karger.com/Article/Fulltext/348549

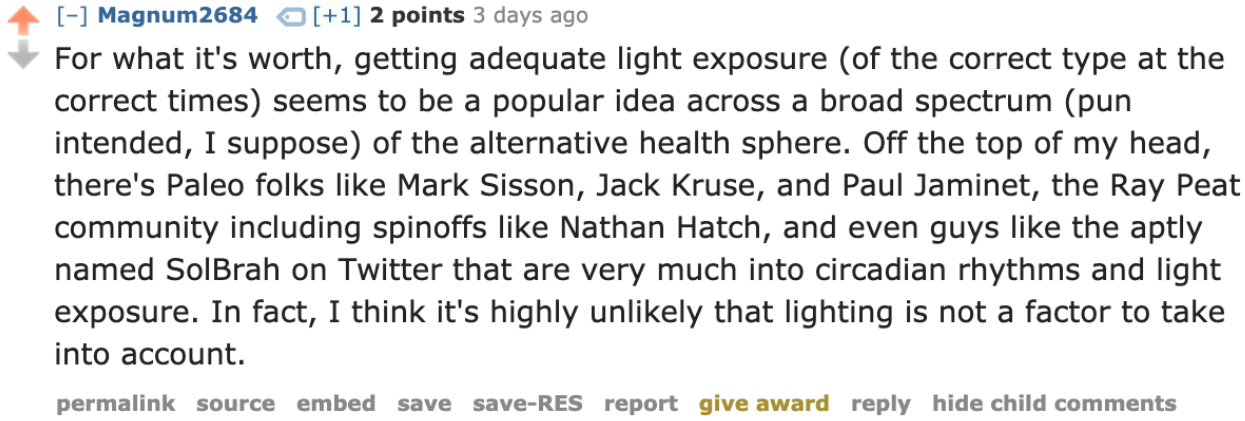
And I will say, about this paper and the other papers that I reference from here on out, that I don't have the background to evaluate how strong they are. YMMV. However it does make

some intuitive sense to me, in the context of the torpor idea, that animals would use signals from the changing light levels to enter and exit hibernation.

It also appears to be the case, at least in mice, that fat cells can *directly sense light* and use that as a trigger to burn fat stores: http://www.sci-news.com/medicine/fat-cells-sense-light-08057.html (which is a nice pop-sci wrapper around the paper *Adaptive Thermogenesis in Mice Is Enhanced by Opsin 3-Dependent Adipocyte Light Sensing*) [Edit: HT /u/PavlovaPalava]

> *Based on the current findings, it is possible that insufficient stimulation of the light-OPN3 adipocyte pathway is part of an explanation for the prevalence of metabolic deregulation in industrialized nations where unnatural lighting has become the norm*

I think the broader alt-nutrition community is also already thinking along these lines:



I actually have a SAD lamp myself, but David Chapman seems to think that brighter lights than what are commercially available for SAD have a more pronounced effect: https://meaningness.com/sad-light-led-lux

Basically: it was not practical for lamps to be brighter than 10,000 lumens when the original studies were done with fluorescent tubes, and most commercial SAD lamps produce 2500 or even less lumens. But with the advent of cheaply available LED lights it is now relatively inexpensive to construct a setup of 90,000 lumens, which is much closer to the strength of full summer daylight, and he says that in his experience it is much more effective.

But don't get too excited...

The only drawback to light therapy is that it occasionally causes people with bipolar disorder to enter into a manic state:

Both a manic and a hypomanic episode include three or more of these symptoms:

- Abnormally upbeat, jumpy or wired
- Increased activity, energy or agitation
- Exaggerated sense of well-being and self-confidence (euphoria)
- Decreased need for sleep
- Unusual talkativeness
- Racing thoughts
- Distractibility
- Poor decision-making — for example, going on buying sprees, taking sexual risks or making foolish investments

Given that bipolar disorder often has a seasonal component to it, and that light therapy remains an effective treatment for bipolar *depression*, it seems likely that SAD and bipolar disorder are probably somehow related.

Bipolar is known to be very connected to light exposure and sleep patterns: too much light or too little sleep can trigger mania. One of the only therapies that show effectiveness for bipolar disorder in studies is "Interpersonal and social rhythm therapy", which basically just teaches you how to make a rigid schedule with regular sleep times. Another is CBT-I—CBT therapy specific to insomnia—and it's more or less the same.

While the management of our circadian rhythm clearly has a pronounced effect on our mood, a lesser-known fact is that *diet* has also been linked to bipolar outcomes. The relationship between linoleic acid and bipolar in particular seems complicated:

> *"In summary, [**Linoleic Acid (LA)] metabolism may be dysregulated in bipolar disorder and some, but not all, differences may be influenced by both diet and psychiatric medications. Dietary LA intake has controversial roles in the regulation of inflammatory systems and the risk of related health problems that are often comorbid with bipolar disorder, such as cardiovascular disease and obesity. […] **Data and results herein suggest that psychiatric medications may affect LA metabolism**, adding another potentially important variable to dietary LA recommendations."*
>
> -Excerpt from the 2014 paper *Dietary Intake and Plasma Metabolomic Analysis of Polyunsaturated Fatty Acids in Bipolar Subjects Reveal Dysregulation of Linoleic Acid Metabolism*

Another big unexplained mystery in our world is exactly how the antipsychotic medications and mood stabilizers that doctors use to treat mania really work. Doctors know that if you give them to a person who is manic it will calm them down, but nobody is exactly sure why. We also know that these medications typically cause shocking amounts of weight gain. So if that paper is right that "*psychiatric medications may affect LA metabolism*"… could these drugs be inducing torpor? Could bipolar disorder itself be somehow tied to these metabolic pathways?

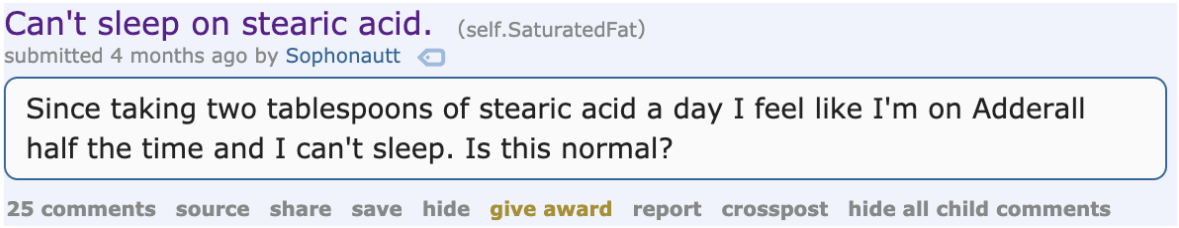
Slime Mold Time Mold convincingly argues that there is evidence of some sort of obesogenic chemical in the water supply, and one of the candidates they propose is Lithium: a mood stabilizer with a well-established weight gain effect. There's no reason why that, and the other obesogenic psychiatric medications that are increasingly prescribed, couldn't also be a part of the picture here.

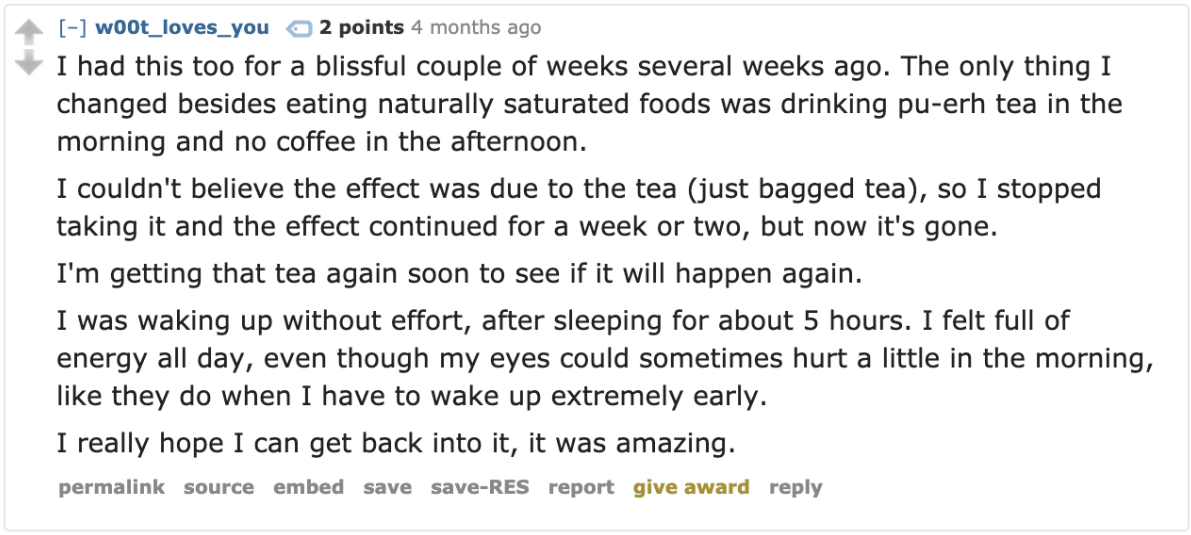
Now, and I'm not trying to pathologize anything or *armchair-diagnose*, but here's Brad again from when he was doing a more extreme version of the croissant diet in his Stearic Acid macro-dosing test:

> *I'm bursting with energy! I always pace when I write/think but the last two days especially. According the health app on my iPhone I took over 17,000 steps yesterday WITHOUT LEAVING THE HOUSE. It's almost 2 PM and I've already taken 10,000 steps today. Last night I had an impromptu 45 minute dance party with myself! My basketball buddy referenced in Introducing The Croissant Diet grabbed me half way through last weeks game and asked "are you on the stearic acid again?" He hasn't asked that in months. He could tell.*

So, uh, this basically sounds *pretty similar* to hypomania to me.

Other people on the subreddit seem to have had some similar reactions to stearic acid and the TCD supplement stack:





> One odd thing I've noticed the past week is some trouble sleeping after consuming the stearic acid in the evening (maybe 2 hours before bed). I wake up in the middle of the night feeling energized and not tired. I'm not really tired during the day, but this has happened a few times and I'm wondering if it's due to an upregulated metabolism?

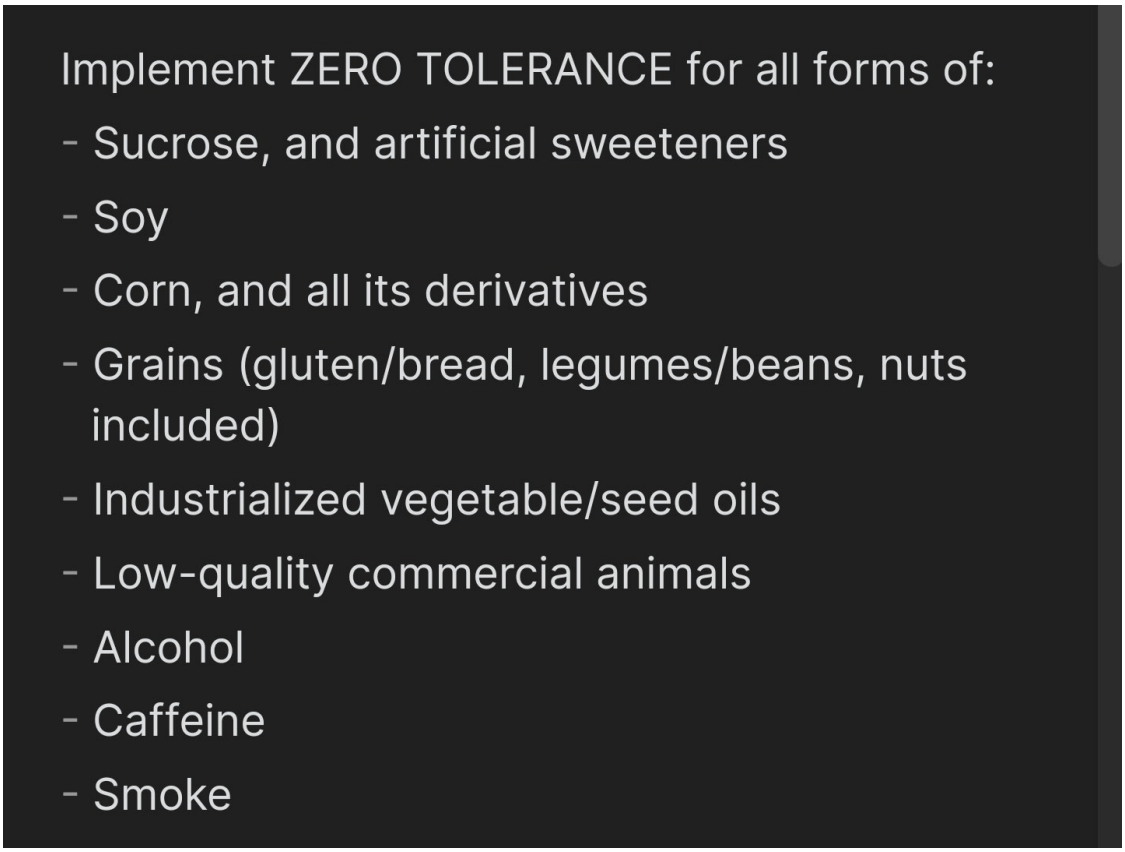
Maybe, and I'm just spitballing here, the state of mania is somehow the opposite of torpor: *extreme thermogenesis*.

Psychosis, which sometimes accompanies extreme mania and extreme depression, is apparently associated with increased levels of *Nervonic acid*: a monounsaturated Very Long Chain Fatty Acid (VLCFA) that is created in the body as a downstream effect of upregulated SCD1. Nervonic Acid is also associated with diabetes severity. More on that here: https://fireinabottle.net/very-long-chain-saturated-and-monounsaturated-fats/

This is all outside my area of expertise, but I'm just bringing it up because it seems that there might be some serious danger afoot for people who go too far too fast.

ZERO TOLERANCE

Now let's return to the list at the beginning:



Re-exploring this list in the context of ROS/SCD1 theory, it seems to cover pretty much everything you would need to do to avoid excess linoleic acid, plus a few minor extras. My friend added sunlight exposure and magnesium (I don't know much about the reasoning behind that but he has a thread on magnesium here if you're curious).

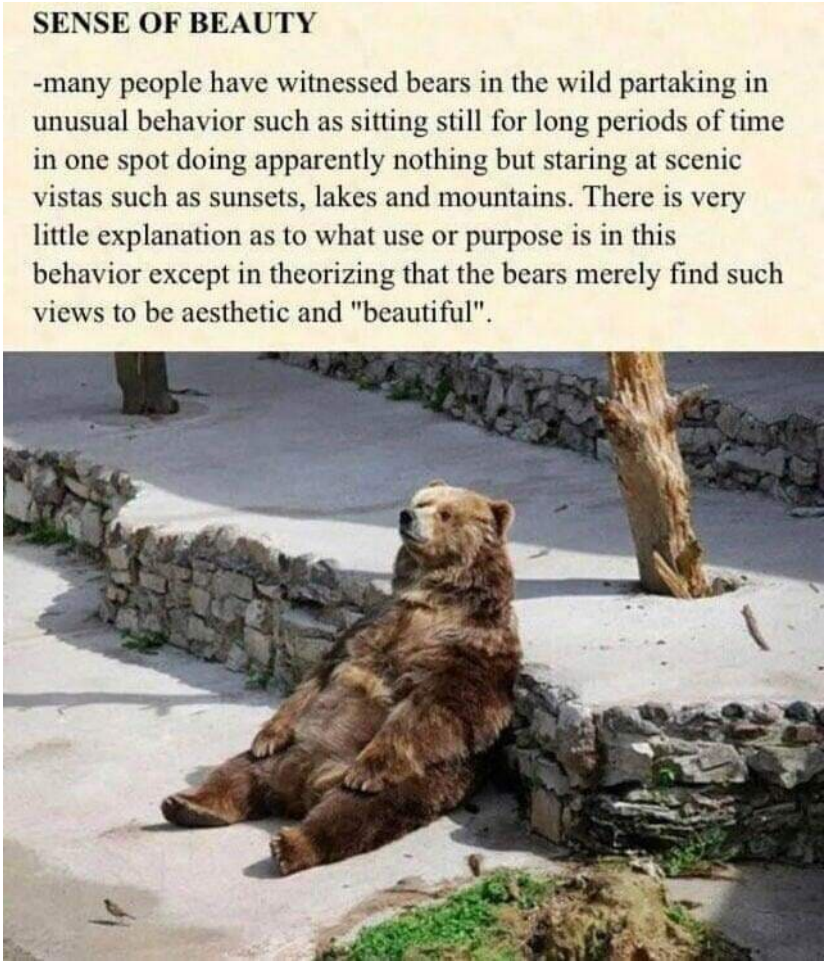
But now that we know what we're looking at, there's at least hope for a less restrictive future. Seed-oil-free baked goods and candies could easily be brought to market. Restaurants could switch to frying things with saturated fats. Animals could be raised with low-PUFA feed. We don't even technically need to leave behind our big bad industrialized food chain: with the right theoretical backing and enough nerve, we could lower PUFAs across the board for everyone.

Unfortunately, exiting torpor safely is definitely a long-term project. The rough consensus guess is that it probably takes AT LEAST 4 years to fully deplete the excess linoleic acid from your fat cells. But, slow and steady wins the race, and even if there's no real way out and we're

stuck with *bear metabolisms* forever, we can at least take steps to make a better world for our kids.

Quitting alcohol, coffee, and smoking are all *healthy*, but those are obviously just optional add-ons. I'm not really planning on living my life with ZERO TOLERANCE for these substances.

There's a chance that it's possible to lose weight while not making optimally healthy choices *all of the time*. I hope that's true. All we can do is try to do the best that we can, while still living our lives to the fullest they can be. Like our dear friend "sense of beauty" bear:



did you really think that this was going to end any other way?

Write a comment...

Charles Richardson Aug 30 Liked by Drew Schorno

That. Was. Amazing. I've been keto paleo forever (like 50 years on and off), have been following Peter and hyperlipid for more than a decade or two, and totally have embraced Brad's hypothesis. You not only explained it extremely well you've brought in these other things (light, etc.) which I find fascinating and make a lot of sense. And they branch off the foundation of Peter and Brad. Great job, thank you.

♥ 2 Reply

1 reply by Drew Schorno

Camille Aug 30

Interesting take! Maybe dumb question, but how does that square up with countries which traditionally also have low obesity AND high consumption of vegetable oils? I'm thinking specifically Mediterranean diet / olive oil. Granted I think olive oil has low linoleic acid content relative to other vegetable oils but still?

♥ Reply

2 replies by Drew Schorno

3 more comments...

Ready for more?

Type your email... Subscribe