FOR, THEN AGAINST, HIGH-SATURATED-FAT DIETS

POSTED ON MARCH 10, 2020 BY SCOTT ALEXANDER

I.

In the 1800s, the average US man weighed about 155 lbs. Today, he weighs about 195. The change is even starker at the extremes. Someone at the 90th percentile of weight back then weighed about 185 lbs; today, he would weigh 320 lbs. Back then, about 1% of men were obese. Today, about 25% are.

This puts a lot of modern dietary advice into perspective. For example, lots of people think low-carb is the solution to everything. But people in the 1800s ate almost 50% more bread than we do today, and still had almost no obesity. Other people think paleo is the solution to everything, but Americans in the 1800s ate a diet heavy in bread, milk, potatoes, and vegetables, and relatively low in red meat and other more caveman-recognizable foods. Intermittent fasting – again, cool idea, but your great-grandfather wasn't doing that, and he had a 1% obesity risk.

This isn't to say those diets can't work. Just that if they work, they're hacks. They treat the symptoms, not the underlying problem. Something went terribly wrong in US nutrition between 1900 and today, and all this talk about low-carb and intermittent fasting and so on are skew to that thing. Given that 1800s Americans seem to have effortlessly maintained near-zero obesity rates while eating foods a lot like the ones we eat today, maybe we should stop trying to figure out what cavemen were doing, and start trying to figure out what Great-Grandpa was doing, which sounds a lot easier.

We get similarly confusing evidence from other countries. Until recently, Chinese people ate mostly white rice. This is exactly the sort of high-

glycemic-index carb that low-carbers say should be ter[illegible] 0 comments since 2020-03-31 0ç
Chinese stayed thin even when they ate a lot. It was only when they started eating processed Western-style food that their obesity rate started to rise.

Or what about France? The French diet is about what you would expect; baguettes, pastries, cheese, meat. Lots of sugar, white flour, and fat – the opposite of all reasonable dietary advice. But 1970s France had the same kind of low obesity rates as 1800s America or China. This is related to the nutritional conundrum famously called the French paradox – why aren't the French fatter and sicker than they are?

The answer to all these questions seems to be something like "the body is pretty good at regulating its own weight under any diet except modern American processed food." But what aspect of processed food makes it bad?

A new section of the online nutrition-sphere claims the answer has to do with the way mitochondria process fat. I've been trying to read these people and get a feel for their opinions. Most of what I've absorbed has come from Brad Marshall of Fire In A Bottle and his posts on The Croissant Diet. I've been told that another blog called Hyperlipid has a deeper investigation, but I've only scratched the surface of them. The r/SaturatedFat subreddit has some good stuff too. I don't claim to fully understand these people and I apologize for any misrepresentations I might be making. But the short version is: they all agree that everything went wrong when we switched from saturated to unsaturated fat.

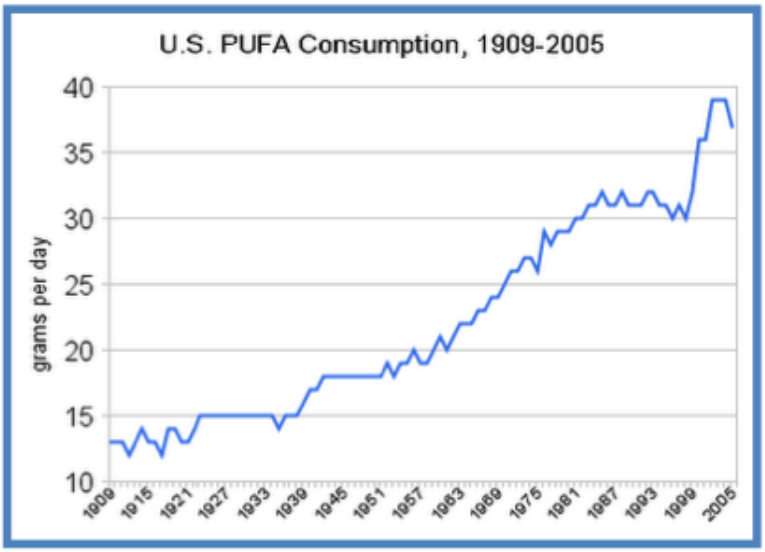
Wait, isn't unsaturated fat the good kind of fat? Well, yes, this is what everyone else thinks. This is definitely one of those "good things are bad and bad things are good" diets. But let's take a look at the argument.

In the 1950s, heart disease rates were rising in the US. Realistically, this was mostly because lots of people had started smoking a few decades before, and now all that tobacco was catching up with them. But people didn't know that at the time, so they did some studies into nutrition, and the studies suggested maybe saturated fat caused heart attacks. So the government told people to replace saturated fat with unsaturated fat, and this was back when the government was competent, so saturated fat consumption plummeted

and unsaturated fat consumption shot up.

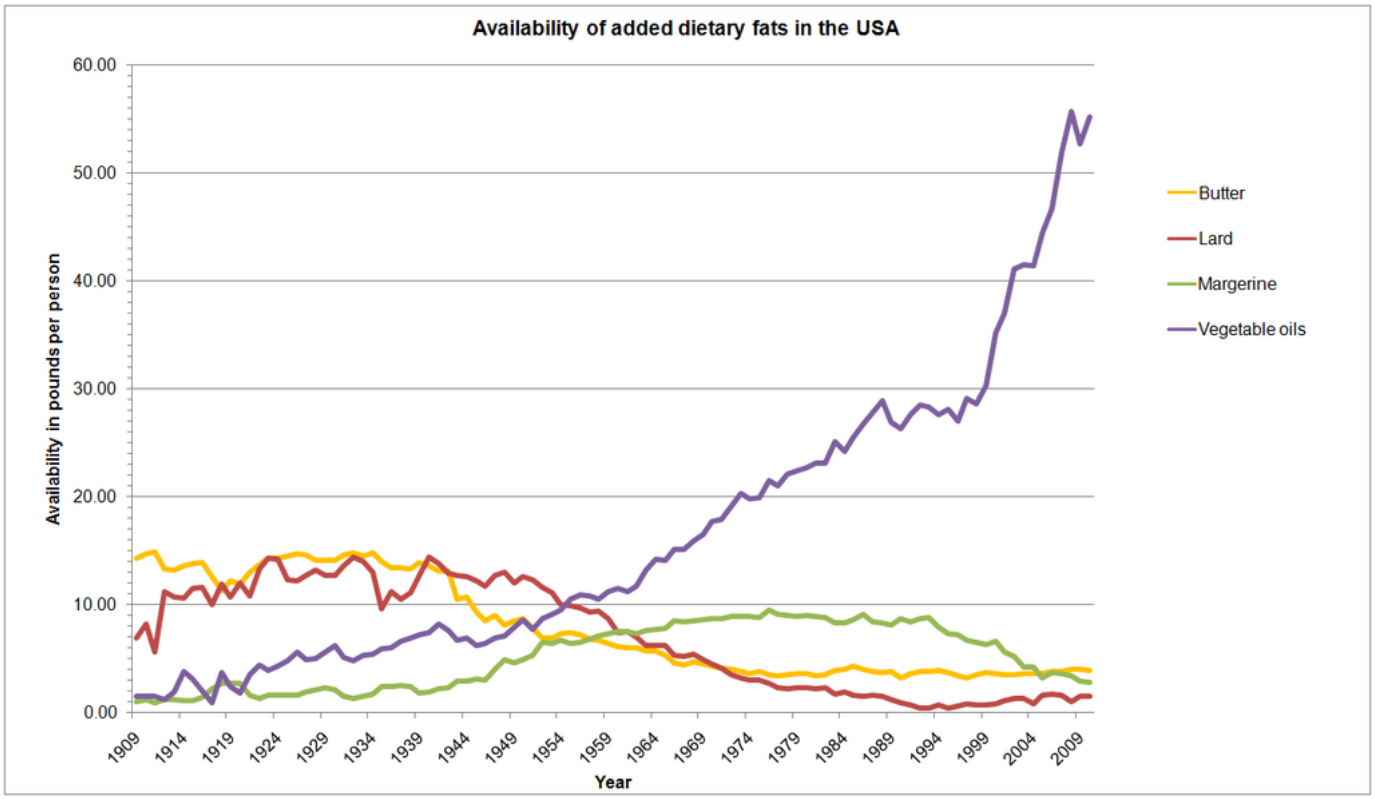
This paragraph is an extreme oversimplification: saturated fat is mostly found in things like milk, butter, and meat. Unsaturated fat comes in two types: monounsaturated and polyunsaturated. Monounsaturated fat is found in olive oil. Polyunsaturated fat comes in two types: omega-3 and omega-6. Omega-3 is mostly found in fish ("fish oil"). Omega-6 is mostly found in vegetables ("vegetable oil"). If you've ever looked at your food and seen ingredients like soybean oil, safflower oil, canola oil, corn oil, et cetera oil, these are omega-6 polyunsaturated fats.

When the government recommended a switch from saturated fats to unsaturated fats around the 1950s, it was omega-6 polyunsaturated fats – vegetable oils – that picked up the slack. Here are some helpful charts:



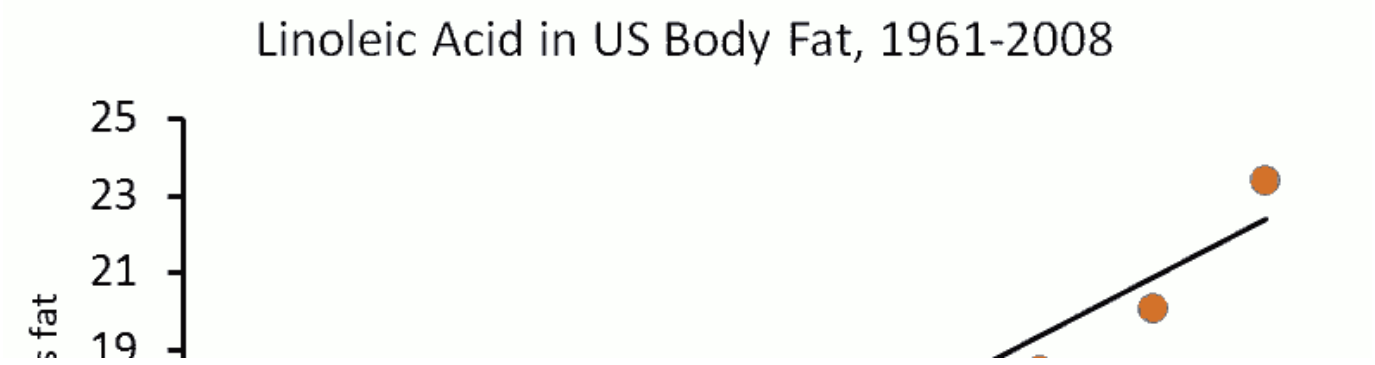
Poly-unsaturated Fatty Acid Consumption

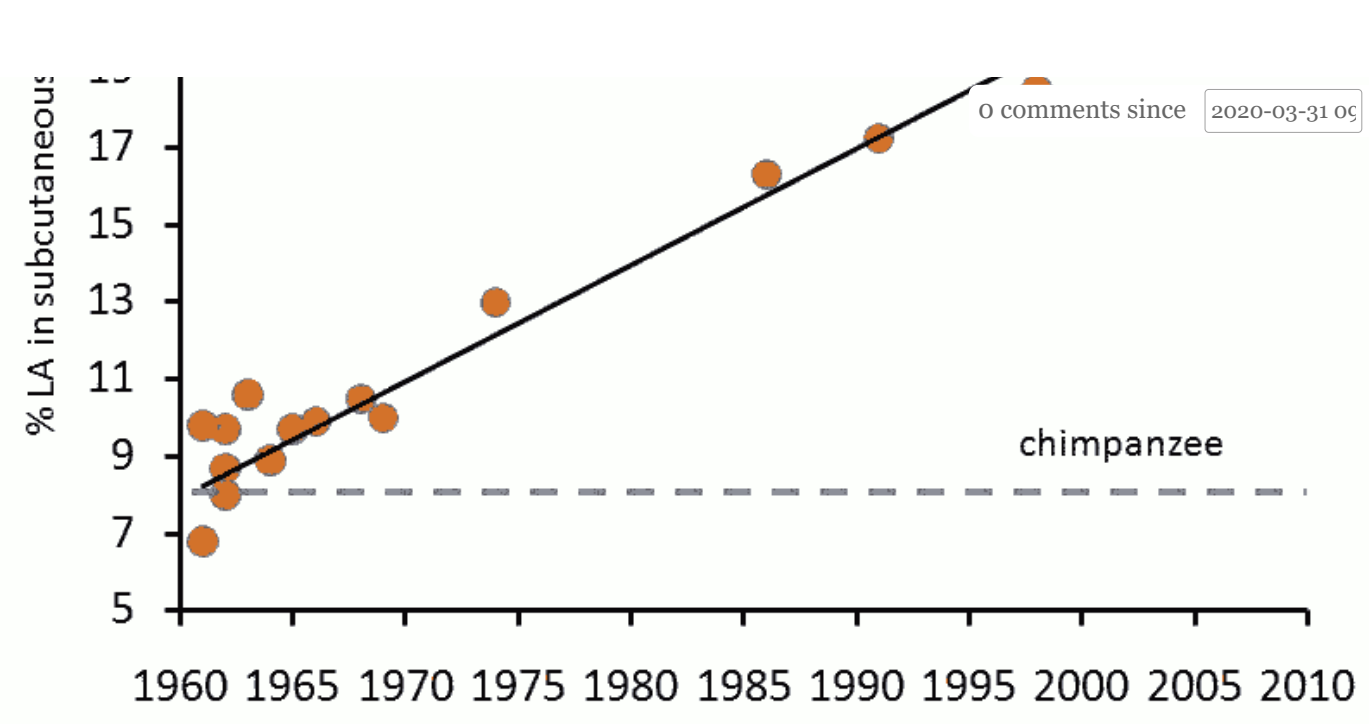
I cannot for the life of me find original sources for either of these graphs, but they seem consistent with everything else I've heard so I am going to trust them. Sorry!



[source]

This dramatic change in consumption of fat was reflected in a dramatic change in the composition of the human body. Studies of human fat cells and breast milk found that they went from being overwhelmingly saturated fat (like the fat cells and breast milk of animals) to being partly polyunsaturated fat:





[source, source, source, source]

The only common villain everyone agrees on in the obesity story is "processed food". I've previously found this frustrating – it reeks of a sort of unreflective technophobia. What *part* of processing makes food bad? How does mere contact with a machine turn food from healthy to unhealthy? What food counts as "processed" or "not processed"? Is ground beef processed, since you grind it? Are scrambled eggs processed, since you scramble them? Is bread processed, since wheat doesn't grow in loaves? Is water processed, since it goes through water processing facilities? Is the Eucharist processed, even though the processing only changes its metaphysical essence and not its physical properties? Everybody I ask acts like the answers to these questions are obvious, but everyone has different answers, and nobody can tell me their decision procedure.

Omega-6 polyunsaturated fats provide a tempting answer. Processing is bad at the point where it involves adding vegetable oil to stuff.

Here is a not-so-fun experiment you can try. Go to your local grocery store, check the ingredients of everything, and see what is the most ridiculous place you can find added vegetable oil – soybean oil will be the most common, though you can spot others. I thought I had reached a low when I found soybean oil listed in the ingredients of what was, to all appearances, just a bag of rice. But then I checked the bread section and found that about

90% of the loaves of bread had soybean oil added to th
the remainder had safflower oil). It really is the closest thing to a ubiquitous omni-ingredient in every processed food, and in some foods that you wouldn't have thought were processed at all.

So this is the circumstantial evidence linking polyunsaturated fat to obesity. Although polyunsaturated fat itself is natural (found in eg nuts and seeds), modern Americans consume it at levels that would have been equally foreign to cavemen and your great-grandfather. The vegetable oil craze started around the same time as the obesity epidemic, and the two have been following the same pattern ever since. And it's concentrated in the same processed foods that most people think are most responsible for obesity. Also, the body fat of obese people is more polyunsaturated than the body fat of healthy people.

But is there a biologically plausible reason why polyunsaturated fat would cause obesity?

Actually, there are several. The one I'd heard a few years ago blames an omega-6 to omega-3 imbalance. Before 1950, most people ate a reasonable amount of fish and a reasonable amount of nuts, and got about 4x as much omega-6 as omega-3. After 1950, people started eating lots of high-omega-6 vegetable oil, but only the same amount of high-omega-3 fish, and the ratio shot up: now it's about 10x-50x as much omega-6 as omega-3. Both omega-6 and omega-3 are involved in cell membranes and signaling chemicals, and there's some evidence that omega-6s may be pro-inflammatory and omega-3s anti-inflammatory. Although the studies haven't really been done, you can tell a story where the natural ratio of 6s to 3s creates a natural level of inflammation, and the current extreme level of 6s to 3s creates an extreme level of inflammation. Inflammation in the parts of the brain that regulate diet are one proposed mechanism for obesity, so there's the skeleton of an explanation here, although lots of work would need to be done to prove it.

But the new one, the one that Marshall and Hyperlipid are pushing, is a little different. They think unsaturated fats in general are bad, including monounsaturated fats and omega-3s (though realistically omega-6 vegetable oils so overwhelm these in the average American diet that we can forget

oils so overwhelm these in the average American diet that we can forget everything else.). The exact mechanism is complicated, but focuses on the Krebs cycle, bane of medical students everywhere. The Krebs cycle is the set of chemical reactions that your cells use to convert high-energy food chemicals into ATP, a form of energy your body can use to power its own biological processes. Both saturated and unsaturated fats feed into the Krebs cycle. But the Krebs cycle produces reactive oxygen species (aka free radicals, eg hydrogen peroxide) when it metabolizes saturated fats, and not when it metabolizes unsaturated fats. Reactive oxygen species seem to be one of the signals the body uses to detect satiety, which makes sense – if they're a byproduct of metabolizing food, and you have a lot of them, that probably means you just metabolized a lot of food, and so you should be full. There's a lot of biochemistry here, and I haven't gone through all of it. But the basic idea is – burning saturated fat makes you full, but for decades we've been replacing saturated fat with polyunsaturated fat, which doesn't make you full. So we've been eating more. Hence, obesity.

If this were true, it suggests a diet high in saturated fat and low in unsaturated fat, especially polyunsaturated fat. Marshall calculated out the right macronutrient ratio and found that the food that most closely matched it was butter croissants – hence the name "the croissant diet". Yes, you can live off croissants if you want. But it also allows lots of other things with high saturated and low unsaturated fat. Red meat (but not chicken or pork; most chickens and pigs are fed high-PUFA feed that gives them high-PUFA meat). Milk, cheese, and butter (but not margarine, which is mostly PUFAs). Pasta, rice, and other carbs (but if you're putting sauces on them, make sure they're high saturated fat). Fried things, as long as you fry them in coconut oil, palm oil, or butter (mostly saturated fat) instead of vegetable oils or olive oils (mostly unsaturated fat). You can read the full specification here.

This diet is kind of the opposite of the one most nutritionists recommend. But it would taste a lot better. And following nutritionists' advice hasn't worked out so well for Americans circa 1970 through 2020. So what could go wrong?

II.

I find this to be a really elegant and provocative theory, with impressive circumstantial evidence. Unfortunately, as far as I can tell all of the direct

circumstantial evidence. Unfortunately, as far as I can tell all of the direct evidence is against it. I'm not a nutritionist and have not studied these nearly as intently as the nutrition bloggers who support it, so low confidence in this part. But I'm putting my objections out there in the spirit of seeing whether other people will be able to reply to them and shoot them down.

First, let's start with the diet itself. Lots of people have tried it, and the most common result is nothing. The r/SaturatedFat subreddit is full of people talking about how the diet didn't work for them, with only a few contrary opinions. I tried it for about a month, and lost about 4 pounds the first two weeks, followed by no more weight loss no matter how hard I tried. This is my usual pattern every time I try a new diet, and I interpret it as placebo or just the effect of restricting some foods. The high-saturated-fat croissant diet did no better.

(Marshall argues it gets better results in waistline shrinkage than weight loss alone, and my own results sort of seem to confirm this, but I'm not confident in the accuracy of my waistline measurements. Also, why should this be true?)

Second, mouse studies. You can feed mice whatever you want, then see how much weight they gain. There are a lot of these, they're all conducted with different mice, different macronutrient sources, and different methodologies, and they all get different results. After looking at many of them, all I can say is that there is definitely no strong trend for lower saturated and higher polyunsaturated fat diets to result in more weight gain. For example, in this study, mice who ate palm oil (a high saturated-fat oil) gained more weight than those who ate safflower oil (a high polyunsaturated fat oil), although mice who ate cocoa butter (a different high saturated fat oil) gained less than either. In this study, mice who ate lard (high in saturated fat) gained more weight than those who ate olive oil (monounsaturated) or fish oil (polyunsaturated). Again, I'm less interested in these particular studies or their particular results than in the vast amount of literature that has investigated these questions and very rarely found a strong unambiguous tendency for saturated fat to be good and unsaturated fat to be bad. Stephan Guyenet, who used to support the omega-3:omega-6 ratio theory, agrees with this and now considers it unlikely based on mouse study results. It's

possible that I'm missing different results for different l

– stearic acid (a specific kind of saturated fat) seems to do pretty well, and the croissant diet to some degree centers around it. But as far as I can tell, an inferiority of any kinds of saturated fat to any kinds of polyunsaturated fat doesn't seem compatible with the basic theory.

And third, people have studied the effect of saturated vs. unsaturated fat *so much*. This is maybe the biggest controversy in nutrition right now. Some people think (in accordance with the 1950s and 1960s findings) that saturated fat contributes to cardiovascular disease. Other people think those findings were wrong and it doesn't. There have been a bunch of studies and big meta-analyses trying to find out who's right with only limited agreement. While some studies have found that saturated fat is bad and others that it's harmless, as far as I know none of them have found that it has a strong protective effect against weight gain. If this was really the difference between the 1800s when nobody was obese and today when a bunch of people are, it ought to be a blindingly bright signal. But I don't see anything of the sort.

Just to give examples: Lin investigated the relationship between saturated fat and weight loss, and found that the higher a diet was in saturated fat, the more likely people were to gain back weight they had lost. Phillips investigated the same question in relation to a probably irrelevant candidate gene, and found the same thing. Utzscheinder investigated high- vs. low-saturated fat diets and found no difference in weight loss, but the high saturated fat diet contributed to unhealthy liver fat deposition. Khaw et al investigated the effect of butter and coconut oil(saturated) vs. olive oil (monounsaturated) on obesity, and found nothing. Schwingshackl et al investigated the effect of 10 food groups on metabolic parameters and found that nuts were the healthiest, even though they are the highest in omega-6 fats.

(also, the whole point of this diet was supposed to be that croissants should be an unusually satiety-producing food, but somebody studied how much satiety every food produces, and croissants are literally the lowest on the list.)

I haven't looked closely at any of these studies and dor
them. I'm more gesturing toward the general idea of how unlikely it is that people have studied saturated fat in depth for a long time, gotten a bunch of small negative effects that might or might not be real, and failed to notice that the real effect is gigantic and positive.

For that matter, where are the random Redditors? Saturated fat is one of the major macronutrients, it's not exactly some weird exotic chemical nobody ever thought to test. If high-saturated-fat or low-polyunsaturated-fat diets help you stay thin as easily as 1800s Americans stayed thin, how come people didn't figure this out in ten minutes? There have been so many random diet crazes like low-carb and paleo, all linked to some people squinting and thinking they might have seen a signal among all the noise. If there were a diet that was pretty basic and actually worked in an obvious way, don't you think people would have found it?

III.

There's an awkward tension between the first part of this post and that last counterargument.

The first part of the post said that there is some dramatic and hard-to-explain difference in obesity between the modern West and every other civilization, whether that's the historical West or other modern countries that haven't yet adopted our diet. I haven't given evidence here, but the obesity goes hand in hand with higher cancer rates, higher cardiovascular disease rates, and just generally worse health. Presumably we're doing something very wrong.

The last counterargument said that if we were doing something very wrong, one of the thousands of biohackers who has tried every ridiculous fad diet and long-shot idea would have reversed the one wrong thing we were doing and gotten incredible results. Then, by the efficient market hypothesis, somebody would have noticed the incredible results, and the smart paying-attention people would switch to that diet, and then we'd have a world that looks a lot different than the past decade or two of people chasing various exciting ideas with no results. As far as I know, nobody has yet met

Ampersand's challenge of finding a peer-reviewed study [illegible] some diet can consistently help people lose lots of weight and keep it off.

But how could that be? If people used to be thin and healthy, we should just be able to do what they were doing! And then that would be the diet that can consistently lose weight and keep it off!

I can only see three ways out of this paradox.

First, conventional wisdom is right about everything. People are fatter today than in the 1800s because they eat too much and exercise too little. They eat too much because they are rich, food is cheap, and food tastes really good. They exercise too little because they're office workers now instead of farmers. In this model, the reason the efficient market hasn't found the secret to weight loss is because there's no secret and weight loss is really hard. It wasn't hard for your great-grandfather because he had fewer options and so he didn't need to exercise willpower to avoid the bad ones. The most sophisticated version of this model, so sophisticated that maybe I shouldn't call it this model at all, is the food reward theory ably defended by Stephan Guyenet.

This has a lot going for it, but can't be quite right. Exercise seems like a red herring; studies of how much people eat, exercise, and gain weight have shown that dietary changes explain more than 100% of weight gain over the past 30-40 years – probably we are exercising a little more. And there was really tasty food in 1800s America and 1970s France, so how come people didn't overindulge in that? How does it explain all the weird results like lab animals, pets, and feral rats gaining weight? This probably part of it, but it still feels like something's missing.

Second, diet is barely related to the obesity epidemic, and it's being caused by plastics or antibiotics affecting the microbiome or something like that. This is another thing where I would have expected people to notice, but I definitely don't want to dismiss it prematurely.

Third, it's a ratchet. Departing from the ways of our ancestors (or great-grandparents) can make you obese, but returning to their ways cannot make [illegible]

you thin again. A bad diet (whatever that is) shifts your weight set point up but a good diet does not shift it back down, at least not in a reasonable amount of time. It just prevents further damage.

This contradicts the evidence from some people who do manage to lose weight, including some people who manage to lose a lot of weight and keep it off. I think the theory would have to be that different people's set points are differently malleable, and that some people are obese because their set point is set to obese, and other people barely have a set point and are mostly operating on calories-in-calories-out. If this seems a little too convenient an assumption, keep in mind this is how lots of other set points work – some people will gain tolerance to certain drugs almost instantly, and other people will never get it at all.

Overall I am ending this research more confused than when I started it. I think the most likely dietary change I make is to try to avoid foods with soybean, corn, or safflower oil, since this is probably a good stand-in for "foods processed enough that they count as processed foods and you should avoid them". I don't think the evidence is good for avoiding fish oil and olive oil, and there's enough evidence from elsewhere that these foods are healthy that I'm going to keep trying to eat them. I don't think the evidence is good for saturated fats being especially good, and there seems to be at least equally strong evidence that they're bad, so although I'm not going to work too hard to avoid them I'm definitely not going to optimize my diet for getting as many of them as possible.

451 RESPONSES TO *FOR, THEN AGAINST, HIGH-SATURATED-FAT DIETS*

Reverse order

FeepingCreature *says:*

March 10, 2020 at 11:23 pm

Is there a study that puts people on a diet, waits for them to lose weight, stops the diet, waits for them to regain weight, then puts them on another diet? (With randomized choice which diet to try first per person.) The ratchet/set point variance model seems testable; if it's a personal factor, then it should be stable or at least correlated between diets. Though maybe this just tests "general stick-with-it-itude" – which to be fair, also may be the common factor we're looking for.

Worst case, which diet shifts whose set point is also a personal factor. Not sure whether that's too pessimistic.

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edit: If I were to guess what seems most plasible, I'd say weight loss diets need intermittent fasting days to push setpoint down. By default, no matter which diet, the body maintains at best. Maybe I'll try that when I'm on holiday and don't need high energy levels.

Hide

Douglas Knight *says:*

March 11, 2020 at 9:42 am

No, there are no such studies. There are two problems with such a study. One is that it is complicated and the other is that it is a diet.

People rarely do studies where they "put people on a diet." People are hard to control! If you want a dietary intervention of more than two weeks, it's going to be telling people what diet to eat, but that has little effect.

People don't do complicated studies. Here's a similar study that would be a lot easier (because it isn't about diet) and which is highly relevant to medical practice: take depressed people, put them on random SSRIs. Wait six months and if they didn't get better, change the SSRIs. But no one does this because no one wants to know if medicine works.

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Byrel Mitchell *says:*

March 11, 2020 at 10:44 am

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Most depressive episodes are around 6 months in length. This trial would find that most people got better on almost any SSRI. Or in a placebo group. It's not a very useful trial design.

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Cliff *says:*

March 11, 2020 at 2:30 pm

My understanding is that as yields have skyrocketed, nutritional density in crops (particularly grains) have plummeted. In other words, wheat for example is much lower in vitamins and minerals than it was 70 years ago. Might that have some effect? People eating more to get an appropriate amount of vital nutrients?

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Modvind *says:*

March 11, 2020 at 5:12 pm

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There is something to it. The composition of food (including meat) has changed dramatically following intensive agriculture. More carbs and fat, less everything else. That being said, dietary diversity has increased, as well as vitamin/mineral fortification, so overall nutrient deficiencies are down worldwide. Hence the main nutrient that has been studied in terms of this kind of explanation is protein and it is referred to as the 'protein leverage hypothesis'. It seems to me that there is some weak evidence for it, but it is not the bright signal we would expect to see if it is really the causal explanation of the obesity epidemic.

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Liface *says:*

March 10, 2020 at 11:33 pm

>> For that matter, where are the random Redditors? Saturated fat is one of the major macronutrients, it's not exactly some weird exotic chemical nobody ever thought to test. If high-saturated-fat or low-polyunsaturated-fat diets help you stay thin as easily as 1800s Americans stayed thin, how come people didn't figure this out in ten minutes?

Many people did figure this out a while ago.

I have been following the fitness and nutrition community closely since 2006. There's been a pro-saturated fat movement associated with the Paleo movement that started in 2012 or thereabouts. Here's a couple of examples: an article from 2013: https://greatist.com/health/saturated-fat-healthy, and there was a book called "The Big Fat Surprise" from Nina Teicholz in 2014.

A lot of knowledgable people have been "in the know" about saturated fats for a while in the context of a greater "return to paleo" diet, but the Croissant Diet seems to have honed in on saturated fat specifically and taken it a bit further.

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jrdougan *says:*

March 11, 2020 at 4:27 am

Online, the oldest site I know of that goes down this path was "Beyond Vegetarianism" (www.beyondveg.com), which the wayback machine first dates to 1998. It is still up and an interesting read as a lot of it's focus was show that various idealistic diets of the time had a weak basis.

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Jman *says:*

March 11, 2020 at 7:35 am

I remember beyondveg, good times. I was also into Weston Price at the time, which was actively pushing saturated fats because they don't oxidize and become inflammatory the way unsatured fats do. The reason why tropical oils and animal fats are saturated is because they are both hot. Animals are warm-blooded and the tropics are hot.

Having said that, I think there are other potentially relevant changes since the 1800's:

* Modern wheat has a lot more gluten. So the food reward value of baked goods is a lot higher than it was back in the 1800's. Also, who knows, maybe there is some new type of gluten that does something particularly nasty physiologically even if it isn't celiac.
* Foods are a lot more convenient than they were in the 1800's. Impulsivity is a key part of food reward.
* Sugar consumption is probably higher as well. Homemade cookies are pretty low in sugar compared to what you get in the candy aisle. This is probably one of the smaller changes but it does fit with a food reward theory pretty well. Cookies and other sweets were closer to being "fruits" (sweet things that taste good but which don't overwhelem homeostatic mechanisms) than oreos.
* People are more urbanized and sedentary. You might be better off being "Amish fit" than doing Crossfit – lots of walking with small amounts of lifting heavy things may be better than high intensity exercises for an hour in an otherwise sedentary existence.

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sobani *says:*

March 11, 2020 at 10:05 am

Does anyone know how obese the Amish are? And how much their rumspringa affects that. And if the rumspringa affects it, whether returning to the Amish community reverses that effect?

Afaik the Amish are the closest to an 1800s diet. And their rumspringa and return to the community should give insight into the ratchet theory.

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Byrel Mitchell *says:*

March 11, 2020 at 10:14 am

The ones in the community I grew up in had a weight distribution closer to modern than 1800. I think they were probably slightly better than average, but quite a few morbidly obese adults.

I never saw an obese Amish kid though, and the heaviest young adults were overweight or just barely into obese. Rumspringa usually only lasts 1-3 years, so it's not really enough time to put on an enormous amount of weight.

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Jstewall *says:*

March 11, 2020 at 1:15 pm

This reference argues against an increase in gluten content of modern wheat.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3573730/

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onyomi *says:*

March 10, 2020 at 11:40 pm

What about the whole "diseases of kings" thing? Portraits of Henry VIII (which were probably created to be flattering) look quite fat to me, and from what I've read, Louix XIV probably died of type 2 diabetes and was likely also quite fat in older age (when presumably he wasn't running around hunting stags, etc.).

That is, yes there was tasty food in your great-great-grandma's time but it wasn't so cheap, plentiful, and varied that most people could eat a lot of it every day, and not only a lot but such a varied lot that you don't get tired of it (I can not only "eat like a king," I can eat like a Thai king today, a Venetian doge tomorrow, etc.). Plus, while she didn't take spinning class, she probably did walk more than you, had a stronger social support network, grew up in less sanitary conditions and therefore less vulnerable to "hygiene hypothesis" inflammation, etc.

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Taymon A. Beal *says:*

March 11, 2020 at 1:11 am

Nitpick: Henry VIII had a lot of health problems in the last decade of his life, largely traceable to a jousting accident, so probably isn't a great example to generalize from.

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onyomi *says:*

March 11, 2020 at 1:33 am

Just reading Google it sounds like some of his problems probably stemmed from enforced inactivity due to the injury. That is, you can probably eat like a king if you're hunting stags and jousting all day, but combine eating like a king with being sedentary, either because you have a painful injury or because there's so many entertaining video games to play, and you get obese?

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sclmlw *says:*

March 11, 2020 at 6:57 am

I'd be cautious talking lessons from a heavily inbred ('purebred') population that was known to have all sorts of unique health challenges as a result. The risk of

confounding factors is high.

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sclmlw *says:*

March 11, 2020 at 11:22 am

I'd be cautious about extrapolating from a highly inbred population that is known to have all sorts of unique health challenges as a result.

Not only that, but animal research should require additional verification. I remember in grad school one of the other labs tried housing their animals at a warmer temperature than The Standard everyone uses. They made some unique observations, like how the mice were much more active. We used to think they huddled together because they're highly social, but it was probably just for warmth. Heart rate at warm temps went down by half. They started developing fevers in response to infection. We had thought mice were just different for some reason, otherwise why no fever during infection? Turns out it was just that they were cold stressed for their whole lives.

It's been awhile since I did any mouse work, so I'm not sure, but last I checked it's still all being done at 25 C. So it's perhaps more suspect than purebred human research.

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xenon *says:*

March 11, 2020 at 12:45 pm

@DT there's a reason "yes, *in mice*" is an immediate and not that unfair dismissal of "groundbreaking" discoveries discovered…in mice.

There are lots of advantages to running experiments with mice (for one, most could never be ethically run on humans). But their results often generalize poorly to humans, if at all.

Hide ↑

onyomi *says:*

March 11, 2020 at 7:02 pm

The epithet "William the Bastard" (referencing Lambert's comment below) doesn't sound very inbred.

Hide ↑

Lambert *says:*

March 11, 2020 at 3:34 am

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Even further back, William the Conqueror realised he was getting a bit too lardy to ride his horse, so he went on a diet.

Hide ↑

Anthony *says:*

March 13, 2020 at 9:55 am

In an age where most people are calorie-deficient, being fat is a signal of high status, and will therefore seem attractive (at least in men).

Hide ↑

romeostevens *says:*

March 10, 2020 at 11:59 pm

Waistlines: body composition (LBM). People who are 'normal weight' are almost universally underweight in LBM and overweight in body fat. I rarely meet people I'd say are healthy.
Processed food decision procedure: you're looking at the level of the foods in question, it's about what might alter the molecules your body subsequently uses to build itself out of. My off the cuff decision procedure when I don't want to bother doing deeper investigation is whether or not my grandpa could produce it by himself, i.e. no industrial scale processes. This includes not eating things like the mentioned weird industrial bread. Notably this wouldn't catch preserved meats, which seem to be extremely terrible.

Hide

ksdale *says:*

March 11, 2020 at 12:10 pm

A bunch of guys I played football with were in a health class where they took a very naive BMI test (like it just asked about height and weight) and they all thought it was hilarious that basically all of them got put into the obese bucket, even though most of them had basically the lowest possible healthy body fat. They were all just heavy for their height because of their muscles, but I thought it was odd that even such a naive test didn't account at all for muscle size. I wasn't even particularly muscular and I registered as something like 10-20 pounds overweight. I would have had to stop working out entirely to reach the "correct" weight.

Hide ↑

caryatis *says:*

March 11, 2020 at 4:57 pm

Body fat percentage is a good check on BMI in cases like that.

Hide ↑

M *says:*

March 12, 2020 at 9:22 am

Too bad that the only really accurate way to check all the fat off and weigh it :).

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All the other methods have pretty bad accuracy. They're good mostly for measuring changes in BFP for an individual

Hide ↑

VivaLaPanda *says:*

March 12, 2020 at 12:13 pm

Any studies on how inaccurate "body composition" scales are? I've always assumed they were mostly bollocks, but never found anything specific.

Hide ↑

kaakitwitaasota *says:*

March 11, 2020 at 12:39 am

> *Other people think paleo is the solution to everything, but Americans in the 1800s ate a diet heavy in bread, milk, potatoes, and vegetables, and relatively low in red meat and other more caveman-recognizable foods. Intermittent fasting – again, cool idea, but your great-grandfather wasn't doing that, and he had a 1% obesity risk.*

Can we get a source for this? Robert J. Gordon's *The Rise and Fall of American Growth* devotes a section to changes in the American diet. In 1870, the average American ate 74 pounds of beef and veal, 123 pounds of pork, 15 pounds of chicken and turkey and a pound of lamb, for a grand total of 212 pounds of meat a year, falling to 141 pounds by 1940. 1940 represents a mid-century nadir, because meat consumption climbs again after the war: in 2010 the average American ate just barely less meat than in 1870, but much, much more of it was poultry (about 60 pounds of beef, 47 of pork, a pound of lamb and 96 pounds of chicken and turkey).

Meat consumption *was* low in the rest of the world, but the comparative prosperity of the US, though abysmal by the standards of today, was borne out in a high consumption of meat. (Though, admittedly, much of that meat was not bought–the American farmer had much more land than his European counterpart, and pigs will generally look after themselves given the space.)

I wonder about nut and fish consumption, though. Fish + shellfish consumption was only about 11 pounds a person in 1940, and I doubt it was much higher in 1870, though I don't know for certain.

Hide

blkadder *says:*

March 11, 2020 at 9:23 am

It's even more complex than that though. In addition to the type of feed, you need to look at the fat content of the meat. Due in part to the fat-is-bad madness a lot of the fat has been bred out of pork in the U.S. as an example which further complicates analysis.

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Ketil *says:*

March 11, 2020 at 1:06 am

I blame TV. Not just for the inertia of spending hours every day sitting and missing out of opportunities for physical exercise, but also because it is so often combined with eating. TV dinners, TV snacks, nuts, beer, popcorn. TV seems to be the perfect combination of drawing enough attention not to notice that you're full, but not so much that you don't also want the flavor of a snack. And unlike reading, knitting, card games or other evening pastimes one might have in the 1800s, your hands are free to feed you.

I also blame eating-optimized fast foods and snacks. Some foods just seem to be too easy to keep eating after I am full, and in some cases even if I don't particularly like them – probably through a combination of salt and fat and sugars.

Hide

Kaitian *says:*

March 11, 2020 at 2:03 am

Snack foods are specifically designed to be not just tasty, but fun to eat. Crisps crunch in a satisfying way, chocolates have a melty core, and so on. So even if the trinity of salt/sugar/fat is not enough to make the food taste good to you, the fun factor might keep you snacking.

I've personally noticed that I don't actually like the taste of many snack foods, but I still eat them because I like the eating process itself. Then again, maybe most people include that in their definition of "taste".

Hide ↑

ayegill *says:*

March 13, 2020 at 9:29 am

It must be feasible to create zero-calorie crisps/chips, to reproduce the eating experience without the dietary problems. Hell, the taste is mostly just salt, so just sprinkle some of that on top. "Light chips" would probably make boatloads.

Hide ↑

Dissonant Cognizance *says:*

March 13, 2020 at 7:56 pm

This was tried in the 90s IIRC, with Olestra, a fat substitute that was non-digestible. It got widely pilloried on late night TV because of Olesta's unfortunate side effect of anal leakage, which I guess is just going to happen whenever you want fats that don't get broken down for energy. They were gone from the market pretty quick, well before I was old enough to care about trying them.

Hide ↑

CatCube *says:*

March 13, 2020 at 8:43 pm

I had forgotten about that skit.

Hide ↑

noyann *says:*

March 11, 2020 at 2:58 am

TV is made to excite or lose to competition. Eating has a pacifying effect that originates in breast (or bottle) feeding, and remains,, through pacifiers and thumb-sucking (and it's also an aspect of smoking), into eating/mouth-stimulating for self-calming. Hence metabolically unnecessary eating in front of a TV, or nowadays, a computer screen.

Hide ↑

caryatis *says:*

March 11, 2020 at 8:06 am

Practical advice following from this: don't eat while doing other things.

Hide ↑

noyann *says:*

March 11, 2020 at 8:12 am

Practical advice following from this: don't eat while doing other things.

.. except debate, banter, and flirt[*] — cf. French and Europe-Mediterranean eating culture.

[*] …all of which transport "you are safe, and accepted/valued here". Ties in on another level with the stress-eating hypothesis.

Hide ↑

Rebecca Friedman *says:*

March 11, 2020 at 2:59 pm

Problem: I dislike TV and avoid it as a rule; furthermore, I don't snack. (The latter is for reasons of health – "snacks" are generally things I don't think I should be eating, so I don't buy them – while the former is uh, long story, but let's say I don't think I've watched TV for more than a minute this year.) I still have to watch my general diet/keep up with exercise if I want my weight to stay constant or drop instead of rising.

I mean, TV seems very likely to be part of the problem, but I don't think it can be all of it.

Hide ↑

benf *says:*

March 11, 2020 at 1:18 am

Forget exercise and consider exertion. It's not going to the gym four hours a week, it's sitting in a car 3 hours a day instead of biking or walking. When I moved from sprawlburbia to a European city I lost ten pounds without even noticing because I spent at least an hour every day physically locomoting instead of sitting in traffic.

This is not a lifestyle change that anyone can make, it's a consequence of dysfunctional physical infrastructure.

Hide

myla *says:*

March 11, 2020 at 2:02 am

I don't know what sprawlburbia means and if it's related to an American lifestyle, but if you moved from the U.S. to Europe you might also consider that you automatically changed your food choices (probably). But then again many Europeans also get fat since the influences of the American food market.

But sure, using your body to burn more energy is definitely a thing. 😉

Hide ↑

Ketil *says:*

March 11, 2020 at 2:58 am

Moderate physical activity is negatively correlated with obseity. Here are the top hits for this:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5396498/
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5015672/

In my experience, the body is pretty good at adjusting calorie intake according to expenditure – in periods, I have been physically active that should increase my calorie budget by 50%, but didn't really lose much weight, and while I didn't measure, it sure felt like I was eating more. So it's not clear why this should work, and as always, correlation is not causation.

Hide ↑

konshtok *says:*

March 11, 2020 at 4:29 am

I had a thought along similar lines

When great grandpa did physical work it was 6-12 hours a day of low to moderate exertion
When we exercise today even the most fanatical do about 2-3 hours a day of moderate to high exertion

we've gone back to hunting but we are hunting pizza instead of toiling in the fields to grow it

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EchoChaos *says:*

March 11, 2020 at 5:20 am

Yeah, I think this is the most likely culprit. We don't have just constant movement. I am a fidgeter and have been all my life, which makes my management style very "get up and walk around", and I notice that the people who get up from their desk more are thinner, although lots of the overweight people work out in the 1-2 hour a day sense.

Constant movement is underrated pretty heavily.

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Wency *says:*

March 11, 2020 at 7:35 am

I made this observation even back in high school days. The fat kids tended to sit really still in class. I could never stop moving, and I'm still that way. My legs or feet are literally always in motion at my desk unless I'm applying active effort to keep them still, and so far weight hasn't begun to be a real issue as I'm approaching 40.

Hide ↑

realitychemist *says:*

March 11, 2020 at 12:44 pm

As a counterfactual, I also fidget constantly, esp. tapping my heels on the ground while I sit (I'm doing it right now, in fact). However I am overweight-to-obese, depending on whether you go by BMI or more sophisticated body fat measurements. I have been this way (constant fidgeting but also overweight) since high school, though I definitely put on a few more lbs after I stopped playing sports regularly and replaced my walk to school with a 2hr/day commute by car.

Hide ↑

fluorocarbon *says:*

March 11, 2020 at 5:44 am

This is something I've thought about as well. I work in large company (in the US) where roughly half the people walk/take public transportation and half drive. Anecdotally I've noticed that I can usually tell which category someone falls into by looking at them. It's not just about weight either, but kind of a difficult to describe general body state. It's also not necessarily about total amount of exercise – a lot of the health conscious car commuters go to the gym, but they are still flabbier if not exactly chubbier.

My half-baked theory is that one thing that's important isn't so much exercise in general as walking outside a little bit every day. The last time I Googled for studies to confirm or deny this, the ones I found were about total amount of exercise or number of steps, which includes going to the gym and

found were about total amount of exercise or number of steps, which includes going to the gym and walking on a treadmill indoors. I'd be interested in whether there ha 0 comments since 2020-03-31 0ç thing and what they've found.

Scott also mentions in his post:

> *How does it explain all the weird results like lab animals, pets, and feral rats gaining weight? This probably part of it, but it still feels like something's missing.*

Again anecdotal, but I can usually tell indoor cats from outdoor (or indoor/outdoor) cats using the same criteria. My lazy old grumpy indoor/outdoor cat isn't obese even though all he does is sleep on the porch all day. Some friends of mine have trouble keeping their indoor cats thin even though they exercise them with toys every day.

Hide ↑

caryatis *says:*

March 11, 2020 at 8:09 am

I have a healthy indoor cat and I don't understand how it would be hard to control a cat's weight. You control everything it eats, for an indoor cat, except for a rare mouse, so if overweight, just reduce the food. Why would that not work?

Hide ↑

Berna *says:*

March 11, 2020 at 8:24 am

It would work if you had only 1 cat, but I have 2. I suppose if the overweight one becomes obese, I'll have to measure their food and watch while they eat it, to control their portions individually; but I'd really hate having to do that.

Hide ↑

Hyperfocus *says:*

March 11, 2020 at 11:15 pm

If your cats are chipped, you can use RFID-sensing food dishes that only open for the correct cat. I got a pair of them when I got a second kitten, who couldn't eat the prescription food of my adult cat, and didn't want my adult cat chowing down on the kitten's food. Now that the kitten is grown, I still use them because they keep food-territorial fighting from happening.

Anyway, with those it's easy to separately control what each cat eats.

Hide ↑

Berna *says:*

March 12, 2020 at 1:11 am

@Hyperfocus: Hey, thanks! I didn't know

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Hide ↑

2181425 *says:*

March 11, 2020 at 8:19 am

Cat stories! We live in a rural area and have 4 barn cats we got as kittens. They are indoor/outdoor (put up at night as defense against coyotes and weather). Over time, we've had 3 new cats appear (we're not far from a town and people unfortunately dump cats near us, the friendly ones tend to stick around where there's food) and interestingly 2 of them were cats that had lived in the 'wild' on their own for several months prior to finding us.
Those 2 (the 'feral' two) consistently get fatter in the winter than any of the others that we've provided food to since they were little. The feral 2 also conserve movement *much* more than the others. Where the litter-mates will play and fight with one another, the other two cats are much less likely to engage in activity like that even though the cats are all on generally good terms with one another–even in the summer but especially in fall/winter. Completely anecdotal and I'm sure biased, but it's still very interesting to us.

Hide ↑

medvssa *says:*

March 11, 2020 at 10:48 am

As another anecdote, my indoor cats gradually went back to a normal weight when I switched them to an "outdoor" food. I chose it because the ingredients seemed more like my idea of what a cat should eat.
They eat a lot less food now, so my guess is that the outdoor food gives them satiety.

Hide ↑

Anthony *says:*

March 13, 2020 at 10:01 am

Related:
http://www.twolumps.net/d/20050420.html

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helaku *says:*

March 12, 2020 at 6:40 am

Anecdotal: I have an indoor/outdoor cat which gains weight in the winter and looses it for the spring/summer/autumn period. And it eats a lot in the winter. Probably this is evolutionary to survive in harsh winter times.

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unreliabletags *says:*

March 14, 2020 at 11:00 am

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Hypothesis: car commuters are mostly suburbanites, and suburbanite adults are mostly parents. This would imply less sleep and less free time. It would also imply that they're older or, if the same age, lower socioeconomic status.

These people may very well have *been* the young and active subway commuters living with roommates in fashionable urban neighborhoods, earlier in their lives.

Hide ↑

myla *says:*

March 11, 2020 at 2:15 am

When it comes to food consumption, weight gain and health everybody seems to have a strong opinion about it (including me). I guess the reason might be that it is such a complex topic and it probably is *not* just correlated with a single factor.

Serious research has shown:
* It doesn't matter what you eat as long as you eat enough *high fibre* food, keep a high *variety* of different plants and also don't forget to eat fermented/probiotic stuff. This strongly related to the heavy influence of your gut microbiome, you want to keep it a "flowering garden" instead of a wasteland by just eating the same junk every day. Source: https://www.youtube.com/watch?v=-LUuqxQSaFQ
The most fun thing about the gut microbiome is that if you take feces of thin mice and plant it into obese ones, that the obese ones will start losing weight when staying on the same diet.

* Genes have a much stronger influence than you might assume, so it's really a question whether your choices can change that much. [I kind of can eat what I want and don't gain weight (and have to work out hard to gain muscles), also I just go for a run three times and burn all my fats away.] Source: https://www.youtube.com/watch?v=88tWJ1p5d4o

* A combination of fats and sugars (as used in many American foods) is actually leading to sugars converted to fats for storing. The first impression you have when thinking about american food for me is always it's too sugary. It's disgusting. Doesn't matter if you drink fruit juice instead of Coke by the way, sugar is sugar. Insuline spikes also cause inflammation.

* Energy intake and consumption is heavily controlled by your brain (which consumes 20% of ATP energy I think) and there is evidence that disturbances in regulatory systems between brain and the rest of the body can lead to weight gain by eating too much, although your body already has enough energy. This is related to the so called "Selfish Brain Theory".

Hide

analytic_wheelbarrow *says:*

March 11, 2020 at 5:07 am

> *The most fun thing about the gut microbiome is that if you take feces of thin mice and plant it*

> *into obese ones, that the obese ones will start losing weight whe*

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This seems like the most interesting finding on out there. Why isn't this the focus of research? Imagine if fecal transplants ("trans-poosions") could solve this enormous public health problem!

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myla *says:*

March 11, 2020 at 5:38 am

I also think it is very interesting, it is even believed that certain mental health issues are negatively influenced by your gut (and that means certain microorganisms, e.g. researchers found bacteria that produce GABA in your gut, a neurotransmitter that can affect your behavior). In mice they also found a direct (non-hormonal) neuro-link between gut and brain with the direction towards the brain.

There is research going on in this field, there was even a project which wants to collect your feces, maybe it was mentionend in one of the videos above, I forgot the name.

But then again your gut is known to be a very specific combination of microbes (like a unique fingerprint), and this changes through how you eat. And it is *one* factor in the many things nutritional science already knows.

Hide ↑

sclmlw *says:*

March 11, 2020 at 7:10 am

Except the microbiome is recursive with diet. The reason one type of bacteria is dominant over another isn't because you ate a bunch of that kind of bacteria. (I'm looking at you, probiotics full of sugar.) It's what you feed your gut microbes that determines which ones grow faster and which ones starve.

Not all microbes have the same ability to metabolize nutrients. So what you eat determines the gut microbiome, more so than exposure. FMT is interesting, but the larger question is how the people with 'good poop' cultivated that mixture of microbes in the first place.

Hide ↑

myla *says:*

March 11, 2020 at 11:38 am

I agree and I hope I wrote exactly that (it's also what is said in the link I provided). ☺ Maybe you were referring to the transplant stuff. I only mentioned it showing which role this system might play.

Hide ↑

Doesntliketocomment *says:*

March 11, 2020 at 2:05 pm

It is recursive, but there is evidence that gut fauna can induce urges and appetites for certain foods as a way to keep their preferred environment. Depending on how strong that effect is, it might be easier to repopulate the gut before trying to control diet.

Hide ↑

Byrel Mitchell *says:*

March 11, 2020 at 7:15 am

It's pretty conclusively established that there's SOME connection between gut and some mental disorders. Autism particularly is strongly associated with GI issues. Here's a table from study comparing GI issue incidence between children with autism (ASD), typical development children (TD), and non-autistic delayed development (DD): https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3981895/table/T2/

Children on the spectrum are massively more likely to have GI complaints than typical children the same age (8x as likely to have diarrhea, for instance.) There's way too much signal here for there to not be a link.

Many other mental disorders respond to hitting the serotonin signalling system with a hammer (using SSRIs.) It's not clear what the mechanism of action is exactly: serotonin reception sensitivity or bloodstream concentration or something (possibly even knock on effects via other neuro transmitters.) So most people think that serotonin is related to mental disorders in some way (though the evidence pretty much forces that way to be complex and multifaceted.) Still, 90% of seratonin in the body is produced in the gut. Some researchers think it's produced by microflora there.

But it stands to reason that if hitting the seratonin signalling system with a hammer can alleviate a broad range of mental illnesses in some people, then having the organ the produces 90% of the serotonin in the body screwed up could also affect it.

Editted tl;dr: Yep, people do believe that the gut is linked to mental disorders, and the evidence for it is very strong (even though we don't really understand the link.)

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RogerKint *says:*

March 11, 2020 at 7:21 am

A (small) randomized controlled trial of fecal transplantation was just published a couple of days ago. Null result.

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myla *says:*

March 11, 2020 at 11:43 am

Interesting, thanks.

On the other hand I wonder what it would actually take to change you microbiome with external forces other than just eating differently. Maybe one of such capsule is actually not really effective. I don't think the whole length and area of the gut will care about it.

When babies are born naturally it is assumed that their passing along the mothers anus and therefore exposure to her gut microbiome will transfer important microbes to the baby, it actually changes the babie's not really established biome. That might be a reason why babies that were born via c-section develop more illnesses and allergies, since they were not exposed to the influence of certain bacteria. So a transfer and change seems at least possible.

Hide ↑

matthewravery *says:*

March 11, 2020 at 7:44 pm

To be a bit more precise, they found a small positive effect based on a pretty tiny sample (n = 12 each for placebo and treatment group) that experienced high variance in the placebo group. (see Fig. 2) A Bayesian would call this weak evidence in favor of the research hypothesis and suggest follow-up studies.

As an aside, the fact that they used the Wilcoxon for their comparison vice a t-test was a good decision, IMO, due to the apparent outlier in the control group.

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Anon. *says:*

March 11, 2020 at 6:10 am

> *Genes have a much stronger influence than you might assume, so it's really a question whether your choices can change that much. [I kind of can eat what I want and don't gain weight (and have to work out hard to gain muscles), also I just go for a run three times and burn all my fats away.]*

While it's true that genetics has a powerful influence (heritability of BMI is in the ~75% range), all the genes (that we know of) related to BMI are expressed in the CNS (cool chart). It's got very little to do with your digestive system or fat storage ("I can eat as many calories as I want and don't gain weight!"*). It's all about self control, life-history strategy, etc.

* "Hardgainers" are a huge meme in the fitness community. They ju 0 comments since 2020-03-31 0ç
religiously counting calories and keeping track of your weight I assure you will be able to gain weight and put on muscle.

Hide ↑

myla *says:*

March 11, 2020 at 11:50 am

I might want you to watch the lecture about genes and obesity I provided a link for, it's very entertaining too. 😉 Also the BMI is not liked by everyone in the research community I think. But thanks for the graphics.

By the way, the term hardgainer is known to me. I don't know if I would say I am a hardgainer. It's just that I seem to stagnate for a long time, there could be many reasons, I tried different stuff. But I definitely cannot eat more, that would make me feel sick. And this might be a reason, yes.

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gleamingecho *says:*

March 11, 2020 at 11:58 am

> *But I definitely cannot eat more, that would make me feel sick.*

I'm sure there are possible scenarios where you could eat more in such a way that you gradually felt less sick in doing so. (Trying to helpful, not smug.)

(I assume you don't have some sort of clinically diagnosed illness eliminating such a possibility).

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myla *says:*

March 11, 2020 at 12:35 pm

Yes thanks I guess so. Probably there are scenarios where I could eat more if I would force myself or change the amounts of food I take in (I usually have 3 meals a day, people recommend doing more than 3 and reduce the amount of food with each session). On the other hand I want to eat healthy stuff, so just eating more of the more or less healthy stuff I already it can be quite difficult. What I meant by "more food would make me feel sick" is just that I have this natural tendency to feel full (I also eat pizza, not just all salads or anything).
Sometimes I feel like my brain is craving (maybe obese people feel this all the time) and then I eat more than usual but it always leads to me feeling dizzy/tired afterwards for a while and also if I eat too much I get problems digesting all of it. Well, maybe if it was too much fats for example

digesting all of it. Well, maybe if it was too much fats for example.

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No clinically diagnosed illness on my part by the way, although I might deal with some depressive symptoms now and then.

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Chris Phoenix *says:*

March 11, 2020 at 2:17 am

Gut microbes and/or epigenetics and/or psychology. Here's the anecdata:

My weight has stayed around 205-215 for the past several decades, with a few excursions up into the 220's. (I'm 6'2".) I never diet, and most of the time I do not exercise much. Life events have had significant rapid effects on my set point.

Seven years ago I started running marathons (6 total, and I trained less than 3 months for each of them). I didn't eat enough before one of them, and felt real hunger during it. Afterward, I ate like a pig for weeks and gained about 5 pounds. Seems likely I messed up my gut microbes.

Conversely, I went to Burning Man one year, walked many miles a day for a week, and didn't bother to eat much. (Drugs were not involved, and I had plenty of food. I was just too busy seeing stuff.) I lost almost 10 pounds and kept it off for years after without trying.

Psychology: I've noticed that, although I believe I want my weight to be 195, whenever I notice it has dipped below 205 I start eating a lot more. Also, I remember reading dozens of reviews of some-diet-or-other which fell neatly into two buckets: 1) This diet sucks! It's so restrictive! And it doesn't work! 2) This diet is great! I can eat lots of things! And I'm losing lots of weight!

Epigenetics: Metabolic-related epigenetics are demonstrated to be both heritable and environmentally affected. This is less a "This is what's causing it" and more a "There's a mechanism here, we don't know what it does, we'd better actually rule it out before we assume it's not involved."

Gut microbes: There's some evidence they're involved in desire to eat, metabolism, etc. There's certainly no shortage of means, motive, and opportunity for them to affect the brain and mind, especially about what we eat. Transfer between people could account for apparent cultural effects: if most people around you have obese-o-genic gut microbes, you probably will too. And there could easily be a ratchet effect or even a vicious-cycle effect over a few decades.

For what it's worth, the few times I've actually tried to lose weight, I've done it easily with some combination of:
1) Cut way back on sugar and chocolate for a few weeks. Easiest to cut them out entirely.
2) Don't eat anything but raw vegetables after early evening. Maybe skip breakfast if I'm not actually hungry.
3) Don't binge-eat.
4) Don't eat lots of "junk food." Maybe eat a few extra veggies.
5) Aside from the above, eat whatever I want, whenever I want, as much as I want. Dieting is bad for almost everyone in the long run! There's lots of evidence on this.

everyone in the long run? There's lots of evidence on this.

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myla *says:*

March 11, 2020 at 2:45 am

I agree with your statements except for the one about breakfast (and even though there is evidence that you might lose weight by doing it, there is also evidence that breakfast has important benefits for your health and mind).

But then again I don't even understand how people can not be hungry in the morning. I feel like my stomache implodes after I wake up and don't eat anything. 😀

Hide ↑

Matthias *says:*

March 11, 2020 at 3:27 am

Myla, being hungry for breakfast seems to depend strongly on habit. Just like meal timing in general.

When I regularly eat breakfast, I'm hungry in the morning.

When I regularly don't eat breakfast, I'm not hungry in the morning.

From what I can tell, as long as you eat a reasonable amount of food averaged over a period of a few days, your body can get used to almost any meal timing pattern and get hungry at the proper times. Eg even alternate day fasting.

Hide ↑

myla *says:*

March 11, 2020 at 5:47 am

I agree and also think that it is a habit of mine. A certain time of my life I loved a specific type of chocolate, even a little bite was awesome. So I regularly woke up in the middle of the night to just take a bite and then I would sleep like a baby. And normally I would of course not wake up in the middle of the night to eat something.

I still believe that breakfast in the morning does something good for you.

Hide ↑

Loriot *says:*

March 11, 2020 at 5:36 pm

> *From what I can tell, as long as you eat a reasonable amount of food averaged over a period of a few days, your body can get used to almost any meal timing pattern and get hungry at the proper times. Eg even alternate*

> *meal timing pattern and get hungry at the proper times. Even alternate day fasting.*

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This accords with my experience as well. I got into the habit of eating a snack soon after arriving at work every morning and eventually realized that I was getting hungry at that time of day specifically. Like I would get super hungry at 9:30 AM and then feel fine by 10 AM *even if I didn't actually eat anything*.

Hide ↑

Roger Sweeny *says:*

March 11, 2020 at 8:49 am

Just as there are "owls" and "larks", there are people who are hungry in the morning and people who are not. I eat within minutes of getting up. My wife and son wait for hours; they're just not hungry.

Hide ↑

Neike Taika-Tessaro *says:*

March 11, 2020 at 1:02 pm

Interestingly enough, I thought for years that breakfast made me feel sick, so I just stopped having breakfast. Back when I was having breakfast, I would constantly have stomach aches for some hours after it – mild ones, but enough to be really annoying. The only breakfast I came into routine contact with and was fine with was bacon and eggs, which I found very strange.

…turned out to have been carbs, which feels obvious in hindsight.

But now I'm out of the habit of breakfast. I have an early lunch instead, usually at 11:30 (though it doesn't bother me much to postpone it, but I do notice on some level that my body seems to be expecting food around that time).

Hide ↑

Rafal Smigrodzki *says:*

March 11, 2020 at 2:35 am

Welcome to the world of multifactorial etiology. It's highly unlikely there is a single culprit responsible for the obesity explosion. Cheap food, easy access to food at all times causing continuous eating (as the opposite of naturally occurring intermittent fasting), added palatants, counterproductive government health advice based on cherry-picked data, high caloric density food, high glycemic index food, reduced physical activity, sugar sweetened drinks, flour with added iron (the bane of US bakeries), availability of air conditioning and much higher indoor temperatures at night, trans fatty acids, processed food low in diverse nutrients causing compensatory hunger when the body attempts to get enough of micronutrients, such as magnesium, vitamin K, D, ergothionine, and others… The list could go on, and there is a lot of good evidence in favor the above and other factors. And there may be some dark horses running, like whatever is causing the secular trend towards

lower testosterone levels in men,

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Luckily, it's actually not that difficult to stay somewhat thin. Almost every morning after work I eat a huge salad of fresh vegetables (arugula, onion, avocado, good quality tomatoes, blueberries), with a liberal slathering of olive oil and balsamic vinegar (not the nasty prepared dressing), and with a big chunk of the best cheese I can get (Roquefort, 3 year Dutch gouda, barrel aged feta, Camembert) and a chunk of meat of some sort (chicken liver, sardines, fatty steak or whatever I fancy that day), sprinkled with nuts of some sort and with sucralose-sweetened tea. The salad is huge and actually incredibly tasty, since I don't skimp on quality and quantity. And then there is chocolate as dessert! All in all about 1600 calories but I don't feel really hungry until the next breakfast salad, so I guess it counts as intermittent fasting, too. Plus, on weekends I also eat dinner, usually a 20 oz. ribeye and thick slices of bacon, and other goodies, up to about 4000 calories. Whenever I stick to this way of eating (so as not to say "diet"), my weight hovers in the 165 – 170 lb range, which is fine for my height and build. Easy – and it addresses a lot of the multifactorial influences I mentioned above, which may explain why it works for me. YMMV.

Hide

Byrel Mitchell *says:*

March 11, 2020 at 7:20 am

> *Luckily, it's actually not that difficult to stay somewhat thin.*

That's extraordinarily untrue for some people. I'm glad it's easy for you though.

Hide ↑

Jman *says:*

March 11, 2020 at 7:45 am

Yup, it doesn't matter the forum. Every time diet and weight loss come up you get the same comments from people who either currently dieting and had short-term success, or people who have always been thin.

I'm one of the naturally skinny people myself, but I don't make the mistake of saying it's easy. It's just genetics. I think the National Weight Control Registry is more useful in that regard, but the results are depressing. It seems to boil down to counting calories for the rest of your life.

Hide ↑

Purplehermann *says:*

March 11, 2020 at 8:07 am

Aside from people with some kind of birth defect that makes weight loss near impossible,
It really isn't too hard to stay fairly thin.

People who don't stay thin don't usually get exercise or put much thought into what they eat IME.

I've personally gotten some friends of mine to get in shape helping them start exercising consistently and eating better.

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Hide ↑

caryatis *says:*

March 11, 2020 at 8:15 am

There are a LOT of fat people out there who are constantly trying new diets and exercise plans. You may say they're not doing it right, but the hypothesis that fat people just don't care about their weight is clearly false.

Hide ↑

Cliff *says:*

March 11, 2020 at 9:45 pm

Out of curiosity, is there a study where overweight people actually weigh and input all the food they eat each day into a calorie tracker (along with maybe exercise)? As in, someone monitors them to make sure they do this? I wonder whether this would be ineffective like everything else, if they could see exactly how many calories they were eating and their caloric surplus estimate.

Do people just not think of this, or just not want to do this, or would it actually do nothing? (note, I do this and it seems to work very well with about 10min per day dedicated to it).

Hide ↑

Purplehermann *says:*

March 12, 2020 at 1:44 am

They seem to think they do… but those friends of mine also thought so. We sat down together, disected what they thought they were eating, they paid attention to what they were eating for a few days (not inhibiting, just paying attention), we sat down again.

We went over basics of micronutrients, calories, and simple sugars and processed foods being generally bad.

We'd eat meals together and exercise together, and they'd lose weight.

There are people I'm less close with who I've tried to get to lose weight.

They are less willing to modify their diets or lifestyles, or to really go over eveeything they eat.

0 comments since 2020-03-31 0ç

Anecdotes of people who were trying to l

Roomate says he is going to lose weight. Come back to the room, he is casually eating a chunk of store bought cake he leaves by his bed side.
(He let me toss it, he's looking a bit better already and it hasn't been long. He does his own thing but will take some advice, hopefully that will be enough)
//////////_///////__/////////_____///

Classmate tells me he will lose weight. He is nursing a bottle of coke. I point out he should probably stop drinking coke in general (I know that coke is his usual beverage). He says I already started. I say forget this bottle, finish it, but in general you should ease off the coke.
He waffled, never stopped with the coke and didn't lose the weight.
_____////_____///___///_///////__/
Girl who freaked out at the idea of giving up beer. Never lost the weight.
/////

People usually aren't willing to actually sacrifice, they want to drink a magic potion then continue their lifestyle.

Hide ↑

xenon *says:*

March 11, 2020 at 12:55 pm

Then you should be publishing your methods and running a clinic, because you're somehow doing something the medical establishment thinks is impossible.

Hide ↑

Purplehermann *says:*

March 12, 2020 at 1:53 am

I'd be happy to run a large study (and I'm sure others here would too) showing that given education and willpower obese people can usually hit normal weights (ampersand's challenge).
The issue is that I have no idea how to go about running a study properly / getting it started.

Aren't there plenty of personal trainers who do this consistently though?
The main issues are always people dropping out, and going back to their old lifestyles

Hide ↑

caryatis *says:*

March 11, 2020 at 8:13 am

0 comments since 2020-03-31 0ç

+1. Also, to echo Scott's hypothesis #3, it may be that the exact same diet and exercise habits that keep some people at a healthy weight would not work to get obese people down to a sustained healthy weight.

Hide ↑

acymetric *says:*

March 11, 2020 at 8:15 am

I would find it easy to believe that once someone has reached a certain threshold of being significantly overweight/obese that it would take some kind of system "shock" to really change their weight level.

Hide ↑

tenoke *says:*

March 11, 2020 at 2:42 am

Could it be that people in the 1800s, cavemen etc. had low obesity rates to a significant extent because it was hard to survive if you were obese, so the pressures were much stronger as soon as you started getting even a little heavier and less healthy?

I assume it's something frequently discussed, so I am mostly just curious what are the counter-arguments.

Hide

adambliss *says:*

March 11, 2020 at 6:31 am

+1. The explanation of "survivorship bias" seems so screamingly obvious that I can't believe Scott didn't mention it in the post. Surely I must be missing something?

Hide ↑

AwfullyCritical *says:*

March 11, 2020 at 7:42 am

It probably applies to cavemen. But I can't imagine that being obese in the 1800s would affect your survival rates that heavily. They were not preyed upon by lions or wolves, so running away was not crucial to survival. Diseases caused by obesity take years to kill — it might be a *slight* factor, but not a huge one.
I don't think that explains the pattern here.

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 9:10 am

> *people in the 1800s, cavemen etc*

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Practically neighbors on the human timeline!

Okay, less snarky: If we had to look all the way back to cavemen to find lower obesity rates, then this type of explanation could make sense, but we had much lower obesity rates in the more recent past when these types of pressure clearly did not apply.

Hide ↑

noyann *says:*

March 11, 2020 at 2:51 am

Comparison of food oils. (Keep reloading until the weak server serves.)

Hide

Douglas Knight *says:*

March 11, 2020 at 10:09 am

Instead of reloading, click here

Hide ↑

spider-mario *says:*

March 15, 2020 at 3:49 pm

Meh, it says that flaxseed oil is the "highest source of omega-3 oils" and "many times more than most fish oils", without mentioning the fact that unlike fish oil which is mostly EPA and DHA, flaxseed oil's omega-3 is ALA which is converted to EPA and DHA at a ludicrously inefficient rate by the human body (less than 5%).

Hide ↑

DarkTigger *says:*

March 11, 2020 at 3:01 am

> *Exercise seems like a red herring; studies of how much people eat, exercise, and gain weight have shown that dietary changes explain more than 100% of weight gain over the past 30-40 years – probably we are exercising a little more.*

Your dieatary post frustrate me.

1) Your linked study states that "ENERGY intake" (so calories eaten) have an more important impact than excercise.

It's not about what kind of marcos we are eating, but how much of them.

2) This does not surprise me, since it is a lot easier to ramp up calorie intake than calorie outflow. If you do not believe this, look up how long you have to run, to set of a single slice of bread with cheese. And I have no problem eating three extra slices of bread a day, try offsetting that with an 40 hour week and an social live.

2) Yes we might exercise a little more (as in going to the gym). But I'm pretty sure even office drone's like me

had to do more running around fetching paper files and stuff like that 30 year activity back then. I remember when having a screen running in the household for more than an hour a day switched from beeing an extremly low class signal to normal.

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Hide

Robert Jones *says:*

March 11, 2020 at 3:02 am

Somewhat random collection of thoughts:

I weigh 157lbs, so I'm 2lbs heavier than the 155lb figure given for the average American man in the 19th century, which isn't in the link provided by the way. I'm 5'11", so I'm also a bit taller than the average 19th century American man. I mention this not to be smug (well, not only for that reason) but because any explanation for the obesity crisis has to avoid proving too much, i.e. it needs to explain why some people are obese and some people aren't. I follow official dietary guidance fairly closely, including aiming to get no more than 10% of my calories from saturated fat.

The "circumstantial case" for a high saturated fat diet needs to be better. There's a nadir for animal fat consumption around 1990. PUFA consumption is flat from about 1985-1999. Neither of those show up in the obesity rate. What about other countries? Straightforward environmental explanations tend to struggle to explain why obesity took off in the US earlier than in Europe. I wasn't there, but my sense is that the advice to avoid saturated fats was widespread in the 1950s rather than being a specifically American thing.

Your link for "people in the 1800s ate almost 50% more bread than we do today" also does not contain that result, although it does indicate that per capita availability of flour and cereal products was 52% higher in 1909 than in 2007. It also has the following conclusion:

> *Long-term trends indicate marked increases in availability of added oils, meat, cheese, frozen dairy products, sweeteners (particularly those used in carbonated beverages), fruit, fruit juices, and vegetables, which may have influenced the prevalence of childhood obesity. Flour and cereal availability has fallen since the early 1900s but has rebounded in recent decades.*

That's talking about childhood obesity, but it seems plausible that the same trends also influence the prevalence of adult obesity. We simply have a greater abundance of rich foods than great grandpa.

In re diet and exercise, we're fatter than people in the 1970s because we eat more (despite being slightly more active), but the difference in exercise is contributing quite a bit to explaining why we're fatter than people in the 1920s (although we do also eat more too). At the individual level you're mostly right that exercise is a red herring, since we're not about to switch to jobs requiring intense physical labour. Intentional exercise is beneficial for a variety of reasons, but in most cases it only leads to a marginal increase in TDEE, which is often matched by an increase in nutritional intake.

Hide

Matthias *says:*

March 11, 2020 at 4:19 am

0 comments since 2020-03-31 0ç

Europeans diets in the 1950s were still influenced by post-war shortages. So not sure how comparable that is. Specifics depend on country.

Hide ↑

wyager *says:*

March 11, 2020 at 3:04 am

It seems reasonably likely that whatever has caused the massive measurable decline in male fertility is related to whatever has caused the massive increase in obesity. The timelines seem to match up, and there are plenty of mechanisms that couple the endocrine system to the metabolic system.

Hide

GearRatio *says:*

March 11, 2020 at 2:08 pm

Is it possible being fat makes you less fertile? Seems occam friendlier.

Hide ↑

secondcityscientist *says:*

March 12, 2020 at 10:25 am

Insulin and glucagon *are* an endocrine hormones. The pancreas *is* part of the endocrine system. Certainly, all endocrine disruptors don't work on all hormones or receptors, but to the extent that environmental endocrine disruptors are a relatively novel problem there's no reason to expect that the parts of the endocrine system that control metabolism would be unaffected.

Hide ↑

noyann *says:*

March 11, 2020 at 3:10 am

Since when is butyl-paraben common in cosmetics? Other agents where maternal exposure changes the set point for satiety in babies?

> *Mothers reporting the use of paraben-containing cosmetic products have elevated urinary paraben concentrations. For butyl paraben (BuP) a positive association is observed to overweight within the first eight years of life with a stronger trend in girls. Consistently, maternal BuP exposure of mice induces a higher food intake and weight gain in female offspring. The effect is accompanied by an epigenetic modification in the neuronal Pro-opiomelanocortin (POMC) enhancer 1 leading to a reduced hypothalamic POMC expression. Here we report that maternal paraben exposure may contribute to childhood overweight development by altered POMC-mediated neuronal appetite regulation.*

Hide

encharitimone *says:*

March 11, 2020 at 3:11 am

0 comments since 2020-03-31 0ç

Is there a way to look at the microbiomes from earlier eras? I know nothing about…what would that be called? Micro-archaeology? (One google search later) Archaeobiology, apparently.

Are there well-preserved poop samples from early people in permafrost somewhere? Ancient people that sealed feces in jars for religious reasons (ala Prachett)? 19th century poop fetishists who kept souvenirs?

It seems like having this kind of data on the internal workings of historical digestive systems, even a small number of data points, could significantly narrow the range of plausible theories, and it doesn't seem wildly inconceivable that answers might be findable.

Hide

myla *says:*

March 11, 2020 at 3:26 am

I think you can just take microbiome samples from "healthy"/not obese people of today, which is already done. I don't remember the project I read about, but this seems similar:
http://americangut.org/

Hide ↑

Matthias *says:*

March 11, 2020 at 4:25 am

You can take modern samples, but comparison to historic samples would still be useful.

Hide ↑

Robin *says:*

March 11, 2020 at 6:03 am

Open one of these cans?
https://en.wikipedia.org/wiki/Artist%27s_Shit
A sample from Italy 1961.

Hide ↑

Jerden *says:*

March 13, 2020 at 5:55 am

I know that there have been studies of microbiomes around the world, including hunter gatherers, and noted a lot of differences. Given that faeces tends to not be preserved well, and bacterial populations will definitely start to change as soon as it leaves the body, that's probably the best data we can get.

Must have been weird for isolated tribes when scientists showed up demanding poop.

Hide ↑

Adam Scholl *says:*

March 11, 2020 at 4:04 am

"Second, diet is barely related to the obesity epidemic, and it's being caused by plastics or antibiotics affecting the microbiome or something like that."

Another candidate is viruses: https://www.mayoclinicproceedings.org/article/S0025-6196(11)61392-X/pdf

Hide

myla *says:*

March 11, 2020 at 5:53 am

Thanks, the correlation with certain viruses is something I never heard of. ☺

Hide ↑

xenon *says:*

March 11, 2020 at 1:02 pm

As is your parents/grandparents being deprived of food, which seems to trigger an epigenetic change that increases weight as well as higher incidences of the disorders frequently associated with obesity.

Weight-cycling also appears to increase weight in the end, so it seems plausible that constant pressure to diet is pushing weights upwards, especially at the far curve.

Hide ↑

Alkatyn *says:*

March 11, 2020 at 4:08 am

I appreciate posts like this that make a seemingly very strong argument for one possibility, then disprove it immediately afterwards. Its useful to be reminded how easy it is for very persuasive seeming arguments to be wrong, and the intuitive sense of plausibility doesn't track reality.

Hide

analytic_wheelbarrow *says:*

March 11, 2020 at 5:48 am

+1

I think that's the right meta-takeaway from this!

Hide ↑

Tom Chivers *says:*

March 11, 2020 at 4:09 am

> *there was really tasty food in 1800s America and 1970s France, so how come people didn't overindulge*

> *in that?*

0 comments since 2020-03-31 0ç

at least in the case of 1800s America, can't we reasonably explain this by saying "it was lots more expensive" (and also, perhaps, less brilliantly optimised for palatability, or calorie-density-and-low-satiety or whatever)? Even in 1970s France it was probably less universally available. It's not that no one was obese then, it's just that far fewer people were, and that fits (does it not?) with the idea that high-calorie palatable food was much less easy to get hold of.

(Conflict of interest disclosure: I've previously written something pretty much uncritically accepting Guyenet's position, so I am publicly committed to it and probably over-keen to defend it.)

Hide

alphago *says:*

March 12, 2020 at 10:02 am

Yeah, I think you've hit on Scott's key mistake. The post hinges on the implicit assumption that there hasn't been a significant increase in the availability of hyper-palatable food (e.g. junk food, fast food, etc) over this time frame, but he offers no evidence for this dubious claim. No doubt Scott is correct that there was some "really tasty" food back then, but hard to see how this is anything but a non-sequitur as an argument against the notion that an *increase* in the availability of hyper-palatable food is largely responsible for the obesity epidemic.

Hide ↑

Randy M *says:*

March 12, 2020 at 10:27 am

Wouldn't the hedonic treadmill/adaptation mean it that in ye olden days the tastiest food was about as good as modern food? Or is modern food a super-stimulus we aren't evolved to acclimate to?

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 10:34 am

We probably aren't even adapted super well to the basic ancestral agricultural diet, if quantity and variety are within your means. After all, wealthy merchants and aristocrats in the old days were often chubby or obese, whereas the common man was usually not. Technology cheapens food, and market forces select for the foods that are more profitable – and a food that, ceteris paribus, makes you eat more of it, is more profitable.

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 10:27 am

Agreed.

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There's a fascinating recent study on the effects of ultra-processed diets vs minimally-processed diets. It's just what you'd expect – you eat more of the processed stuff. Especially check out the kinds of food the subjects were given in the supplementary document. There's pictures! Both of the meal plans definitely fall into the modern dietary Overton window, but you can definitely see how the availability of the processed foodstuffs would have been much poorer compared to the unprocessed stuff. Even if people ate a lot of bread (absent from the unprocessed menu), the bread was markedly different – as I've noted elsewhere in the thread.

Hide ↑

Lanrian *says:*

March 11, 2020 at 4:14 am

> *Third, it's a ratchet. Departing from the ways of our ancestors (or great-grandparents) can make you obese, but returning to their ways cannot make you thin again. A bad diet (whatever that is) shifts your weight set point up, but a good diet does not shift it back down, at least not in a reasonable amount of time. It just prevents further damage.*

The asymmetry of this feels a bit off to me. However, there's a fourth possible explanation that's related: What if there is some *point in time* when your weight set point gets fixed, e.g. at some point during childhood, or even before you're born, during pregnancy. This would explain why it's hard to find the source of the problem: A lot of experiments happen on adults, and even if you do the experiment on children (at exactly the point where the weight set-point is set), it would be hard to tell successes from failures, since (i) You can't see people go from obese to non-obese during the trial, if it mostly affects the future, so you need a large sample size and a good control group, and (ii) If it takes years for the weight set-point to be noticeable, you need longitudinal studies, which is a pain.

I don't know anything about this field, but I'm sure people have thought about this possibility previously. Anybody know what the research says?

Hide

Dan *says:*

March 11, 2020 at 5:59 am

I seem to remember there being some well-known study about children born to malnourished mothers in Denmark during World War II or something like that, that suggested pre-natal causes for (some) obesity.

Given good enough data, it seems like you could prove or disprove this by looking at societies that adopt a Western diet; if the obesity doesn't show up until the next generation, that suggests pre-natal. If it shows up in people who were children when they adopted the Western diet, but not in people who were adults, then that suggests a childhood ratchet.

Hide ↑

The Big Red Scary *says:*

March 11, 2020 at 6:32 am

Maybe you have in mind the long-term effects of the Dutch famine of 1944-1945?

https://en.wikipedia.org/wiki/Dutch_famine_of_1944%E2%80%9345

It seems there are even epigenetic effects:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2579375/

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Cerastes *says:*

March 11, 2020 at 4:35 am

> *Second, mouse studies.*

Worthless.

Seriously. Why, exactly, would we expect a small, short-lived, r-selected, predominantly granivorous rodent to yield any substantial insight into the diet of a large, long-lived, k-selected, highly omnivorous primate? The usual bullshit response of "they share 90+% DNA similarity"? This is like saying, "I want to understand whale locomotion, but they're too big to fit in the lab, so we'll use sheep, which are genetically very close and more tractable" then being surprised that sheep swimming does not lead to sound science about whale swimming.

Animals are not just sacks of genes which are completely interchangeable based only on overall genetic similarity. Those genes are expressed in radically different ways, patterns, timings, etc., leading to organism level physiology and adaptations. Snakes have the exact same HOX genes for body axis patterning as every other vertebrate, the only difference is how and when they're turned on.

I'm FAR from an opponent of lab animal testing; I do it myself, inckuding terminal experiments, albeit on species far more interesting than mice. But you have to choose the right species for your results to have any meaning, something we've known for almost a century, enshrined in the Krough Principal. And choosing the right species is not just a matter of how chemically similar they are after you put them through a blender. Most vertebrates are extremely similar at the molecular level anyway, sowhy not pick something that actually resembles out digestive physiology and adaptations? Pigs. Racoons. Shit, I bet you could even get more human-relevant results out of blue tongued skinks (a large, omnivorous Australian lizard) than mice. So mice have more genetic tools, so what? Go make the tools for the other species. Otherwise you're like someone turning up to fix my plumbing with electrician's tools, because they're the only ones you have.

TL;DR – bad choice of experimental animal species = bad science. Don't just use rodents because everyone else does.

This rant brought to you by every comparative biologist ever.

Hide

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myla *says:*

March 11, 2020 at 6:02 am

Well as a lab animal researcher you might know stuff better, but then again I wonder if it's really that important in some areas. Why would the digestive system of a human work so differently for example (given that it's not a cow with her specific digestive system that we compare ourselves with) or why should certain influences not be good indicators for further research? Also a theory doesn't get approval merely by studies on mice right? Usually it's a first step in a long list of research for new drugs for example.

But yeah, often things are presented like "we found this in mice" and people or the media assume this means it's transferable to humans when it is not directly possible.

By the way I *am* an opponent of lab animal testing and hope there will be much better methods like simulations in the future and I hope you will find a better job then that doesn't let animals suffer.

Hide ↑

Randy M *says:*

March 11, 2020 at 7:12 am

> *why would the digestive system of a human work so differently for example (given that it's not a cow with her specific digestive system that we compare ourselves with) or why should certain influences not be good indicators for further research?*

But the thing is, we're not looking for large effects. Like, both animals are killed by most of the same toxic of substances, both can be kept alive by others.
But long term effects over time may well be another matter.

Hide ↑

Lambert *says:*

March 11, 2020 at 8:06 am

>better methods like simulations

Like, I get that animal testing is, while necessary, an evil, but *laughs and also weeps bitterly in empiricism*.
We already simulate everything we can, but 'everything we can' tends to be limited to like, one protein at a time. The real world has a habit of ignoring our nice theories and simulations.
There's no way to save millions from e.g. cancer without sacrificing thousands of mice.

Hide ↑

noyann *says:*

March 11, 2020 at 8:16 am

0 comments since 2020-03-31 0ç

Suffering on this planet is not a zero-sum game. The suffering inflicted in animal tests is a preventive investment. Despite the usual fuzziness of such concepts, and things-going-wrong, it's a consoling notion (imo).

Hide ↑

Byrel Mitchell *says:*

March 11, 2020 at 7:28 am

One reason to believe that mice make a good model for human dietary weight-gain is that mice are fairly difficult to make obese on any diet except human junk food (which is reliably effective.) If your priors (like mine) are near certainty that junk food is good at making humans obese, that's a significant relevant parallel which makes mice look like a pretty good model for human diet.

Of course the standard disclaimers still have to be borne in mind. The map is not the territory. All models are wrong; some models are useful.

But from what I know, mice look like a useful map on diet effects.

Hide ↑

James Miller *says:*

March 11, 2020 at 4:41 am

Anecdotally, I was very thin until around 25 when I steadily began gaining weight. By 40 I was overweight, and the trend was not good. About eleven years ago I started paleo / bulletproof coffee (coffee+butter) + intermittent fasting + (recently) lots of Quest bars + very little sugar, little vegetable oil (meaning I can't buy most stuff in a supermarket) and no corn or wheat although I do have white rice, and I naturally lose weight on this diet and when I'm eating I eat more than I want to not have my weight drop further.

Hide

The Big Red Scary *says:*

March 11, 2020 at 6:38 am

Somewhat similar story, except I put on the weight in a few months around ten years old. I kept it on until almost forty, when I effortlessly lost thirty pounds on a diet of beef, eggs, salad, coffee, 98% cocoa bars, and nuts. So far, my weight has been stable for about a year and I am very energetic. Might not work for everyone, but I enthusiastically recommend giving it a try when people ask me how I lost weight.

Hide ↑

Randy M *says:*

March 11, 2020 at 7:13 am

I forget why, but some paleo advocates have a quite different stance on rice than on wheat or corn. Something about being probiotic maybe.

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PhaedrusV *says:*

March 11, 2020 at 5:26 am

Two questions:

1) I'd heard awhile back that a study showed that variety in your diet inhibits your body's ability to process specific foods efficiently and is linked to weight gain. Simple diets of minimal ingredient count over long periods of time cause your body to get really good at processing the ingredients, whatever those are. Examples include people who swear by the all-beef diet, among others. One of the key factors is apparently that it takes at least 4-6 weeks for your body to adjust to different concentrations of nutrients, so you'll feel crappy until then, and once your body adjusts reverting to your old foods will be equally painful. Anyone have any more info on that?

2) Nutrition science is rightfully the whipping-boy of the replicability crisis, with something like a 70% failure to replicate. I suspect it won't advance meaningfully until it ties itself to modern genetics, and nutrition studies are combined with genetic testing and effects are sorted by gene expressions. We could even use existing studies if we go back and send 23 & me kits to participants and update the data to reflect results. Anyone know if anything like that is being done yet?

Hide

PhaedrusV *says:*

March 11, 2020 at 5:47 am

As far as functional dieting, here's my moderate success anecdote: From early attempts I learned a few things.

One, I have a very tough time giving things up cold turkey; even the best-intended attempts end in binging failure after a few days.

Two, everything I tried worked! At first. For a few pounds. And then didn't. Eventually I decided that the common thread was watching what I ate, and the attention was likely causing reduced calorie intake.

Three, the goal of "reduced calorie intake" wasn't something I could turn out into a functioning system. Inattention, say at a social meal, would cause me to overeat every time. The issue was that there was nothing I could point to while eating to say "this is reduced, that is not reduced".

With those problems in mind, I started something new back in August of '19. By October I had lost 30 lbs, and decided that I'm happy with my weight at that level. Since then I've kept it off, and I haven't felt that I'm depriving myself in any unsustainable way.

The system I implemented involves 2 'rules' (reason for air-quotes explained later).

'Rule' 1: I don't eat until I'm full, I eat until I'm not hungry any more. This may not sound like much of

a difference, but I think it's reduced my calorie intake by about 25% primarily responsible for my weight loss. Other little tricks like small dish size, which I'd tried without much success before, seem to help this a little bit as well. The key is to have an actual mental line, and be able to detect where you are in relation to it. It took me about a month and a half to be able to detect in real-time when I crossed that line and should stop eating, and since then it's been much easier. It took about three months before my body shifted to reflect my new calorie intake and I stopped feeling like I wasn't eating enough (even though I wasn't actually hungry, it was an odd feeling).

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'Rule' 2. With stuff that I know isn't good for me, like dessert, I'll eat the biggest two bites I can handle (or an equivalent amount, in politer settings), and then call it quits. This seems to combine the best of not depriving myself, not being rude when people offer me sweets, and minimizing bad food intake. The first two bites always taste the best anyways; after that it's just calories and regret.

The reason I wrote the rules as 'rules' is because my system also includes a set of actions for when I violate them; it's not really a failure. I took the inspiration from Goodhart's Law, and decided that I would just count times I deviated. I was starting daily journaling at the same time; I took a page out of Ben Franklin's journal practice and on each day I put a small dot for each time I failed to live up to the virtue of temperance, as defined by my diet goals. Starting out I'd have 4-5 dots most days, but over time my Goodhart's Law plan worked and I started trying to optimize what I was measuring, and I'm doing better these days. It's also nice, from a mental commitment standpoint, to be able to binge at Thanksgiving dinner and think "this will be a couple dots later" and then enjoy myself. This part is the hardest to describe, and was the aspect of my plan I was least confident in, but the results have spoken for themselves.

Hide ↑

myla *says:*

March 11, 2020 at 6:13 am

Regarding question 1 I have to say that variety in food is actually good for you and negatively correlated with obesity. Here is why: https://www.youtube.com/watch?v=-LUuqxQSaFQ

I totally see why rule 1 would work given that it's also my opinion. 😀 And scientifically it is related to the selfish brain theory, where in many people the regulation to the feeling of "I am not hungry anymore" doesn't work. Also related to genetics (specifically the regulation due to the effects of "leptin").

I also agree with rule 2 because I naturally don't like to eat much dessert or sweet stuff (only sometimes); people might think I have to force myself, but it actually doesn't feel good for me (even though I never had any obesity problems or keep myself from eating certain stuff). I only buy one ball of ice-cream when others buy three and I never understood how they can even eat that much for example.

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notpeerreviewed *says:*

March 11, 2020 at 9:22 am 0 comments since 2020-03-31 0ç

Ideally you should be linking to the research backing these videos rather than the videos themselves.

Hide ↑

myla *says:*

March 11, 2020 at 11:57 am

Those are lectures of researchers showing their own work, so they link to themselves. 😉

Hide ↑

eric23 *says:*

March 11, 2020 at 1:56 pm

This makes it sound like the best treatment for obesity may be a form of CBT.

Hide ↑

noyann *says:*

March 11, 2020 at 6:50 am

1) I'd heard awhile back that a study showed that variety in your diet inhibits your body's ability to process specific foods efficiently and is linked to weight gain. Simple diets of minimal ingredient count over long periods of time cause your body to get really good at processing the ingredients, whatever those are.

And/or the endobiome composition is optimized.

Hide ↑

acymetric *says:*

March 11, 2020 at 8:07 am

> *1) I'd heard awhile back that a study showed that variety in your diet inhibits your body's ability to process specific foods efficiently and is linked to weight gain. Simple diets of minimal ingredient count over long periods of time cause your body to get really good at processing the ingredients, whatever those are.*

This seems backwards. If your body is really good at processing a food, it is going to extract the maximum amount of energy from it. If it is bad at processing a food, more of that energy will be "wasted". This would seem to suggest that a varied diet where your body never gets too good at extracting energy would lead to lower weights.

Hide ↑

PhaedrusV *says:*

March 12, 2020 at 5:04 am

0 comments since 2020-03-31 0ç

It depends on what happens to 'waste'. If waste is expelled, then bodies which focus on specific food and minimize waste would be able to get their energy from a lower amount of food. If waste is only from the point of view of specific processes then I'd expect the 'waste' to get stored in long-term storage, i.e. fat.

Hide ↑

Konstantin *says:*

March 11, 2020 at 5:36 am

What exactly do we know about nutrition with an extremely high degree of certainty? I'm talking about the same level as "The MMR vaccine is safe and effective" or "Climate change is happening and is caused by human action." It seems like almost all of the advice given in this area, even from normally credible sources, ends up being wrong or based on an inadequate scientific foundation. This makes it difficult to make informed choices, and there don't seem to be many basic facts that all reasonable people agree on.

Hide

Lambert *says:*

March 11, 2020 at 6:01 am

Being really deficinent in certain micronutrients leads to specific diseases.

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 9:25 am

> *What exactly do we know about nutrition with an extremely high degree of certainty? I'm talking about the same level as "The MMR vaccine is safe and effective" or "Climate change is happening and is caused by human action."*

"The proximate cause of obesity is eating too much," which is…at least something, even if we don't know what influencing people to eat more than they used to.

Hide ↑

xenon *says:*

March 11, 2020 at 1:23 pm

Basically nothing. Nutritional studies are mostly observational, which basically translates to "worthless". There are researchers in the field saying just about everything should be thrown out (the links in that article are all worth a read too). Fivethirtyeight has a great example–using typical standards of a nutritional study, they managed to find statistically meaningful correlations between things like eating egg rolls and owning a dog and drinking lemonade and believing Crash deserved to win Best Picture.

Aside from big stuff like "too little vitamin D causes rickets", the field is just not that deep. Nutrition is ridiculously complex, experiments are almost impossible to design and ridiculously expensive, and we

ridiculously complex, experiments are almost impossible to design and ridiculously expensive. and we don't even fully understand the body systems under study–ghrelin, a 0 comments since 2020-03-31 0

only discovered in 1999, and we still don't fully understand it (we initially thought ghrelin supplements would cure obesity, and it does help–but only in people with Prader-Willi syndrome). The microbiome certainly seems to be doing *something*, but we don't know exactly what.

Hide ↑

ChrisA *says:*

March 14, 2020 at 5:40 am

Xenon – you are right, correlation studies is basically all we have on diets impact on obesity or health in general, and there are so many cofounders and adjustments made to them it is not worth paying attention to. We see these studies breathlessly reported by the media all the time, then they disappear and a few months later we see a study claiming the opposite result.

Another thing, and this thread is a great example, people have very strong views on the causes of obesity and what works or doesn't work for loosing weight. My thesis is that it is status thing – people like to tell other people what they are doing wrong because it increases their status. Strong priors and correlative studies don't make for good science.

Hide ↑

unreliabletags *says:*

March 14, 2020 at 11:08 am

There are plenty of cases where people get most/all of their meals from an institutional cafeteria (military, college undergraduates, Google employees, etc). Can't you do a proper experiment there?

Hide ↑

John Schilling *says:*

March 14, 2020 at 11:09 pm

You'd need for them to get literally all of their food from an institutional cafeteria that offers no choices and no second helpings. And you'd need for them to not all run away when you explain the new rules. So that basically leaves you with prison inmates, and the military for one enlistment period if you don't mind not having a military at the end of it.

Hide ↑

dogiv *says:*

March 11, 2020 at 2:20 pm

Partially hydrogenated oils are harmful in large quantities.

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bwingrave *says:*

March 11, 2020 at 5:37 am

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I apologize for not having a source on this, but I saw a video recently that indicated processed foods might be bad for you because they make it easy to eat a lot of calories without much effort. The example given in the video was eating the ingredients of hummus (which I guess would require more chewing) vs. eating actual hummus. My takeaway was that it's not specific ingredients that cause processed food to be a problem, but the fact that we don't notice how much food we are eating when we eat processed food

Hide

myla *says:*

March 11, 2020 at 6:27 am

The problem lies in the term "processed food" as Scott mentioned in his post. I actually don't think that your example counts for what people usually mean by the term. I make hummus myself once in a while and it's all natural ingredients just mashed together in a blender. Sure it was processed in a machine and therefore my stomache will have an easier time digesting it, but my brain will like the taste and the microbes in my gut will love it either mashed or not mashed (because in the end I am eating to feed *them*, not me, they digest it for me and produce useful stuff as a byproduct).

"Highly processed food" usually refers to ingredients like synthetic chemicals (aromas, flavour enhancers, colorings…), where you actually replace natural stuff. Of course microbes don't like that stuff because it has no value. Well maybe some microbes do, but then they produce stuff *you* don't like and they thrive in your guts when you eat the same stuff all the time.

So yes, highly processed food might be bad for you, especially if you only eat that stuff.

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notpeerreviewed *says:*

March 11, 2020 at 9:26 am

That's basically the "food reward" hypothesis mentioned in the post.

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skaladom *says:*

March 11, 2020 at 5:40 am

This is a frustrating situation for science lovers like most of us here who like to understand the gory details of everything… but reading this post and re-reading Scott's 2017 review of _The Hungry Brain_, I'm surprised by how clear some of the high level effects are.

It seems that, contrary to lots of negative and confusing opinions about all sorts of diets, there is one diet that seemed to do 100% of what everybody is asking of it: the ad-lib bland food diet (or so I get from the 2017 post). Obese people self-regulating themselves out of obesity and without having to use willpower to limit their portions… if that's not directly holy grail (because, obviously, nobody wants to commit themselves to eating

sludge for a lifetime), doesn't it at least point very clearly to an area of research? You've got the wanted effect with a pretty drastic intervention, now you just need try out all sorts of ways
repetitive, and step back every time it doesn't work.

So here is my take. The major thing that changed between 1800s America, or 1970s France, or current hunter-gatherers, and much of the modern civilized world, is that the market food has been optimized by capitalism and marketing. The main tool for this has been ultra-processed food. This is a somewhat slippery concept, but still a pretty usable one. Traditional bread, cheese or yoghurt are (just) processed foods, whereas industrial bread and most dairy products marketed nowadays are ultra-processed. Long ingredient lists, and ingredients and processes that no great-grand-mother in any of the world's cultures would have used, are the primary marks of ultra-processed food.

The point is, ultra-processed food is not the root cause, but the symptom of marketing-driven optimization to maximize the "stomach share" of their edible products. This acts as a strong societal force which maximizes the addictiveness of the most strongly marketed edibles, which directly opposes the body's mechanisms for keeping a healthy weight. And when this marketing infects a society's culture, it also undermines the previously culturally-evolved body of tacit knowledge about what kind of eating is considered normal and healthy in that particular society.

So, time for a hypothesis. A modern Westerner can follow a fairly easy, safe and healthy diet by following general recommendations to a decent-to-moderate extent (eat your veggies, fiber, etc.), taking culinary inspiration from whatever (pre-food-marketing) culture(s) they like, while training themselves to respond to marketing of edibles as a strong negative (especially anything marketing itself as healthy!), and to avoid eating ultra-processed food-like substances in any substantial amounts.

This is not particularly hard in most of the world, nor is it inordinately expensive. To the extent that cultural know-how has been lost, it might take a bit of experimentation and exploration… you can watch youtube videos or ask your grandmother about her own mother's cooking.

Final point: I think Scott wrongly jumps to the conclusion that non-marketing-optimized food would be bland and not delicious. In the 2017 review I read:

> *There's a sort of fatalism to talking about "food reward". If the enemy were saturated fat, we could just stick with the sugary sweetness of Coca-Cola. If the enemy were carbohydrates, we could go out for steak every night. But what do we do if the enemy is deliciousness itself?*

But: are fried eggs, sardines, bread with butter and jam, steak, miso soup, curries, rice, pasta, stews, kimchi, cheese, roasted potatoes, (real) greek or italian-style salad, gyozas/dim-sum/momos, chili con carne, guacamole, masala dosa, and an endless list of non-ultra-processed dishes from the world's cultures, not delicious themselves?

It's just a hypothesis, and I'm not even in the medical or biological field, but here's my take for today. Deliciousness from "traditional" foods is not optimized against you, whereas the "deliciousness" of modern ultra-processed food is. Act accordingly.

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notpeerreviewed *says:*

March 11, 2020 at 9:30 am

> *This is not particularly hard in most of the world*

I had a carnitas super burrito for lunch yesterday. Was it ultra-processed or not? Probably some of the ingredients were and some weren't; I don't know know what went into their sour cream or guacamole… or really, any of it.

So it's not particularly hard **if** you always prepare your own food. A lot of modern life is built around the assumption that you're not doing that.

Hide ↑

caryatis *says:*

March 11, 2020 at 5:02 pm

>So it's not particularly hard if you always prepare your own food. A lot of modern life is built around the assumption that you're not doing that.

You can, though. I mean, I understand why people don't—I eat out every week myself. But people who are strongly motivated to lose weight could easily try giving up restaurants and convenience foods.

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analytic_wheelbarrow *says:*

March 11, 2020 at 9:37 am

I think the "potato hack" falls into this category, and it works very well.

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eric23 *says:*

March 11, 2020 at 1:59 pm

Ultra-processed foods are very enticing to eat, AND simple to store/prepare. The latter is not true of good food from some traditional culture.

It's no accident that the poor in Western countries tend to eat more ultra-processed foods. They don't have the time or money to obtain/prepare what you recommend.

Hide ↑

Cliff *says:*

March 11, 2020 at 10:41 pm

> *It's no accident that the poor in Western countries tend to eat more ultra-processed foods. They don't have the time or money to obtain/prepare what you recommend.*

And yet, poor people work less, and healthy ingredients/cooking is often cheaper…

Hide ↑

Modvind *says:*

March 11, 2020 at 6:11 pm

I work in a food industry-adjacent science field, and this is also my take on it. The food industry optimised products profit, which means low cost, high palatability and convenience. In short, cheap and delicious food is now everywhere, which causes people to overeat. Our satiety sensing mechanisms evolved on the African Savannah, and is doing a pretty good job given the circumstances, but ultimately cannot with these modern designer foods. It is death-by-a-thousand-cuts rather than one bright signal.

Hide ↑

johan_larson *says:*

March 11, 2020 at 6:03 am

I wonder how much of this can be traced to food costs. I was born in Finland but moved to Canada with my family when I was 10, and I remember my mom marveling at how cheap groceries in Canada were. Food in the US, as far as I can tell, is even cheaper.

This is partly about just plain wealth — Americans are rich by world standards, so the basics of life are cheap — but also about nerdy stuff like agriculture policy. US agriculture policy tends to emphasize making food cheap, whereas other countries focus more on quality, security of supply, and keeping family farms in business.

I don't want to imply this is a straightforward matter of core economics; you have to be really poor in the first world before you literally can't afford to feed yourself. But if food is expensive enough that even people who aren't poor have to keep a close eye on their grocery bills, that could produce a food culture where you don't eat casually. You eat at meal times and that's that, and that's better for you than our TV-time snacking.

Hide

Unirt *says:*

March 11, 2020 at 1:30 pm

This makes sense but doesn't fit my experience. When I was a poor student, I still preferred to scrape together my last pennies to buy some delicious fast food instead of getting cheap and healthy ingredients to cook for myself. And I noticed that the less money I had the more fervently I ate anything I could find, probably gaining weight.

Hide ↑

FLWAB *says:*

March 11, 2020 at 5:42 pm

> *When I was a poor student, I still preferred to scrape t*
> *some delicious fast food instead of getting cheap and h*
> *myself.*

I guess it depends on your personality. When I was a poor student I considered eating out at a fast food restaurant a luxury outside my budget: a trip to Dairy Queen was reserved for rare special occasions. On the other hand, I had a meal plan with the school so eating any food that wasn't provided in the plan was also a luxury in my book. The meal plan covered all but four meals a week, so I usually just skipped those meals. When I did buy food for myself it was always cheap tortillas and generic cheese and salsa to make quesadillas, or else it was instant raman. Ah, good ol' $.30 a package raman.

On the other hand, that's the kind of personality I have. I'm a miser by nature. On one occasion during my freshman year I got in a heated fight with another classmate because they had sent my clothes through the school dryers an extra time because they seemed damp, and they wanted me to pay them back the extra quarter it cost. I was furious. So I'm not the best example either.

Hide ↑

methylethyl *says:*

March 11, 2020 at 6:03 am

I've followed Hyperlipid for years– his site is fascinating. He talks about weight gain and weight loss a lot, because what he talks about is deeply involved in metabolism, and the research that talks about metabolism is deeply involved with weight loss.

But it's really important, reading his stuff, to understand that weight control *isn't* the main reason Peter (the Hyperlipid guy) is doing it. He is using a low-carb, high-saturated-fat diet because he has ankylosing spondylitis: a horrifying type of arthritis where your vertebrae gradually fuse together. The diet has reversed this condition (to what extent, I don't know), and seems to be keeping it in remission for him. The fact that he can also use it to help control his weight is more of a pleasant side-effect. Quite a lot of what he explores on his blog is the link between various foods and inflammation– I think he doesn't know exactly why his diet is keeping his disease in remission, but he's extremely curious about it, and whenever he spots something that seems relevant, he posts it with analysis.

Hide

Neike Taika-Tessaro *says:*

March 11, 2020 at 1:18 pm

Thanks for adding this! This is interesting to me; I'm on low-carb for similar reasons (anti-inflammation – in my case I started it to help my brain recover after the B12 deficiency, and have been keeping with it because my irritable bowel syndrome disappeared), and so I'm also naturally curious about the *why* behind these effects. Perhaps I'll put Hyperlipid's site on my reading list. Thanks for the info!

Hide ↑

peterj *says:*

March 11, 2020 at 6:05 am

There seems to be a lot of over-complication of American's weight gain. The simple fact is that average calorie consumption has increased, irrespective of the nature of the food https://www.businessinsider.com/daily-calories-americans-eat-increase-2016-07 As previously mentioned, great tasting food is now ubiquitous in the US.

Hide

notpeerreviewed *says:*

March 11, 2020 at 9:36 am

> *There seems to be a lot of over-complication of American's weight gain. The simple fact is that average calorie consumption has increased*

Yes, we know. The discussion here is comparing hypotheses as to why calorie consumption has increased. "Great tasting food is now ubiquitous in the US" is the "food reward" hypothesis, and the post discusses some of the strengths and weaknesses of that hypothesis.

Hide ↑

myla *says:*

March 11, 2020 at 12:07 pm

Maybe linked to the inability to know when you are "full". Also if you are obese you somehow eat more than others. So if you have a nation full of obese people, the overall consumption will naturally be higher right?

I don't think that food nowadays is more tasteful than in other times of human history (after we learned to use spices and cooking of course). On a sidenode and with stereotypes don't forget that people from Britain get fat too and think about how their food tastes (and French people stay slim while their whole country is built around a dining table full of delicacies). Yeah, I am also joking.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 12:13 pm

I wonder if there is any contribution from what used to be considered everyday, transitory "backache" becoming a thing that justifies a finding of permanent disability and the resulting inactivity that comes with it. https://www.ncbi.nlm.nih.gov/pubmed/2533783

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Loweren *says:*

March 11, 2020 at 6:16 am

One fun diet thing that I invented for me and my friend is "competitive CICO".

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It takes 2 participants, ideally friends who trust each other. The goal is to eat less calories over a week than your partner. Each night you put your daily calorie intake in the shared Google Sheet, and in the end of the week you calculate the difference in weekly calories. The one who consumed more pays money to the one who consumed less, proportional to the difference. You also submit weekly weight difference to prevent cheating. We calculate calories from product barcodes using free MyFitnessPal app

We found it works for us because it feels like a race between you and your rival, which you can benefit from if you win. The selfish nature motivates me better than, for example, donating to charity or something like that. And if your opponent is in the lead by one bag of chips, it's easy to get even – don't eat a bag of chips today!

I made an example in the google sheets where everything is calculated automatically, you just need to post the calories daily and weight weekly in the grey rows, and figure out how you will convert calories to your currency of choice. We convert straight to russian rubles (e.g. 2000 calorie difference = 2000 rubles, or $27). Feel free to copy it.

https://docs.google.com/spreadsheets/d/11jG4_Q2wTZocZutqn4ip5DqBc0ZGAd9GxsVHyomRGuU/edit?ouid=101039324881941983651&usp=sheets_home&ths=true

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caryatis *says:*

March 11, 2020 at 8:56 am

This sounds like great fun. You could also say that whoever eats most below their TDEE wins.

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FLWAB *says:*

March 11, 2020 at 5:47 pm

I'd love to do that, but every time I try to calorie count I come to the same problem: namely, how do you count calories? Ironically it's easiest to do when buying processed junk food: just read the label and add it up. But when I make food at home it's suddenly much more complicated. "Okay this recipe called for two cans of black beans, that adds up to X calories, plus I used maybe half a jar of tomato sauce, plus I grated a bunch of cheese I'm not sure how much I guess maybe an ounce? (How much is an ounce anyway?) plus the pasta…I guess the complete dish is XXX calories, but I didn't eat the whole thing at once. Did I eat half of it? A third? I have no idea. Hmm…I guess I'll just wing it on the calorie count." Repeat that for just about every meal of the day…and throw it all out the window if you go out to eat at a restaurant that doesn't publish calorie estimates. No matter how many times I tried to calorie count I always gave up after a few days when the math became exponentially more work to calculate.

Hide ↑

Cliff *says:*

March 11, 2020 at 10:48 pm

Restaurants are hard of course, but cooking doesn't need to be. If you use a calorie tracker like cronometer or myfitnesspal, you can just take the whole re

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you eat you weigh how much you ate and you enter that and it calculates it for you. If you are doing ad hoc cheese grating and such, you can put the bowl you are grating into on a scale and then you know exactly the weight of cheese you have grated, which you can jot down if you wish until you put it in your tracking app.

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FLWAB *says:*

March 12, 2020 at 10:17 am

I think that is the main issue: I don't have a kitchen scale. I guess calorie counting really doesn't work unless you have one. I'll have to look into it.

Hide ↑

RalMirrorAd *says:*

March 12, 2020 at 10:40 am

The fitbit App comes with a bar code reader for foods, so you simply specify what your portions were (You select the measurement type, servings, grams, oz, etc., and then the quantity)

Once you've put something on your log it stays in a library that you can pull from afterwards quickly, you can also select things to be on a favorite list.

If the app can't find the barbcode you can try to look through the fairly extensive database of foods as you type them in.

Obviously you need a smartphone to do this.

Hide ↑

FLWAB *says:*

March 12, 2020 at 3:15 pm

I don't have a kitchen scale, which seems to be the linchpin of the problem. A "serving" is a completely useless measurement, and I have no idea how to eyeball grams or oz. Cups can be helpful, but you can't measure everything with cups.

Hide ↑

Error *says:*

March 13, 2020 at 8:37 am

A scale is best, but an alternative without one is to measure by the box. If I eat part of a block of cheese, I don't know how many calories are in that part without measuring; but I know that when I finish the block, I've eaten a total of (calories-per-serving * servings-in-block) since I bought it.

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brownbat *says:*

March 11, 2020 at 6:20 am

I vote for conventional wisdom.

I don't know how to deal with the captive animals study, but one animal study is unlikely to make me significantly reevaluate basic thermodynamics. Most likely they're mismeasuring the energy in the foods or mismeasuring the energy expenditure of the animals.

No one spontaneously gained weight in the Minnesota starvation experiment, or on the Biggest Loser. Vets will still recommend caloric restriction for fat pets, and they're not widely reevaluating that recommendation from ubiquitous failures.

"No no," you might say, "we all know calories matter, we're talking about the margins."

But why are we talking about the margins? What are we attributing to compositional effects, vice caloric effects? 5%? If so, are we recommending cigarette filters to combat lung cancer here?

Why not focus on the 95% factor, unless… just maybe… it's painful and hard and all the incentives make us really desperately want there to be an easier way?

Even though there were good foods in the past, we've made it frictionless to grab a pack of little chocolate donuts when you fill up your tank. Caloric availability matters. And when I press my Mediterranean friends about how much delicious pasta they eat while staying so thin, they confess it's just occasional, and describe a diet that most people would consider intermittent fasting.

If you were assigned a subject where you completely controlled their diet and wanted to get them to lose weight, but you could only control either composition or total calories, which would you choose? How worried are you that you couldn't get them to lose weight by completely controlling their total calories alone?

The secret diet is maybe having someone else pick every food you consume.

Hide

notpeerreviewed *says:*

March 11, 2020 at 9:41 am

> *I don't know how to deal with the captive animals study, but one animal study is unlikely to make me significantly reevaluate basic thermodynamics.*

Almost no one here is arguing against CICO as the proximate explanation for obesity. The question is what factors lead people to eat more – what is it about little chocolate donuts that makes people eat more of those than 1970s French people ate croissants?

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acymetric *says:*

March 11, 2020 at 9:43 am

Sure they are. If anti-CICO people aren't in the majority on this blog, they are at least a sizable and very vocal minority. There are several anti-CICO comments throughout the comments section on this post.

People are especially resistant to believe that there is such a thing as the "CO" part.

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 10:22 am

Motte: Someone who consumes more calories than they expend will gain weight. This comes very close to being a tautology, and most of the people you say are dismissing the "CO" part are not dismissing the motte version of it.

Baileys: (1) CICO is solid nutritional advice and it's not just the proximate explanation for the obesity epidemic, but the only explanation we need; (2) both CI and CO have changed in ways that are relevant to the obesity epidemic. These are both scientifically controversial claims, and in particular, the claim that CO has gone down is not supported by most published research.

The bailey claims are what most of the anti-CO people are arguing against (I'll grant that there are probably some hardcore Taubes supporters here, and Taubes seems like he might be against even the motte version of CICO.)

Hide ↑

anon789 *says:*

March 11, 2020 at 6:26 am

Your characterization of paleo as "caveman diet" is coming from the lowest rung thinkers in that space. I think the reason there is no single solution is the complexity and diversity of contributing factors. Maybe check out people like Chris Kresser, who cites many studies supporting those complex factors in his book and comes to similar conclusions as you do.

Hide

erinexa *says:*

March 12, 2020 at 5:16 pm

I will confess my ignorance of anything to do with diets, but I read "caveman" as a reference to the literal name "paleo." If the diet is not meant in some way to be related to what "paleo" humans ate, perhaps the higher rung thinkers should think on how to rebrand.

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0 comments since 2020-03-31 0ç

enkiv2 *says:*

March 11, 2020 at 6:40 am

Somebody has to have controlled for the obvious confounder that around 1950 we got a lot better at keeping people with health problems alive (including those health problems that would cause, result from, or exacerbate obesity), right? And the other obvious confounder that during the 1950s we rolled out several classes of psychiatric drugs whose side effects include weight gain?

Hide

Randy M *says:*

March 11, 2020 at 7:24 am

> *And the other obvious confounder that during the 1950s we rolled out several classes of psychiatric drugs whose side effects include weight gain?*

Interesting point, and I know that some of these are pretty wide spread.

It seems that how exactly these produce the side effect of weight gain could be a fruitful study, pardon the pun. Not, preferably, to create a pill with the opposite effects, but to better understand the metabolism and refine our diet advice. Or is this well known already?

Hide ↑

noyann *says:*

March 11, 2020 at 8:04 am

Drugs used in meat production that speed up weight gain and carry over across a barbecue?

Other drugs/fertilizers that indirectly affect the eater's metabolism and/or gut flora?

The above, in microdoses, through metabolites, or complex interactions?

Hide ↑

eric23 *says:*

March 11, 2020 at 2:02 pm

In the 1950s we also rolled out antibiotics, which are also linked to weight gain.

Hide ↑

noyann *says:*

March 12, 2020 at 2:31 am

…, an effect that is abused in meat production.

Hide ↑

TJ2001 *says:*

March 11, 2020 at 6:41 am

This has been studied EXTENSIVELY by the Agricultural guys and they basically already sorted it out…. You can do things to goats and rats that you can't do to people. 😉

Here's what they found:
It turns out that when food is healthy but doesn't taste good – "animals" only eat enough to satisfy the body's caloric requirements. When food tastes really good – they will tend to eat as much as is available.

And remember – we are "animals"… 😉

So what has driven this change since WWII? The answer is: Cost of food as a percentage of household income.

Prior to modern industrialized agriculture (pre-WWII) food cost 25%-50% of an "average" family's income. So families LITERALLY had to choose between Food and stuff like housing or clothing.

Now food costs <10% of an average American family's income… We DON'T have to choose between food and everything else…

Since food was so expensive – society was forced to work out ways to get people to eat less food and to shift the balance towards consuming "cheap" food instead of "expensive" food…

In my Grandmother's day – women were schooled in "Home Economics"… The wife was expected to manage the household budget. Since food could be 50% of a household budget – getting people to eat less of it was mission critical. And so that meant making food that people ate less of…. If you *only* spent 22% of your household income on food – you now had 27% available for stuff like rent and clothes…

Look at old cookbooks (pre-1950) and you will find them full of recipes that result in bland, chalky tasting, off flavors and textured food. They often include ingredients that have off flavors or unpleasant textures. Holiday food was somewhat different because it was a once-a-year celebration where you could indulge in good food….

Compare that to the last 20-years…. Which have seen an explosion in recipes which the average cook can use to produce delicious food on a week night….

So what's different about places like Japan, France, and Italy? Food prices are still ridiculously high due to local circumstances. As a result – families still conserve on food so they have budget available for other household needs.

Hide

stationarywaves *says:*

March 11, 2020 at 6:51 am

This is only true of North America, though. French and Italian food has always tasted good, but they

didn't start becoming majorly obese until recently.

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notpeerreviewed *says:*

March 11, 2020 at 9:43 am

> *This is only true of North America, though. French and Italian food has always tasted good, but they didn't start becoming majorly obese until recently.*

Do we have good sources on that? Were Italians eating delicious spaghetti carbonara every night, or were they having that every once in a while and primarily eating blander food?

Hide ↑

TheAncientGeeksTAG *says:*

March 11, 2020 at 11:59 am

Pasta was originally eaten as a cheap filler before you got into meat and veggies . It's not so much eating less as eating cheaper.

Hide ↑

stationarywaves *says:*

March 11, 2020 at 12:29 pm

My source is an old guy from Caserta Vecchia born in the early 1930s who told me what he used to eat and how it was prepared. North America doesn't have very many naturally occurring spices. In Italy, you can find herbs growing as weeds on the side of country roads.

To put it another way, it's hard to get fat eating conch fritters if you grew up in Belize in 1915, because eating conch fritters begins with taking a catamaran out into the ocean and diving for conch. Much different story in Belize today, where you can get pretty fat on conch fritters because someone else catches them while you're putting in a day at the office.

So, in North America, when people had to hunt pheasants and wild turkeys or dig for clams, it was a lot harder to get fat on pheasant and turkey and clam, and not because it was bland. Today, it's pretty easy to get fat on pheasant and turkey and clams, but not because they taste better.

Hide ↑

myla *says:*

March 11, 2020 at 12:16 pm

I also would say that Chinese and Thai people would say that their food tastes very good. And I somehow agree as long as I don't have to eat pig feet or other animal products. Oh I am very

much in love with Thai currys.

0 comments since 2020-03-31 0ç

Isn't "Super Size Me" a good hint for what is causing obesity? Still, the founder of McDonalds is celebrated as genius. -.-

Hide ↑

stationarywaves *says:*

March 11, 2020 at 1:09 pm

Right, Chinese and Thai food are other great examples. Sure, plain rice is bland, but no one would say that the Thai cookbooks from 100 years ago mostly gave recipes for bland food. Bland food is almost a uniquely Anglo-American phenomenon. The British boiled their vegetables, and we yankees learned that awful practice from them. The Turks have been cooking their vegetables in olive oil for a thousand years or more; I think we'd have to go back to Classical Antiquity to find extremely bland Turkish food.

Hide ↑

eric23 *says:*

March 11, 2020 at 2:04 pm

Historically, most Chinese people didn't eat the Chinese food in cookbooks. They ate, how should I put this – gruel. About the same gruel as Europeans ate in the same periods. Only the rich had what we refer to as a country's traditional food.

Hide ↑

Michael Watts *says:*

March 12, 2020 at 12:32 am

"In the past, poor people ate gruel" is a popular modern myth. Sure, they ate gruel. They ate other things too. Ancient Chinese *prisoners* (well, convicted criminals; they were less "in prison" and more "slave labor") got a diet of nothing but grain, and we can see the resulting malnutrition in their skeletons today. Farmers ate a varied diet.

Olive oil was a big big deal in Classical Antiquity, and Greeks had colonized much of the Turkish coast at the time.

Hide ↑

Spookykou *says:*

March 12, 2020 at 2:01 am

I thought that the whole reason we are so giant today is because up until recently most people were pretty chronically malnourished? Is it actually the bovine growth hormones!! uh eh uh eh uh… I can't type out the x-files

theme apparently.

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Hide ↑

Glen Raphael *says:*

March 22, 2020 at 2:07 pm

> Isn't "Super Size Me" a good hint for what is causing obesity?

Super Size Me was essentially a hoax. The math didn't work. Spurlock couldn't have been eating as much as he claimed using the rules he claimed to follow (and never showed his work), while others who tried to replicate the result couldn't. There's even a counter-documentarian who *lost* weight and *improved* his bio-markers with an all-fast-food diet.

Hide ↑

thisheavenlyconjugation *says:*

March 11, 2020 at 7:54 am

Japan, France and Italy spend ~13% of household income on food, whereas the US spends ~7%. The UK, Canada and Germany are 9-10%.

Hide ↑

TJ2001 *says:*

March 11, 2020 at 9:34 am

It is at that level now – we have had industrialized agriculture bringing prices down for 70 years now…..

Tradition and traditional foods are what they are though…

One of my friends spent a year in Japan in the late 90's…. He was a big guy – but lost over 50lbs there in that year. He said eating like an American would bankrupt you – so you had to eat like a Japanese… and their food tastes weird. Unsalted food + strong fish/seaweed flavorings were popular where he was…. He said he had no desire to eat more than 1-meal a day… His body was simply not "hungry" for any more. I (sort of) like domestic japanese food but I have the same reaction as he did – I don't have any desire to eat more than one meal a day when I have the stuff…

Hide ↑

stationarywaves *says:*

March 11, 2020 at 6:49 am

This is one of those topics where it's not sufficient to just look at a bunch of studies and data and then reach a conclusion. You have to have a deep understanding of how health in the human body actually works. A lot of the so-called experts and bloggers and "fitness industry" people out there are somewhere on the shyster-ignoramus

spectrum. If you follow fitness and nutritional science for decades, as I have,

What things?

First: Weight gain is indeed a bit of a ratchet. Once you acquire fat cells, it is virtually impossible to eliminate them. They merely shrink when you lose weight. You can liposuction them out, but then they grow back anyway. **This is a vitally important point, because it means that the major key to avoiding obesity in adulthood is avoiding fat gain in adolescence.** There are studies out there that demonstrate this empirically. Once you put on fat, you're screwed. In the 1800s, most people didn't put on much fat in adolescence because they were working too hard and eating too little. If you don't teach your kids to work hard or exercise a ton, and to regulate their diet, then you are basically dooming them to obesity.

Obesity rates are higher now because adolescents are less healthy.

Second: Exercise works great, but nobody understands it anymore. The current exercise trends involve going to the gym and lifting weights to increase your BMR, and then managing your diet to manage your body composition. But the fad used to be aerobic exercise, which is actually a brilliant way to burn fat in the body. It's the Krebs Cycle again. And the more aerobic exercise you do, and at higher intensity levels, the more efficiently your body burns fat.

For a fat, sedentary person, 30 minutes of low-intensity cardio is hardly worth anything. So, the fitness experts argue, that person should be doing 20 minutes of HIIT instead. Actually, the person should be doing 30-40 minutes of HIIT twice a week and 45-90 minutes of low-intensity cardio on all the other days. Do that, and you sure as hell won't have an obesity problem. But this kind of exercise is *hard*, and people don't like answers unless they're easy, like "eat bacon and do some bench presses." NO!

One effect of running 100 miles per week is that your cellular mitochondria count goes through the roof. Guess what that does to your VO2 max. Guess what a high VO2 max does for your ability to metabolize fat during exercise. All of the physiological mechanisms involved here are very well understood. Aerobic exercise is correlated with higher longevity and lower rates of cardiovascular, lung, and metabolic diseases. Why? Because aerobic exercise optimizes cellular metabolism at the cellular level. Stop reading *Mark's Daily Apple* and start doing more cardio. All of the science validates this.

Third: Yes, there are a lot of lifestyle factors involved here. Everything about human life is different now than it was even 50 years ago. There's more free food at the office. Kids spend less time doing random weird shit outdoors. Vacations have become less active and more food-and-drink oriented. Fewer people walk places anymore. No one, for example, goes to the park on Saturday afternoon and tosses a ball back and forth… like… *for fun*… as in, that's what you're doing. There's simply less time spent moving around and doing stuff; meanwhile, we spend a lot more time sitting and chatting over food and drink. Any one of these things doesn't make a huge difference, but all of them together add up to a major difference in lifestyle versus yesteryear. There's no getting that back. You're either interested in going outside to walk, run, or toss something back and forth, or you're not. And today, with all our many technological wonders, it's no surprise that we're more keen to sit at home. It adds up.

Hide

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acymetric *says:*

March 11, 2020 at 8:10 am

I just want to signal boost this because it matches both my intuitions and my personal experiences with weight gain/weight loss in the last decade and a half or so.

Hide ↑

DNM *says:*

March 11, 2020 at 4:36 pm

Agreed.

Hide ↑

caryatis *says:*

March 11, 2020 at 9:00 am

This is the first time I've heard weight lifting criticized as being too easy!

Seems to me that 1) any type of exercise is hard if you work hard enough at it, and 2) there is substantial evidence that both strength training and cardio are beneficial for health (and appearance) and most people should be doing both. Ideally throw in some yoga for flexibility, balance and injury prevention.

Hide ↑

acymetric *says:*

March 11, 2020 at 9:10 am

I think you misunderstood the comment, as I don't see anything saying that weight lifting is too easy.

To your second paragraph, the metric for effective excercise is isn't how hard it is to do. Yes, obviously it is ideal to do both, but if you are going to choose one it is probably better to make it cardio than weight lifting.

Hide ↑

caryatis *says:*

March 11, 2020 at 5:04 pm

>people don't like answers unless they're easy, like "eat bacon and do some bench presses."

I don't see why you need to choose one form of exercise. This cardio vs. lifting thing is a false dichotomy.

Hide ↑

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stationarywaves *says:*

March 12, 2020 at 5:00 am

You don't "need to choose." You can do whatever you want. But if your goal is to shed fat or prevent gaining it in the first place, choosing activities that burn fat directly and promote more efficient fat metabolism is a better way to go than following the current trend of low carb + weight lifting + occasional HIIT.

Hide ↑

stationarywaves *says:*

March 11, 2020 at 12:35 pm

I didn't say weight lifting was easy, I said it doesn't metabolize fat directly — unlike aerobic exercise, which does.

What I said was hard was doing 30-90 minutes of cardio every single day, including two medium-length HIIT sessions per week and five LISS sessions. The reason I say it's hard is because the overwhelming majority of people who show up at a gym or sign up for Beachbody videos are people who are looking for a weight lifting and diet plan so that they can avoid the kind of aerobic training I'm talking about. People will do almost anything to avoid that kind of training.

But if they embraced it, they'd discover what physiologists already know: that it is the best and most effective way to shed pounds, extend lifespan, and prevent chronic disease.

Hide ↑

myla *says:*

March 11, 2020 at 12:22 pm

I love what and how you write, thanks. 😀 First point is really missing in many discussions.

Hide ↑

petermckinnis *says:*

March 11, 2020 at 4:27 pm

> *Actually, the person should be doing 30-40 minutes of HIIT twice a week and 45-90 minutes of low-intensity cardio on all the other days.*

FWIW I lost about 40 lbs in 1 year (245 -> 205) training for a triathlon doing basically this. Stopped training and gained about 1/2 back in 3 years.

Hide ↑

Cliff *says:*

Cliff *says:*

March 11, 2020 at 10:55 pm

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> *You can liposuction them out, but then they grow back anyway.*

Wut? Also doesn't this first paragraph sort of contradict the rest?

Hide ↑

stationarywaves *says:*

March 12, 2020 at 5:06 am

Do a little Googling, friend.

https://www.webmd.com/beauty/news/20110503/study-fat-may-return-after-liposuction

Hide ↑

Purplehermann *says:*

March 12, 2020 at 2:06 am

+1

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RobJ *says:*

March 12, 2020 at 1:11 pm

I don't have a problem with the 1st and 3rd points, but am unsure about the 2nd. Aerobic exercise was the conventional wisdom for losing weight up until maybe 10 years ago (or so… I have no idea when exactly the conventional wisdom changed, but it was definitely after my teens & early 20s) and that change doesn't seem to have had any effect on trends in weight loss for adults or weight gain in adolescents.

Hide ↑

The Nybbler *says:*

March 12, 2020 at 2:52 pm

The problem with "aerobic exercise" for weight loss is that most people do low-intensity exercise, then reward themselves with food. If you want to lose weight with exercise you need to do high-intensity exercise, and then not eat more.

Hide ↑

ChrisA *says:*

March 14, 2020 at 5:53 am

Indeed, I go the gym and I see people taking a stroll on the running machine, reading a magazine. After 1/2 hour they towel of and consider themselves exercised. Of course the running machine will show they have exerted a fair amount of calories, but

the reality is that it is probably not much above th

0 comments since 2020-03-31 0

have sat in the chair. Exercise that helps in loosing weight has to leave you out of breath, significantly raise your heart rate and last for a sustained period.

Hide ↑

stationarywaves *says:*

March 13, 2020 at 5:10 am

I tried to address this in my comment already. There's a difference between "just doing some aerobic exercise" and doing the kind of aerobic training that optimizes fat metabolism. I'm not talking about the former, I'm talking about the latter. I'm talking about daily cardio with a mix of HIIT, aerobic threshold training, and low-intensity steady-state training. As I mentioned in my comment, a fat person doing 30 minutes of puttering on an elliptical machine isn't going to get anywhere. If a person wants to eliminate fat through exercise, then he or she will have to increase VO2 max and aerobic threshold. A daily endurance-training regimen is the only thing that can do this. Not weight lifting, not keto dieting, not veganism or avoiding processed foods. Endurance training.

Hide ↑

RogerKint *says:*

March 11, 2020 at 6:50 am

One thing that's different between the food we eat today and what our ancestors ate is that our food is the product of "scientific breeding." While artificial selection of animals and plants has been going on for millennia, it was only in the 20th century that it became a highly rational and systematic enterprise. As a result, the gene pools of farm animals and plants have changed more in the last 100 years or so than they had otherwise changed since the invention of agriculture.

The most conspicuous consequence of modern breeding is that agricultural yields have greatly increased, meaning that food is more plentiful and cheaper today. This has surely had a direct effect on obesity rates, but I wonder if there have also been qualitative changes in the animals and plants we eat. Could breeding animals and plants so that they yield more for humans to consume also make their products more obesogenic in their chemical composition? This could also explain why lab animals have been gaining weight, too—their food comes from the same modern, high-yield sources.

Hide

Randy M *says:*

March 11, 2020 at 6:56 am

One interesting theory I read awhile back was that different seasonal foods contain different ratios of omega oils and/or sugars, and so one type is a signal to our bodies that winter is coming and we should put on some weight. Recently we've been able to eat whatever we want, and so we get these signals confused (or happen to land on the autumn signals) and thus tend to always be in weight gain mode. I don't think there's a ton of evidence here but it's kind of neat.

I think genetics plays a big role here and some people do well on one type of 0 comments since 2020-03-31 0ç

A few years ago we we pretty far towards paleo in an effort to help my wife lose some baby weight (complicated story). Not all the changes stuck, but one that did for me at least is eating quite a bit of butter, coconut oil, and eggs, as well as trying to do more of the cooking ourselves from simple ingredients. But I was thin all my life and still am, so all I can say there is that for me a diet with a generous amount of saturated fats didn't make things worse even as I got more sedentary and a bit older, and that my cholesterol numbers were fine last I checked in my late thirties.

One other point, I recall the paleo people were very skeptical of a lot of diet studies that relied on self-reporting of recalled eating habits to group people roughly based on their macronutrient profiles, and also of animal studies that rely on animals that eat different diets in the wild, like mice. Not sure how right they are to be critical of these studies and how much of it is just trying to explain away the generally contradictory evidence Scott cites, but we do know here that it's important to dive into the details of such studies before taking them as gospel.

Hide

dogiv *says:*

March 12, 2020 at 6:31 am

The seasonal nutrient composition idea doesn't quite add up. Given the wide variety of diets available in all the places people live around the world (many of which don't even have a winter season) it's hard to imagine that "humans" generally are adapted to any one set of seasonal changes. You could try to make the narrower case that, say, white people are adapted to the seasonal nutrient ratios of northern Europe… but that kind of basic metabolic change seems like it might take more than a couple thousand years. Plus the obesity epidemic certainly isn't limited to any one sub-population.

Hide ↑

j1000000 *says:*

March 11, 2020 at 6:57 am

> *And following nutritionists' advice hasn't worked out so well for Americans circa 1970 through 2020.*

I apologize if I missed something b/c I stopped and will soon RTRestOfTFA, but this is a question I always have. This line is sometimes part of paleo/keto/whatever arguments, but are the people who are actually strictly following the advice of nutritionists/the food pyramid fat? My sense is that Americans who have gotten fatter between 1970 and 2020 are simply not following any advice in any regard (or pretend they are but are lying to themselves).

Hide

stationarywaves *says:*

March 11, 2020 at 6:59 am

This x 1,000. People are not generally following nutrition guidelines.

Hide ↑

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notpeerreviewed *says:*

March 11, 2020 at 9:47 am

> *This x 1,000. People are not generally following nutrition guidelines.*

In aggregate, people do follow compositional guidelines – when the FDA recommends switching from saturated fat to unsaturated fat, people do that. They don't follow guidelines about overall calories, though.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 12:20 pm

> *They don't follow guidelines about overall calories, though.*

Which is the most important guideline for obesity purposes.

Hide ↑

Freddie deBoer *says:*

March 11, 2020 at 6:59 am

Speaking as someone who is a whole 50 pounds heavier than he was two and a half years ago cause I went back on meds… maybe part of it is all the meds out there?

Hide

caryatis *says:*

March 11, 2020 at 7:38 am

Yeah, definitely. Antipsychotics often cause massive weight gain. And hormonal birth control can cause weight gain.

Hide ↑

Lord Nelson *says:*

March 11, 2020 at 7:00 pm

I don't think it explains everything, but I think it definitely is a contributing factor.

The amount of food I ate for dinner went up by a full 50% (three fish instead of two) after I started taking hormonal BC. Watching it happen was surreal. Prior to starting the BC, trying to eat that much food at dinner would have made me physically ill.

Hide ↑

meh *says:*

March 11, 2020 at 7:11 am

Is anyone not buying the conclusion here? https://www.sciencedaily.com/rele 0 comments since 2020-03-31 0ç

Hide

Urstoff *says:*

March 11, 2020 at 7:13 am

Are there historical studies on calorie consumption and expenditure? That seems like such an obvious first explanation that surely it has been investigated (and I guess dismissed?).

Hide

notpeerreviewed *says:*

March 11, 2020 at 9:48 am

> *Are there historical studies on calorie consumption and expenditure? That seems like such an obvious first explanation that surely it has been investigated (and I guess dismissed?).*

It's not dismissed; most everyone agrees that's the proximate cause. What we're trying to figure out is why people consume more calories than they used to.

Hide ↑

Urstoff *says:*

March 11, 2020 at 2:54 pm

food tastes good

Hide ↑

Thomas M *says:*

March 11, 2020 at 7:21 am

No mention of the oft-maligned high-fructose corn syrup (HFCS)?

Hide

dogiv *says:*

March 12, 2020 at 6:44 am

Maybe this is widely known but I just learned it so I'm going to share: high fructose corn syrup is usually about 55% fructose and 45% glucose. That's almost the same as table sugar, which is 50-50. There are varities of HFCS that are 90% fructose but they're not used much. For comparison, honey is about 40% fructose. Fructose is (more or less) the part of sugar that's bad for you, unless you're insulin resistant in which case all refined carbs are bad for you. So while HFCS is a little worse than sucrose or honey, it doesn't seem likely to be a major cause of obesity.
Citation: *The Story of the Human Body: Evolution, Health and Disease* by Daniel Lieberman, which I highly recommend.

Hide ↑

caryatis *says:*

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March 11, 2020 at 7:22 am

Scott says "following nutritionists' advice hasn't worked out so well for Americans circa 1970 through 2020."

This is the wrong way to think about it. I know we all love to hate nutrition "science" around here, but the fact is, people who follow nutritionists' advice have always been less likely to be obese, regardless of whether you're a 1970s person following "low fat, sugar is fine" or a 2010s high protein, high fat, low carb person. Most likely people who follow nutritionists' advice are richer and more conscientious on average, but also nutritionists' advice in any era, for all its flaws, has produced better outcomes than the Standard American Diet.

Even if nutritionists don't know what they're doing, you're still better off following their advice than eating ad libitum.

Edit: I'm finding the Croissant Diet page's constant statements that "the French do/don't eat X, so we should too" highly unconvincing. Are pastries really a large portion of traditional French calorie intake? Even if so, how do we know pastries are essential to a healthy weight?

Hide

Roger Sweeny *says:*

March 11, 2020 at 7:30 am

Some years ago, I was bicycling through Grafton, Massachusetts and noticed a statue on the town common. It was of one of the town's eminent citizens from 1900 or so. He looked like he had swallowed a beach ball. Which is a slight bit of evidence for theory one (the conventional wisdom). Most people couldn't afford to eat a lot but those who could and did, well, they got fat.

Hide

TheAncientGeeksTAG *says:*

March 11, 2020 at 12:24 pm

And then the justice,

In fair round belly with good capon lined,

Hide ↑

craftman *says:*

March 11, 2020 at 7:44 am

> *And there was really tasty food in 1800s America and 1970s France, so how come people didn't overindulge in that?*

People used to be very poor [citation needed] but that's a first pass at why overeating has never been a problem. A 1970's France explanation probably needs to add a term for "culture".

On a very basic level I believe in the thermodynamic truth of calories in/calories out: f(in) – f(out) = z. Now the functions f(in) and f(out) are no doubt very involved and go beyond what you put in your mouth or how many minutes you spend on a treadmill. But I would require any theory put forth to be able to plug itself back into this model and explain why diet X makes me mindlessly eat more/less, slows down my metabolic processes, makes me poop out more calories rather than absorb them, etc.

Hide

AwfullyCritical *says:*

March 11, 2020 at 7:55 am

I always wonder why the proposed explanation for widespread obesity is usually centred on locating a "key factor", an easy knob one can tune and go from fat to thin on any human (and presumably back).
Isn't it possible that there is no *single factor*, but the entire issue is caused by compounding of significantly smaller effects, each brought upon by a different small change?
Why do experts in the field expect to find a singular culprit to the problem? Can't "death by a thousand cuts" be a viable model?
At least in my experience following a restrictive diet produces no better results than general healthy eating habits.

Hide

Byrel Mitchell *says:*

March 11, 2020 at 10:23 am

The question would be: why did all of these independent smaller effects happen at the same time?
We're dealing with an inflection point here.
Food's been getting cheaper for centuries; why in the last 70 years is that suddenly an issue?
People have been getting more sedate for centuries. Why don't we see a gradual increase in obesity?
Food's been getting tastier for centuries; why did people not gain weight from overindulgence gradually?

And so on.

Inflection points tend to be caused by single or a few causally entangled effects, because a pile of independent smaller effects will a) not sync up at a specific point in time and b) will tend to have positive and negatively regulating factors mostly cancelling each other out as they vary.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 7:55 am

Has anyone debunked this:

Energy eaten – energy used = energy stored

Hide

JungianTJ *says:*

March 11, 2020 at 9:07 am

The logic in which this equation is generally invoked is easily debunked by noting that it „proves too much" as Scott likes to say. It proves that children grow because they „overeat" (or „underexercise").

Hide ↑

acymetric *says:*

March 11, 2020 at 9:13 am

I really don't think it does anything of the sort. You're going to have to expand on that a little. There is no obvious connection between @gleamingecho's comment and your claim that it "proves" children grow because they overeat.

Consider (for kids):

Energy stored = Energy eaten – (energy used for activity + energy used to grow)

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 9:51 am

> *Has anyone debunked this:*
>
> *Energy eaten – energy used = energy stored*

No. Most everyone involved in the discussion believes that's the proximate cause. The problem is, that's the same kind of explanation as "the homicide rate went up in the 80s and 90s because more people were getting hit by bullets." The question is why the amount eaten went up. That's why we're asking questions like "Is it because food now is cheaper? Do certain diet compositions make people hungrier?" Et cetera.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 10:44 am

> *No. Most everyone involved in the discussion believes that's the proximate cause. The problem is, that's the same kind of explanation as "the homicide rate went up in the 80s and 90s because more people were getting hit by bullets." The question is why the amount eaten went up. That's why we're asking questions like "Is it because food now is cheaper? Do certain diet compositions make people hungrier?" Et cetera.*

Yeah, this makes sense. But I think that the results of the equation hold true on an individual level.

What I mean to say is, if I personally gain weight, it's not b 0 comments since 2020-03-31 0ç
oil (qua soybean oil) in my diet or too much processed food or not enough antioxidants or whatever. It's because my energy intake equation was imbalanced. That's true whether I've been eating 3000 calories worth of soybean oil, 3000 calories worth of table sugar, or 3000 calories worth of pure beef tallow. There are obviously motivational, psychological, genetic, biological, societal, etc. inputs that affect my consumption level, but in the end, it's me putting the food in my mouth, chewing, and swallowing. (I make no statements here whether moving the energy intake equation one way or the other is harder or easier for anyone else.)

On a societal level–that's a whole different can of worms and I appreciate Scott and the readership's tackling of these issues.

Hide ↑

dogiv *says:*

March 12, 2020 at 7:13 am

It seems like there's more going on even after you put the food in your mouth. Certain types or amounts of food could increase or decrease your basal metabolic rate or tendency to move around (in fact, we know perfectly well that a low-calorie diet will decrease both of these). In a hypercaloric state, some types of food will tend to cause more fat gain while others will cause more gain in lean mass (e.g. high protein diet, creatine). Diet also affects your microbiome, which can in turn affect how efficiently you metabolize different foods. Same with exercise–it does other things to your body besides just burning calories, like alter your BMR, increase your feelings of hunger, change your insulin response, and so on.
At some level, you could theoretically boil all of these down to "energy stored = energy intake – energy expenditure" but only if you define every one of those parameters in a way that's both complicated and impossible to measure. If you add up the calories on all the packages of the food you eat, and then use one of those online BMR calculators to determine your energy expenditure and calculate the surplus or deficit, and then you compare this to your weight change over time, they will not match. They probably won't even be close. Even if you lived in one of those labs where they measure your oxygen use, I doubt it would help much because the energy intake side is still so complicated.

Hide ↑

JungianTJ *says:*

March 11, 2020 at 11:22 am

Gary Taubes would not agree that this is the proximate cause. David Ludwig and Robert Lustig probably wouldn't either. Just as you wouldn't say that an energy imbalance was the proximate cause of a child's growth. Instead, cause and effect are reversed, according to this view.

Hide ↑

gleamingecho *says:*

0 comments since 2020-03-31 0ç

March 11, 2020 at 11:46 am

But I would say that an energy imbalance (surplus) is the proximate cause of a child's growth. What evidence shows otherwise?

Hide ↑

Randy M *says:*

March 11, 2020 at 12:07 pm

And you'd be right, and useless.

Hide ↑

JungianTJ *says:*

March 11, 2020 at 12:22 pm

If that's not obvious then perhaps my intuitive understanding of „proximate causation" is wrong and I should not have spoken for Taubes and others.

EDIT: The problem, as I see it, is that an energy surplus is supposed to „cause" height increase in children but waist increase in others. But I'm genuinely unsure what „proximate causation" technically means, never really reflected on it; it was not a joke, and Randy M also says you are technically right about proximate causation.

What I do think Taubes and Lustig would say is that people poison themselves with too much fructose, causing metabolic disease, one symptom of which is obesity, and thus overeating is caused since the energy equation has to hold.

Hide ↑

JungianTJ *says:*

March 13, 2020 at 3:37 am

As I failed to notice but SteveB points out below the energy equation as stated is most likely not even right.

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 12:17 pm

I specifically had Gary Taubes in mind when I said "most" everyone.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 12:25 pm 0 comments since 2020-03-31 0ç

Does anyone have a quick primer on what Gary Taubes would say as is relevant to this particular comment thread? I suspect we're talking past one another (probably because I'm misinformed and/or misunderstanding the argument–I'd like to understand what I'm missing!).

EDIT: This reply is also posted in response to

> *If that's not obvious then perhaps my intuitive understanding of „proximate causation" is wrong and I should not have spoken for Taubes and others.*

I doubt this is the case. I think whatever is not obvious is due to my own misunderstanding, and I'm hoping I can be set straight. If I'm to be the butt of a joke I would like to have a fighting chance at understanding why.

Hide ↑

xenon *says:*

March 11, 2020 at 1:54 pm

@gleamingecho

I'm not sure exactly what Taubes would say, but the general against-CICO argument is that *yes*, ultimately it's about CICO, but that humans do not have controls over either the "in" part or the "out" part, making it basically useless in practice, akin to pointing out that the air has an acceptable oxygen mix to an asthmatic–not incorrect, just not relevant, because some other process is actually the driving force.

How many calories/nutrients you absorb from your food varies from person to person, on what you're eating, and on other circumstances you may or may not be aware of. So does stuff like glycemic response to foods. Your appetite–as in, the urge to eat–is out of your control , and the willpower required to override it in the long term is nigh-impossible to maintain, as anyone who's ever dieted can tell you. Society amply rewards the thin, so there must be a *massive* force on the other side compelling behavior that is "bad" (or possibly behavior is at least partly irrelevant).

Similarly, you cannot control your CO–you can modify it, sure, by going to the gym or the like, but your body can "turn down the thermostat" and greedily hoard calories without your say-so. This is what appears to happen with obese people who lose weight–they do not metabolically resemble thin people, they metabolically resemble *starving* people, even when they may still be overweight/obese (which should raise lots of questions about why we

still be overweight/obese (which should raise lots of questions about why we expect losing weight to be the silver bull 0 comments since 2020-03-31 0ç

feeling malaise and feeling cold are both common reports to dieting.

Basically, your body is doing a lot of things you are not consciously aware of and cannot control. The equation is far too simple to be of any use.

Hide ↑

SteveB *says:*

March 12, 2020 at 7:43 pm

Great question! While it seems to be commonly believed that:

Energy eaten = energy used + energy stored

this is almost certainly wrong – at least according to a great article I read so long ago it may have pre-dated the internet.

For there is another way for the energy eaten to leave – from the other end of the tube it went in. According to the article, by default, what comes in goes straight out *unless* your body 'thinks' it needs it, in which case it is absorbed. (This has the benefit that the body doesn't need an explicit mechanism to deal with toxins – they are just ejected by default).

Also gives an obvious explanation for how two people eating the same food and expending the same energy can differ in how much weight they put on. One simply absorbs more food energy than the other.

The true equation should be:

energy eaten = energy used + energy stored + *energy expelled*

Hide ↑

Taj *says:*

March 11, 2020 at 7:55 am

FWIW, the mystery graphs are from Stephan Guyenet, here:
https://web.archive.org/web/20100427215358/http://wholehealthsource.blogspot.com/2010/04/do-seed-oils-cause-multi-generational.html
https://web.archive.org/web/20090525093939/http://wholehealthsource.blogspot.com/2009/05/coronary-heart-disease-epidemic_19.html

It looks like he got the data from an earlier version of this report:
https://www.fns.usda.gov/USFoodSupply-1909-2010

(More-or-less matching PUFA data is easy to find there, but I'm not sure about the animal fat.)

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methylethyl *says:*

March 11, 2020 at 8:05 am

Surely the expense of food, whether that's in prep time, labor, or dollars, has something to do with it.

I'd love to see the side-by-side chart of obesity rates and % of household income spent on food. I'm not sure how you'd measure effort– are there any studies devoted to how much time people spend on food prep vs. how much they weigh?

It's not just the ingredients that change with processed food. An ice cream sandwich or a bag of chips… it's virtually no effort to acquire and eat those. What if you had to cook the little slab cookies from scratch, and make the ice cream with a hand-crank ice-cream churn, every time you wanted to eat an ice cream sandwich? How many would you eat? Would you ever eat them? Would you eat them only on special party occasions where churning the ice cream was essentially a social activity? If you had to slice the potatoes and fry them in hot oil to eat chips, would you still eat chips? How often?

My great-grandmother loved fried chicken, and was thin all her life. She raised the chickens, killed them, dressed them out, and fried them herself (in lard!). I'm told they were extremely delicious. But even if KFC used the exact same ingredients… Memaw's fried chicken was not remotely the same thing as picking up a bucket of chicken in the KFC drive-thru. And while the wild ducks she shot, and the possums she skinned, and the fish she caught were, technically, free… the time investment was very high. Especially compared to a frozen lasagna. I don't think that difference is reflected in any of the charts or comparisons I've looked at, on SSC or anywhere else.

Hide

ChrisA *says:*

March 14, 2020 at 6:01 am

I think portion size is probably one reason that people in the past could eat such high calorie dense food in the past, and is probably the reason for lack of such high obesity rates in say France today. If you cook your own food, the portion size is easy to control and when it's eaten there is no more unless you want to go to the trouble of cooking some more. If you buy prepared foods, or in restaurants, portion sizes are more unconstrained.

Hide ↑

acymetric *says:*

March 11, 2020 at 8:06 am

> *This has a lot going for it, but can't be quite right. Exercise seems like a red herring; studies of how much people eat, exercise, and gain weight have shown that dietary changes explain more than 100% of weight gain over the past 30-40 years – probably we are exercising a little more.*

I could not possibly be more skeptical of this finding. The obvious issue is that your body isn't going to process a 1,600 calorie/day diet the same way it processes a 3,000 calorie/day diet. There are a bunch of others. In any

1,600 calorie/day diet the same way it processes a 3,000 calorie/day diet. There are a bunch of others. In any case, we are *definitely* not more active now than we were 50 years ago, so ar 0 comments since 2020-03-31 0ç data is probably doing something (or several things) wrong.

Hide

Purplehermann *says:*

March 11, 2020 at 8:16 am

Yeah, obese people especially move way way less than… anything animate I guess.

An obese guy I knew in college told me that he went running every day. Saw him at it, he was barely moving at a walking pace. Still an outlier, he was doing better than the rest of the obese I know of.

Hide ↑

caryatis *says:*

March 11, 2020 at 9:30 am

The obese person running slowly might be working harder than you would running fast. Your comments on this thread are coming off as really unkind.

Hide ↑

Purplehermann *says:*

March 12, 2020 at 2:23 am

Object level: Unlikely. He was definitely putting in effort, maybe more than I do when I run at an easy pace for fun, but not when I really step on the gas. It **is** harder for him to to work hard, but from a CO perspective that isn't important.

I stand by my claims to the effect that obese people generally get less exercise (including daily movement), eat more, often underestimate how much they eat (especially compared to people at healthy weights) and overestimate their exercise/movement (in general and/or compared to people at healthy weights).
////////_____//////___/////
I think my comments are "necessary " (or at least should be said) and true.

The point here was that the larger people are, the less intense/useful their CO activities seem to be, not to judge how hard mentally/psychologically it is for them or to judge their worth/value or make light of their difficulties.

I apologize if anyone was offended by my rather tactless manner.

I could have been much kinder, so thank you for pointing that out @caryatis, I'll try to moderate my tone going forward.

Hide ↑

eric23 *says:*

0 comments since 2020-03-31 0ç

March 11, 2020 at 2:26 pm

If you're obese, moving around is a lot harder, and burns more energy, than if you're thin.

Hide ↑

Purplehermann *says:*

March 12, 2020 at 2:32 am

It does burn more energy, for equal forms of exercise/effort.
Two people running at equal speeds for equal distances, one obese and one thin, the obese person will have done far more work and used more energy.

I think those who are very large find it difficult to make their bodies put in as much effort.

A healthy thin person will run 3 kilometers in twenty minutes, an obese person will walk 2 kilometers in 45 minutes (made up numbers).
Despite the difficulty the obese person goes through, the thin person will physcally have expended more effort (biologically, not mentally).
These numbers are just used to demonstrate what I'm pointing at.

I'd love to see a breakdown of physcial effort by weight, work, and intensity by someone who has the know how

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 9:54 am

> *In any case, we are definitely not more active now than we were 50 years ago, so any study that infers that based on its data is probably doing something (or several things) wrong.*

There sure are a lot of those studies, though, and they're published in highly respected places. Can you elaborate on why you think they're obviously wrong?

Hide ↑

Purplehermann *says:*

March 11, 2020 at 8:12 am

I've seen people go from unhealthily overweight to normal (or better) after starting to exercise consistently and eat better (nothing fancy, just don't eat junk or drink sugar, eat only till not hungry, don't snack.. common sense stuff) enough times that I find it hard to believe exercise isn't a component.

It also seems odd to me that people have such a hard time – just pay attention to what you're eating and exercise

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Byrel Mitchell *says:*

March 11, 2020 at 10:33 am

This reminds me so much of my attitude about depression before I developed it. Just… keep going, keep up your daily living activities, and you'll feel better! Most of your issues are caused by you not doing the simple easy things in life; if you fix those, things will be much better for you!

It's even true; if a depressed person successfully keeps up their DLAs, they DO generally do better. I was just horribly cruelly wrong about how easy those were for the depressed person.

I was missing developmental milestone #2. And I think you are too. 'Easy' is not an objective fact about a task. It's subjective. Some people will struggle much much more with any given problem than someone else.

Hide ↑

Purplehermann *says:*

March 12, 2020 at 2:48 am

Hey. Depression sucks.

It isn't that I think it is 'Easy' – saying "just" probably implies that I think it is. My bad. You're also right abour different people having different levels of difficulty for any problem.

What seems odd to me is people having ***such*** *a hard time*.

Depression is different from obesity in my mind for a simple reason:
Depression directly, psychologically makes it harder to do daily activities.
Obesity shouldn't make it much harder to stop drinking calories, to cut down on junk, to stop buying things you shouldn't be eating.
Exercise for people who are overweight but not quite obese doesn't seem **very** hard (this opinion of mine is secondhand, from people who were or are overweight).

I might be missing this milestone partially, how can i differentiate between my inability to model others in a specific case, and other people not knowing how to deal with an issue, making excuses, running away from their issues, or not caring enough? (This question is general, not specifically for obesity. The reasons given are all things that have and do make me personally not take care of things I should)

Hide ↑

Byrel Mitchell *says:*

March 12, 2020 at 6:53 am

First, thanks for replying so thoughtfully. I spend too much time on the internet and

First, thanks for replying so thoughtfully! I spend too much time on the internet and in real life with people who take any suggestion of 0 comments since 2020-03-31 09 challenge instead of an opportunity to learn or explain their thinking. ☺

> *Depression is different from obesity in my mind for a simple reason: Depression directly, psychologically makes it harder to do daily activities. Obesity shouldn't make it much harder to stop drinking calories, to cut down on junk, to stop buying things you shouldn't be eating. Exercise for people who are overweight but not quite obese doesn't seem very hard (this opinion of mine is secondhand, from people who were or are overweight).*

This really depends on how obesity works, which we don't fully understand. It seems like the number of fat cells you have is something of a ratchet; your body mostly tries to avoid adding or removing them in favor of filling them more or less. But if you get morbidly obese, your body will have to start adding them… and then they never go away and affect your internal hunger management system (possibly permanently?.)

But I think the cause of difficulty isn't mostly obesity itself. Obesity is the symptom in many cases (more akin to failing to do your DLAs than to depression.) I think a significant portion of people who are morbidly obese are morbidly obese because it's much harder for them than normal people to manage their food intake (they get more severe hunger pangs and starvation drives than normal and at the wrong setpoints.) And then naturally it's much harder for them to lose weight as well.

I'm not trying to say this is everyone that's overweight; personally I flirt with the line between overweight and obese and have for the last 6 years. I know I'm one year of focus away from being pretty stable at a healthier weight; I'm one of the people where you're right, and it's not that hard. I've lost 10 pounds year before last and 15 last year, and it's not gotten hard for me to keep them off. But I've known people who bust their ass counting calories and eat almost exclusively home cooked meals etc. And while they can temporarily lose weight doing it, it makes them absolutely miserable. And they care enough to keep trying anyhow for a year or two at a time… and then some real life tragedy or w/e happens, they lose their focus, and go right back to their set point in a matter of a couple months. It's much much harder for them than me (or, judging by your examples in another post here, than both the failed and successful weight-loss examples you've personally helped.)

> *I might be missing this milestone partially, how can i differentiate between my inability to model others in a specific case, and other people not knowing how to deal with an issue, making excuses, running away from their issues, or not caring enough? (This question is general, not specifically for obesity. The reasons given are all things that have and do make me personally not take care of things I should)*

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This is such a hard question in general. I think the ‘revealed preferences’. It’s the same way we learn what people actually care about; we see what they spend money and effort on.

If someone grouses about their weight and puts minimal effort into changing it (or exclusively effort that is efficient for social signalling) then I wouldn’t assume they’re struggling with it. Maybe they have an independent psychological issue making it hard to try things (as you say, depression sucks), but that’s independent of whether the thing would be hard for them. If, on the other hand, someone has a library of a dozen+ diet books and healthy cookbooks (which they actually cook things out of), spends time getting into healthy eating cultures, adds some amount of exercise to their life, and stresses about their weight constantly… then if they fail to keep weight off, at least we know they tried hard. It’s not a lack of effort or caring at that point.

And if they eventually give up after trying and failing repeatedly, that’s pretty rational learned helplessness IMO. And it’s really really hard to distinguish that sort of entirely sympathetic apathy with the ‘never-really-tried’ sort of apathy. But I think the first thing is just to realize that the first category of people exists for almost any given ‘easy’ thing. There are people who find it monumentally challenging to eat enough, to not eat too much, to get angry when wronged, to avoid getting angry every time they’re slighted, to drink enough water, to not drink too much water, to recognize other people’s emotions, or to not be overwhelmed by them, to have sex, to avoid having too much sex, etc. Heck, even any specific thing like ‘running’ that we all ought to have an evolutionary predilection toward is much harder for some people than normal.

So when a community of people say ‘X is really hard for us’, I think the default assumption should be that there are a lot of people in that group for whom it is true, and at least a few that are just using it as cover to avoid social consequences for not taking responsibility.

Hide ↑

Two McMillion *says:*

March 11, 2020 at 8:17 am

Well, I’ve lost 17 pounds in the past two months by counting calories and walking more, so maybe I’m just one of the lucky people?

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Urstoff *says:*

March 11, 2020 at 8:24 am

Lucky to be accurately counting calories and regulating your intake, I guess.

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HarmlessFrog *says:*

March 11, 2020 at 2:48 pm

A caloric deficit is how you lose weight. No surprises there.

But as a lifestyle, to permanently become lean, it requires a dedication that few are capable of.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 3:17 pm

> *A caloric deficit is how you lose weight. No surprises there.*
>
> *But as a lifestyle, to permanently become lean, it requires a dedication that few are capable of.*

This is what I've tried to say in several comments and started-then-deleted comments in this thread. Ignore those. This.

Hide ↑

Cliff *says:*

March 11, 2020 at 11:04 pm

For the last 5 months I have been tracking my calories (almost all the time), which takes me 10 minutes per day, and exercising about 20 minutes per day. Thus my total time investment is 30 minutes per day. I don't think this is a lot of dedication, though I grant you that it is some, and possibly you are correct.

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 2:15 am

Were you obese?

We're not talking about someone vaguely lean trying to become marginally leaner, or someone trying to lose weight for a short term (five months is short – try five years).

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JungianTJ *says:*

March 11, 2020 at 8:25 am

Very interesting. I had wondered for a while if it's worth looking into vegetable oils as the possible root of Western metabolic disease, as opposed to sugar (fructose). I also love how this post exposes the thoughtless blaming of „processed" foods.

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The first time I considered this blog seriously was in 2017, but I dismissed it then after checking past posts for my new-found pet topic at the time, the sugar hypothesis, and finding only a dismissal with no backup except a link to a revenge-driven Guyenet review of Taubes that I knew already, as well as „[Taubes] misrepresented a lot of stuff and wasn't very good at what might be called scientific ethics" (from „Contra Hallquist", 2015), but no examples of such behaviour.

This cost me about two years of following this blog. I say „cost", since now, after rediscovering it last year, it's my favourite! But I still live according to the sugar hypothesis, as opposed to doing things like counting calories or avoiding processed foods. What is the best argument against the hypothesis? That the French were still healthy in the 1970s?

Regarding the chart about linoleic acid in US body fat, Taubes documents on the first pages of „The Case Against Sugar" that the diabetes epidemic started way before 1960. While I'm at it, he also says that at the end of the 19th century the French consumed only half as much sugar per person as the Americans (p.167). And he discusses in the book the possibly addictive nature of sugar, which could address the „efficient-market paradox" raised in the post (as can the fact that the damage from sugar is long-term and variable). And he talks about the ratchet effect, in particular over generations.

Hide

Randy M *says:*

March 11, 2020 at 8:28 am

The other thing that's added to so many foods recently, besides seed oils, is of course high fructose corn syrup. I don't know if the time lines match up, but if you avoid one you are probably also avoiding a lot of the other.

Hide ↑

JungianTJ *says:*

March 11, 2020 at 8:54 am

If I remember correctly, most HFCS is 55 percent fructose as opposed to 50 percent in normal sugar: not such a big difference. However, at about the same time that HFCS came on the scene, Americans started avoiding fat, at least partly replacing it with sugar/HFCS.

Hide ↑

MrBubu *says:*

March 11, 2020 at 9:01 am

There is a long and bit-cringy-at-times discussion btw guyenet and taubes on Joe Rogan. Guyenet has a full source document on his blog which goes through all his arguments.
Then there is the whole nusi thing where Taubes hypothesis was tested and didn't pan out in metabolic wards (PI: Kevin Hall) and Real World (PI: Christopher Gardner, see DIETFITS). Gardner appeared on the Sigma Nutrition Podcast which explains the study and result in more detail.

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JungianTJ *says:*

March 11, 2020 at 9:55 am

I think in that discussion on Joe Rogan they talked about the carb-insulin-model of obesity but did not get to fructose and insulin resistance. Taubes loses every debate „on the science" anyway; his point is basically that current nutrition science is a pile of crap, which *could* be true, see Scott's „5-HTTLPR: a pointed review".

Regarding NUSI, Taubes wanted to give the results more authority by putting his opponents in charge of conducting the studies. That was naive, and sure enough they fell out quickly over methods. I do remember the metabolic ward study, and here is what Taubes said, from my memory, very roughly:
A) It was only a *pilot* study, yet Hall ran with it and declared the matter closed.
B) They did not achieve "metabolic balance" (or something like that), so the results were worthless except that they showed you can't do it that way (testing whether you can was the point of the study after all).
C) Even discounting A and B, the results were still consistent, contra Hall, with the carb-insulin-model.

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n-alexander *says:*

March 11, 2020 at 8:26 am

Sorry if I am being naive and this is has long been proved wrong. I'll be happy if you could change my mind, because I don't like this idea and its implications. But.

Used to be, up until early XX, healthy people would have more surviving children, and sick people would have less or none (if you had diabetes or a heart condition, you'd just die in early XX). Since mid-XX and increasingly today, personal health has become irrelevant re: the number of children. There may be even a negative correlation of sorts in some groups.

If that were true, we'd naturally expect average health to go down, including obesity, heart problems, and so on. Also we would not be able to fix it with a diet. Which is what we're seeing.

Alex

Hide

Randy M *says:*

March 11, 2020 at 8:32 am

I think the recent changes in body composition are more dramatic than this effect would suggest, especially since those obesity and heart disease don't tend to kill people before reproductive age (although obesity may decrease fertility, I don't know if that is linear).

In other words, it's been some time since being chronically unhealthy was a big reproductive hit, but these changes are more recent. Correct me if I'm wrong.

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MadRocketSci2 *says:*

March 11, 2020 at 8:44 am

Way too recent, way too fast it seems to me. We're talking about 2-3 generations, right?

Hide ↑

n-alexander *says:*

March 11, 2020 at 9:12 am

I'm not suggesting DNA changes, but just opening up possibility to reproduce to people who are sick. That would not need a long runtime. Would in fact be ery quick, if being sick was hereditary – and certain kind of being sick is.

Hide ↑

n-alexander *says:*

March 11, 2020 at 9:15 am

"kill" – no, but what about "marry and have children"? Or about the health of those children, and their ability to survive – without our current ability to help them.

But I heart what you're saying. I've no data on the timeline here re: "when being chronically unhealthy was a big reproductive hit". That'd be interesting to see.

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 9:56 am

> *Since mid-XX and increasingly today, personal health has become irrelevant re: the number of children.*

I think most of us are assuming that mid-XX began at least several generations before the obesity epidemic.

Hide ↑

DannyTheSwift *says:*

March 11, 2020 at 8:29 am

My reactions:

> *Everybody I ask acts like the answers to these questions are obvious, but everyone has different*

> *answers, and nobody can tell me their decision procedure.*

My pet hypothesis is that it's the bleach. I started making my own sourdough recently, based on the fact that it seems to be the only bread historically consumed in any of the Blue Zones (areas with unusually high concentrations of male centenarians (yes there is controversy surrounding the accuracy of these, because of course there is)). Sourdough is abnormal because it's made from a fermented starter culture of lactobacillus, instead of from yeast. For the first few weeks, I couldn't get my starter right. Then I realized that I'd been using regular flour, whereas the recipe specifically calls for unbleached all-purpose flour. The bleach was killing the lactobacillus before I could get the culture going. There are plenty of studies showing different ratios of 'good' vs 'bad' bacteria in the microbiomes of obese vs healthy people. I think that the bleach in our diets may be preferentially killing off the 'good' bacteria in our microbiomes. Somebody with more money than me should do a study on this.

> *Marshall argues it gets better results in waistline shrinkage than weight loss alone, and my own results sort of seem to confirm this, but I'm not confident in the accuracy of my waistline measurements. Also, why should this be true?*

This is likely because saturated fat (and monounsaturated fat) is known to boost testosterone, which in turn will help boost muscle mass. Muscle is denser than fat, so an increase in muscle will keep your weight up even as your waistline shrinks.

> *...soybean oil, safflower oil, canola oil, corn oil, et cetera oil, these are omega-6 polyunsaturated fats.*

I know you said this is an oversimplification, but a few corrections: canola oil is 59% monounsaturated fat, and the polyunsaturated fat has a 2:1 omega-6:omega-3 ratio. Also, almost all nuts have significantly more monounsaturated fat than polyunsaturated fat.

> *Schwingshackl et al investigated the effect of 10 food groups on metabolic parameters and found that nuts were the healthiest, even though they are the highest in omega-6 fats.*

Related to the above. Also, research has shown that nuts have the strongest mortality-reducing effect among various food groups in humans.

> *Other people think paleo is the solution to everything, but Americans in the 1800s ate a diet heavy in bread, milk, potatoes, and vegetables, and relatively low in red meat and other more caveman-recognizable foods.*

This is a pet peeve of mine. The idea behind paleo is that the healthiest diet is the one that you evolved to eat, which makes perfect sense. But which diet did you evolve to eat? The diet of your ancestors 1,000,000 years ago? 100,000? 10,000? Because unless you're descended from the Maasai you're ancestors have not been eating nothing but red meat that entire time. If you're of European extraction, then your ancestors have primarily been farmers for the past 5,000 years. "But wait," an imaginary paleo-adherent replies, "5,000 years is nowhere near long enough for evolution to work its magic." Well, it was long enough for Europeans' skin color to change, in order to make up for the reduced vitamin D content of an agricultural diet. It was long enough for lactose

tolerance to spread throughout Europe. It was long enough for humans to get used to break down the starches in grains, compared to the two that other primates have. IMO, eating the way you evolved to eat is primarily going to involve whole grains and vegetables.

> *...and the studies suggested maybe saturated fat caused heart attacks*

I wonder how strongly correlated saturated fat consumption was with tobacco consumption. I'd assume both correlated with wealth at the time.

My final thoughts: Monoun/saturated fats may be better than polyunsaturated insofar as they boost testosterone, but probably not beyond that. Polyunsaturated fats are fine as long as you watch your omega-3:omega-6 ratios. Don't eat foods with bleach in them. Eat plenty of whole grains and vegetables.

Hide

MadRocketSci2 *says:*

March 11, 2020 at 8:39 am

This is interesting to me. I've always had trouble with my weight. (Oddly enough, desperately violently exercising to stay under a military weight limit vs. being a grad-student chair-bound nerd doesn't seem to have changed anything.)

I travel a lot for about a week at a time. It's impossible to be (diet-of-the-year) while on travel: You have to buy things you can fix on paper bowls in a microwave. Even when I'm home and cooking for myself, everything I cook comes out of jars/boxes from a grocery store.

Just about anything that comes in a microwave meal box or a soup-can is garbage. When you see "78 milligrams of protein!" proudly advertised on a can of chili, you need to get back in the time machine and stop this horrible future from occurring. 😛 Starch of some sort, corn syrup, and (possibly given the article) vegitable oil seem to be the prime constituents.

PS: If anyone has any advice for things you can eat in a hotel room that aren't Purina-drone-chow, I'd be interested.

Hide

j1000000 *says:*

March 11, 2020 at 9:05 am

I have a high tolerance for repetition and can eat meals made entirely of protein (out of personal preference, not some sort of keto thing.) But in a hotel room you could stop at most grocery stores and grab stuff like cans of tuna w/mayo, smoked salmon, maybe hard boiled eggs (might need some sort of plastic device to make your own), or beef jerky, and have a side of fruit/veggies. Some raw veggies aren't brutally unappetizing — carrots, for instance.

Hide ↑

Lord Nelson *says:*

March 11, 2020 at 6:47 pm

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I have an extremely bland diet thanks to food intolerances, so ymmv on whether this is sustainable, but my go-to hotel food is sandwiches. Grab a loaf of bread and a couple of different types of meat. Baked chips or some kind of fruit for a side. It's cheap and filling and not terribly unhealthy.

I also take single serve oatmeal packets sometimes, if I know my hotel won't have a free breakfast.

Hide ↑

Adam *says:*

March 11, 2020 at 8:43 am

Am I too late to be the one to coin "typical body fallacy"?

Hide

MadRocketSci2 *says:*

March 11, 2020 at 8:48 am

PS: The French also still smoke like chimneys, don't they? Maybe our problem was stopping smoking. 😛

I remember a Finnish blogger who (half-jestingly) suggested this is why our great organizational, engineering, and scientific excellence has fallen apart: We stopped using our most potent nootropic.

When did we (America and Europe) *start* smoking en-masse? Sometime after colonization of the new world, but I'd have to look up further details.

Hide

caryatis *says:*

March 11, 2020 at 9:29 am

Cigarettes (and the female smoking that came with them) only became popular after WWI.

Hide ↑

glorkvorn *says:*

March 11, 2020 at 12:24 pm

They had plenty of loose-leaf tobacco before that, didn't they? Tobacco was a main crop in Virginia since the colonial days.

Hide ↑

notpeerreviewed *says:*

March 11, 2020 at 10:00 am

Here's a compound hypothesis: Tasty, affordable food was widely availabe the obesity crisis. However, there was never a time before the obesity crisis when we had both wide availability of tasty food *and*

low rates of smoking simultaneously.

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I don't know if it works, though – I think the demographics of smoking and obesity might not line up correctly.

Hide ↑

shepskeptic *says:*

March 11, 2020 at 8:50 am

Here is a video (almost 100k views) of a talk by a doctor explaining this entire hypothesis in fairly good detail. He goes into the changes in body weight since the 1950s as compared to now. And describes how the increased consumption of vegetable oils mirrors the changes in obesity, and how saturated fat might be protective. A little technical, but still pretty interesting.

https://www.youtube.com/watch?v=pIRurLnQ8oo

Hide

jamii *says:*

March 11, 2020 at 8:52 am

> What part of processing makes food bad? How does mere contact with a machine turn food from healthy to unhealthy? What food counts as "processed" or "not processed"? Is ground beef processed, since you grind it? Are scrambled eggs processed, since you scramble them? Is bread processed, since wheat doesn't grow in loaves? Is water processed, since it goes through water processing facilities?

The new Brazilian diet guidelines, which have been adopted by a few other countries now, divides food into:

Minimally processed: food that has been washed/cooked/soaked/fermented/etc in order to make it edible but is still recognizably the same food.

Processed: food that has been transformed into something inedible eg flour, sugar, oil, pink meat goo.

Ultra processed: food that has been made by combining processed foods together into something that is again edible eg bread, cake, soda, chicken dippers.

It's still a bit loose around the edges (eg are rehydrated dried beans ultra-processed food?), but it seems like a reasonable heuristic for a diet.

Hide

MadRocketSci2 *says:*

March 11, 2020 at 8:53 am

Doesn't sound too reasonable to me. It isn't getting to the root of the (I am assuming) chemical problem. Something changed in terms of constitution of our food. We didn't start/stop cooking things since 1800. How does mere mechanical alteration of food change the way we metabolize it?

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notpeerreviewed *says:*

March 11, 2020 at 10:01 am

> *Ultra processed: food that has been made by combining processed foods together into something that is again edible eg bread, cake, soda, chicken dippers*

Doesn't work too well because bread was eaten widely before the obesity epidemic.

Hide ↑

HarmlessFrog *says:*

March 11, 2020 at 2:35 pm

> *Doesn't work too well because bread was eaten widely before the obesity epidemic.*

Consider that almost everything about bread is different.

1. Milling used to be very rough, and advanced to the fineness of today with the industrial revolution (and even in the first half of the XX century hardly everyone ate industrially-milled flour). Finer milling – more absorption of carbohydrates.
2. The types of grain are different. For example, we mostly eat Borlaug's dwarf wheat, not the ancestral (lower-yield) varieties. This is hardly without effect. AFAIK, ancestral grains are better tolerated by coeliacs, for example.
3. The types of fertilizer and quality of soil (due to degradation) are different, which is important especially for mineral content of the grain.
4. The type of biological processing is different – nowadays barely anyone uses sourdough, and instead baking powders and quick yeasts are used. This is also important for bioavailability of minerals due to phytate breakdown by sourdough fermentation.
5. The time from milling to finished product is likely very different. Home-milling used to be common, now it's unheard of. Flour degrades in micronutrient content with time, so there's another vector for emptier calories.

Hide ↑

MadRocketSci2 *says:*

March 11, 2020 at 2:42 pm

Random grammar/spelling question:

I've seen these (I believe they're called ligatures and are some sort of latin-descended thing) alternate spellings before:
coeliac, celiac, etc.

When are these *supposed* to show up in the spelling of a word? Is it a British thing?

What do they mean in terms of pronunciation? (As

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Hide ↑

caryatis *says:*

March 11, 2020 at 5:29 pm

It's a difference between British and American spelling. No effect on pronunciation. (Other examples: foetus vs fetus, paediatrician vs pediatrician, aesthetic vs esthetic).

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MrBubu *says:*

March 11, 2020 at 8:55 am

Regarding saturated fat, I recommend the Sigma nutrition statements about saturated fat and heart disease. This is the third one which contains the overall conclusion.
https://sigmanutrition.com/diet-cvd/

You can find the 2 previous parts on that page

Hide

Statismagician *says:*

March 11, 2020 at 9:03 am

I wonder if it isn't basically your first option, but with a legibility-problems modulation. Calorie counts and minutes in the gym are easy to track, but constant incidental exercise because your city was built to walking scale isn't, nor is whether or not your culture supports snacking, nor yet stuff like stricter or looser conformity to more or less cohesive aesthetic standards, what strikes you as a reasonable meal size, and what your local restaurants will sell you for what seems like a good price.

Hide

Joe6 *says:*

March 11, 2020 at 9:07 am

Scott, I think there is a simple way to explain how the PUFA model is correct even with the lack of strong clinical results, and that is simply the time scale of fatty acid incorporation.

If set point is actually influenced by inflammatory effects of n-6/n-3 ratio in fat tissue (and the data strongly suggest it is), that ratio will change **very slowly based on dietary changes**. Just modeling how much PUFA people generally eat in a day vs how much is stored in your body, it can take many months or years for the overall fatty acid composition in tissue to change based on a step change in dietary intake. This is made worse because of how prevalent n-6 is in the modern diet, and how rare n-3 is: even if you eat a low-PUFA diet but occasionally have "cheat" meals of foods fried in corn oil, your *overall* n-6/n-3 ratio is still substantially higher than it would have been for both Paleo people and the public in the 1800s. If you are starting with a high n-6/n-3 ratio, the levels in your fat tissue will change even more slowly and take longer to stabilize at a lower level.

So when you have dietary intervention trials that make changes for relatively short timeframes, with low adherence (since it can be difficult to actually eat a diet with an n-6/n-3 ratio as low as was historically available, and very very easy to eat more n-6), it's not at all surprising to see less than extreme changes.

The good news is this doesn't mean the"set point" is permanently broken; the bad news is that it can take a long time to "fix".

Hide

Scott Alexander *says:*

March 11, 2020 at 11:32 am

I think in a lot of the mouse studies they can change the mice's diet for a pretty significant fraction of their life.

Hide ↑

acymetric *says:*

March 11, 2020 at 11:40 am

I don't know enough about any of this to have a truly informed opinion on how useful mice studies are when trying to understand human weight gain/loss, but I thought this comment by @Cerastes was a pretty compelling argument that mice are the wrong…"tool" (don't like that word there but can't think of a better one) for this kind of research.

Hide ↑

Anteros *says:*

March 11, 2020 at 9:17 am

I doubt that there's one single all-encompassing answer to this dietary dilemma, but it does strike me as odd that all the emphasis (particularly Scott's) is on a reductionist analysis of the chemical components of modern diets. Barely a word about *how* people eat. You know that 'lunch hour' thing? We don't have one of those in France. Everyone takes two hours over their lunch break. Even most Supermarkets are closed for two hours every lunchtime.

By the time people get to the cheese course (the third for the labouring classes, the fourth for the bourgeoisie..) there's very little hunger left going around – just enough for little morsels of French heritage. And I don't know any French people who bother with dessert – I have my apple crumble and custard on my own, in secret.

Not saying eating culture is everything, but if you think about ultra-processed foods e.g. Big Macs, they're designed to be eaten in about 30 seconds.

Hide

Statismagician *says:*

March 11, 2020 at 9:25 am

I agree with this; the mechanistic stuff plausibly works for a within-g Member A is obese and Group Member B isn't, but if the between-groups variance is much more impactful I think it neatly explains what's going on.

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Anteros *says:*

March 11, 2020 at 10:22 am

Something else that I don't think Scott mentioned is central heating. I read a study about a year ago that claimed Calories consumed by people in the UK are **less** than the amount consumed before the widespread adoption of central heating, despite us now being considerably more porky than our predecessors.

Again – no claim that this explains **all** of the rise of obesity, but seemingly it's another factor.

One other little cultural difference in France. There's often bread accompanying a meal….. but never butter to go with it.

Except in my house!

Hide ↑

Scott Alexander *says:*

March 11, 2020 at 11:31 am

If this were the explanation, wouldn't we expect to find obesity rates hadn't changed in the US South, Mexico, and other warm areas?

Hide ↑

Anteros *says:*

March 11, 2020 at 11:43 am

Indeed, although it might be a quiet little signal amidst plenty of noise.

Hide ↑

glorkvorn *says:*

March 11, 2020 at 11:33 am

But it seems like French people are now getting fatter too. So whatever worked for them in the 70s is no longer working, at least not as well as it used to. If they're still having long, slow meals just like they used to then apparently that's not the secret.

Hide ↑

Anteros *says:*

March 11, 2020 at 11:48 am

I think the 'long slow meals' are indeed changing. But I still [illegible] country – the U.K., which I think has followed the USA down the fast food route.

0 comments since 2020-03-31 0[illegible]

But yes, definitely not **the** secret, just one of many many changes that all have a little influence. And all – as far as I can see – making it easier to pile on the pounds.

Hide ↑

n-alexander *says:*

March 11, 2020 at 9:24 am

We may be vastly underestimating the amount of physical activity that people in early XX had consistently every day.

Or, there may be a critical difference between intense exercise for one hour, and sustained low level exertion throughout the day.

I used to compete, so I would go to a gym 6 days a week for a very intense workout. Still, I would have difficulty cutting weight down to the required number (say, walking at 185 and cutting down to 176).

Then I would go on a self-support trip for 10 days, say, paddle the Grand Canyon. No food restrictions – sugar, carbs, meat, whatever. Just going downriver, even if sometimes against the wind. I'd come home slim without trying.

Hide

Lord Nelson *says:*

March 11, 2020 at 6:39 pm

That was one of my first thoughts as well. I lost weight without trying when I worked two customer service jobs. I also lose weight (and gain nice thigh muscles) without trying every time I go to Japan. Being on your feet for eight to twelve straight hours is a pretty decent workout, imo.

Hide ↑

nostalgebraist *says:*

March 11, 2020 at 9:44 am

Really interesting post, thanks.

IMO there's something important in the first five paragraphs here that — assuming those paragraphs are accurate — should generalized beyond the context of this one dietary hypothesis. It sounds like the following things are true:

– sometime between 1800 and today, there was an "obesity transition" in the US population, where *some* factor or confluence of factors caused a dramatic change in the weight and BMI distributions of the population

– we have enough evidence about this transition to talk in an evidence-based way (with, as always, some caveats

and missing pieces) about when it started/ended, how gradual it was, etc. 0 comments since 2020-03-31 0ç

– a similar "obesity transition" also happened in numerous other countries across the same period, but these didn't all happen at the same time, and (because different countries are different) didn't occur under exactly the same set of social and material conditions

Assume for now that all that is 100% true. Doesn't this provide a really promising general framework for generating, and then testing, new hypotheses about obesity? Before the transition, obesity rates were extremely low from a modern perspective, *and* explicitly anti-obesity lifestyle modifications were rare (apparently no one needed them). This should give us a nice pseudo-random range of different lifestyle configurations that various "great-grandpas" adopted without becoming obese, which ought to immediately reject some otherwise seemingly plausible hypotheses. And then, if a hypothesis passes this test in (say) the US history context, we have even more stringent tests from the cross-country evidence: a proposed factor present in the US transition but not in the Chinese one is suspect, while we can feel more confident in one that's present in both, and even moreso if it's also consistent with France, etc.

This post sets up this framework quickly, and then focuses in on the (un)saturated fat hypothesis, as evaluated via that framework as well as via other lines of evidence like reddit dieters. Maybe the (un)saturated fat hypothesis itself turns out to be a miss. But that's no count against the framework, and there are probably plenty of other hypotheses we can generate with its help. These don't have to be dietary hypotheses, and indeed non-dietary hypotheses seem the most promising, given the amount of effort that's been poured into diet after the transition with little to show for it, and the variety of diets people ate in the pre-transition world without triggering the transition by eating them.

(Is this framework an under-explored avenue for research? or are there lots of uses of it that I just don't know about?)

Hide

notpeerreviewed *says:*

March 11, 2020 at 10:06 am

That's a good summary of what we're trying to do, yes. I don't know if I would agree with the statement that non-dietary hypotheses seem the most promising, for several reasons:

– Feeding lab mice human food makes them fat.
– Humans lose at leat some weight on most restricted diets.
– The obesity transitions in various countries seem to correlate with when they adopted American-style diets.

All those argue for something about the modern diet being the explanation.

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JungianTJ *says:*

March 11, 2020 at 10:09 am

That's how Gary Taubes argues for his sugar hypothesis. And he says that he was the only one to check 19th-century hospital records for diabetes cases, compared to 40 articles being published on obesity *every week*.

Hide ↑

HarmlessFrog *says:*

March 11, 2020 at 9:53 am

> *Intermittent fasting – again, cool idea, but your great-grandfather wasn't doing that, and he had a 1% obesity risk.*

I highly doubt he wasn't, at least some of the time. Meal frequency has gone up. To the point that all waking hours can be considered one, giant meal. No, that's not the Onion, the Onion article is here.

In addition, your great-grandfather probably wasn't eating as much as he'd have liked to eat, because he probably couldn't afford it. Food was significantly more expensive back then. Nevermind that read-to-eat meals weren't even available at all times of day and night.

Hide

caryatis *says:*

March 11, 2020 at 5:32 pm

Simply not eating after dinner probably leads to consuming fewer calories than the average American (whether or not you choose to call that IF).

Hide ↑

bran6 *says:*

March 11, 2020 at 10:05 am

This post reminds me of Michael Pollan's critique of "nutritionism" and its focus on demonizing, or conversely glorifying, particular nutrients. However, the relationship between food, nutrients, and our bodies is incredibly complex and every time we think we have a culprit (1980s: Fat is Evil! 1990s: Carbs are Evil! etc) the prescribed solution actually makes us more obese and unhealthy.

I've struggled with weight for years but have had much luck and lost over 20 pounds since reading Michael Pollan's food rules and following the maxim of **eat food, not too much, mostly plants.**

The rules that have been most helpful are:

1. Don't eat anything your great-great-grandmother wouldn't recognize as food.
2. Avoid food products that come bearing health claims.
3. Stick to the sides of the grocery store and stay away from the middle.
4. Especially avoid food products containing ingredients that are a) unfamiliar, b) unpronounceable c) more than five in number — or that contain high-fructose corn syrup. All of these ingredients give indication that the food is highly processed.

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erinexa *says:*

March 12, 2020 at 6:02 pm

Borrowing a framework from Dungeons & Dragons, I find many food rules and diets to be high intelligence, but Michael Pollen strikes me as having high wisdom. His rules are not as clear as "no x" but as someone who failed at counting carbs, they are easier to fit into my lifestyle in a meaningful way.

Hide ↑

RalMirrorAd *says:*

March 11, 2020 at 10:09 am

Anecdote:

In the spring of 2012 I was ~200lbs and over the course of a couple of months got it down to ~160 lbs, in 2014 and when I moved into my own place gradually gained weight until by late 2019 I'd hit ~190lbs. Up until this point i don't believe there was a significant change in activity level over those 8 years.

In the last 2 months I have gone from 187 lbs to 166 lbs using a combination of intense calorie restriction, fasting, and supplementing minerals. I've also started weight training and couch to 5k, plus a riddiculous amount of walking each day. (Anywhere from 9-17k steps per day) which has, *supposedly* increased my calories burned per day to 2900-3600 per day, roughly. (The strength training is for muscle atrophy not calorie burning)

I don't feel hungry but i do have to be careful about Dehydration. Also recently my weight has not gone down but my measured percent body fat (I use a smart scale) has gone down by quite a lot.

I do not believe weight loss is literally impossible but the satiety and addictiveness of foods plus the deprivation of free time that comes from exercising to increase caloric expenditure.

My guess is that the optimal weight loss diet works like all other diets in that it produces a caloric deficit, but what makes it optimal is that it does so in a way that 1. optimizes other bodily requirements 2. maximizes perceived satiety and minimizes the food cravings that keep people hungry.

Hide

renato *says:*

March 11, 2020 at 10:26 am

> In the 1800s, the average US man weighed about 155 lbs. Today, he weighs about 195. The change is even starker at the extremes. Someone at the 90th percentile of weight back then weighed about 185 lbs; today, he would weigh 320 lbs. Back then, about 1% of men were obese. Today, about 25% are.

What about the height difference?
Getting taller should take some fraction of the weight increase due people being more obese.
Following this line, it feels like we might have crossed the point where more available calories would translate into

Following this line, it feels like we might have crossed the point where more available calories would translate into getting bigger (taller, but with a similar fat ratio) to getting just fatter, since w

0 comments since 2020-03-31 0

affected by malnutrition.

For example, consider Korea, since the north is malnourished and cannot reach the same average height as the south, despite being very close genetically, if the same amount of food were available to them now, it would take some time for their height to catch up with the south and then to start getting obese.

Hide

Edward Scizorhands *says:*

March 11, 2020 at 10:52 am

I wish this post addressed 'What is "inflammation" and why is it bad?' when talking about it.

Hide

gleamingecho *says:*

March 11, 2020 at 10:58 am

Sheesh.

Hide ↑

VolumeWarrior *says:*

March 11, 2020 at 10:53 am

I lean towards the "diet doesn't really matter" camp for all the reasons you mention. Consumption of processed pre-packaged foods is likely extremely colinear with SES, laziness, whatever.

One piece missing from this analysis is that there is actually no reason to be thin and lose weight. Life expectancy? No one cares if they live to be 80 let's be real. Sexual attractiveness? The more unattractive you are, the more unattractive your spouse can be. There is no sexiness arms race. Mediocrity and stagnation make stable relationships make homes make kids.

Even people who are really, really screwed over by obesity might view it as a feature instead of a bug. Deep down. If you're disabled because they took your foot, expectations for you are lower. You get excuses for not being a full adult. Etc. etc.

Basically I fail to see the upside of being thin and fit. And this is coming from someone who pushes body composition very very far towards "fit". I value my "health" and performance tremendously but it also doesn't do anything for me except alienate me from the vast majority of normals.

Strongly consider that being obese is a useful piece of social tech for many people, and that anti-obesity arguments come from a place of culture war nonsense and middle-class signaling the virtues of conscientiousness/meekness.

Hide

Bugmaster *says:*

0 comments since 2020-03-31 0ç

March 11, 2020 at 11:05 am

FWIW, I'm fat and weak, and I'd love to be thin and fit (I can be thinn*er* and fitt*er* than I am now, but not by much; at least, not without a major time investment). There are many things I simply can never experience because of my poor physique, and, although I am not disabled, there are many day-to-day tasks that I find much more difficult than fit people. Oh, and by the way, I am definitely spending more money on medicine than an average fit person.

So far, the "social tech" had never worked out for me, either; people just see me as disgusting/weak-willed/useless, not as someone deserving of extra consideration or virtue. YMMV, of course.

Hide ↑

VolumeWarrior *says:*

March 11, 2020 at 11:32 am

You'd like to be thinner the way we'd all like to be millionaires. Fun to think about, but then the costs. It doesn't mean everyone would actually benefit from the process of becoming different.

> *people just see me as disgusting/weak-willed/useless, not as someone deserving of extra consideration or virtue*

You may not want to be viewed as weak-willed, but certainly other people do because it lowers expectations for them. Also just sounds like you're in the wrong tribe. Plenty of other tribes in America welcome the obese. You're totally nonthreatening to them.

Hide ↑

Bugmaster *says:*

March 11, 2020 at 12:02 pm

> *You'd like to be thinner the way we'd all like to be millionaires.*

This is an apt analogy, because most people will never be millionaires, no matter how hard they work. It takes more than hard work to be a millionaire; it also takes luck and a bit of startup capital. Likewise, while it is possible for everyone to be a bit thinner, some people will never be as fit as others.

In my own personal case, being thin is not my number one priority; in other words, I'm not willing to dedicate my entire life to being thin (though I am spending some time on being a little thinner than I normally would be). But that doesn't mean that I don't get to envy naturally thin people sometimes; nor, IMO, does this automatically qualify me for some baseline level of social disdain, as you seem to be implying.

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notpeerreviewed *says:*

March 11, 2020 at 12:29 pm

0 comments since 2020-03-31 0ç

> *You'd like to be thinner the way we'd all like to be millionaires.*

This is not the case for most obese people, especially most obese women. I don't think about not being a millionaire every day and feel bad about myself, which is definitely something many obese women do.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 11:43 am

Bugmaster, YMMV, but here's a thing that I found helpful in trying to implement small changes:

https://www.barbellmedicine.com/blog/where-should-my-priorities-be-to-improve-my-health/

I'm not affiliated with the company; I just think they put out some pretty good science-based macro-level advice that doesn't get down into the weeds of "this one weird trick." The big thing I like is they encourage self-efficacy WHILE AT THE SAME TIME acknowledging there are likely to be biological, psychological, and/or social constraints to said efficacy for any given individual.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 11:06 am

These are all quite interesting points. Thanks!

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eric23 *says:*

March 11, 2020 at 2:34 pm

You're really reaching to see the upside in every bad situation. I mean "If you're disabled because they took your foot … You get excuses", really?

That may or may not be a psychologically healthy way of coping with the bad situations you find yourself in, but it's hardly an argument for *choosing* bad situations when you have better alternatives.

Hide ↑

VolumeWarrior *says:*

March 11, 2020 at 7:21 pm

Yes, really. Some peoples' lives and social positions are made more secure and robust by disability. I believe some people are disabled by random bad fate, and others just kind of passively go "oh no, how did that happen?" and play dumb.

0 comments since 2020-03-31 0ç

Being disabled entitles you to low expectations and makes you immune from criticism for your shit health and physical output. Yes, probably because of the halo effect, expectations for mental output are decreased too.

I would hate to be disabled. So would you probably. But there's plenty plenty of people who aren't doing anything in life who would be able to get away with even less if they had "health conditions".

Hide ↑

Bugmaster *says:*

March 11, 2020 at 7:34 pm

Personally, I think that the "fat acceptance" movement is pretty toxic. No, you are not "healthy at every size"; being fat has real, measurable negative effects on your health. And no, people aren't obligated to find your bulk attractive; you can't force anyone to have any kind of specific sexual preferences, and the majority of people are attracted to fit, lean bodies. Also, calling someone "fat" isn't a hate crime.

That said, after reading your posts, I can kinda see where the fat activists (likewise, disability activists) are coming from, in a way that I hadn't seen before. Now, I respect them a little more than I used to.

Hide ↑

caryatis *says:*

March 11, 2020 at 5:35 pm

What about the effects of obesity on daily life? People who have been obese and then lose weight report feeling much better physically, having higher self-esteem and being able to engage in many more fun activities. Personally, I'm much happier when I can be proud of what I look like naked.

Hide ↑

VolumeWarrior *says:*

March 11, 2020 at 7:23 pm

Selection bias.

Look I am super anti obesity and super pro health/vitality/energy, from an aesthetic standpoint. I just recognize that being obese is a tremendous asset in certain social circles.

Hide ↑

muskwalker *says:*

March 12, 2020 at 11:04 am

> *People who have been obese and then lose weight report feeling much better*

> *physically, having higher self-esteem and being able to* 0 comments since 2020-03-31 0ç
> *activities. Personally, I'm much happier when I can be proud of what I look like naked.*

Coming from a different-in-cause-but-related-in-effect subculture in regards to what VolumeWarrior is talking about, I can assure you there are many of us (by count if not percent) who are much prouder of what we look like naked when we are obese than when we are not.

This perspective makes studies like the ones that you describe—that show mental effects like people regaining self-esteem, feeling better, etc. from losing weight—immediately suspect because the researchers rarely take it into account: it's almost surely as likely that the effects could be from achieving a weight closer to one's *ideal* weight, not necessarily because the weight itself is *low*.

Hide ↑

Bugmaster *says:*

March 11, 2020 at 11:01 am

> *Exercise seems like a red herring; studies of how much people eat, exercise, and gain weight have shown that dietary changes explain more than 100% of weight gain over the past 30-40 years – probably we are exercising a little more.*

What do you mean by "Exercise" ? AFAIK, Europeans tend to walk and/or ride bicycles a lot more than Americans do, not as part of some exercise program, but just because that's how they get to work (or to the store, or to their friend's house, etc.). This might explain why Europeans are so much thinner than Americans, even when you control for genetics (*). The same goes for your grandfather, especially if he was an ordinary person, who "micro-fasted" quite often, though not by choice.

(*) Although I can't find the study where I'd read that originally, so maybe Europeans aren't thinner after all…

Hide

myla *says:*

March 12, 2020 at 1:54 am

Obesity is also a problem in Europe of course (I am from Germany), and by problem I just mean that it implies health and other problems for the individuals. Here you can see a list, maybe this is sufficient for what you read: https://en.wikipedia.org/wiki/List_of_countries_by_obesity_rate

I have friends and family members that have visited the U.S. and most commented on the following:
– Wow, so many Americans are obese.
– Wow, so many Americans just drive everywhere, even for things in walking distance.
– Wow, the amount of food they served in the morning was just too much.
– Where can I find real bread? 😉

In Germany I feel this "American norm" when visiting a multiplex cin
"normal" size, which really wants me to scream since it is half a litre of coke. :@

0 comments since 2020-03-31 0

Hide ↑

William75 *says:*

March 11, 2020 at 11:19 am

If the unsaturated fat hypothesis is correct, would its supporters agree that the "truth" is likely to get out and that the obesity epidemic is likely to be reversed (at least for those willing to eat more butter and less vegetable oil)?

My non-expert opinion is that the problem with modern processed food (e.g., a bag of Doritos) is that it is delicious and extremely calorically dense, so that you can happily eat an excessive amount without feeling full. Is this only true, or even possible, because of the addition of vegetable oil? I see that vegetable oil is the second ingredient in Doritos. Would it be impossible to make Doritos with saturated fat? If they were made, would they suddenly be more filling?

Hide

myla *says:*

March 12, 2020 at 2:02 am

As a researcher pointed out, the reason for the cravings for things like desserts and stuff like Doritos is that the combination of fats and sugars and fats and salts makes your brain want it, even if you just ate a whole meal. It's ignoring the natural signals of feeling full. So I don't think it's about caloric density in the first place, because usually people don't eat a bag of Doritos for lunch right? (Maybe some do.)

Also the saturated fat stuff is most likely not correct, read the second paragraph of Scott's article. 😉

Hide ↑

ksdale *says:*

March 11, 2020 at 12:19 pm

Another anecdote about exercise now relative to the last few hundred years – I happen to know a lot of people who work in construction, in the woods, and on farms, and they generally are way more overweight than you would expect for how physically demanding their jobs are.

I always chalked it up to them being very hungry due to physical exertion, and then eating substantially more calories than they burned… Perhaps that is easier now than it was in the past.

I, for one, think there is something to the set point idea. I have recently lost 10-12 pounds and seem to be keeping it off and something I noticed at the beginning was that if I tried to limit my calories, I would get really hungry for a few days, and then as I kept eating smaller meals, my desire for larger meals would gradually fade. But if I lapsed and had a huge meal, then I was back at square one and hungry all the time. It was that way for at least a few weeks, maybe a month.

I've spent a few months eating much smaller meals now, and I've gotten to th 0 comments since 2020-03-31 0ç used to enjoy feel unpleasantly large now, and if I eat way too much, I still seem to want to eat less the next day. A new set point is a perfect way to describe it.

Hide

eelcohoogendoorn *says:*

March 11, 2020 at 12:28 pm

The mouse studies seem pretty much worthless to me. Things like dietary setpoints, or hardcoded assumptions in our signalling pathways about what the 'right' amount of saturated fat derived ROX is, is the kind of thing that a population could adapt to in a few generations; or at least a timescale far far shorter than the evolutionary separation between mice and humans. Sure we share a lot of biochemistry and there is plenty of value in mouse models for the right things; but trying to figure out which fats are bad in this manner is silly.

Not that this influences the overall conclusion much though. Ive stopped believing that dietary science was going to produce anything but noise many years ago. Been giving the IF a try recently out of curiosity; I hadnt tried it yet, and I have not seen it being disproven yet; but I suspect thats also mostly just a matter of time.

Hide

Dave Rolsky *says:*

March 11, 2020 at 1:04 pm

To add some more noise to this conversation, I wrote a post on my blog about my own weight loss experience.

The TLDR is that I ate less food and my weight went from a BMI of 34.4 to 24.6. I didn't change **what** I ate, just how much.

I think this would support the theory that some people have a more malleable weight set point than others. If anything, I reach the point of feeling uncomfortably full too easily these days. The other day I had a croissant and a medium kale caesar salad (both vegan) for lunch, and this was quite filling. Ten years ago, that would not have been the case (I'm 46 now so it's not like I was in my prime growth years back at my heaviest weight).

Hide

morris39 *says:*

March 11, 2020 at 1:15 pm

Long article to say that none of the offered theories is effective, the examples are redundant. The broad reasons are that either the wrong questions are being asked or/and self interest trumps value. Some portion of the second reason is obvious, grift but directed thinking plays a large role. An example is the respected researcher mentioned who is well above average for objectivity but who attributes appetite derangement to origins in the brain (his field of study). That is a convoluted answer. The simplest is that the derangement (if it is that in fact) occurs at the source, the digestive tract. That the brain does not control the autonomic system is well established.
As far as wrong questions what is not considered is that inappropriate accumulation of fat may be a futile

response to a health problem that is in it's terminal stage. An operational explanation can be constructed and tested. Of course that would be a post hoc story and of little use until some e' 0 comments since 2020-03-31 0ç
As a personal matter I find it of practical use but so not discuss b/c no one would consider it reasonable but without any rational reasons.

Hide

teo_nenov *says:*

March 11, 2020 at 1:16 pm

Consider this – the way you process different foods depends on your *genes*.
The reason why nobody was fat before was not only people used to physically spend more calories, but they were stuck eating the same kinds of food for centuries. The ones who could afford different types of food (from foreign lands) – the kings for example – were known to be slightly more obese, and you can find evidence to that. So if your cells are taught to consume certain kinds of food and gain energy from certain kinds of fats, whatever they are, changing that would cause your organism to behave less efficiently – hence some foods make you gain more weight than others, but for other people this doesn't apply, hence no study or experiment can be the single source of truth. We live in a world today where you can buy foods that come from all parts of the world in your local convenience store. Maybe just stick to what your great grandpa used to eat and you'll be fine.

These are just my thoughts, I'd like for someone with a scientific background to tell me why I'm wrong.

Hide

myla *says:*

March 12, 2020 at 2:15 am

Yeah genes are very much involved in why you might get obese, but not necessarily because they determine how you process food – because I guess the compositions of your gut microbes determines how you process it. Here is a very recent lecture about obesity and genes if you are interested: https://www.youtube.com/watch?v=88tWJ1p5d4o

By the way I don't stick to what grandma and grandpa ate and I have no obesity problem, so the hypothesis could be falsified although I could be an outlier (which I am certainly not). And also it seems that eating a variety of food helps to not get obese since it makes many different microbes flourish inside of you instead of only a "small number" of microbe types. Microbe variety is correlated with health and negatively correlated with obesity. So eat as much different stuff as you can. 😉

Hide ↑

zzzzort *says:*

March 11, 2020 at 2:12 pm

Somewhat orthogonal to the question of which diet is the best, but why exactly is the anti-obesity medication sector such a shitshow? I'm a lazy american, I want to be able to take a pill that will result in me being the correct weight, without all of this 'willpower' BS. Given the prevalence of obesity this seems like there would be an enormous market and enormous real benefits. I'm health research adjacent, and I don't know anyone working on obesity, but maybe I have a skewed sample, and it's just a hard problem? Is there some reason to expect that

controlling hunger response or calorie uptake should be harder than controllin 0 comments since 2020-03-31 0ç
production, which we've done pretty well at?

Hide

Randy M *says:*

March 11, 2020 at 2:36 pm

History of diet pills with terrible side effects.

Hide ↑

noyann *says:*

March 12, 2020 at 2:51 am

was there meant to be a link?

Hide ↑

Randy M *says:*

March 12, 2020 at 7:14 am

I mean, it would have been kind, but no, I just have recollections and not facts, sorry.

Hide ↑

gleamingecho *says:*

March 11, 2020 at 3:14 pm

I am given to understand that phentermine is both effective and semi-widely prescribed.

Hide ↑

MadRocketSci2 *says:*

March 11, 2020 at 5:01 pm

Nevermind the cosmetic aspects of weight: I want to be able to take a pill to kick my metabolism into constant overdrive, like my rail-thin friend achieves naturally. Being able to operate at peak energy for 16 hours a day, and turn our overabundance of food into focus, would do wonders for quality of life.

You would think fine-grained control over metabolism would be something that a: has obvious horomonal handles to manipulate and b: would have nigh-infinite demand.

Hide ↑

The Nybbler *says:*

March 11, 2020 at 7:33 pm

> *I want to be able to take a pill to kick my metabolism into constant overdrive, like my rail-thin friend achieves naturally. Being able to operate at peak energy for 16 hours a day, and turn our overabundance of food into focus, would do wonders for quality of life*

0 comments since 2020-03-31 0ç

We've got 'em. They're called amphetamines. There are, of course, side effects.

Hide ↑

noyann *says:*

March 12, 2020 at 2:51 am

Take thyroid hormones to get artificial hyperthyreoidism. (Maybe not a pill but an injection.)

Hide ↑

caryatis *says:*

March 11, 2020 at 5:38 pm

What medications are you talking about that control sex drive? My understanding is that research into libido-increasing drugs for women has been largely unproductive. I don't know about such drugs for men, I imagine there's not much of a market…

Hide ↑

zzzzort *says:*

March 11, 2020 at 5:55 pm

I was actually thinking about chemical castration, with the analogy of suppressing a fundamental urge.

Hide ↑

myla *says:*

March 12, 2020 at 2:21 am

2C-B was once sold as a libido increasing* drug (when taking only small doses), now it's only an awesome illegal psychedelic. 😉

*Totally works for me that way. Other libido increasing drugs are testosterone, which you increase by doing sports and not masturbating. 😛

Hide ↑

noyann *says:*

March 12, 2020 at 2:50 am

Take a pill that contains the head of a live tapeworm.

Hide ↑

dark orchid *says:*

March 11, 2020 at 2:15 pm

Isn't the Mediterranean diet supposed to be particularly healthy and not fattening, and they basically put olive oil

on everything?

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Hide

Douglas Knight *says:*

March 11, 2020 at 3:46 pm

Like most writing on this topic, you go back and forth between "fattening" and "unhealthy." I don't think this lead you to any mistakes, but I think you risk leaving false impressions. The two claims "MUFA are good because it is anti-inflamatory" and "MUFA are bad because it is fattening" are not actually contradictory.

The diseases of modernity, such as diabetes, are probably caused by the same thing that causes obesity. But they are probably not caused directly by obesity, because the correlations are so small. Losing weight at all costs is a mistake. In particular, taking amphetamine for weight loss (a few comments up) seems like a pretty bad decision. And losing muscle in the pursuit of weight loss is a bad sign (as Romeo said way above).

Hide

HarmlessFrog *says:*

March 11, 2020 at 3:56 pm

> *The diseases of modernity, such as diabetes, are probably caused by the same thing that causes obesity. But they are probably not caused directly by obesity, because the correlations are so small.*

I currently believe that being too fat is what causes the vast majority chronic illness. The problem is that you can easily be too fat without even appearing overweight, nevermind obese. And contrariwise, some people are blessed with the ability to get arbitrarily fat without suffering the usual metabolic illness that comes with it. Add a very rough measure for obesity like BMI into the mix, and you have some weak relationships.

Hide ↑

Douglas Knight *says:*

March 11, 2020 at 5:49 pm

I don't think that paper says quite that. It says that there is a variation from person to person of what threshold turns diabetes on and off, but it also says that this threshold varies from cohort to cohort. If the distribution of thresholds were the same today as what it was in 1980, there would be a lot more diabetes today. (Which is what I should have said in the first place.)

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 2:12 am

There is a lot more diabetes today than there was in 1980s. About half the population is diabetic or pre-diabetic (which is just a difference of the degree of diabetes) based on fasting hyperglycemia or glucose tolerance tests alone, and those tests have poor

sensitivity compared to something like a Kraft test 0 comments since 2020-03-31 0ç should be).

Hide ↑

Swami *says:*

March 11, 2020 at 4:36 pm

A crazy one word possibility…

Worms!

What contribution did intestinal parasites have to average weight in pre 1950s era? I remember reading somewhere that over 90% of children in China had intestinal worms in the not to distant past.

The larger topic is the effects of disease in general. In the past, disease and parasites made us weak, so our bodies naturally attempt to adjust for this. In an environment with virtually no serious disease or parasites, we are set too high.

Honestly, I have no expertise in this field. Just spit balling…

Hide

myla *says:*

March 12, 2020 at 2:25 am

I also remember reading about how allergies in African countries increased with the amount of parasitic worms being removed/absent from children and real people. Some worms seem to have a protective effect on humans.

Hide ↑

Quixote *says:*

March 13, 2020 at 7:58 am

Yeah. It's kind of gross. But we should give serious thought to the possibility that the optimal number of parasitic worms is not exactly zero. I mean that right amount of bacteria is not zero. And the ancestors environment did have worms.

Hide ↑

ChrisA *says:*

March 14, 2020 at 6:21 am

Yep – I was scrolling until I found this comment. People had many parasites in the past that we don't have today and also the quality of the food (due to lack of refrigeration) was also much worse. As a result, plenty of days with stomach upsets. When I live in Cairo for instance, probably every second week I got some shits. I didn't have a weight problem!

Of course this isn't the only reason that people are fatter today, but 0 comments since 2020-03-31 0ç

Hide ↑

Lord Nelson *says:*

March 11, 2020 at 6:17 pm

I'm intolerant to soy, and the fact that soybean oil (and soy lecithin) is in everything drives me insane. Anyway, now that I got that off my chest…

The most surprising thing about this entire post, to me, is that croissants are considered a low satiety food. Croissants make me feel fuller than almost anything else, ounce per ounce. I sometimes use a croissant to replace a small meal, and have even used one to replace a full meal in a pinch, to reasonable effect. Surely I can't be the only one…

Hide

Berna *says:*

March 12, 2020 at 1:39 am

I tried this 'Croissant Diet' for a little while (2-3 weeks), and croissants are indeed quite filling. One croissant with old Gouda replaced 4 slices of wholegrain bread with nut paste/vegetarian paté in my diet.

Hide ↑

NoRandomWalk *says:*

March 11, 2020 at 6:42 pm

My hypothesis is that low-level chronic activity doesn't trigger the hunger response, but exercise does. I observe this in myself a lot. After gym, I have to eat, but when I am walking around all day I am not particularly hungry. This is especially prominent when I am fasting – going to the gym makes the fast miserable, but low level prolonged walking around doesn't bother me. So, as we have changed the volatility of our exercise, we've resulting in our bodies encouraging us to eat more.

Hide

Corundum *says:*

March 11, 2020 at 7:01 pm

Another possiblity: There could be a critical window where diet has a big effect on obesity; for example, during gestation or childhood. This would explain both why obesity goes up with the modern American diet (everyone in their critical window is eating the bad stuff) and why changing diet as an adult doesn't have much effect.

Hide

philosophistry *says:*

March 11, 2020 at 11:50 pm

I suspect air conditioning. Most people can tolerate +/- 10 degrees Fahrenheit if they wait 30 minutes and let

their body adjust. Thermoregulation burns a lot of calories. Older, European h probably don't have as much of an install base of A/C. Google turns up some hits on the subject.

0 comments since 2020-03-31 0

(Also, I noticed Rafal briefly mention A/C in their comment above)

Hide

myla *says:*

March 12, 2020 at 2:32 am

This sounds like a cheap, but working marketing strategy of A/C resellers. No way this is the common cause for obesity, which is a problem all over the world by the way, also in Europe.

Hide ↑

Dack *says:*

March 13, 2020 at 11:46 am

The calorie is a unit of heat. Shouldn't being cooler always burn more calories than being warmer, ceteris paribus?

Hide ↑

Loriot *says:*

March 14, 2020 at 6:03 pm

The body is an ensemble of complex interlocking feedback loops, so there's no particular reason to believe that strongly a priori. For example, perhaps the body reacts to cold by reducing energy consumption by internal processes?

Hide ↑

wonderer *says:*

March 12, 2020 at 1:05 am

> *First, conventional wisdom is right about everything. People are fatter today than in the 1800s because they eat too much and exercise too little. They eat too much because they are rich, food is cheap, and food tastes really good. They exercise too little because they're office workers now instead of farmers. In this model, the reason the efficient market hasn't found the secret to weight loss is because there's no secret and weight loss is really hard. It wasn't hard for your great-grandfather because he had fewer options and so he didn't need to exercise willpower to avoid the bad ones. The most sophisticated version of this model, so sophisticated that maybe I shouldn't call it this model at all, is the food reward theory ably defended by Stephan Guyenet.*
>
> *This has a lot going for it, but can't be quite right. Exercise seems like a red herring; studies of how much people eat, exercise, and gain weight have shown that dietary changes explain more than 100% of weight gain over the past 30-40 years – probably we are exercising a little more. And there was really tasty food in 1800s America and 1970s France, so how come people didn't overindulge in that? How does it explain all the weird results like lab animals, pets, and feral rats gaining weight? This probably*

> *part of it, but it still feels like something's missing.*

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I'm surprised Scott dismisses the straightforward explanation so glibly. It seems so obviously like the right one. OK, so we're exercising a bit more than in 1990. So what? Are we exercising more than in 1880? And even if there was tasty food in 1800s America, you couldn't afford it. The GDP per capita PPP was about $3400 in America in 1890. For France, it was about $10,000 in the late 1970s. In today's USA, it is $65,000. This huge discrepancy in income doesn't even cover the huge increase in variety and quality of food over the past few decades. If you happen to be genetically disposed to like Thai food more than American food in 1880, too bad– you probably won't ever know what Thai food tastes like. Today, you can order Thai food every day and get fat on it.

I don't know why lab animals are gaining weight, but pets and feral rats are easy to explain. Pets are getting fatter because we're a lot richer than before, and can lavish more care on pets. Feral rats eat food that we throw out, and since we're richer, we both buy more food and don't try as hard to avoid wasting food.

There's no mystery here. The conventional theory is more than enough to explain the observations.

Hide

sharper13 *says:*

March 12, 2020 at 2:16 am

@Scott Alexander,

Thanks to a little wrestling with Google's image search, here's what appears to be the original source for those graphs, which also references *The Big Fat Surprise* by Nina Teicholz.

Hide

LGS *says:*

March 12, 2020 at 2:23 am

Scott's conclusion still strikes me as too credulous of the saturated-fat-is-good theory. What about all the million health organizations insisting saturated fat causes heart disease – are you really dismissing them on priors, without even checking out the evidence? Here's wikipedia:

> *There are strong, consistent, and graded relationships between saturated fat intake, blood cholesterol levels, and the epidemic of cardiovascular disease.[6] The relationships are accepted as causal.[23][24]*
>
> *Many health authorities such as the Academy of Nutrition and Dietetics,[25] the British Dietetic Association,[26] American Heart Association,[6] the World Heart Federation,[27] the British National Health Service,[28] among others,[29][30] advise that saturated fat is a risk factor for cardiovascular disease. The World Health Organization in May 2015 recommends switching from saturated to unsaturated fats.[31]*

Scott's conclusion says, effectively, that there's not enough evidence saturated fat is good for you; but the

conclusion should really be that saturated fat is quite probably very bad for you!

0 comments since 2020-03-31 0

Hide

The Nybbler *says:*

March 12, 2020 at 6:54 am

I'm not sure if the million health organizations should be considered null signal or negative signal, but I sure wouldn't give them any positive priors. They've been giving the advice all along as we got into this situation.

Hide ↑

LGS *says:*

March 12, 2020 at 11:53 pm

> *They've been giving the advice all along as we got into this situation.*

And as we all know, the public meticulously follows the dietary recommendations of government authorities, right? Give me a break.

Hide ↑

HarmlessFrog *says:*

March 13, 2020 at 2:04 am

Saturated fat consumption has gone down, quite a lot. See Scott's article above.

Hide ↑

LGS *says:*

March 13, 2020 at 3:01 am

He mostly gives evidence that unsaturated fat consumption has gone up.

Hide ↑

HarmlessFrog *says:*

March 13, 2020 at 3:53 am

Given the known compositions of these fats, it amounts to the same. Butter, tallow and lard are the major sources of saturated fat, before the fad for coconut oil came around. You're right that it's hard to tease out precisely how much it's decreased because of multiple confounders, but I do think it used to be much higher than the 11% or so of today.

Hide ↑

LGS *says:*

March 13, 2020 at 11:20 am

> *Saturated fat consumption has gone down, quite a lot.*

…

> *You're right that it's hard to tease out precisely how much it's decreased because of multiple confounders, but I do think it used to be much higher*

One of these sounds much more certain than the other. You're basically just making this up based on your intuitions, but trying to sell it as an established fact.

Hide ↑

HarmlessFrog *says:*

March 13, 2020 at 2:13 pm

Butter is about 65% saturated fat. In 1909, the availability was 14 pounds.
Lard (at least nowadays; it was probably more saturated back then) is 40% saturated. In 1909, the availability was 7 pounds.
Margarine is about 20% saturated. In 1909, the availability was 1 pound.
"Vegetable oils" is non-specific, but back then it was probably cottonseed oil, which is about 25% saturated. In 1909, the availability was 1.5 pounds.

That makes a total availability of about 12.5 pounds of saturated fat, which makes up about 53% of the dietary fat in this model.

In 2009, the availability of butter was 4 pounds (hard to see precisely), the availability of margarine was 3 pounds, the availability of lard was 1.5 pounds, and the availability of vegetable oils was 55 pounds (again, hard to see precisely). Again, it's hard to know exactly which vegetable oils were used, so I'll round off to using slightly later data – about 2/3rds soybean oil (16% saturated), about 1/6ths rapeseed oil (7% saturated) and about 1/6ths corn oil (13% saturated).

That's a total availability of 11.5 pounds of saturated fat, which makes up 18% of the dietary fat. I'm frankly amazed that the absolute number didn't end up being higher than the 1909, given the extreme disproportion in total consumption of oils. The real numbers are probably more in favor of unsaturated fats, given the rising popularity of chicken (chicken fat is about as unsaturated as pork, which is less saturated than beef tallow) and the mostly stable consumption of beef and pork (and the deterioration of pork fat saturation). Nevermind that the list of fats is hardly exhaustive. But let's assume that this is close to the real proportion, for the sake of not having better information.

Total fat consumption in 1909 was about was about 195 grams per day. That's about 64 grams of saturated fat in 1909, and 35 grams of saturated fat in 2009. For whatever reason, be it compliance with health recommendations or simply market forces, the public apparently almost halved their saturated fat intake.

Sources:
https://en.wikipedia.org/wiki/Fat#/media/File:Fat_composition_in_foods.png
https://en.wikipedia.org/wiki/Vegetable_oil
https://www.universityofcalifornia.edu/news/americas-most-widely-consumed-cooking-oil-causes-genetic-changes-brain
https://www.npr.org/sections/thesalt/2012/06/27/155527365/visualizing-a-nation-of-meat-eaters
https://www.usda.gov/media/blog/2014/05/27/100-years-tracking-nutrients-available-us-food-supply

Hide ↑

LGS *says:*

March 13, 2020 at 4:58 pm

As far as I can tell, your claim that butter/lard consumption was much higher in 1909 is not supported by any of your sources. So instead of giving me long lists of irrelevant references that do not mention your main controversial claim, please give just one link which talks about butter or lard consumption in 1909 (or whenever), preferably with a comparison to modern consumption rates.

Hide ↑

HarmlessFrog *says:*

March 13, 2020 at 11:59 pm

This is the direct implication of Scott's figures, the third one especially, where I got the numbers from. Availability is an indirect measure of consumption.

This data is apparently coming from the USDA.

https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/

Hide ↑

LGS *says:*

March 14, 2020 at 12:43 am

Thanks. Lots of interesting information there. Butter declined a lot since

Thanks. Lots of interesting information there. Butter declined a lot since 1909, but it has bottomed out in the earl 0 comments since 2020-03-31 0ç – not exactly what you'd expect if people followed official recommendations!

You're right that lard was a thing and is now basically gone. On the other hand, meat consumption increased, total milk+cream availability increased (with cream increasing a bunch), and eggs have gone up and down but appear to roughly equal the 1909 levels now.

Then again, I'm not adjusting for the fact that consumption per capita of most things increased since Americans just eat more now (they are fat). So maybe the proportion of calories from saturated fat did go down, though it's not 100% clear to me.

Hide ↑

HarmlessFrog *says:*

March 14, 2020 at 2:27 am

> *Thanks. Lots of interesting information there. Butter declined a lot since 1909, but it has bottomed out in the early 80s and has since been increasing – not exactly what you'd expect if people followed official recommendations!*

OTOH, the official message has been a lot less consistent in recent years.

> *You're right that lard was a thing and is now basically gone. On the other hand, meat consumption increased, total milk+cream availability increased (with cream increasing a bunch), and eggs have gone up and down but appear to roughly equal the 1909 levels now.*

AFAIK, chicken is what especially grew. Chicken is at best as saturated as pork. There's the additional confounder that chicken used to be lean, but nowadays thanks to engineering of the broilers, it's become more and more fatty – but the database data isn't updated. Eggs are allegedly about 29% saturated, but I wouldn't bet that this hasn't changed in recent years.

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 8:55 am

Science advances one funeral at a time. There are multiple, contemporary meta-analyses showing that saturated fat is not a problem – if you have any idea how to interpret the findings – hell, the same wikipedia page you cite has ten such reviews. The people who believe otherwise simply haven't died yet, and happen to occupy eminent positions, chiefly due to their age, hence the note later on that these

organizations follow the old paradigm.

0 comments since 2020-03-31 0ç

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LGS *says:*

March 13, 2020 at 1:22 am

If you're waiting for them to die, I suggest not eating so much saturated fat, because at this rate I'd expect the saturated fat proponents to die first (of heart disease). Interested readers may want to click through that wikipedia link of yours, which has meta-analyses both for and against the health risks of saturated fat (but none demonstrating health *benefits* from saturated fat).

Hide ↑

HarmlessFrog *says:*

March 13, 2020 at 1:59 am

I'm not waiting on anyone to die – I can read the literature myself. The folks who rely on medical organizations to feed them predigested summaries are the ones who are reliant on the organizations being up-to-date, not me.

Hide ↑

jmcb *says:*

March 12, 2020 at 2:41 am

After a century of evolution by market selection, the industrial food complex is a complex beast whose sole purpose (in the sense of evolution) is to separate you from your money. This is mostly by using your natural appetites against you, but it doesn't care as long as you pay up. Trying to beat it by adopting a simple diet like No Vegetable Oil is a bit like trying to beat Alpha Zero at chess by a using a simple strategy like Move The Rook. It might be hard to give a scientific explanation of what exactly it is that makes the strategy fail, other than it's the defining purpose of your very sophisticated opponent to make sure that failure does happen.

So the only winning move is… not to play the game. It you're paying someone else for anything but the raw ingredients, if you're paying them for a designed product, then you're playing their game.

A side benefit of not playing the game is that you know exactly what you're eating, and it's super easy to enter all the information into whatever app you like and monitor your exact nutrition and calorie intake and calorie expenditure.

I spent a year doing this (kind of by accident, and gradually at first) and loss 25 pounds without much effort. (48 yo male, 5'11", went from 173 lbs to 148 lbs, basically my high school weight. Now I'm something like 16% body fat, which is not too far away from underwear model territory.) I didn't even think I had more than 10 pounds to lose. I don't really see it coming back because it took no will power at all and I enjoy what I eat much more know than the packaged food I ate before.

I now think anyone can do this. It's a bit like a piece of advanced math. It takes effort until the lightbulb comes

I now think anyone can do this. It's a bit like a piece of advanced math. It takes effort until the formula comes on, and then it's easy.

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Purplehermann *says:*

March 12, 2020 at 3:05 am

This is an interesting point. What are the chances that people who are "lucky" are people who are less susceptible to food marketing tactics?

Hide ↑

bwingrave *says:*

March 12, 2020 at 6:52 am

I assume from your post that you are doing more cooking from scratch than you did before. Is that correct? If so, would you mind sharing how you were able to do this? A typical thought pattern in our house is along the lines of "cooking from scratch takes more energy and time than the easy-to-prepare items so I'll go with what's easy". Would love to hear how you overcame this please.

Hide ↑

BlackboardBinaryBook *says:*

March 13, 2020 at 7:31 pm

I'm not the person you asked, but I'm gonna share my experience anyway in the hopes that it is helpful:

1. If you like cooking even a little bit, try to focus on that. For me, cooking is like hiking or gardening: ahead of time I always doubt whether I want to do it, but during and after it's relaxing, refreshing, and reinvigorating. Practicing mindfulness techniques while cooking is also helpful to both your mental health and the taste of your food.
2. If you're not feeling up to mindful effortcooking, combine it with something else you enjoy. For me that's nerdy podcasts and socializing with my roommates. Family time and TV are also fine options.
3. Develop a routine. Set aside 1 day a week for grocery shopping. If you commute, find a place on your way home where you can make a quick stop for quality fresh produce. Practice making at least 5 different simple meals until you can do them in your sleep. That way you don't feel pressured to be adventurous on days when you just don't have the energy.
4. Organize your kitchen. Anyone who will be cooking frequently should be involved in this if possible, so that you all learn where everything goes.
5. Don't keep junk food/processed food in the house.

Hide ↑

myla *says:*

March 12, 2020 at 2:46 am

Maybe this was already mentioned, but I kind of think that one big reason why so many people are obese these days is that they were obese as children. And later on it's naturally harder to [0 comments since 2020-03-31 0] this your whole life (since the development of more fat cells). Actually, I guess people usually don't get obese as adults (except for women/men after hormonal influences for example or other drug induced stuff).

So why are more children obese these days? Because their parents are bad role models, junk food is available everywhere and children naturally don't move that much these days since there are computer games and other stuff to consume on the couch. Also they inherit the obesity related genes from their obese parents.

So the answer of course is: Computer games. We should ban them. 😛

Hide

stationarywaves *says:*

March 12, 2020 at 5:21 am

I mentioned this in my original comment. There's a series on Netflix called *Ask the Doctor*, and one episode is about obesity. They cover the connection between adolescent and adult obesity in some good detail. Highly recommended for anyone who wishes to know more about this.

The other day, I was working from home and looking after my 5-year-old daughter. I always work out during my lunch hour, so when lunchtime came, we went upstairs and did a P90X workout together. It was great because it involved a lot of running and jumping around in the living room. The kid couldn't stop giggling, which made me giggle, and we spent the whole time laughing and tiring ourselves out. Great fun! I couldn't help but think about what a lot of parents are missing out on because they don't do this stuff with their kids.

Hide ↑

myla *says:*

March 12, 2020 at 11:36 am

Oh this sounds awesome, I would also love to do sports with my children (if I had some). Thanks for the Netflix recommendation too.

Hide ↑

ownshoes *says:*

March 12, 2020 at 2:47 am

I'm interested in the Omega-3 theory, hadn't heard that one before.

As it happens, I've been wondering why I've lost a little bit of weight recently, and I started taking omega-3 supplements at around the right time for this to get added to the big-ol'-sack-o'possibilities. I was never overweight but I'm now at the point where if I lose much more I'll be getting into the underweight category, so solving this mystery is fairly high up my list.

Hide

HarmlessFrog *says:*

0 comments since 2020-03-31 0ç

March 12, 2020 at 9:13 am

The story of n-3 is one of the poster boys for not taking correlation for causation. The association between the n-3 index (what percentage of your red blood cell membranes fatty acids are n-3) and heart disease is huge – comparable to smoking. But if you look at the enormous body of randomized trials, there's next to nothing. Taking supplements won't harm you, that much is established, but it's not going to help much at all.

This doesn't mean that there's nothing to it, but a shortage of n-3 fatty acids is not the causative vector. Rather, I can think of a few other explanations, based on the fact that n-3 and n-6 fatty acids are competitors for the same enzymes, and alter each other's concentrations:
– Low n-3 index is a proxy high n-6 index, which is inflammatory (personally, I don't think this is it, but I've yet to see a trial that tried to raise n-3 indices by reducing n-6, rather than supplementing n-3).
– Low n-3 index is a proxy for processed junk food consumption, which wrecks your health in numerous ways (plausible, but generic).
– Low n-3 index is a proxy for lipid peroxide consumption via processed, long-on-the-shelf seed oils (best idea I've found, but large doses of vitamin E, that this explanation would suggest to try – are harmful to health, not beneficial, so I don't know).

Hide ↑

ownshoes *says:*

March 12, 2020 at 1:19 pm

OK thank you, this is helpful. I'm taking them because the NHS recommends it for vegans, on the basis that it's good for heart health. Hopefully that guidance will keep abreast of any updates to the evidence, and in the meantime it won't be doing any harm, as you say.

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 3:29 pm

Sure, keep taking them. They're not harmful, and offer at least one benefit I know of – sunburn protection.

Hide ↑

Darwin *says:*

March 12, 2020 at 6:46 am

A fourth possibility:

What would you say if I said 'productivity has gone up a whole lot since 1800, what one factor is the cause of that?'

You could point to several big factors, inventions and changes to workflow, but really the answer is 'Capitalism

incentivizes productivity gains in a way that creates millions of little and big ir 0 comments since 2020-03-31 0ç
forms over time.'

What if the 'standard American diet' works the same way?

IE, food scientists have incentives to make foods more delicious and addictive, food capitalists have incentives to make food cheaper and easier to get your hands on, food marketers have incentives to make you always want to eat and make eating something right now seem as appealing as possible, etc.

Assuming those people are good at their jobs, this could lead to a million little things that contribute to the obesity epidemic. The things that make the food more delicious and addictive just happen to involve making them really caloricly dense, throwing their natural nutrient balances out of whack, filling them with many types of chemicals that each cause tiny problems on their own and add up to big issues, etc. Between lower costs and higher convenience increasing demand, and marketers making you always feel hungry and associating their food with good feelings, you always eat more than you need to, even without some smoking gun in the food that's messing with your satiety. Etc.

I can't name every proximal causal factor in this model, which is the point – by analogy, I also can't name every proximal cause of increased productivity. But maybe the ultimate cause of both is the same – market forces happen to incentivize things that increase productivity, and market forces incentivize things that happen to contribute to the obesity epidemic.

Hide

siwhyatt *says:*

March 12, 2020 at 8:34 am

I've been studying this topic for over a decade. I think this question is so difficult as there are many contributing factors.

I highly respect the work of Guyanet, think there's a lot to be said for his food reward theory, but don't think that "eat bland food" is a viable (nor necessary) solution.

There's a lot we don't know, but there are some things we do know for sure:

1 Chronically over consuming calories is bad for health.
2 Loosing excess body fat is very hard.
3 Despite this, some people can and do permanently do so on a wide variety of diets.

Based on the available evidence, my best guess is that "processed" food is problematic because it is designed to be cheap and highly rewarding. Teams of scientists work on refining the mouth feel, smell, etc and ensuring every bite is the same.

Couple this with societal/cultural changes. I think there are many parallels with the opioid crisis. Opioids have been around for ages. Now they are more readily available perhaps, but this alone doesn't explain the epidemic,

why some people become addicted, etc.

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Finally, I think a major factor is the false promise of rapid / easy results. Losing weight and (initially until new set point kicks in) keeping it off is hard.

Very much doubt it's going to turn out it was one or two micro-nutrients behind the whole thing all along.

Hide

eqdw *says:*

March 12, 2020 at 10:53 am

ANECDOTE ALERT:

Last year in July I weighed about 195 lbs. This morning I weighed in at 167.

How'd I do it? Literally just ate less.

How did I eat less? I stopped being hungry.

How did I stop being hungry? Now there's the important question in my mind. It just kind of happened, I don't have a good explanation for it, but a few things:

1) Adderall. Obviously this is kind of cheating. But counterpoint: I was also taking adderall during most of the time I went up from 175 to 195

2) Depression, anxiety, and stress. My life utterly fell apart in 2019 and it got to a point where for weeks at a time I would skip dinner because I was too depressed to bother cooking. But counterpoint: I am maybe 50% over all of that, and my appetite is still suppressed, and my weight loss is still progressing

3) _Somewhat_ avoiding processed foods. Work feeds me lunch and so I eat decent cooked meals instead of prepackaged lazy bachelor food. But counterpoint: I am really half-assed about this, and I still eat a nontrivial amount of processed foods. Further, like Scott's post said, I have no idea what part of processing is the bad part. For all I know the food they prep at work is processed to hell and back

4) A conscious effort to eat more red meat, and a generalized reduction in carbs. Not enough carb reduction to come anywhere close to keto. But, for example, once or twice a week for dinner I'll just make a steak (covered in salt, pepper, and butter) and then just eat that for dinner. No sides, no veggies, nothing. Just the steak. Over the past few years I have come to believe that red meat is critically important for my health (mostly due to noticing halfassed correlations) but I have not ever tracked this in detail.

These are the only things I am aware of that would have had any impact on this. Interesting to note: physical activity and fitness had _nothing whatsoever_ to do with my weight loss. In fact, despite being the lightest I have been since 2012, I'm probably considerably more out of shape than I used to be; eg I doubt I could handle a 10 mile hike right now.

0 comments since 2020-03-31 0ç

Anyways, I am not a doctor, I am not a nutritionist, but I am pretty convinced that the reason people are fat these days is because they eat too much, and the secret to weight loss is to eat less. I think most of the interesting science is probably under the question of "how do different diets / nutrients / etc affect appetite"

Hide

The Nybbler *says:*

March 12, 2020 at 2:48 pm

You might appreciate The Hacker's Diet: How to lose weight and hair through stress and poor nutrition

I've found also that my weight is correlated (not anti-correlated) with physical activity, but it's for the really obvious reason that when I'm doing a lot of physical activity I get hungry and eat more. Lowest weight I've been as an adult was when I'd broken my hip and wasn't eating much because it was hard to get up off the couch. On the other hand I was borderline "overweight" when I was doing competitive inline skating, but I wasn't really buying the BMI guidelines when it was hard to get my jeans over my calves.

Hide ↑

Loriot *says:*

March 12, 2020 at 9:20 pm

> My life utterly fell apart in 2019 and it got to a point where for weeks at a time I would skip dinner because I was too depressed to bother cooking. But counterpoint: I am maybe 50% over all of that, and my appetite is still suppressed, and my weight loss is still progressing

Perhaps this lowered your body's set point so you are less hungry even after the depression goes away?

Hide ↑

easytoremember *says:*

March 12, 2020 at 1:54 pm

I think that weight loss mostly comes down to how much you eat (in terms of calories), and not so much what you eat, assuming you have a reasonably healthy diet (I.e. you get enough macronutrients and avoid things that are unquestionably bad, such as trans-fats).

Our BMR, the base number of calories one's body needs to consume to function, is the baseline amount that one should try to meet every day and then add on to, depending on how much they exercise and their build.

There are plenty of reputable websites online providing estimates on how many calories you need to maintain, as well as lose, weight.
So long as you maintain a caloric deficit, you should be able to shed those extra pounds.

If my memory serves me right, 3000-3500 calories is around a pound of weight. So, for example, if a person has a daily caloric-deficit of 400, that would be 2800 calories lost every week, a little under a pound!

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However, be cautious not to go overboard and not to deprive yourself of too many calories. Sudden, extreme weight loss is associated with many health issues.

At risk of being cliché, remember: moderation is key.

Hide

HarmlessFrog *says:*

March 12, 2020 at 3:34 pm

> *I think that weight loss mostly comes down to how much you eat (in terms of calories), and not so much what you eat, assuming you have a reasonably healthy diet (I.e. you get enough macronutrients and avoid things that are unquestionably bad, such as trans-fats).*

Whereas, I think that what you eat determines how hungry you are, and how much you will eat.

> *Our BMR, the base number of calories one's body needs to consume to function, is the baseline amount that one should try to meet every day and then add on to, depending on how much they exercise and their build.*

The problem is – caloric restriction without dietary habit alteration will drop your BMR, if you lose weight doing it, much more than loss of lean mass would predict.

> *However, be cautious not to go overboard and not to deprive yourself of too many calories. Sudden, extreme weight loss is associated with many health issues.*

Correlation isn't causation. Fasting is remarkably safe for what it is.

Hide ↑

easytoremember *says:*

March 12, 2020 at 7:37 pm

> *Whereas, I think that what you eat determines how hungry you are, and how much you will eat.*

I agree with this. Nowhere in my post do I address this issue. Satiety can vary wildly between foods and obviously calorie-dense meals that don't leave you feeling full afterwards would make it harder to lose weight.

> *The problem is – caloric restriction without dietary habit alteration will drop your BMR, if you lose weight doing it, much more than loss of lean mass would predict.*

~~I'm not sure I agree with this. As far as I know, BMR is independent of diet and what changes it is your current weight, your body fat percentage, height, gender, age, and some negligible genetic factors as well.~~

It seems that caloric restriction can drop your BMR more than you'd expect, but I'm sure one could account for this drop while calculating caloric needs.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3914266/

> *Correlation isn't causation. Fasting is remarkably safe for what it is.*

This is why I put "Moderation is key" at the end of my post. A reasonable amount of fasting would have little or no side effects.

And while correlation isn't causation, that doesn't mean sudden weight loss isn't associated with many adverse effects.
It's been well documented in medical literature that drastic weight loss over a short period of time is a risk factor for many health conditions, and can increase your risk of having gallbladder stones, fatty (ironically) liver disease, gout and other conditions.

https://www.hopkinsmedicine.org/health/conditions-and-diseases/gallstones

https://spssi.onlinelibrary.wiley.com/doi/abs/10.1111/0022-4537.00116

I *guess* it's possible that there are confounding factors, and that it isn't really the cause of anything bad. But how likely is that?

At the very least, surely you agree that muscle loss due to your body not having enough energy in the form of fat and sugars is a bad thing, and that extreme fasting can cause one's body to target lean mass for energy?

Where it gets tricky is in defining "rapid" weight loss. But over 2 pounds a week is excessive, in my opinion, in most cases, and it's likely you'll rebound and gain that weight back anyway if you lose it really quick.

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 11:35 pm

> *It seems that caloric restriction can drop your BMR more than you'd expect, but I'm sure one could account for this drop while calculating caloric needs.*

You can. But it's surprising to many that they need to eat far less than their lean-mass-matched counterparts in order to home in on their leanness, and it's quite distressing to have to eat something like 1000 kcal for extended periods of time. I probably couldn't stomach it.

> *And while correlation isn't causation, that dc* 0 comments since 2020-03-31 0ç
> *isn't associated with many adverse effects.*
> *It's been well documented in medical literature that drastic weight loss over a short period of time is a risk factor for many health conditions, and can increase your risk of having gallbladder stones, fatty (ironically) liver disease, gout and other conditions.*

How many of those apply to **intentional** weight loss?

> *I guess it's possible that there are confounding factors, and that it isn't really the cause of anything bad. But how likely is that?*

Pretty likely, actually. If you are losing weight without intending to, something really weird is going on. Body weight is homeostatically regulated with long-term tendency to creep up, not down, as you age. If you're losing weight for no reason, for all I know your thyroid could be messed up, or you can have cancer, or early type 1 diabetes, or end-stage type 2 diabetes, or any number of other conditions that cause wasting.

> *At the very least, surely you agree that muscle loss due to your body not having enough energy in the form of fat and sugars is a bad thing, and that extreme fasting can cause one's body to target lean mass for energy?*

I agree that excessive lean mass loss is bad. But I disagree that fasting is particularly hard on lean mass. Just about any successful weight loss regimen will burn lean mass and fat mass. This is normal, expected and desireable – you don't actually want to have the extra blood vessels, connective tissue, and skin, and you don't need the extra muscle to lug around the extra fat mass.

> *Where it gets tricky is in defining "rapid" weight loss. But over 2 pounds a week is excessive, in my opinion, in most cases, and it's likely you'll rebound and gain that weight back anyway if you lose it really quick.*

More like, you will rebound if you go back to your previous dietary habits. You can permanently, until you die, eat a calorie-reduced diet, sure, but that's a non-starter for almost everyone.

Hide ↑

easytoremember *says:*

March 13, 2020 at 2:36 am

> *and it's quite distressing to have to eat something like 1000 kcal*

Unless you're a bed-bound, five foot elderly woman who's on the verge of

death, you'll need more calories than thi0 comments since 2020-03-31 0

> *How many of those apply to intentional weight loss?*

Rapid weight loss is bad regardless of whether it's intentional or not. And, unneeded to be said, unintentional weight loss is something you should talk to your doctor about, as it can be a sign of other health issues, like you mention.

> *I agree that excessive lean mass loss is bad. But I disagree that fasting is particularly hard on lean mass. Just about any successful weight loss regimen will burn lean mass and fat mass. This is normal, expected and desireable – you don't actually want to have the extra blood vessels, connective tissue, and skin, and you don't need the extra muscle to lug around the extra fat mass.*

I think you seem to be equating the "rapid, unhealthy weight loss" I mention with IF here, something you're a proponent of clearly.

I'm not pro IF, nor am I against it. It can be just as effective as daily caloric deficits if done right.

I don't, however, think completely abstaining from eating every two days and having an average caloric deficit of, say, 300 cals per day is any more effective than just eating 300 calories less daily.

That's just CR with extra steps.

And regarding your contention that losing weight too fast doesn't mean an unhealthy loss of lean mass, I completely disagree.

> *Just about any successful weight loss regimen will burn lean mass and fat mass. This is normal, expected and desireable*

This is not true and potentially dangerous advice. Just take a look at all the anorexic people who are wasting away after going on fad diets.

Insofar as they've lost weight, you can call their weight loss regimen "successful" I guess. But would you consider it healthy? No.

Not all diets are equal. The ones that don't provide your body with enough kcals **will definitely make it eat your muscles for energy**.

The study you link compares a CR diet with an IF one and comes to the

conclusion that IF doesn't show any adve 0 comments since 2020-03-31 09
Nothing in that particular study is extreme, or what I'd consider a truly dangerous amount of weight lost.

I bet that if they did a similar study but the participants were told to do intermittent fasting 6 days of the week, and eat a normal amount on the final day, you'd see tons of side effects.

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HarmlessFrog *says:*

March 13, 2020 at 3:43 am

> *Unless you're a bed-bound, five foot elderly woman who's on the verge of death, you'll need more calories than this.*

If you want to be weight stable, sure. If you want to continue losing weight, instead of stalling at "still obese", a thousand kcal is probably just a modest undershooting of your caloric needs. Adaptive thermogenesis is a bitch.

> *Rapid weight loss is bad regardless of whether it's intentional or not.*

I disagree.

> *I don't, however, think completely abstaining from eating every two days and having an average caloric deficit of, say, 300 cals per day is any more effective than just eating 300 calories less daily.*
>
> *That's just CR with extra steps.*

To me, it's quite a lot more doable, because of the added simplicity – eating vs not eating, rather than doing calculations every day.

> *And regarding your contention that losing weight too fast doesn't mean an unhealthy loss of lean mass, I completely disagree.*

Where do you even get that idea from?

> *This is not true and potentially dangerous advice. Just take a look at all the anorexic people who are wasting away after going on fad diets.*

Nobody is advising anorexics to do that.

0 comments since 2020-03-31 0ç

> *Not all diets are equal. The ones that don't provide your body with enough kcals will definitely make it eat your muscles for energy.*

Yes. This is true regardless of whether you're restricting calories or fasting.

> *The study you link compares a CR diet with an IF one and comes to the conclusion that IF doesn't show any adverse effects. Nothing in that particular study is extreme, or what I'd consider a truly dangerous amount of weight lost.*
>
> *I bet that if they did a similar study but the participants were told to do intermittent fasting 6 days of the week, and eat a normal amount on the final day, you'd see tons of side effects.*

(I assume you mean a prolonged fast for 6 days, then normal eating.)

You'd lose that bet, not only because the medical literature includes plenty of studies of acaloric prolonged fasting, but also because I've done such things twice myself, absent side-effects. There are several studies on prolonged water-only fasts for periods that even I would balk at. Like these:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1274154/
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4982520/
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2495396/

Hide ↑

camp0526 *says:*

March 12, 2020 at 6:24 pm

Microplastics in all our food, homie.

Hide

Outlaw_Thirds *says:*

March 12, 2020 at 7:34 pm

I found Why Calories Count very convincing; we're living in a world of unprecedented abundanceand endless opportunities to wirehead with delicious food. The one thing that all fad diets promise is that you can somehow cheat thermodynamics, and if one of them worked it would have conquered the world by now because someone would wrap it in an appetizing package and make billions.

Hide

easytoremember *says:*

March 12, 2020 at 8:09 pm

Great read!

0 comments since 2020-03-31 0ç

It's ridiculous how many people think that certain food will make you gain more weight if it has more sugar, or fat etc. even if the calories in it are the exact same amount as something purportedly healthier.

You could live off a diet of nothing but twinkies and Mcdonald's big macs, and so long as you weren't getting enough calories, you'd lose weight.

This public ignorance of nutritional facts isn't helped whatsoever in America by the big junk food companies who have their grubby, capitalistic hands in every proverbial pie intended to *educate* the public on nutrition.

I suggest everyone read the wikipedia list of controversies for this if they want to be in for a shock: https://en.wikipedia.org/wiki/Academy_of_Nutrition_and_Dietetics

Yeesh, and the rest of the world laughs at Americans for being ignorant, but the game is really rigged against them.

Good luck finding sensible advice when financial motives stack the deck against you at every turn.

It's sad really, and this sort of misinformation isn't limited to the food industry either.
From my experience, you can find it in any industry where human suffering is exploitable for profit.

Hide ↑

HarmlessFrog *says:*

March 12, 2020 at 11:37 pm

> *You could live off a diet of nothing but twinkies and Mcdonald's big macs, and so long as you weren't getting enough calories, you'd lose weight.*

If.

Hide ↑

mcpalenik *says:*

March 13, 2020 at 10:42 am

I've actually done this, sort of. I ate almost exclusively McDonald's hamburgers, restricting myself to approximately 1500 calories per day, and exercised, and lost 44 lbs (from 220 to 176) in a few months. In the 8 years since, I've gained about 14 lbs, but when I stopped doing that (I was still running 2-3 days per week, no more weight lifting and no calorie restriction) I stayed in the mid 180s for about 7 of those 8 years (as of now, I'm just over 190).

Hide ↑

Squirrel of Doom *says:*

March 12, 2020 at 8:44 pm

This text assumes a low body weight in the past was a sign of health.

My mental model is that humanity has almost always lived on the verge of starvation through history, until the Industrial Revolution increased our incomes by 30x over 250 years, and now we can eat as much as we like.

So I don't think those thin people were very healthy. They were probably as fat as they could be, given the poor life they led.

Hide

Carl Milsted *says:*

March 12, 2020 at 9:14 pm

Here are some things that have changed over the past half century:

1. Sugary drinks are WAY up. When I was a kid, Coke was making the transition from 6 to 12 ounce bottles. Today, a 12 ounce soda is a small, or even below small. Also, the supply of good quality fruit juices was much lower when I was a child. Welch's grape juice came in quart glass bottles. Orange juice came in concentrate form. And so on.

2. There is a difference between polyunsaturated oils and polyunsaturated oils that have been subject to high heat or long periods of heat. Eat a cup of raw walnuts and you will have no lingering greasy mouth feel. Go to a chain restaurant which serves vegetables sautéed on a 450 degree griddle lubricated with soy oil and you will get a greasy mouth feel that lingers for hours. You have been varnished. Maybe the body accumulates such varnish without burning it readily.

3. Tomato sauce consumption is WAY up from my childhood days. There is something addictive about tomato sauce. I tend to overeat foods which contain it.

4. Humans are slow to convert the simpler polyunsaturates into the longer chain versions. We can handle lots of nuts. But our food animals are affected by their feeds. What we feed our food animals has changed dramatically over the past half century. The Nixon Administration changed how corn is subsidized, which led to a move to aggressive corn feeding of animals. (See *Inflammation Nation*.)

5. We smoke less. Maybe the other factors that lead to obesity start earlier but were hidden by tobacco.

Hide

William Eden *says:*

March 12, 2020 at 11:41 pm

I just got around to reading this, so unfortunately my comment is going to be quite stale, but maybe someone somewhere will find this useful.

I have been a big fan of Peter at Hyperlipid for a long time, and so I thought i 0 comments since 2020-03-31 0ç more specifically what he predicts. The mitochondrial implications aren't just about types of fat, but also macronutrient proportion, and glucose vs fructose. It all ends up being mechanistically complicated, but it does give a spectrum of fats/carbs that he believes should be more or less healthy on a mitochondrial level:

1) Saturated fat-based almost ketogenic diet
2) Shift to monounsaturated fats as starch increases in the diet
3) Starch-based diet, with a small amount of polyunsaturated fats
4) Almost entirely pure carbohydrate based diets

Fructose is especially metabolically harmful. On the mitochondrial level, it is worst in combination with saturated fats. But he has an unrelated set of thinking that believes the liver specifically gets damaged by fructose/alcohol + polyunsaturated fats, which leads to loss of glycemic control and type 2 diabetes. So really fructose is just never safe to consume…

The underlying model behind all of this honestly is quite interesting, and touched on NAD/NADH ratios well before the anti-aging fad kicked off, but especially FADH2/NADH ratios – which forms much of the basis of the spectrum of health diets I posted above.

And it turns out you can basically find healthy diets along all 4 points in that spectrum:
1) Ketogenic diet
2) Mediterranean diet
3) The original ADA/AHA diets (much lower in fat than any "low fat" diet eaten in practice)
4) Tons and tons of ancestral populations eating primarily starch

It is a complex theory, but it's also trying to explain something with the complexity of biology (extremely complex!) and explain a widely disparate set of experimental results, while making actual experimental predictions!

Hide

HarmlessFrog *says:*

March 12, 2020 at 11:50 pm

> *Fructose is especially metabolically harmful. On the mitochondrial level, it is worst in combination with saturated fats. But he has an unrelated set of thinking that believes the liver specifically gets damaged by fructose/alcohol + polyunsaturated fats, which leads to loss of glycemic control and type 2 diabetes. So really fructose is just never safe to consume…*

Which is kinda strange, given that fructose is widely occurring in nature (fruits and honey), and are hunter-gatherers are known to eat it whenever they have the chance.

Hide ↑

William Eden *says:*

March 13, 2020 at 12:58 am

0 comments since 2020-03-31 0ç

Sorry, I overstated things in that last sentence, because if you buy this model then fructose is pretty dangerous and under reasonable conditions we probably shouldn't eat much of it.

But – I worded #4 deliberately: from a metabolic perspective, a reasonable amount of fructose consumption is fine when consuming *just carbohydrates* and little/no saturated fat. At low enough fat levels, glucose/fructose ratios can be effectively compensated for in the mitochondria.

This is the post that covers it: http://high-fat-nutrition.blogspot.com/2015/10/protons-and-ultra-low-fat-once-more.html

Hide ↑

Carl Pham *says:*

March 13, 2020 at 4:35 am

For what it's worth, I've had a lot of success with approximately Greger's "nothing but whole plants" diet. Weight came way down, lipid panel improved dramatically (LDL in the 60s for example), pre-diabetic markers (A1c et cetera) all backed off into healthy territory. I didn't go whole hog, because I kept fish in, since I really like fish. Mostly salmon, sardines, the occasional tuna. And the change was very rapid — only 6 weeks in before I noticed big changes.

I don't really buy all of Greger's fanatical evangelism, and his endless studies that "prove" his point. (You should read him on chicken — man, it's like eating plutonium as far as he's concerned.) But it's true if you stick to just eating plants that arrive at your cooking apparatus essentially as they come from the ground — whole raw vegetables, brown rice, whole potatoes, et cetera — then there's little doubt there's no "processing" however you define the word (except the cooking you do yourself of course, and part of the deal is you can't fling in large quantities of salt and sauces, you have to stick to more or less the kinds of spices you could theoretically pull form a garden).

One has to wonder why you can't add red meat to this "unprocessed" diet, since one tends to buy meat "unprocessed," more or less straight from the animal's corpse, and maybe you can, but there is an argument that the red meat we eat today is nothing like what our great-grandparents ate. Cattle these days eat a lot of grain, whereas then they ate at lot more grass. They're kept disease-free with antibiotics and gain weight much faster, modern meat is considerably more tender and less "muscular" and fibrous than it used to be. (Even I in my lifetime have noticed the difference in chickens; modern chickens are incredibly plump and soft compared to those I ate as a kid 50 years ago.) Perhaps the pre-death "processing" of our farm animals adds up to a change in the nature of our meat which makes it no longer as healthy for us as it was for our grandparents? It may be fish haven't suffered the same fate, because they aren't really domesticated yet — haven't been bred to the same degree.

Anyway, that's my anecdote. One (1) data point. More or less it consists of giving up on finding *exactly* how the modern diet differs from the older diet, and just says to hell with it, eat as if it was the Depression and you were pulling vegetables out of your backyard, or buying them from a farmer's stall, and you couldn't really afford

to buy anything baked or premade. As to why it isn't more popular — well, ho 0 comments since 2020-03-31 0ç
Plain whole vegetable foods, even with assorted spices, just don't zing on the tastebuds much. You get to pondering a BLT on toasted sourdough bread, chocolate ice cream, eggs Benedict, mmm mmm. Maybe our great-grandparents just couldn't afford much different all the time, or maybe if you eat a modern diet long enough your tastebuds get desensitized, habituated, and you need more powerful flavor signals than our ancestors did.

I'll add that the H2O2 signal theory of satiety signalling strikes me as colorful nonsense. I read the paper pointed, and there's a whole lot of hypothetical chains there, a lot of could-maybe-isn't ruled out kind of stuff, which in the quagmire-thicket that is biochemistry means to me this is pretty speculative stuff. Anyway, H2O2 is such a short-lived molecule a priori it doesn't seem super plausible it could fill this role as a general messenger. Usually the body uses short-lived tiny molecules for very local signalling, and why would hunger and satiety be a very local process?

Hide

HarmlessFrog *says:*

March 13, 2020 at 4:58 am

> *One has to wonder why you can't add red meat to this "unprocessed" diet, since one tends to buy meat "unprocessed," more or less straight from the animal's corpse, and maybe you can, but there is an argument that the red meat we eat today is nothing like what our great-grandparents ate.*

You can totally add meat to that (hell, you can eat nothing but meat, if you want). The active ingredient in "whole foods, plant-based" is the "whole foods".

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6628127/
https://www.ncbi.nlm.nih.gov/pubmed/31105044

Hide ↑

Carl Pham *says:*

March 13, 2020 at 1:36 pm

Yes, I kind of figured. That was why I was OK with leaving the fish in, and it has apparently done me no harm. With the meat and poultry, though…as I said in my comment, the way those animals are raised has changed tremendously over the past 100 years, and so arguably the animals themselves are "processed" in ways that may not make them good to eat any more. There are lots of people who swear by grass-fed beef, or free-range chickens, and there's a bewildering array of claims about assorted ways of raising them out there. But I'm not *that* fond of meat and poultry anyway, so if I can keep my fish I'm good, and I don't have to try to figure out how to get "unprocessed" animals in my diet.

Which is to say, I agree in principle, but it seems annoyingly time consuming to execute in practice.

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By the way, one of Greger's weirder but more intriguing hy
raising poultry makes them reservoirs of assorted zoonotic viruses that may not be doing you any good. Subclinically, generally, meaning there is no big obvious illness. But perhaps a chronic unnoticed infection and reinfection by some virus or other is doing you harm — maybe it alters the gut biome or something? Who knows? But it's an interesting argument that viral transfer from chickens to humans (mostly during preparation, obviously not after being cooked) is an issue. From that point of view, the virtue of eating plants is that there are *no* viruses that can jump from plants to humans, the phylogenetic distance is just too great.

Hide ↑

HarmlessFrog *says:*

March 13, 2020 at 2:18 pm

Valid concerns – but mind you, domestic plants weren't left alone, either. The industry is always trying to breed cheaper, tastier variations of the staples, and damn the micronutrient content, or the necessity of artificial chemical protection.

Hide ↑

Carl Pham *says:*

March 13, 2020 at 4:25 pm

Ha ha yes that's true. Best to grow it all yourself from heirloom seeds, I guess. Yikes.

Although I've also heard a "hygiene hypothesis" in re the gut biome, which argues that in the days when we ate less thoroughly cleaned produce, we got a regular dose of soil microbes which contributed to a healthy gut. I guess I could add a 1/4 teaspoon of dirt to the nightly meal and see how it goes…

Hide ↑

Quixote *says:*

March 13, 2020 at 7:20 am

I'm skeptical of this theory. There are a lot of studies that have found good things to be correlated with the "Mediterranean" diet which can be summed up as put lots of olive oil on everything. Since olive oil is an unsaturated fat, of unsaturated fat had a strong negative effect we would have seen it in all the med diet studies. We saw the opposite.

I'm strongly of the view that diet is a red herring and the driver of obesity is probably some ambient chemical that became common at around the same time as modern food processing. Maybe a weed killer like round up that's in the water. Maybe micro plastics ingested from bottles after the switch from glass to plastic packaging. Maybe flame retardants. Maybe pesticides that get into the water. I'm not sure and anything I would say would just be speculation. But I would have expect that whatever the real cause is, it's very wide spread, and associated with industrialized modern societies.

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Carl Pham *says:*

March 13, 2020 at 1:55 pm

People have argued it's birth-control pills. I find it a little dubious, just because I doubt *all* environmental chemicals are doing us in hypotheses, since they are close to homeopathy in their faith that parts per trillion of a compound can have profound effects. But women have been dosing themselves with pretty impressive levels of synthetic estrogen and progesterone, and they do live in close proximity to men, so to speak. Who knows?

Hide ↑

Gerry Quinn *says:*

March 16, 2020 at 1:25 pm

If it's 'something in the water' it seems to me that it would affect everyone a bit, rather than affect some fraction of people while leaving others apparently untouched.

Hide ↑

wiserd *says:*

March 13, 2020 at 7:40 am

Several extra things (of the inevitbale million) to consider;

Calcium metabolism links back to relevant issues in a lot of different ways. K2, which 'takes calcium from the bloodstream and puts it into the bones' in unrefined animal products is linked to reduced arterial calcification.

K2 is higher in free range chickens that have been allowed to eat grubs than farm raised chickens. Since quality standards vary widely, we should note that free range chickens raised in this way should have more 'orangeish' yolks due to higher levels of caretinoids.

Milkfat is associated with reduced weight gain relative to other forms of fat.

> *Data from epidemiological studies and clinical interventions suggest that one or more dairy components might directly affect MetS parameters. For example, calcium has been postulated to reduce body weight by modulating vitamin D concentrations in plasma and therefore attenuating intracellular calcium effects in activating genes involved in fatty acid synthesis and reducing those involved in lipolysis. Peptides present in milk have been associated with the inhibition of angiotensin converting enzyme and, therefore, with blood pressure reductions. Branched chain amino acids may increase post-prandial insulin secretion and regulate plasma glucose levels, and leucine, an abundant amino acid in milk, may be responsible for decreased plasma glucose through modulation of mTOR. Through different proposed mechanisms, dairy nutrients may target all components of MetS.*

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4031787/

(CLA), a fatty acid found naturally in ruminant animal food products, has beer 0 comments since 2020-03-31 0ç obesogenic agent,
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6413010/

(Though of course the Chinese have traditionally had low rates of obesity and also low rates of milk consumption.)

Given sunlight's role in mood and vitamin D production (and vitamin D's role in calcium metabolism) I think there's a lot of support for looking at time spent outdoors.

Also, it seems worth noting, tangentally, that "Vitamin D" is not actually a vitamin and 25OH vit D3, which is often used as a marker, may be reduced via inflammation.

Flavanoids (basically coloring) in plants tends to reduce the speed of nutrient absorption which would reduce insulin spikes.

Also; Boiled (but not fried) potatoes seem to promote fullness more effectively than their calorie content would predict via protease inhibitors. I do wonder if any other unprocessed plant has similar activity, though I don't know of it. It would be quite reasonable for plants to evolve chemicals that encouraged animals to eat less of them.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3033477/

Hide

NovaByblos *says:*

March 13, 2020 at 8:57 am

> *Intermittent fasting – again, cool idea, but your great-grandfather wasn't doing that, and he had a 1% obesity risk.*

I politely recommend revising this. He sure was doing that. Look at modern rates of "longest time between calorie consumption" vs then. When 95% of people were farm laborers, they absolutely did not get up and have a big breakfast, then a starbucks sugar bomb mocha at 10am, then lunch at 12, after snack at 3, dinner at 6, and a bowl of ice cream before bed. They woke up at the sun, worked all day and (on average) had one big meal after work. That has major effects both along Intermittent Fasting lines and just lower calorie consumption (due to psychology/satiety, almost no one can eat the same amount of calories in 1 meal as they do in 3 meals + 3 snacks during the day).

Your general method of "let's see what they did in the past when they had no obesity, in order to judge modern theories" is a good one, but in this case you're overstating it and undermining the method!

Also, I assume you are referring to "intermittent fasting" variants like "16:8" where people try to not eat for 16 hrs each day. That's one type, but another type is doing longer water fasts (1-5days). Again, great grandpa absolutely "did" this method, but it was usually enforced on him by wartime rationing, famines or enemy soldiers

absolutely "did" this method, but it was usually enforced on him by wartime rationing, famines or enemy soldiers burning his crops.

Also #3: I think if you look into the intermittent (and longer) fasting research, you will find exactly the kind of data that is supported by the "did grandpa do it?" methodology. I would love to read it when you do!

Hide

akarlin *says:*

March 13, 2020 at 12:28 pm

Don't know if it has been mentioned, but let's make one important observation: The obesity epidemic started in the US in the 70s, then spread to its colonies and to Western Europe with a 10-20 year time lag and is now a global phenomenon.

What happened around that time? The extreme commercialization of agriculture, which translated into a collapse of nutritional value per calorie. There are studies showing this trend (collapsing mineral content per calorie) for a variety of grain crops, e.g. see Fan, Ming-Sheng, Fang-Jie Zhao, Susan J. Fairweather-Tait, Paul R. Poulton, Sarah J. Dunham, and Steve P. McGrath. 2008. "Evidence of Decreasing Mineral Density in Wheat Grain over the Last 160 Years." Journal of Trace Elements in Medicine and Biology: Organ of the Society for Minerals and Trace Elements 22 (4): 315–24.

In the "old days", you could get a balanced diet through a carb heavy diet. But now you need to "overconsume" carbs to get your needed dosage of minerals and vitamins. Some people's metabolisms cope as is; other people need to stick to predominantly high nutritional quality foods (often translating into diets such as paleo or keto), which however requires discipline and discretionary income. Capitalism has literally made people fat.

Hide

Skivverus *says:*

March 13, 2020 at 1:09 pm

I mean, it beats starving to death, which is what all that extra food was being grown to prevent. (Wikipedia reference)

Hide ↑

akarlin *says:*

March 13, 2020 at 2:47 pm

But where did I make the contrary claim? ☺

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HarmlessFrog *says:*

March 14, 2020 at 9:06 am

> *In the "old days", you could get a balanced diet through a carb heavy diet. But now you need to "overconsume" carbs to get your needed dosage of minerals and vitamins.*

Is there experimental evidence for micronutrient leverage in humans

strategy is just maximizing calories, with just about no regard paid to stuff like vitamins and minerals.

Hide ↑

MTSowbug *says:*

March 16, 2020 at 5:45 pm

If this were the explanation, wouldn't we expect consuming multivitamins to mitigate obesity?

Hide ↑

HarmlessFrog *says:*

March 17, 2020 at 8:56 am

An excellent point.

There is at least some evidence of that.

https://www.nature.com/articles/ijo201014

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edh *says:*

March 13, 2020 at 12:41 pm

> *In the 1800s, the average US man weighed about 155 lbs. Today, he weighs about 195. The change is even starker at the extremes. Someone at the 90th percentile of weight back then weighed about 185 lbs; today, he would weigh 320 lbs.*

I read this as saying that 10% of men in the United States today weight at least 320 lbs. Am I interpreting this correctly?

If so, what's the evidence for this statistic?

I'm skeptical. For one thing, it's inconsistent with my real-life impressions. That doesn't make it false (I could just be a bad observer: bad at estimating weights of people I encounter, bad at estimating deciles, exposed to biased population samples, etc.) But more significantly, this claim seems to conflict with the statistics I see online.

Hide

Carl Pham *says:*

March 13, 2020 at 1:32 pm

My online research suggests 90th percentile for modern men is about 260 lbs.

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DannyTheSwift *says:*

March 13, 2020 at 3:30 pm

My reactions:

> *Everybody I ask acts like the answers to these questions are obvious, but everyone has different answers, and nobody can tell me their decision procedure.*

My pet hypothesis is that it's the bleach. I started making my own sourdough recently, based on the fact that it seems to be the only bread historically consumed in any of the Blue Zones (areas with unusually high concentrations of male centenarians (yes there is controversy surrounding the accuracy of these, because of course there is)). Sourdough is abnormal because it's made from a fermented starter culture of lactobacillus, instead of from yeast. For the first few weeks, I couldn't get my starter right. Then I realized that I'd been using regular flour, whereas the recipe specifically calls for unbleached all-purpose flour. The bleach was killing the lactobacillus before I could get the culture going. There are plenty of studies showing different ratios of 'good' vs 'bad' bacteria in the microbiomes of obese vs healthy people. I think that the bleach in our diets may be preferentially killing off the 'good' bacteria in our microbiomes. Somebody with more money than me should do a study on this.

> *Marshall argues it gets better results in waistline shrinkage than weight loss alone, and my own results sort of seem to confirm this, but I'm not confident in the accuracy of my waistline measurements. Also, why should this be true?*

This is likely because saturated fat (and monounsaturated fat) is known to boost testosterone, which in turn will help boost muscle mass. Muscle is denser than fat, so an increase in muscle will keep your weight up even as your waistline shrinks.

> *...soybean oil, safflower oil, canola oil, corn oil, et cetera oil, these are omega-6 polyunsaturated fats.*

I know you said this is an oversimplification, but a few corrections: canola oil is 59% monounsaturated fat, and the polyunsaturated fat has a 2:1 omega-6:omega-3 ratio. Also, almost all nuts have significantly more monounsaturated fat than polyunsaturated fat.

> *Schwingshackl et al investigated the effect of 10 food groups on metabolic parameters and found that nuts were the healthiest, even though they are the highest in omega-6 fats.*

Related to the above. Also, research has shown that nuts have the strongest mortality-reducing effect among various food groups in humans.

> *Other people think paleo is the solution to everything, but Americans in the 1800s ate a diet heavy in bread, milk, potatoes, and vegetables, and relatively low in red meat and other more caveman-recognizable foods.*

This is a pet peeve of mine. The idea behind paleo is that the healthiest diet is the one that you evolved to eat, which makes perfect sense. But which diet did you evolve to eat? The diet of your ancestors 1,000,000 years

ago? 100,000? 10,000? Because unless you're descended from the Maasai yo[illegible] nothing but red meat that entire time. If you're of European extraction, then y[illegible] farmers for the past 5,000 years. "But wait," an imaginary paleo-adherent replies, "5,000 years is nowhere near long enough for evolution to work its magic." Well, it was long enough for Europeans' skin color to change, in order to make up for the reduced vitamin D content of an agricultural diet. It was long enough for lactose tolerance to spread throughout Europe. It was long enough for humans to get six copies of the amylase gene, used to break down the starches in grains, compared to the two that other primates have. IMO, eating the way you evolved to eat is primarily going to involve whole grains and vegetables.

> *...and the studies suggested maybe saturated fat caused heart attacks*

I wonder how strongly correlated saturated fat consumption was with tobacco consumption. I'd assume both correlated with wealth at the time.

My final thoughts: Monoun/saturated fats may be better than polyunsaturated insofar as they boost testosterone, but probably not beyond that. Polyunsaturated fats are fine as long as you watch your omega-3:omega-6 ratios. Don't eat foods with bleach in them. Eat plenty of whole grains and vegetables.

Hide

The Obsolete Man *says:*

March 14, 2020 at 10:17 am

It's been a very long time since I posted anything, but I just wanted to share a personal experience with weight loss. I have weighed around 190-195 for over 20 years (I'm 60). According to the charts I was always about 20-25 lbs overweight. Not obese, not motivated to do anything much about it – just a mild desire to reach about 175-180 lbs. or so. No active dieting. Then… last year I got the flu. The first time I've had that in a LONG time – can't remember when the last time before that was. I was sick for about a week, maybe ten days – mild symptoms, moderate fever thru complete recovery. There was a ten pound weight loss associated with it. The weird thing was that I only gained back a couple of pounds since then. It 'reset' my weight in a sense. I haven't been this weight since the late 80s. I haven't changed my diet any. Weird.

Hide

andagain *says:*

March 14, 2020 at 12:08 pm

This reminds me of the Richard Wrangham book Catching Fire: How Cooking Made Us Human. He was mostly writing about the human evolution, the invention of cooking in particular. The point of cooking, he argued, is to make food easier to digest, so you can use more of the calories within it.

As a side issue, he noted that most forms of food processing have the same effect, so that it is easier to get more calories from a "modern" processed food than from a more "old-fashioned", less-processed food, with exactly the same calorie content.

In short, if you want to watch your weight, he suggested eating less digestible foods.

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truthlizard *says:*

March 14, 2020 at 1:37 pm

It's possible part of it is epigenetics. A Dutch study found that people born during a famine had higher rates of obesity than their siblings. So one possible cause for a person being obese is if their mother dieted during pregnancy to avoid gaining too much weight, it could trigger the same epigenetic effect as famine.

Hide

Lorec *says:*

March 14, 2020 at 2:08 pm

Kudos for being the only information source I've ever seen that's willing to regularly end on confusion, which is probably the correct resort given available info in a majority of highly contested questions like these. Unless it's not.

Hide

faith *says:*

March 15, 2020 at 2:21 pm

I don't expect this to add much to any particular argument, but I find it interesting related to the topic in general. Given that most of the US population was rural in the 1800s, it's reasonable to expect that included raising most of their own food.

Below I've pasted my uncle's description of raising corn before their family bought a tractor. At one point he states that fertilizing required "two boys." He really means that it requires two sets of hands, but he calls them boys because most sons began plowing between ages 10 and 14.

I can't help but consider the physical cost involved in raising & harvesting a crop of corn without a tractor, and wonder how this lifestyle might affect a body besides simply using calories and building endurance. These old men now who grew up working like that–most of them, even now at age 80 or more, have a kind of work-endurance that will challenge a young man in his prime.

Remember pre-tractor plowing? We used horses but mules were more common. We mostly grew corn, but cotton was the cash crop that was more widely grown. Anyway, this is how I remember raising a field of corn in the '50s..
First, you had to break up the ground, using a one-horse or a two-horse turner. Then you reworked last year's terraces and laid it offinto rows. Some farmers were partial to mound-shaped terraces but we always had V-shaped ones. The terraces would follow the contour of the land, and since the slope was rarely consistent the there would usually be both long rows and short rows between the terraces. We always laid the rows off with a wood beam plow stock using a bull tongue scooter and left and right hand Johnson wings mounted to the plow foot by a heel bolt; this would throw the soil both directions and leave a v-shape row.
Next we had to fertilize. The plow for this was the distributor which had a hopper for the fertilizer with an adjustable opening at the back; the fertilizer was distributed as the hopper was made to bounce up and down by

a lever bumping over knobs on the weight-bearing wheel running in the bottom of the row behind the scooter. It made quite a noise. The operation required two boys—: one to plow the distributor and the other to keep its hopper filled with fertilizer. The next step was to plant the crop and the plow-machine for this was the planter. Its main feature was a 4- or 5-gallon, seed-holding canister with a mechanism in its bottom that would dispense the seed at regular intervals through a bottom hole. This apparatus used the motion from the front, steel wheel to rotate a notched plate in the bottom of the canister. The seeds would fill the notches by gravity and when a notch would rotate across the bottom hole its seed would automatically fall into the soil opened by the scooter below. Trailing appendages on both sides would throw dirt over the seeds and a special shaped, final wheel would then leave the dirt mounded over the seeds all down the row.

Cultivation: After the corn came up we usually would need to thin it. That is, often more than one seed would be dispensed at once from the planter and one of the double stalks would need to be removed. We did this by hand. [I think this step was always necessary in cotton crops because it was more efficient to veer toward overplanting (and then thinning) than underplanting (and then having to replant in the gaps). Thinning cotton—called chopping cotton— was done with a hoe.] After the corn stalks were several inches high we would run around it for the first time. For this operation we would use the wood beam plow stock with a pointed tip scooter and one Johnson wing to throw some of the dirt between the rows over toward the new plants. Also this required a defender—a rectangle of tin—whose height could be adjusted to allow the Johnson wing to throw just enough dirt just far enough to cover the grass between the stalks but not far enough to bend or cover the stalks. This process required each row to be plowed twice—as the dirt had to be thrown from the one side and then the other. After more growth we would run around each row again, covering the new grass and throwing more dirt from the middle onto the stalk and roots. This didn't require a defender as the stalks were taller and stronger by now. Finally, we would lay it by by running the middle out again using the bull tongue scooter and two Johnson wings.

At least, this is how I remember it.

Hide

DaveK *says:*

March 15, 2020 at 7:01 pm

I wouldn't poo poo the endocrine disruptor explanation.

I would imagine it's multi-causal. Endocrine disruptors, things that affect our gut biome, interconnected problems that feed back and reinforce each other.

Hide

DaveK *says:*

March 15, 2020 at 7:13 pm

Some links to support the role of endocrine disruptors as major culprit-

https://en.wikipedia.org/wiki/Obesogen

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5359373/

https://www.healthline.com/nutrition/5-chemicals-that-are-making-you-fat#section1

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https://www.endocrine.org/topics/edc/what-edcs-are/common-edcs/metabolic

Hide

midjji *says:*

March 16, 2020 at 3:54 am

Perhaps all of these studies account for these factors but I really don't think so. Random controlled trials don't work for diets. But they do for degree of physical work/exercise, so let's kindly assume that is actually accounted for, though I doubt it.

People used to eat alot less for many reasons. Perhaps most importantly: People were just plain poor. Meaning people ate smaller portions of less costly and less tasty food. But this is more than just a simple cost, it's also about availability. Spices and candy was more expensive, but also expensive enough that the really good stuff we have weren't available at all to most. 50 years ago the idea of going to a restaurant for every meal, or even just work lunch was financially and culturally ludicrous. Because meal sizes are often a bit larger than needed at restaurants, people eat more. Similar to how using larger plates will make you eat more as you intuitively fill to the same proportion.

Growing up I went to a school with terrible food then moved to one with good food. It had a very clear impact on the size of the kids. That said even them I was shocked at how good the food was (panpizza available for every meal) at a us school I stopped by.

Could the answer perhaps be as simple as food, candy and beer today is tastier, more varied, and for any adult with a job, basically free? Hunger used to make us eat alot of terrible food like kale, drink water and a carrot was candy, but today you don't have to, so we keep eating after we stop being hungry. I also note does not happen to those who still eat like that, who are also notably thin.

Hide

Paul the Fossil *says:*

March 16, 2020 at 1:55 pm

I'm a lifelong serious family-tree hobbyist whose ancestry turns out to be American on all sides for lots of generations. The most-recent of my ancestors to arrive in the U.S. was in the 1850s; next-most-recent were in the 18th century, and at least half my personal ancestral lines have been here for at least ten generations. Hence my 30 years of researching those family lines has resulted in a 40,000-person database that is at least 95% Americans. (Defining that to include obviously colonial Americans.)

Virtually none of those ancestors were rich or famous, and neither were very many of them dirt-poor; it's yeoman farmers and shopkeepers all the way down. Besides a bunch of fun "odd side notes to history" type stories that I am forever boring my family with, this long slow-motion deep dive into average-Americans history has brought into vivid relief at least two fundamental social changes. I often wonder if those may be underappreciated in their impacts. Those are the drastic shift in family sizes, and the equally rapid/drastic change in the distribution of adult lifespans.

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(A) Family size. It's hardly news that American couples today aside from first-generation new immigrants have only 1 or 2 children which is a shift from even when the Boomers were kids. What I didn't grasp but the genealogy thing really makes plain is how much and how fast the norm changed between the 19th century and the early 20th. From the 1600s through the 1800s _many_ married couples who lived long enough (see next item) had 8, 10, 13 or even more children. Every family-tree geek I know (which is many because like everything else it's more and more a networked hobby) is persistently amazed by the prevalence of that.

Some of those children didn't survive childhood for reasons that I'm sure everyone reading this is aware of. But lots of them did. Having 6, 8 or 10 mouths to feed was the norm, for generations. And having a spouse die (which happened all the damned time, see next item) didn't dissuade them, they'd quickly remarry and resume annual production. The number of large blended families during those centuries, in America at least, is just staggering. (I have more thousands of half-cousins walking around today than I could possibly ever count.)

(B) The distribution of adult lifespans. It's true that a big chunk of the lower life expectancies of past eras was due to childhood deaths. But life expectancies from age 20 or whatever were also lower than today, and even more noticeable is that they were much less reliable. In other words the standard deviation of lifespans from say age 20 was, to our modern expectations, insane. Adults died suddenly at all ages — women during childbirth, men and women from what we would today call easily preventable or treatable illnesses, men from those eras' staggering consumption levels of hard liquor, accidents of all kinds, and then there was the Civil War…!

There was only limited classism at play in this stuff: the New York doctor trying to deliver Elizabeth Schuyler Hamilton's child didn't know to wash his hands any more than the neighbor lady trying to deliver the farm wife's. Pre-late-19th century American genealogy is in this way both fascinating and horrifying.

The period when both of those broad realities shifted in the U.S. was the couple of generations starting in about the last quintile of the 19th century. From like 1880ish to 1930ish it's night and day on these two specific aspects of U.S. family structure. Centuries of consistent distributions upended in a genealogical minute.

And to be clear all of my personal knowledge here is of what we now call white Americans. For African Americans the change in basic family-structure realities was obviously even more drastic (though less evenly distributed at least until the Great Migration). For Americans of Mexican or Asian descent whose families have been here since at least the 19th century I am told by fellow family-tree hobbyists that much the same picture emerges.

So then regarding the topic of this SSC post, I wonder, could those tectonic shifts in American family structure be relevant? Could there be something structural regarding how pre-1900s American families fed their [many-more-including-some-having-a-different-parent] children than the social norms of the last 100+ years? Could there be some way in which the much-higher rates of unexpected adult deaths held down general obesity rates? Something else? I'm spitballing obviously….seems worth considering at least.

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Randy M *says:*

March 17, 2020 at 7:23 am

I don't know how directly that's relevant, but it was all interesting. 0 comments since 2020-03-31 0ç

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Jeff Nobbs *says:*

March 31, 2020 at 9:37 am

Other possibilities to consider:

1. Vegetable oil is one (large) part of the chronic disease and obesity epidemic but not the whole part.

2. We haven't done any truly good long term studies measuring vegetable oil vs something like butter or animal fat. Most studies are short term and/or observational. And removing vegetable oil could take months or years to show improvements.

3. The particularly damaging and disease causing affects of vegetable oil probably come mostly from when they're heated, especially repeatedly as is the case with deep frying. Deep fried food is a big source of Americans' calories. I don't know of any studies that make this distinction – they usually look at uncooked or lightly cooked vegetable oil vs saturated fat.

Regardless, vegetable oil is one of the few foods where consumption has increased consistently for a hundred years in line with increasing rates of chronic disease and obesity. We are smoking less, drinking less, exercising more, and eating "healthier" (more fruits and vegetables, less saturated fat and sodium) compared to previous decades. If we're doing everything right, why do rates of chronic disease and obesity still surge? Vegetable oil, which now accounts for 20% of our daily calories and has largely remained out of the public spotlight, may be the missing link.

This post on Slate Star Codex is part of what inspired me to do a deep dive on the topic of what foods are causing chronic disease and obesity: https://www.jeffnobbs.com/posts/what-causes-chronic-disease

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