

Every morning, Dave Asprey drinks a mixture of medium-chain triglyceride oil, unsalted grass-fed butter, and low-toxin coffee. He then stands on a vibration plate positioned under an ultraviolet lamp. He claims the set-up replicates the effects of a morning walk in a fraction of the time. Once he is finished vibrating in place, he wears an electroencephalogram headset, a device providing information on electrical signals in the brain, and performs neurofeedback exercises. Throughout this routine, he swallows various pills. The most “essential” of which are 5mg of methylcobalamin, 800mcg of 5-MTHF, 10mg of zinc, 1mg of copper, 200mcg of selenomethionine, 1000mg of krill oil, magnesium, iodine, and vitamins A, D, and K2 (Bellis). If Asprey anticipates an especially busy day, he’ll consume a subset of modafinil, nicotine, adderall, forskolin, and artichoke extract (Asprey, 11 Nootropics). Asprey doesn’t exercise regularly, which is the only thing distinguishing him from a cyberpunk Patrick Bateman. On the off-chance Asprey decides to exercise, he purposefully restricts his workouts to 20 minutes, once every 7 to 14 days (Asprey, Bulletproof Diet).

Asprey is not a biologist or a neuroscientist. He’s not a science fiction character. He’s an entrepreneur with a computer science background. His morning routine is not the product of doctor recommendations or Weight Watchers guidebooks, evident by the fact that he stuffs his face with butter every morning and purposefully restricts exercise to 20 minutes once every two weeks. It is instead the synthesis of thousands of hours of Googling, meta-analysis, and half a million dollars spent on self-experimentation (Wortham).

Why defy conventional wisdom and embark on this intuitively ridiculous DIY nutrition expedition? Asprey tells The Guardian: “More than improving my health, it was about having control of my own biology. When I started out, I thought I had a couple of problems. I had some

brain fog, like I'd try and pay attention or remember things and I couldn't. I got pretty concerned about it. Then [the doctor] told me I had a very high risk of stroke and heart attack before I was 30. And I said, 'Well, fix me.' And it was the utter failure of that approach that made me decide I had to take control."

Doctors serve a vital role in society. Many people perceive them as superhuman, as entities that operate outside the bounds of human knowledge and the vast uncertainty of the medical field. We don't expect to walk into a barbershop and have the barber tell us he doesn't know how to cut our hair. So, like any other service role, we expect to leave the doctor's office "fixed", or to have at least taken a step in the right direction.

We forget that medical students, however exceptional, are still *students*. Students who rail Adderall to cram for a final and forget it all the next day, students who make mistakes, students whose fantasies about an upcoming date overshadows the subtle difference in symptoms between the Epstein-Barr virus and Chronic Fatigue Syndrome.

And so, Asprey, disillusioned by the fallibility of the medical system, took his health into his own hands. He claims he eliminated all previous illnesses affecting him, and also shed over a hundred pounds of fat. Then, after achieving a "normal" level of health, he looked for ways to be better. Ambitious from a young age, steeped in the competitiveness of Wharton and entrepreneurship, he wished to harness his armchair biology to surpass his normal physiological capabilities (Wortham). Asprey didn't want to just be your health-conscious co-worker, who bikes to work everyday in flattering spandex, is incessantly happy, and never complains of back pain. He wanted monk-like awareness, presidential cunning, and Nietzsche-tier introspection.

Enhancement of healthy individuals is an area most medical journals don't touch, but in our increasingly competitive society, these shortcuts to exceptionalism are more and more alluring. Look around any financial district on a Monday morning and this becomes obvious. Everyone power-walks around, exuding cortisol, hoping to shave whatever seconds they can off their inefficient morning commutes. More importantly, they're all clutching coffees. Most Americans rely on some level of caffeine to complete demanding tasks, so much so that it simply becomes a given part of their daily routines. Some, however, suffer side effects from caffeine such as jitteriness and anxiety that detract from their performance, pulling them behind their colleagues who are able to guzzle down six cups in stride. If I went to my doctor asking him for help drinking more coffee whilst minimizing the negative side effects, he would, in a stern but concerned tone, tell me to just drink less coffee. He would tell me to rest more, and to stop stressing out about my productivity levels as it leads to unhealthy behavior. While the advice is sound, it's not what anyone wants to hear. The doctor won't tell me to take l-theanine, a non-dietary amino acid, which is generally known to counteract the negative effects of caffeine, and exactly what Dave Asprey does.

Last year, I went to my doctor with complaints of persistent insomnia. He told me to walk in the sunlight for one hour each day in the morning to help regulate my circadian rhythm. I protested-- an hour a day of just walking is a huge time sink. An hour is enough time to go to the gym, finish an assignment, or watch half of *Superbad*. He gave me a stern look and asked if I actually wanted to get better. Not knowing how to respond, I begrudgingly accepted the prescription. There are no medical studies that address the issue of patients not wanting to spend an hour a day fixing their sleep problems-- studies like: *Circadian rhythm management shortcuts*

in individuals with low patience levels seeking fulfilling social lives. Asprey sees this vacancy. He fills the gap with his own research and creates his own shortcuts, which, in this case, is the vibrating plate under the ultraviolet lamp.

Skeptics like nutritionist Marion Nestle criticise the efficacy of Asprey's "hacks", dismissing their popularity as preying on "wish-fulfillment fantasies" (Wortham). Since the medical field is so uncertain, with studies contradicting each other and washy evidence being interpreted to support opposing claims, there is an ongoing debate between Asprey and the conventional nutritionists distressed by his armchair biology. Some of Asprey's claims seem ridiculous, but in this field, it seems like anyone can present a good argument for why they're right. In spite of Asprey's supporting evidence and logic, I highly doubt a vibrating plate under a UV light is just as good as an hour long walk in the sunrise, and many nutritionists would agree. But that's ok. Asprey found a medium between not walking at all and wasting an hour walking each day. He accepts the risk, the circadian rhythm disruption and mitochondrial inhibition that would occur if his UV light and vibrating plate is not a suitable replacement for a walk in the sun, and chooses to do it anyway.

Accepting potential health risks to save time or enhance yourself is at the core of the "biohacking" movement, a movement focused on the kind of do-it-yourself, unconventional, nutritional shortcuts, biological augmentation, and cognitive enhancement Asprey has spent the last decade researching. Asprey explains the "hacking" suffix to The Guardian: "Hackers are systems thinkers and in order to take control of another computer, you don't have to know everything about it. You just have to know enough and apply the right techniques. And it is experimental and it is OK to try something and fail. There's a lot of fear in medicine and there's

also a lot of, ‘Well, we’re only going to do one thing at a time...’ It’s very, very slow-moving and I don’t want to move slowly. I’ve only got maybe 85, 90 years. My goal right now is 180 years, because I’m doing something about it now instead of waiting.”

While I wouldn’t want Asprey as my family doctor-- he’d probably feed my baby valerian root extract and pea-protein instead of breast milk-- there’s some sense to what he’s saying. Getting the FDA to approve a drug is a difficult and expensive process. There are likely hundreds of promising drugs still early in the pipeline we won’t have access to until it’s too late. Even after a drug does get FDA approved, there’s still no 100% guarantee it’ll be safe; safety problems are later revealed in 1/3rd of FDA approved drugs (Lupkin). Also, the FDA does little to no research on what they view as “cosmetic” drugs, drugs not aiming to cure an illness or mitigate discomfort, but to enhance people past their biological limits. Take Piracetam, one of Asprey’s recommended cognitive enhancers. The FDA has a page on Piracetam, but all but one of the studies are on children with dyslexia, on elderly experiencing cognitive decline or Alzheimers, or on adults with neuronal damage due to alcohol abuse, and the one study on the cognitive enhancing effects of piracetam in healthy adults is too insufficient to strongly support any position (Piracetam). The study, *Increase in the power of human memory in normal man through the use of drugs*, while concluding piracetam benefits verbal learning, administered the drug to a measly sample of 8 people. Since the study was conducted in 1976, no attempt has been made to replicate its findings or further investigate the potential of piracetam in healthy adults.

Many cognitive enhancers Asprey takes, such as modafinil or Adderall, are scheduled in the U.S. due to concerns over lack of long-term safety information, side effects, and addiction potential. As most undisciplined college students know, Adderall probably isn’t good for you,

but if you only take it occasionally, the chance of something terrible happening is slim and the benefits outweigh this risk. Like Asprey's hacker or a Wall Street trader, the unprescribed Adderall consumer doesn't understand the entire system they're working with-- the full set of detrimental pharmacological interactions Adderall will have with their bodies-- but they choose to take a calculated risk for a large payoff. The difference here is that drug users risk their health rather than their career or wealth, and society, generally agreeing that this is a bad decision, has created rules and regulations to prevent individuals from wagering something so essential to life.

There is a fundamental philosophy behind our aversion to taking calculated health risks: the idea that quantity of life trumps quality. By taking modafinil, by accepting the slight chance of a life threatening skin rash or undiscovered side effect to squeeze more hours of focus out of the day, one takes the position that quality trumps quantity. The doping athlete accepts the heightened risk of heart attacks, choosing the life-affirming fulfillment that comes with being the best of the best over living a healthier life with mediocre placements. For ungifted individuals with high ambitions struggling with the fact that at least 50% of IQ is heritable and fixed and that hard work can only close certain gaps (Cakic), the cognitive enhancing drug provides an option to be better. They might wake up at 60 covered in cancerous tumors, later linked to the sparsely studied substances they were taking. Perhaps walking for an hour in natural sunlight instead of spending that hour working next to a Vitamin D box would've slowed their joint deterioration. Their doctors might think "I told you so", be stricter with their safety recommendations, and maybe even publish an article about the dangers of cognitive enhancers. But the dying individual might not have regrets. Like Asprey, they may have exhausted known or natural routes to help their deficiencies, and were failed by the slow moving medical field and the limitations of

current human knowledge. Or maybe they were perfectly healthy, but didn't have the innate creative, physical, or intellectual edge to attain the goals they dreamed of. They might see their biohacking as a success, as it provided them the freedom to reject the biological hand they were dealt, taking risks to be greater. They might play back vivid memories of their short but vivacious, life, free of brain fog and anxiety, filled with motivation, however artificial, to accomplish whatever it is that made them happy instead of curling up in bed with their laptop, coping with a vague but persistent self-disappointment. They can say they gave 110%, literally.

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