

Steve Hendricks

A CURE
for
LONG
COVID
?



A Struggle with Viral Fallout,
a Fast to Reverse It,
and
the Science of Fasting to Heal

STEVE HENDRICKS

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“I was blown away by this book. There is so much information that I had never even remotely, even briefly heard of. There were literally times my mouth dropped open. Get the book, read it, read all of it. It’s a page-turner.”

—Melanie Avalon
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“A literary gem, with fantastic lines scattered like laugh-bombs throughout its pages. What’s especially joyful is Steve’s insistence on getting the science right. He argues against unsupported claims no matter where they come from: vegans, keto promoters, you name it. He doesn’t overstate the power of fasting, noting that hype is one of the enemies of widespread acceptance by the scientific community.”

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“Steve Hendricks proves to be a master of explaining the multitude of benefits that various kinds of fasting can unleash.”

—Dr. Joel Kahn, author of
Your Whole Heart Solution

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BOULDER, COLORADO

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First edition

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To my fellow sufferers

STEVE HENDRICKS

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Preface

In recent years, researchers have proven what a few perceptive individuals have observed throughout the ages: fasting stimulates the body to make repairs, and those repairs can sometimes rid us of disease. This fact is by now firmly established, and in the pages that follow I devote only a handful of passages to the research proving it, although I'm well aware it remains controversial, especially among doctors. Many doctors—I am tempted to say most—and even many laypeople wholly innocent of medical training have trouble believing that skipping meals can sometimes be healthier than eating them. But to convince the most resolute doubters would require hundreds of pages that would prove an irrelevance to readers who already know fasting is therapeutic or who are interested only in the narrower question of whether fasting “works” for post-viral syndromes like long COVID. So those pages are not in this book. Happily, they're in another. For a fuller account of the astonishing science and fascinating history of fasting, the reader may turn to *The Oldest Cure in the World: Adventures in the Art and Science of Fasting*. Its author, a harmless enough chap, enlivens his chronicle with his own self-experiments and at odd intervals can even turn a pretty phrase.

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Sickness

ONE SATURDAY MORNING at the end of summer I awoke to the kind of mild fatigue that usually succeeds late-night amusement or insomnia, although neither had been my luck last night. I rose, grumpily, and made a slothful toilet. Each task—pulling on socks, brushing teeth, shaving ears (for I have reached that stage of life)—required about twenty percent more effort than normal. As the day wore on, my state did not improve, and when I awoke worse Sunday I knew illness was my lot.

By Monday I was shabbier still. Exhaustion all but immobilized me, and a fever overran my defenses. Come nightfall I trembled with ferocious chills. Sleep proved elusive, and when I finally snatched a fitful hour, I woke to a cold clamminess and the discovery I had sweated through my pajamas. I changed with creaking stiffness and took an age to fall asleep before waking sodden once more and changing anew. Before morning I did it all again, this time soaking through the sheets for good measure.

At dawn the chills and sweats subsided, and in their place was a generalized anguish—a stupid, helpless ache as mental as it was physical, a distant cousin to the feeling I get from watching television or reading the opinion pages of the *New York Times*. When the chills and sweats returned that night, I gave up on pajamas

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altogether and passed the hours between towels that I drenched one after the other.

A grim routine was established: by day, worn-out wretchedness; by night, torturous chills and sweats; throughout, a fever from which there was no reprieve. When awake, I lay long hours inert because even to sit up wearied me. I couldn't remember the last time I had felt so ravaged—not by the shingles that had scorched my back like a boiling kettle, not by the bacteria in Belize City that drove me to the ER spouting from assorted orifices, not by the surgeon who sawed my tibia in half, hinged it open, and sent me on my crippled way with too few opioids. The bug that had me now was in a league of its own, a microbial Vlad the Impaler before whom I was but a pitiful Saxon villager, a husk broom the sum of my defensive arsenal.

At some point my wife Jennifer bundled me out the door and into urgent care, where my swabbed nose betrayed no trace of COVID, influenzas A or B, or respiratory syncytial virus. The physician's assistant who examined me said a colony of mystery bugs was chewing its way through town and I was evidently the latest course in their movable feast. Since my symptoms suggested a viral rather than a bacterial assailant, she had no medicine to dispense, and since my fever hovered around a vindictive but not dire 102 degrees, there was no point in admitting me to the hospital. If I wished, I could drown my pains, or at any rate slightly moisten them, in ibuprofen and acetaminophen, but the only real course was to wait for the virus to relent. I went home and submitted. Four years of Trump and three of Biden had me well schooled in pained resignation.

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A week passed before the virus showed signs of abating, and on the tenth day the fever, chills, and sweats left for good. Relief seemed at hand—but, as it would turn out, only *seemed*. I continued weak and fatigued. This did not at first surprise me because so fierce an illness surely called for a gradual recovery. But it soon became clear I wasn't recovering, gradually or otherwise. Instead, I had entered a new, chronic phase of illness, this one marked by three symptoms: one new, the other two elaborating on symptoms from the acute illness.

The new symptom was an odd headache that was entirely positional. When I lay on my stomach, the moment my head touched the pillow I became lost in a whorl of dizziness. A cramp, remote at first, wrapped round my brain and steadily magnified into a crushing grip. If I stayed in this position for even a minute, the dizziness and pain grew unbearable, but if I turned onto my side, both pain and vertigo instantly vanished, although a post-headache soreness and a twisting disorientation lingered. The headache disturbed me as a sign of my body's ongoing distress, but in practice it was easy to manage. I had only to remember when lying down to lie on my side or back and no headache would assault me.

Of the two preexisting symptoms, one was insomnia. During the acute phase of my sickness, I had thought the chills and sweats alone were keeping me up nights. But now, warm and dry, I still couldn't sleep. No matter how tired I was at the end of each day, I almost never felt drowsy, and no matter how long I lay abed or how many soothing massages Jennifer gave me or how long I soaked in a warm bath, I couldn't fall asleep. It felt as if a circadian switch that should have cued my body to shut off for the night was stuck in the on position. Whether it had gotten jammed early in my infection or

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during my transition from acute to chronic illness, I couldn't say. But night after night an unknown force inside me demanded I stay awake, and most nights I didn't sleep until dawn and then for only a few hours. The rare times I did fall asleep at a normal time, I always woke two or three hours later and failed to sleep again till the next night. Naps offered no respite. If anything, my sleep during the day was even choppier and more unreliable than my nocturnal efforts. I didn't see how a body could heal without sleep, and sure enough morning after morning brought not a whiff of recovery.

The third symptom, by far the worst, was fatigue, although *fatigue* does the state no justice. *Enfeeblement* would be nearer the mark. *Incapacitation* would do as well. During the acute phase of my sickness, I had taken to bed and couch out of both necessity and desire. I neither was able nor wished to move. But as the acute illness began to lift, the thought of being up and about seemed delightful. Again, though—*seemed*. Getting up proved among the most burdensome of labors, and getting about was nearly impossible. I learned this one afternoon early in the chronic phase of my illness when I tried to get out of bed to join Jennifer on a dog walk. I sat up, swung my feet to the floor, and stood without too much trouble. But no sooner had I risen than my strength deserted me. Whatever vitality had propelled me to the vertical was suddenly nowhere to be found, perhaps depleted by the act of rising. I swayed slightly, my muscles unsure about their role in this strange performance, and it soon became clear that the only thing to do was to collapse back onto the bed, which I did with a groan and a warm oath to the Prime Mover. For a long time I lay still, feeling half-suffocated by an unknown force. Similar maneuvers in coming days showed me that while I might have energy for brief moments of

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activity, the energy always quickly evaporated. I was without reserve—utterly unreserved—and my new favorite position was prone.

But of course sometimes I simply had to get up. I remember another moment early in the chronic phase of my disease when my bladder called on me to rise but the rest of my body refused. The fifteen steps between bed and toilet seemed a vast traverse, and I lay unmoving as the bladder's demands progressed from pleading to insistent to rude. Only when my kidneys joined the protest did I at last surrender to inevitability. It took the courage of a doughboy going over the top at the Somme just to rise shakily to my feet, and as soon as I was up, my resolve wavered. Somehow I made myself take a first step. Then another. And another. Each one felt like lifting a boot of lead, and with every footfall my knees wobbled in just the way they have done with my first atrophied steps after months on crutches. I have crested high passes in the Rockies with dozens of pounds on my back with less effort than it cost me to gain that toilet.

I greeted it like a long lost beloved and tried to push my dread of the return voyage from my head. But the proceedings were concluded all too soon, and I lingered until my buttocks grew numb. When finally I rose, the inbound journey proved even worse than the outbound. Somehow I made it back to the bed. I crumpled onto it and lay insensate for hours.

Day after day, week after week, the trip to the bathroom was rarely even marginally easier than that.

My exhaustion was not merely physical. I was too tired to read, too tired to listen to music, too tired even to watch soccer, a sport for which I have an inexplicable affection. Emails lay ignored in my

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inbox, and I answered texts only tersely and after long delay. I could write nothing else. I could still converse, sometimes even animatedly, but after ten or fifteen minutes I could endure no more and had to beg off. My enervation was nearly total.

Jennifer, that nonpareil, brought meals to my sickbed. These, along with her return from work, were the highlights of my day. But the labor of sitting up to eat almost erased my delight in the feed, and when I had done, shifting the bowl from my lap to the bedside table felt like heaving a thirty-pound dumbbell. To lift a glass of water was such a chore that I became a partisan of the glass half empty.

I neglected everything that could be neglected, including tasks I had previously thought indispensable to hygiene and self-respect. I changed pajamas only when reek threatened. I never shaved, hardly bathed, for weeks didn't floss. To brush my teeth even once a day was a small but cherished victory, and whenever I managed two brushings I wondered that nobody hung a large gold medal around my neck, though I would have settled for a plastic participation trophy. Much later, an X-ray revealed the beginnings of my first cavity in three decades.

Once in a very long while I found the energy—I don't know where—to trek downstairs. A couple of times I even staggered with short, inadequate breaths as far as the front porch and fell onto its sun-warmed planks. But after five minutes I would be overcome by a weariness so deep it verged on the painful. I hadn't known I could be exhausted by a few minutes in the sun, but so I was. Ours is not a large house, but by the time I had threaded my breathless way back to the upstairs bedroom, I felt as if I had negotiated the Great Rift

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Valley and I was done for the rest of the day and sometimes two or three more.

Days passed thus, then weeks, then a month. At no time, not for a fleeting second, did I detect the faintest improvement. It occurred to me that I was bedridden, a word that brought to mind its inevitable companion, *invalid*. Both words are saturated with the past, their sepia association with disease beyond medicine's power to understand, let alone cure. To be an invalid today is to be transported to another era, a time when fate and fortune, not science, determined whether you would ever again rise from the sickbed—another sepia word. Each day in my incapacitation, *bedridden*, *invalid*, and *sickbed* rolled incessantly through my mind, not because I was especially self-pitying but because they so aptly described my helplessness. And helpless I was. I needed no doctor to tell me that I was suffering from the mysterious and desolating disorder known, in the sterile dialect of diagnosis, as post-viral syndrome.

Post-viral syndrome is diversely defined, but its essence is that after the crude insults of an acute viral infection have passed—after the chills and fevers, the vomiting and diarrhea, the headache and sore muscles—the patient somehow remains in a state of siege. The symptoms of her evolving illness may be new, as with my positional headache, or old, as with my insomnia and exhaustion. Many scores of symptoms have been reported. Among the more common are a muddling brain fog, a fatigue that can be mild or total, pain that might be periodic or unending, a shortness of breath running to the desperate, deadened taste or smell, an alarum of heart palpitations, and a riot in the gut. These and other troubles can last months, years, a lifetime. To know yourself a sufferer of post-viral syndrome

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is to know yourself sentenced to prison without knowing the term. Orthodox medicine has no cure.

The most famous of the post-viral syndromes is long COVID, but there are others: long pneumonia, long dengue, long flu, long cold, long whatever-my-virus-was.¹ They have of course been with us all along, but before COVID-19 health authorities only infrequently accepted them as legitimate. Even five years ago, to drag your fatigued frame and befogged mind into a clinic and complain of a vortex of woes that persisted long after an acute illness had passed and that fit no known disorder was to risk being told your so-called illness was all in your head. One of COVID's few mercies was to rupture such cruel ignorance, one hopes forever. But while many doctors now give victims of viral fallout a measure of sympathy, they haven't much else to give. Their treatments are mere palliatives: physical therapy, massage, counseling, anti-inflammatories, analgesics, and stimulants, any of which may succor but none of which strikes the disease at its root. The victim of viral fallout thus finds herself lying roughly where the consumptive Emily Brontë or Henry Thoreau did two hundred years ago—far beyond the reach of any pill, potion, or procedure known to convention.

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Mental collapse

AMONG THE GREAT torments of viral fallout, certainly as I experienced it, was never quite being able to explain to friends and family just how immiserating it was. This inability left me feeling yet more wretched and altogether alone—a commonplace, I would later learn, among victims of viral fallout.

Ironically, part of the trouble is that it's quite simple to explain at least the physical symptoms of viral fallout, which leads healthy people to think they know what you're going through. Meanwhile the psychological toll, which is more enormous still, is difficult for both the sufferer to describe and the sympathizer to understand. When, for example, I told friends my mind was deteriorating under the fatigue, insomnia, and bedriddenness, I'm certain they remembered times they had lain abed with cold or flu and become bored and irritated, and so thought they could approximate what I was going through. They weren't entirely wrong. The exhaustion, apathy, and frustration on the fourth day of a flu differ mainly in degree, not kind, from the exhaustion, apathy, and frustration on the fortieth day of viral fallout. But there the likeness ends because it's one thing to be confined to bed with the expectation that your body will mend and you'll soon be back about your normal affairs, and it's quite another to be bedbound with no end in sight, your

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body and mind perpetually stifled, the grim possibility always before you that this feeble existence might be the rest of your life. For those who have never been the plaything of an indomitable force of nature—as powerless as if tossed about by a tsunami—it’s a tall order to grasp the anguish such impotence imposes.

The anguish, of course, is cumulative. Anyone can bear a short spell of physical or mental adversity because in the early going there is every reason to believe the illness won’t last forever. Certainly I held out such hope at the start of the chronic phase of my disease. Each night I would say an atheist’s prayer that the new day would bring relief—only to have hope dashed with the dawn. This was not immediately disconcerting. But after a week I grew worried, after two weeks I became unsettled, and by the third week I was profoundly alarmed. Each desolation at daybreak was followed by the sterner trial of long unbroken hours stretching before me, hours I had no prospect of using well. The repetition of this trial eventually extinguished my nightly prayer for relief.

I struggled to explain this and my other psychological struggles to friends and family, mostly because I was too exhausted to think through them—or anything else. Complexity and insight were entirely beyond me. The few times I tried to lay out a complicated line of thought (or even to follow one that Jennifer set before me), it always felt like walking a slackline. With each tentative verbal step, my mind would become more strained and chaotic, and sooner rather than later I would tumble off, having conveyed to my listener little more than my disordered state of mind. To know that this disorder could last the rest of my life was a horror whose depths I’m at a loss to portray.

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One aspect of my psychological torment that I almost never tried to describe, because I hardly understood it myself at the time, was what I came later to think of as the unbearable triteness of being. My disease, having robbed me of the ability to *do*—to read, to watch, to move, sometimes even to talk—had reduced me to something close to simply being. Lacking new stimuli, my mind was set adrift, a castaway with nothing but its own resources to fill the preposterously long days and the eternal, silent nights. If there is one certainty about an unoccupied mind, it is that it *will* fill itself with something. With nature, the mind abhors a vacuum. For people with previously healthy minds, this might not be a calamity. But my mind, as I discovered, had been in poor shape, and when it was unable to think with vigor, it turned to well-trod mental paths that were at best unspeakably trite, at worst self-sabotaging.

The British have a word that well captures these familiar treads: *holloway*, which is a sunken path scored into the earth by the repetitive passage of feet. My unoccupied mind wore its holloways deeper and deeper with thoughts I had already thought ten thousand times. None was cheering. I recounted my innumerable sins, ranted the familiar rants against the bastards who run leaf blowers and hedge funds and the Pentagon, waged the ancient battles against publishers, airline representatives, and other pirates with unreasonable jurisdiction over my life, devised the same policies long ago devised against the day the world saw its error and crowned me king. Nothing passed through my brain that wasn't banal or crabbed. It was like being stuck in an endless loop of Twitter posts, not a one worth giving a second to, let alone a day. When, by dint of great effort, I forced myself to think on a more elevated plane—when I weighed, say, some curious aspect of the

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climate catastrophe or why our culture elevates so few people of integrity—not once did my reflections have any snap or originality. The cause of my mental sterility wasn't hard to detect. To think with depth and creativity takes focus, which is to say effort, and I could no more sustain an effort in my brain than I could in my muscles.

If you want to know what your mind is made of, there is no better time to find out than when you are distilled to nothing but mind. Previously I had cherished the idea that I had an active and somewhat healthy life of the mind, but to watch my brain go through its inane paces (and it often felt like watching, as if I were a passive observer of the brain's maneuvers, only at long intervals in control of the machine) was to discover it had been habituated to half a century of grievance, triviality, and uninventiveness. The discovery was a deep wound made all the more painful by my inability to articulate it.

I don't want to suggest that every victim of viral fallout suffers from the same trouble. But everyone who is crippled in body and robbed of stimulus for the mind must paddle about in a reservoir of their own thoughts, and I'm far from the first to find it a tribulation. To judge from the despairing accounts of other sufferers of viral fallout, this difficulty may be rather common.

To readers in good health, it might seem odd that I didn't try to escape my bleak holloways, even for a few minutes, by dreaming of a better future, but I never did. I didn't fantasize of fine days to come or scheme of places to travel, friends to see, articles to write. I simply had no longing for a future that I was helpless to bring about. I made no conscious choice to avoid looking ahead. My mind did its own triaging. What point, it must have decided, in sketching castles in the air if no time soon—maybe never—would I get to lay

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the first stone? Something like this state must have been what medieval theologians had in mind when they cooked up purgatory: a demi-existence in which the unredeemed are not quite alive enough to partake in life's delights but not so far gone as to open a vein and be done with it all.

One of the hallmarks of my purgatory was grief, and its texture will be foreign to no one who has been battered by depression, another illness of great loss. In my sickbed, I mourned my losses as if I had received a diagnosis of early dementia. I grieved for the pleasures of mind and body that I shared with Jennifer and was in no way prepared to give up. I grieved for our son, freshly launched into adulthood and whose adventures now lay far beyond my ability to participate in. I grieved for the intensely physical relationship I shared with our dog, for book ideas that had been germinating promisingly, for the old hikes in the mountains outside my window. I grieved my living death.

In the second month of my illness, reeling under the weight of these and other burdens, my self-esteem collapsed. Unable to write, unable to cook or clean or otherwise help Jennifer, only rarely able to take the sun, hardly able to hold up my end of a dialogue, I was no longer sure what I was worth. How does one derive meaning from life when one can do nothing and think little? Psychologists I have known would say that tying your worth to your output is a fool's errand. Our very existence, the argument goes, entitles us to an esteem independent of what we do or do not, what we think or don't think. But while I agree that basic worth is everyone's birthright, there's no getting around the fact that humans derive satisfaction and meaning from accomplishment and thought, and that a void opens when we accomplish and think nothing.

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I've since wondered if my esteem might have fared better had I lived in a time or place not ruled by neoliberalism's merciless hand. In my culture, alas, productivity is lionized, busyness is the byword, and even people like me who have freed themselves of one or two of these fetters are apt to find doubt lapping at the bedside if they cease to busy themselves. My spiritual inheritance tells me that for everything there is a season, including for breaking down, for tearing, and for weeping, and that no blame attaches to the broken, the torn, and the wept over. But my culture trumps such ideals, and I suffered for it.

As my esteem tumbled, my guilt over doing nothing grew in proportion. Partly this was because I could never entirely convince myself that my mind was as broken as it in fact was.

"After all," I would tell myself, "you can think, however poorly, so how great a leap would it be to write a few sentences?"

I knew such reasoning to be foolish—knew, as all writers know, that creating a well-turned passage was nothing like thinking a few random thoughts. How often had I remarked that six hours of carpentry left me fresher than four of writing? If I had tried to write and persisted at it, I'm certain I would have scribbled my way into the emergency room, but even knowing as much, I couldn't fully convince myself it was true, and I never shook the guilt. I've since learned that many post-viral sufferers with desk jobs—lawyers, secretaries, programmers—feel the same.

One evening, in an attempt to compensate for my uselessness, I lugged myself downstairs and onto a kitchen stool to chop a few vegetables for dinner. I did it, but the price was spending the next two days prone in bed. The folly of this gesture should have made the pointlessness of my guilt plain, but some part of my self-

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reproach was indestructible and continued to taunt me each day I remained in my sickbed.

All of these psychological hardships were made the harder by the uncertainty of my illness, by never knowing whether I was to bear this cross a few months or a few decades. In the Texas of my youth I was regularly victimized by a brand of sadist the state specialized in who went by the title Coach. One of the gothic delights of these preceptors was to make their wards run sprints to the point of vomiting or collapse, although the real torment of the exercise lay in their refusal to tell us how many sprints we were to run. The uncertainty was supposed to strengthen our young minds, but I learned then and was reminded now that to subject a mind repeatedly to capriciousness, to strip it time and again of the slightest authority over its fate is simple torture. Humans crave predictability, and my virus demolished mine as surely as those coaches had.

I've since come to think that the essence of viral fallout is not so much the physical symptoms like fatigue or even the psychological phenomena of grief, confusion, and guilt but rather this loss of control, the demolition of a say in your destiny. And the worst part of it is that the uncertainty asks of you, day after day, minute upon minute, whether you can bear it. The longer my illness dragged on, I wasn't sure I could.

A person of sunny disposition might wonder why the uncertainty couldn't be flipped around and seen as a cause for hope. Sure, our optimist would say, recovery isn't guaranteed, but neither is misery. There *might* be a happy ending yet. But to hold such a view in the depths of disease requires at least a slight hint that the glad day might arrive, however far in the future. Yet no hint emerged,

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and my hope disintegrated by the week. I feared for the day when it was gone at last. Hope is as vital to life as breath, and total hopelessness might have shredded me beyond repair.

As I approached the third month of the chronic phase of my illness, a new symptom arose: my thinking began to slow. So dilapidated was my mind that the change was barely perceptible at first. Soon, however, it became clear I was searching longer to find the right word and to remember simple facts, that I was laboring extraordinarily to compose even brief text messages, that my speech dragged slightly. It was as if my brain had decided that with no way out of this mess, the best course was to shut down by degrees. As it did, my mood darkened and a depression loomed. I thought of it as a vulture perched on my footboard, ever watchful for the moment it could spring at my unguarded gut.

That I averted mental collapse for as long as I did I attribute first to Jennifer's devoted care, without which all would have been lost, and second to having been spared, until that third month, the brain fog that paralyzes so many victims of long viruses. My mind may have been in a parlous state, but I hadn't yet been left struggling, as so many victims of viral fallout are, to recall long division or how to tie my shoes.

A final reason I avoided breakdown was that I had a card in my pocket, which I hoped might be an ace. This was my belief, with a little science to back me, that fasting might do me some good. In fact, there was cause to believe a fast might cure me entirely. The grounds for this belief were far from solid, but they were firm enough to plant my hopes in, and as I had nowhere else to plant them, I plunked them there and, in so doing, held on to just enough fortitude to beat back the terror of descending bleakness.

Viral fallout

WE NEITHER KNOW what causes viral fallout nor want for possibilities.

Inflammation is one. During an acute infection, the body becomes inflamed as the immune system grapples with the virus. Once the virus is subdued, the inflammation ordinarily disappears. But in victims of viral fallout the inflammation can perpetuate itself by unknown mechanisms and, if severe enough, can disrupt organs. In the COVID-addled brain, for example, inflammation can strip nerve cells of the insulating myelin they need to transmit signals and can also damage tau, a protein essential to the structure of neurons.² Tau damaged by COVID looks much like tau damaged by Alzheimer's.

Another possible culprit is autoimmunity.³ During an acute infection, an overzealous immune system may produce not only antibodies that attack the virus but *auto*antibodies that turn on the body's own tissues and continue to do so even after the virus is gone.

Oxidative stress is another prospect.⁴ As the immune system defends the body against a virus, it can generate too many reactive oxygen species, ROS, which are byproducts—sometimes helpful, often not—of biochemical reactions. When ROS are overabundant,

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they ravage DNA and other cellular components. By one theory of viral fallout, ROS may sabotage mitochondria, the powerhouses of the cell, which then struggle to generate energy, which could account for the fatigue so common in viral fallout.

COVID and other viruses can also disrupt the gut microbiome by devastating “good” bacteria and leaving “bad” bacteria to dominate.⁵ Researchers are only just beginning to understand gut dysbiosis generally, and they understand viral-induced dysbiosis hardly at all. But they have learned enough to know that dysbiosis can sow mayhem far beyond the abdomen through gut bacteria that help regulate the heart, brain, immune system, and more. Dysbiosis that endures long after the virus is gone could explain a portion of viral fallout.

Still another possibility is that the virus was never fully vanquished.⁶ In victims of viral fallout, small cadres of virus may lurk in hidden clefts of the body and from those redoubts wage a guerrilla war that the immune system is never quite able to suppress. Many researchers think the Epstein-Barr virus, the agent of mononucleosis, works through such remnants to provoke the puzzling calamity called chronic fatigue syndrome,* which shares many similarities with long COVID and other post-viral syndromes.⁷

There are many other hypotheses,⁸ and if there is a point of consensus, it's that when scientists at last find what they're looking for, it won't be a single perpetrator. There will be offenders plural,

* Patients and their practitioners often call the disease *myalgic encephalomyelitis / chronic fatigue syndrome*, ME/CFS. But since not everyone with CFS appears to have ME, whereas everyone with ME does appear to have CFS, I use the more inclusive term.

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and the mix of them will surely differ from victim to victim and virus to virus.

But although we are without cause or cure, that doesn't mean nobody recovers from viral aftermath. Many do, seemingly spontaneously. Why they do when others do not is another mystery. One certainty is that almost no one recovers overnight. Far more typically, symptoms retreat tentatively, a step or two at a time, often with pauses or retrogressions lasting weeks or months. Complete reversals can take years. Even in those who return to what looks like full health, we don't know whether their cells or tissues have suffered an intractable harm that will emerge later. Nor do we know whether viral remnants might still linger in a now-dormant state just waiting to be reawakened. The varicella-zoster virus that strikes as chickenpox at age seven can bestow shingles at age seventy. Might COVID-19, decades hence, condemn some of us to late-onset asthma or Alzheimer's? Time will tell.

So little do we know about viral fallout that even the number of its victims is uncertain. Long COVID is a partial exception. By one estimate (which, however, is little more than a well-informed guess), 18 million American adults, one in fourteen,⁹ and 6 million American children, one in twelve,¹⁰ endured long COVID in 2024. As of 2022, 9 million American adults had previously suffered from long COVID but recovered.¹¹ (I could find no figure for children.) Most people with long COVID probably have mild to moderate cases, but roughly 4 million American adults were so incapacitated by the disease in 2023 they couldn't work.¹² Most such figures understate the problem because they're based on the definition of the disease from the US Centers for Disease Control, which, in a sop to business owners, declared the illness can't be called long

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COVID until the victim has been sick for three months. I don't know what label the CDC slaps on victims like me who are bedridden for just a couple of months. Maybe I had case of ballroom dancing.

We know even less about the victims of fallout from other viruses than we do about the victims of long COVID. Doctors diagnose people such as me inconsistently at best and commonly not at all, and health authorities rarely track us. But we surely number in the millions. We can get a sense of the scale from chronic fatigue syndrome, which, as I mentioned, may be caused by the Epstein-Barr virus and claims between 800,000 and 2.5 million victims in America alone.¹³ And the toll isn't limited to *viral* fallout. Victims of bacterial fallout endure many of the same trials as we who are ravaged by viruses. In the United States, about 100,000 people a year suffer from what might be called long Lyme, the lingering effects of Lyme disease contracted from the bacteria of a tick. In victims of long Lyme, symptoms flare over months or years, even after antibiotics have wiped out the bacteria.¹⁴ In short, whatever the number of sufferers of viral and bacterial fallout, it is not trivial.

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Therapeutic fasting

A COUPLE OF months after the virus first sickened me—as my mind grew frailer, what little energy I had dwindled still further (an occurrence I hadn't thought possible), and my mood edged toward the desperate—I decided it was time to fast.

To those unfamiliar with therapeutic fasting, this must sound laughable. Starve yourself to reverse viral fallout? Come now. Scientists at hallowed universities, doctors on every continent, pharmaceutical companies sumptuously funded have all been seeking a cure for long COVID and other post-viral syndromes and have arrived at precisely nothing. Yet here am I proposing such scourges might simply be fasted away? Ludicrous.

But the suggestion is far from ludicrous. In fact, for reasons I hope to make clear, I believe fasting is our best and for now only plausible means of reversing viral fallout, if by “plausible” we mean a safe therapy that is supported by long clinical experience and sound research and that seems to have delivered promising early results in humans.

To understand why fasting might work against long viruses, we first need to understand why fasting heals generally.¹⁵ The basic principles are easily grasped. Our bodies do vast amounts of work each day, and one of their most laborious tasks is digesting the food

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we eat and putting the nutrients from that food to work. But when given a break from this heavy labor, the body uses the respite to accelerate repairs of worn and damaged cells. Human cells make these sorts of repairs all the time—if they didn't, few of us would be here a few years from now—but they usually make them only at a very modest rate because they're so busy digesting our food and processing its nutrients. But when we stop eating long enough, our cells will patch up damaged DNA, mend run-down organelles, and recycle other organelles too far gone to fix. The fasting body is a bit like the overworked householder who, given a four-day weekend, will finally patch the roof or paint the fence. And the beauty of fasting is that the repairs aren't made to just one or two organs—not just to the roof or fence—but to cells in virtually all of our organs. Fasting is a whole-body therapy.

Because the repairs are so widespread, prolonged fasting can reverse an astonishing range of diseases. Doctors and patients in dozens of countries have credibly reported for more than a century that fasting has rolled back and sometimes entirely cured disorders as diverse as high blood pressure, rheumatoid arthritis, psoriasis, non-alcoholic fatty liver disease, fibromyalgia, multiple sclerosis, leaky gut, asthma, type 2 diabetes, ulcerative colitis, schizophrenia, angina, eczema, and much else. Not long ago, to make such a claim was to descend into quackery—and many benighted minds in medicine and science still regard it so. But peer-reviewed papers have given weight to nearly all of these formerly preposterous claims, as have literally thousands of patients who have checked into modern fasting clinics with one or more such diseases and checked out weeks later without them.

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Consider, as just one example, high blood pressure. Most authorities say it's irreversible—well beyond medicine or science to cure. Yet prolonged fasting nearly always reverses it. In fact, the greatest therapeutic drop in hypertension ever reported in a peer-reviewed study came not from conventional pills or procedures but from a mere week and a half of fasting at a clinic.¹⁶ In that study, published in 2001, every patient who had been on blood-pressure medications got off them, and the average drop in pressure was 37/13 mm Hg, two or three times better than the best pills can achieve. Better still, the patients with the most life-threatening hypertension saw a whopping decline in systolic pressure (the top number in a blood pressure reading) of 60 mm Hg—*sixty*—on average. Nothing in conventional medicine can touch that.

Such claims always sound outlandish to people who are new to the science of fasting, but evolutionarily speaking the body's ability to heal when denied food is mundane stuff—about as outlandish as its ability to pump blood. Indeed, the regenerative mechanisms of fasting are far more ancient than the mechanisms that permit us to circulate blood and are apparently no less fundamental to the survival of virtually all animal species. That's why nearly all animals have the capacity to heal when deprived of food. So primitive is this capacity that we humans share some of our self-repair mechanisms with yeast, with whom we last had an ancestor in common a billion years ago. The writer who titled his book on fasting *The Oldest Cure in the World* was engaging in no hyperbole. He was stating bald fact.

We and other creatures were endowed with this marvelous self-healing ability for an obvious evolutionary reason: an organism whose cells, when starved of nutrients, repaired themselves rather than rested had a survival advantage over organisms with lazier cells.

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The lazy-celled creatures lost evolution's race and have no heirs among us today. You, I, and everyone we know are a breed of evolutionary winners, and our champion's purse is the ability to cure ourselves of some disorders. Not a bad perk on top of being alive in the first place.

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Fasting for long COVID

BECAUSE FASTING CAN help with so many diseases, it was no surprise, once COVID-19 overspread the globe, that doctors at the world's largest center for fasting began receiving calls from sufferers of long COVID. Over the last century the Buchinger Wilhelmi Clinics, today of Überlingen, Germany, and Marbella, Spain, have fasted more than a quarter million patients and for the past dozen years have housed one of only two centers in the world for clinical research into fasting. The callers with long COVID complained of fogged brains and perpetual exhaustion, breathlessness and muscle aches, disrupted sleep and loss of smell and taste, and they wanted to know whether a fast might help. The clinicians said they didn't know whether fasting could reverse long COVID but, yes, fasting routinely lessened symptoms like theirs and sometimes helped with similar diseases, for example with chronic fatigue syndrome. And since multiple large studies had proven that fasting under medical supervision was safe, the clinicians were confident that a fast would do the callers little harm and quite probably a lot of good, even if their long COVID remained untouched. Many of the callers came to Überlingen and Marbella and fasted.

More accurately, they modified-fasted. Although fasting in American clinics is usually done on nothing but water, Europe's

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fasting doctors tend to favor a gentler deprivation. At Buchinger Wilhelmi, patients take up to 250 calories a day in vegetable broths, fruit juices, and honey-sweetened teas, which provide enough nourishment to minimize the side effects, like headaches and nausea, that sometimes bedevil water fasters. The calories also enable fasters to undertake mild hikes, yoga, or a few turns in the pool, all of which lends European fasting clinics the air of a spa. The atmosphere at American clinics is contrastingly clinical.

If there is a drawback to the modified fast, it's that the couple of hundred calories a day may retard the body's repairs. We have few studies to guide us, but the strong impression of fasting doctors over several generations is that water fasters heal more quickly than modified fasters. That is not to say the modified faster doesn't heal. She often does. For the unhurried patient or one who prefers comfort and movement to the relative immobility and discomfort of a water fast, a modified fast may be a good choice—including, if the stories that emerged from Buchinger Wilhelmi were to be believed, for people with long COVID.

One of those stories was of a retired German headmaster, aged seventy, who remained deeply fatigued a year after recovering from her acute COVID infection.¹⁷ She also suffered from a recurring headache and a stiff neck and ran a high fever at odd intervals. When she even mildly exerted herself, as when walking uphill or climbing stairs, she became breathless and dizzy and felt a bizarre tingling under her skull. Her sense of smell had also deserted her. For frustratingly brief periods, it would return, only to leave as inexplicably as it came, but even in the brief interludes when it was present, she could never say what she was smelling. She could not,

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for instance, match the scent of a lemon to the lemon itself. She said her brain seemed to lack that information.

The headmaster fasted nineteen days at Buchinger Wilhelmi, and over the course of her therapy her strength returned little by little, and her symptoms faded until she was free of the breathlessness, fatigue, headaches, stiff neck, and fever. Some months later she reported she was back to walking ten kilometers without difficulty, her sense of smell was returning more often, and she could sometimes even match the odor to its source.

Another encouraging story was of a young doctor from Geneva whose long COVID took the form of a recurring bronchitis that beggared her lungs and made exercise impossible.¹⁸ She often ran a fever, was deeply fatigued and weak of muscle, and slept up to fourteen hours a day. During the first three days of her fast at Buchinger Wilhelmi, she saw no improvement, but on the fourth day she felt such a surge of energy that she tried jogging and found to her delight she could cover five kilometers, albeit slowly. Her respiratory troubles and other debilities faded by the day, and by the time she broke her fast at week's end, she believed she was back to normal.

Long COVID left a thirty-three-year-old dentist from London exhausted, wracked by aching muscles, and weak when standing and walking.¹⁹ Although she could work, she had to rest her head on her desk between patients, and like the Genevese doctor she often slept fourteen hours a day, sometimes eighteen. She described herself a “zombie,” “twenty percent” of her normal self. During her fast of six days, her aches disappeared, much of her energy returned, and she left Buchinger Wilhelmi feeling eighty percent recovered. The

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next year she made a second fast, continued to improve, and left, by her estimation, ninety-five percent healed.

A sixty-year-old wine dealer from Strasbourg who was stricken with long COVID lost his senses of smell and taste—blows so paralyzing in his line of work that he took indefinite leave.²⁰ He was also smothered by a brain fog that kept him from thinking straight, reading even simple material, expressing himself in English or German (both of which he ordinarily spoke fluently), and playing the piano he had long adored. At Buchinger Wilhelmi, rather than make a prolonged fast, he ate a restricted diet of 800 calories and practiced 16:8 fasting, fasting sixteen hours a day and taking all his calories in the other eight. Within days, he surprised himself by sitting down to the clinic's piano and playing sonatas by Scarlatti and Mozart, which moved him to tears. By the end of his stay the fog in his brain had cleared, he had almost completely regained his smell and taste, and he had plans to return to work.

While these stories trickled out of Buchinger Wilhelmi, similar tales emerged from the TrueNorth Health Center in Santa Rosa, California. TrueNorth is the oldest and largest fasting clinic in the United States and is home to the world's only other center for clinical research into fasting. The TrueNorth recoveries were of a piece with the Buchinger cases. One that struck me, because of the length of the infirmity, was of a retired minister who had come to the clinic after two years with long COVID.²¹ During a fast of two weeks his fatigue, brain fog, and other symptoms were rolled back, and after a second fast of ten days the following year his brain fog disappeared entirely and his fatigue was further lessened.

I also heard heartwarming tales directly from a few self-experimenters, although here I must inject a word of caution. While

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prolonged fasting under the supervision of doctors who are trained in the practice has been proven safe in peer-reviewed studies, prolonged fasting at home, unsupervised, has not. Nearly all fasting doctors advise the ill not to fast unmonitored for more than a day and advise even people in perfect health not to fast unsupervised for more than a week.* (The most conservative fasting doctors think even healthy people should fast no more than a day unsupervised.)

All the same, many sick people do fast on their own, and now and then some of them write me. One was a scientist of middle years at a London university whose long COVID had at times left her bedridden with fatigue. She described an opaque fog that enveloped her brain, and she once found herself in a seminar with her hand raised but with no idea, when called on, what she'd meant to ask. She lived in a constant terror she was going to lose her job and fell into a deep depression.

As scientists sometimes do, she eventually decided to self-experiment. She first tried 16:8 fasting, in the manner of the vintner from Strasbourg, but received no relief. Next she put herself on a fasting-mimicking diet, a regimen very low in calories that can yield some of the benefits of fasting. After five days of 500 calories a day, she discovered she was less tired and could do a few tasks that had previously been beyond her. She refed over a week or two and then tried fasting on water for forty-eight hours. Almost from her first skipped meal she felt a little better, and by the end of her fast she was even more energetic and her mood began to lift. A week or two later she made another forty-eight-hour fast and was overjoyed to

* Most fasting doctors also believe that prolonged fasters should be educated in several vital precautions, like drinking copious water and guarding against fainting (a common pitfall since blood pressure drops during a fast). Whether in a clinic or at home, to fast without knowing these precautions is foolishness itself.

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find her fatigue gone, her depression lifted, her brain fog at last receding. Hoping to make a deeper parry against the trouble in her brain, she made a third and fourth forty-eight-hour fast, each time feeling more improved. During her fifth and final fast, this one of sixty hours, the fog disappeared entirely.

“I simply cannot describe in words my energy, excitement, and hope for the future,” she wrote me. “I’m back to running and cycling, and most importantly, I remember words, I can pay attention, I feel clever and confident. . . . I feel like I have my young brain back.”

It was this assortment of stories that gave me cause to think fasting might reverse my viral fallout. I knew of course that such anecdotes didn’t prove fasting could reverse post-viral syndrome, but the stories were numerous enough, consistent enough, and from credible enough sources that they compelled the hypothesis that fasting *might* reverse or even entirely eliminate some cases of long COVID and, perhaps, of other post-viral syndromes.

Other explanations were possible. Maybe the sufferers in these tales had improved simply from resting at a spa or receiving complementary therapies while they fasted, like massage or breathwork. Or maybe their long COVID had been on the verge of relenting, and its disappearance simply coincided with their fasts. But while such possibilities are conceivable, none is particularly plausible. Neither massage, nor breathwork, nor any other therapy has been shown to reverse long COVID, and as I’ve said, when long COVID relents spontaneously, it rarely does so quickly. Still, these and other alternative explanations remain possible, and we would need much more evidence—ideally, multiple randomized,

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controlled trials—to say with certainty that fasting can (or can't) reverse long COVID.

There is another caveat: even if fasting reversed long COVID in a German headmaster, an English dentist, a Swiss doctor, and a French vintner, it won't necessarily reverse a different kind of viral fallout in an American writer. It might not even reverse long COVID in the next German headmaster or English dentist to come along. Diseases and people are variable, and fasting, potent though it can be, is certainly no cure-all.

But for all that, I saw nothing in these wise cautions to deter me from trying a fast for my viral fallout. Indeed, given that fasting has reversed diseases with symptoms similar to viral fallout, given the safety of supervised fasting, given the numerous credible sufferers (and their doctors) who believed fasting had reversed their long COVID, and given that no cure was (or is) forthcoming from mainstream medicine, the obvious choice for one decimated by viral fallout and with no sign of improvement imminent was to fast. In fact, I believed I'd have been a bloody fool not to.

My fast

NEVERTHELESS, I HAD my reasons for waiting two months to fast. For a start, I was deeply reluctant to fast without medical oversight. Unsupervised fasters sometimes land in the emergency room or, on rare occasion, the morgue, and sick fasters are stronger candidates for those chambers than healthy ones. Lamentably, in the western hemisphere there are only three clinics for inpatient fasting, and the two nearest me were both a thousand miles away. How was I, barely able to totter to the bathroom, to get myself to California or Ohio without collapse? In the end I decided that given my long experience in fasting, the least chancy of my poor options was to fast at home—a course I recommend to no one. I decided to minimize my risk by modified-fasting in the Buchinger style, which most doctors believe is safer than fasting on water only. But since safer still would have been not to fast at all, I waited in hope of a spontaneous reversal that never came.

I had another, more insistent reason for not fasting right away. During my acute infection, I had sweated and shivered away more than a dozen pounds, and since I was slender to begin with, I wanted the ballast back before slimming again. It took most of six bedridden weeks to rebulk.

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My final reason for delaying a fast was my hope that if I simply continued to eat healthily, my body might heal itself with the materials I fed it. Several years earlier, an extended study I had made of nutrition science convinced me that the healthiest diet for humans is one of minimally processed plants—a diet free of animal products, highly processed foods, and salt. Eating this way has been shown to prevent, reverse, and sometimes entirely eliminate a host of diseases, including type 2 diabetes, chronic kidney disease, asthma, high blood pressure, other manifestations of cardiovascular disease, certain autoimmune diseases like lupus and rheumatoid arthritis, menopausal hot flashes, acne, non-alcoholic fatty liver disease, and risk factors for dementia.* When I switched years ago to eating plants, my health had improved markedly, and I hoped now my menu would do a job on my viral fallout. There was slight cause for optimism in studies that showed vegans were less likely than omnivores to contract acute COVID and suffered less than omnivores when they did contract it.²² But no research had shown that a diet—plant or flesh, processed or not—could reverse long COVID, and so it proved with me. Day by day, plant by plant, I failed to improve.

At last, one autumn morning I told Jennifer that tomorrow she would be relieved of her duties as *chef du invalide*, and that afternoon I took my last meal. Next morning I awoke feeling about as I had the previous sixty-odd mornings, which was a disappointment. I had hoped for at least a small placebo bump from the very modest thrill of fasting, a gentle stir from finally doing something to thwart the disease. But if anything I felt a little worse, mostly because

* For more on eating plants to prevent and reverse disease, see “Sources on Diet” at the end of my book *The Oldest Cure in the World*.

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without the pleasure of food to break up the monotony of the day, the hours yawned before me even bleaker than before.

Compensation, however, wasn't long in coming. Although I felt no improvement over the day, by nightfall I perceived a slight lessening of my fatigue. It was too faint to be sure of, but I hoped it might harbinge better days.

The next morning I mustered the usual courage to teeter to the bathroom and was surprised to find myself rising from the bed with slightly less trouble than before. Still more astonishing, the journey proved not an unthinkable trudge but only an ungainly trundle. Across the day each trip to the loo became slightly less arduous, and by afternoon a wisp of vitality blew over me.

With it came the strange idea that I might venture downstairs without misery. And so I did. I didn't exactly skip to the front porch, but I reached it with something like aplomb, and once there I didn't have to force myself to endure five minutes in the sun. In fact, I basked decadently. The march back upstairs was strenuous, but on getting into bed I didn't fall to pieces, and an hour or two later I felt recovered, a far cry from the day or two of recuperation that previous trips had demanded. This, I thought as I tried to suppress my mounting excitement, was highly auspicious.

On the third day, I dared accompany Jennifer and our dog Coconut on their morning walk. We didn't range far. My legs, wobbly from long disuse, limited my compass, but even in the wobbling I found good news: my muscles were shaking not from viral fatigue but from simple inactivity, which had turned them to flab. Past experience told me this problem would be easily fixed once I was back to walking again. It was on this walk that I first became certain the fast was working, confident I wasn't enjoying a

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temporary fluke. I could feel the health coursing through my arteries. It felt like spring.

On the fourth day, I joined Jennifer and Coconut for two walks, and on the second of these a rash thought popped into my head: *I could go for a hike tomorrow*. I knew I would do no such thing, but the mere appearance of the thought, unsought, stirred my soul. Later that day, for the first time in nearly two months, I passed an hour or two in the living room. The difference between lying on a bed or a couch is physically negligible, but the gulf is psychologically enormous. For the first time in an age, I felt I belonged in the *living* room, not the sickroom.

Not all of me was progressing brilliantly. I still wasn't sleeping, and my mind was far from lively. But even on a thin ration of sleep, I had more energy than I'd had in two months, and the gears of my brain turned just a little more smoothly. Who was I to complain?

Five days into my fast, I made all three dog walks and was overtaken by a mild euphoria on each. *I could definitely hike*, I told myself now, and the quick inventory I took of my muscles and lungs suggested I wasn't far wrong. I was fairly brimming with exuberance. That evening, for the first time since falling sick, I listened to music, Haydn's two cello concertos. I wept helplessly, joyously, not realizing until that moment that I had lost the capacity to appreciate beauty. To have it back was inexpressibly precious.

Throughout my improvement I had no doubt my fast was its cause, not because I'm a true believer in fasting but because I had changed nothing else about my life, certainly nothing I could identify. What else could have caused so astonishing a turnaround? A drop in the barometric pressure? A change of bedsheets? It had to be the fast.

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On the sixth day, I told Jennifer as she scampered off to work that I could walk Coconut at midday without her. Throughout my illness she had been bussing home at lunchtime to care for her two dependents and then bussing back. I wanted to save her the trip, but I was also planning a small surprise, a deep cleaning of the kitchen, which in our household is a gift superior to floral arrangements or precious stones.

After she had gone, I got down on hands and knees and scrubbed the oak planks of the kitchen floor one by one. When they were clean enough to eat off, I went to work on the cabinet faces, the refrigerator, the countertops, and the appliances. A couple of hours passed in these cheerful labors. Another hour whizzed by as I scraped gunge from the bottom of the oven and degreased its window. Next I removed and washed the control knobs on the range, oiled the cutting block, washed Coconut's dribbled-on placemat, and tightened the mounting screws on the food disposer that had a habit of vibrating loose. Five hours after I'd begun, the kitchen gleamed. I had intended only an hour's work, but I felt fine throughout and was so ebullient I hardly noticed the time. In fact, I was certain I could have done more—cleaned the windows, vacuumed the insides of the drawers—but prudence checked me. I didn't want to do too much too soon, and I half feared I had already.

Jennifer was duly touched when she came home, and we passed a gay evening celebrating my progress. I doubt Persephone emerging from Tartarus felt half so giddy with her restoration as we did with mine. But as we sat on the couch—Jennifer reading, I watching Arsenal lose to Lens—I became aware that I was disoriented, although it was hard to figure out about what. After pondering my confusion a few minutes, I realized I couldn't

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remember names. I looked out the window at the house of our neighbors, next to whom we had lived a dozen years, and although their faces appeared in my mind, their names were lost to me. So too the neighbors on the other side. Nor could I bring to mind the names Arsenal or Lens, even when I saw ARS and LEN in the scoreline in the upper left corner of the screen. But I only began to feel a wild surge of fear when I failed to recall not just the names of authors (“Do you remember who Oliver Sacks is?” Jennifer asked, and I shook my head) but even the names of books I myself had written. “Was one about Indians?” I ventured hesitantly.

I had mind enough left to know that I must have overdone the day’s cleaning and depleted something vital, and I broke my fast immediately with a small bowl of applesauce. When that failed to restore my memory, we proceeded to the hospital. Forty-five minutes later, as we waited for an analysis of my blood, the applesauce finally did its work and my disorientation lifted. The hospital’s laboratory diagnosed a shortage of sodium, which is vital to a number of brain functions, not least memory. No doubt my cleaning marathon had drained it. In decades of fasting, this was the first time I had run into trouble, and it was a chastening reminder that even an experienced faster would be wise to fast under medical supervision, especially when ill. For the record, I also discourse five-hour unfed scrubbing of the kitchen.

Recovery

IN THE COUPLE of days it took my body to recover from the cleaning fiasco, I continued my gradual return to eating. Once back to my normal diet, I judged my body to be about where I'd left it when I broke my fast: mostly but not entirely healed. I could exert myself, sometimes for long stretches, but often became mildly breathless in the effort. On climbing stairs, no matter how short, my lungs struggled. It was a great delight to return to reading, but I couldn't stick with a book for quite as long or with quite as much interest as before my illness. I didn't even try writing, which I knew would sap me. And no matter how gently I treated myself, the endeavors of the day always told so that by evening I could do little more than flop on the couch. I was overjoyed to be bedridden no longer, but eating had arrested my upward trajectory.

Ten days after ending my first fast, I fasted again. Because my disorder was evidently a stubborn one, this time I tried the deeper purge of a fast on water, not the modified fast I had done before. I promised myself not to do anything stupid in the kitchen or any other room of the house. Once again I began to feel slightly invigorated even from the end of my first twenty-four hours without food. Each day I grew a little less weary, a little less short of breath, a little more sturdy. By the fourth or fifth day, the gains

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accelerated rapidly, and by the end of the week I thought a full cure might be within my reach if I could continue the fast a few days more. But with the hospital fresh in my mind, I broke my fast at seven days. First do no harm.

After I refed, I felt in most respects back to normal. I could read for sustained spells, and short sessions of writing went so well that soon I was writing for a few hours at a time. I could talk inexhaustibly, could cook involved dishes, could bicycle to the library. To those who saw me, I'm sure I presented the picture of perfect health, and yet I still wasn't quite my old self. Stairs continued to leave me faintly breathless, and if Coconut led me on an especially long walk, I dragged toward the end. Some mornings I awoke so lethargic that after attending to the matutinal rituals, I crawled back into bed for two or three more hours of rest. Always by day's end I was shot.

At first these symptoms showed no sign of yielding, and I thought another fast might be called for. But I was so weary of deprivation in all its forms that instead of a prolonged fast, I settled for periodic short fasts. Every ten days or so, I took my last meal in the late afternoon and didn't eat again until breakfast the day after next. Within a few weeks, my stamina seemed slightly improved and my fatigue eased a bit, although whether from the thirty-six-hour fasts, which I maintained for a couple of months, or from some other cause, like increasing exercise or the simple passage of time, I have no idea. Whatever the case, after several weeks the fatigue was clearly in retreat. Now, rather than tiring within an hour of serious exertion, I didn't feel malaise until a day or two later. A hard Monday of writing and a challenging hike on Tuesday might make for a Wednesday of sluggish body and mind. Doctors call this state,

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aply enough, post-exertional malaise. Common in long COVID, it usually strikes immediately after exercise and sometimes limits the amount of exercise in the first place,²³ although neither of those conditions applied to me.

For quite a while my sleep remained barren. Ever since adolescence I've had frequent spells of hit-and-miss sleep, and it felt now as though the virus had magnified this old failing. Four months of poor nights passed before I began to sleep soundly again, and even then for many months my sleep turned scrappy at the slightest provocation.

My mind took much longer to return to whole. In the early months of my recovery, notwithstanding my joy at getting better, I was quick to irritate and often troubled by an odd feeling of agitation, as if I'd been injected with an irascibility drug. I kept tumbling into fights with Jennifer that neither of us had any interest in getting into but that we both seemed powerless to avoid. My insomnia, the long uncertainty of the illness, the stewing for all those weeks in unhealthy thoughts, and the unknown molecular havoc the virus had wrought in my brain left me rattled and volatile. For her part, Jennifer was suffering the strain of the lone, full-time caregiver who had maintained another full-time job on the side. It took a couple of months for us to reach a shaky *détente* and another month to find our way back to consistently loving footing.

I experienced other troubles of the brain that I suspect were also the work of viral fallout. A few months into my recovery, I gashed a finger while chopping vegetables. *Careless*, I thought. A couple of days later I sliced the same finger in the same spot. The following week I opened a wound on another finger, and the week after that I cut into a thumb. Such inattention was uncharacteristic

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of me—I probably hadn't sliced myself as many times over the previous decade as I had in those two weeks—and I didn't think the problem was one of coordination. It seemed the fruit of an unfocused mind. This speculation was seconded by several small lapses of memory that were also uncharacteristic. To my relief a month or two later, at about the time my irritability faded, my memory and focus returned to baseline.

Far more disconcerting was the reappearance of an old neurological foe I'd thought I'd left behind for good. For nearly three decades of my adulthood, I had been hounded by a disease called idiopathic hypersomnia, which I had shaken in my late forties, five years before contracting the virus. Victims of idiopathic hypersomnia feel irrepressibly sleepy (hypersomnia), and scientists neither know why nor have a remedy (idiopathic). To go through life a hypersomniac is to feel each day as if you have never fully woken up. As the years pass, your brain works ever more slowly, the sparkle and verve seep out of you, and you forever crave just one more hour of sleep. The kicker is that sleep never restores. No matter how much you sleep—and some poor hypersomniacs sleep twenty hours a day—you always wake just as tired as you were before.

I had reversed my hypersomnia quite unintentionally during a fast to lose weight. After a few days without food, the somnolence simply evaporated, and when I refed on minimally processed plants (it was then that I first changed my diet), the disease didn't return. With one brief and temporary exception, it had stayed away ever since. But now the virus seemed to have resurrected it. Even as the rest of me was recovering splendidly, I had days in which every mental task was once again a heavy-lidded struggle. The disorder

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was inconsistent. One day I could work eight hours, the next hardly at all. I feared I would plummet back into the depths of unbroken hypersomnia, but after three or four months its symptoms began to fade, and as I write, seven months after my bedridden days, the hypersomnia recurs only infrequently and weakly.

One of the challenges of my recovery, a welcome one, was of my own making. When I first began to get better, I resolved that once I was stable, I would work to rid myself of my unhealthy mental holloways. A few months into my recuperation, I started attending more consciously to my thoughts, first trying to notice when I slipped into the sickly treads of the holloways—vastly harder than it sounds—and then hopping out of them and onto healthier paths, which I hoped to wear into habitual grooves. It is a long work, but my mind has responded with some facility, and I take that as one more symptom of a robust recovery.

Today, as I put the finishing touches on this essay, I feel almost as healthy as before my illness, and I see no hyperbole in saying that fasting, to all appearances, has given me my life back.

Peer-reviewed cases

IN NOVEMBER OF 2023, soon after I made the second of my two fasts, I received a press release from the Buchinger Wilhelmi Clinics announcing a paper they had just published. “Improvements during long-term fasting in patients with long COVID—a case series and literature review” had my rapt attention.²⁴ Ever since hearing the stories of recovery from Buchinger Wilhelmi, I had hoped its clinicians would systematize the cases and submit them for peer review, and now they had done so in the journal *Frontiers in Nutrition*. (To disclose, one of the paper’s lead authors, Françoise Wilhelmi de Toledo, the director of Buchinger Wilhelmi’s research program, is a friend, albeit a distant one; years often pass without a word between us.)

The Buchinger paper reported the cases of nine men and five women, aged thirty-three to seventy-four, half of them obese. During their initial COVID infections, one had been completely asymptomatic, eleven had symptoms lasting from a single day to three weeks, and two poor outliers had been dogged by acute symptoms for between four and eighteen months. Four of the fourteen had been hospitalized. They had suffered from long COVID for as few as five and as many as twenty-two months before coming to Buchinger Wilhelmi, where they fasted for from

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six to sixteen days. All of which is to say that the patients, their illnesses, and their therapies were diverse, which would have made for a poor clinical trial but is the norm for a case series, in which doctors take whoever walks in the door and give them whatever degree of treatment they choose to accept.

The doctors of Buchinger Wilhelmi asked their patients to rate the severity of their symptoms before and after fasting on a scale of 0 to 10, and the comparisons made for heartening reading. Patients who had complained of exhaustion rated their fatigue, on average, at 5.1 before fasting, but after their fasts they put it at 1.7. Those who had had trouble breathing rated their breathlessness at 3.4 beforehand but 1.6 afterward. Those with musculoskeletal problems saw declines in muscle weakness from 5.4 to 2.0, muscle pain from 5.1 to 1.3, and joint pain from 4.9 to 1.7. Headaches, among those who had them, were obliterated, toppling from 4.7 to 0.5. Cognitive impairment fell from 5.4 to 2.6. Depression dropped from 2.8 to 1.3. There were similar drops in chest pain, sleep disturbances, dizziness, and disorders of smell and taste. Asked whether they thought fasting had substantially improved their health, thirteen of the fourteen said yes. Some believed they were only somewhat restored, while others judged themselves fully recovered.

The Buchinger researchers didn't make a thorough assay of their fasters' blood, but the biomarkers they did check improved in much the same way that biomarkers do in other fasters. High blood pressure, high cholesterol, and high glucose, to take three examples, tended to decline handsomely. All of the fasters tolerated their fasts well, and none had an "adverse event" requiring urgent medical intervention. This finding was in keeping with an earlier Buchinger

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study in which 99 percent of 1,422 patients, many of them quite diseased, fasted without serious adversity.²⁵

I was impressed that the long COVID patients had fared so well on their relatively brief, modified fasts. These weren't, after all, the water-only deprivations of up to forty days that patients sometimes make in search of a cure at American clinics. Apparently even short, gentle fasts on a couple of hundred of calories a day could bring substantial reversals of long COVID.

Because the paper's authors were clinicians, not bench scientists, they were in no position to probe the biomechanisms behind their patients' reversals. But they offered several intelligent speculations based on other researchers' work. They suggested, for one, that a ketone called beta-hydroxybutyrate (BHB) might have boosted their patients' impaired immune systems. During a fast, when the body is deprived of its preferred fuel, glucose, it breaks down its fat stores and runs on fat byproducts like BHB. Scientists have recently learned that an acute COVID infection can impair the production of BHB,²⁶ which is a problem because BHB is a more efficient fuel than glucose for some of our virus-fighting white blood cells. BHB causes one type of white blood cell, a T cell called CD8⁺, to spew more microbe-killing cytokines at viral invaders,²⁷ and it causes another T cell, CD4⁺, to produce more interferon-gamma, which helps coordinate the immune response to a virus.²⁸ The Buchinger researchers thought fasting might have jump-started their patients' lagging BHB production, thereby making their T cells more potent against any virus that still lingered in their bodies and against any new virus that assaulted them afresh.

But fasting doesn't just *stimulate* the flagging immune system. Other studies have shown it can *calm* a hyperactive immune

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system.²⁹ Fasting, it would seem, is less an upper or a downer for immune defense than a regulator that can nudge it toward equilibrium. This may be important in long COVID because while the disease sometimes acts like a disorder of immune deficiency, at other times it acts like a disease of immuno-overreactivity or autoimmunity—disorders in which the body, exaggerating its response to a threat, creates unwanted inflammation (overreactivity) or attacks itself (autoimmunity). A series of studies from the 1980s and 1990s on fasting for rheumatoid arthritis, in which the immune system attacks the linings of the body's own joints, is instructive. The capstone study was a randomized, controlled trial published in *The Lancet* that showed that a fast of even just a week could dramatically reverse the symptoms of RA.³⁰ One of the other studies found that fasting reduced the activity of neutrophils, which are white blood cells that ordinarily attack marauding bacteria but that in RA can misfire and inflame the joints.³¹ Mechanisms such as this are no doubt why fasting clinics have long reported success against a spectrum of autoimmune diseases including RA, ulcerative colitis, Chron's disease, psoriasis, ankylosing spondylitis, lupus, and Hashimoto's thyroiditis. The sufferer of viral aftermath that is autoimmune or overreactive in character might benefit from similar mechanisms.

The Buchinger researchers thought fasting could also have helped their patients by shutting down molecular pathways that promote body-wide inflammation. Scientists have known for decades that fasting stifles various harmful pathways, one of which is the mammalian target of rapamycin (mTOR) pathway. Essential to growth in our youth, the mTOR pathway, if overstimulated in our maturity, accelerates aging. One way it does so is by exciting

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inflammasomes, which are large protein complexes that ordinarily attack microbial invaders but inflame us when overly agitated. Fasting shuts down the mTOR pathway and with it the inflammation. Fasting also throttles inflammatory molecules like tumor necrosis factor-alpha and interleukin 6.³² Such mechanisms are probably why C-reactive protein, red blood cell sedimentation rate, and other biomarkers of inflammation drop during prolonged fasts.

The drop in inflammation, the Buchinger writers noted, is of special importance to the obese. Scientists once thought our excess adipose tissue—our body fat—was essentially inert. But we now know surplus fat is a kind of factory that constantly churns out inflammatory compounds, which partly explains why obese people are chronically inflamed.³³ (It's also why, among many other reasons, the claim “health at every size,” while admirable for the psyche, is a physical canard.³⁴) Researchers have also learned that the immune systems of obese sufferers of long COVID tend to overreact, which leads to still more inflammation in their already inflamed bodies.³⁵ By burning off inflammatory fat and shutting down other inflammatory pathways, fasting may be especially suited to help obese victims of viral fallout.

The Buchinger clinicians speculated as well about why their patients' brain fog had cleared.³⁶ The research is young, but we know that during a fast the ketone BHB stimulates the brain to produce more of a protein called brain-derived neurotrophic factor, BDNF. BDNF helps us grow new neurons, maintain the neurons we've already got, form new synapses between them, and improve the functioning of neuronal mitochondria, the power plants of the brain cell. A healthy supply of BDNF makes for better learning and

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memory, and it's no coincidence that people with the most dreaded neurodegenerative diseases—Alzheimer's, Huntington's, Parkinson's, multiple sclerosis—tend to be short of BDNF. According to recent studies, so too are many sufferers of long COVID.³⁷

Much of our data on the fasting brain comes from animals, in whom increased BDNF and related changes sharpen the mind. Fasted vinegar flies become more skilled at creating long-term memories,³⁸ and fasted mice learn new tasks better, get through mazes faster, and respond more prudently to threats.³⁹ Old rats, when fasted, learn to swim water mazes more quickly and remember them better.⁴⁰ In mice with a mutation that leads to Alzheimer's, fasters learn and remember better as they age, even though their brains still develop the plaques and tangles that characterize the disease.⁴¹ The neurons of mice who fast before being afflicted with a Parkinson's-like syndrome are far more resistant to degeneration and cause fewer motor problems.⁴² In similar tests of rhesus monkeys, fasting and caloric restriction don't spare them Parkinson's, but compared to normally fed monkeys, the fasters have fewer motor impairments, more of the pleasure-producing neurotransmitter dopamine, and more glial cell line-derived neurotrophic factor, GDNF, which helps neurons thrive.⁴³ When mice with a mutation for Huntington's disease are fasted, they show less neural degeneration, less motor dysfunction, and less muscle wasting.⁴⁴ They also live longer.

Fasting has even been shown to protect the brain against strokes and their aftermath. When scientists induced an ischemic stroke in fasted mice by blocking one of their cerebral arteries, their brains suffered far less damage than those of normally fed mice,

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with fewer dead neurons and neurological deficits.⁴⁵ The scientists speculated that fasting prepared the neurons to respond to potential assaults by hunkering down while under attack and then prioritizing reconstruction afterward. What goes for stroke goes for concussion. When researchers surgically concussed adult rats and then fasted them for twenty-four hours, they had less neural damage, less cognitive decline, and better-functioning neural mitochondria than normally fed rats who were concussed.⁴⁶

Such neurological improvements aren't limited to the brain. When mice with multiple sclerosis were fasted, they had less nerve damage and better motor and mental function.⁴⁷ In one astounding experiment, multiple sclerosis was entirely reversed in 20 percent of the mice—a finding worthy of headlines that have never been written. In a brief pilot trial, when humans with MS ate a low-calorie diet that mimicked fasting, the symptoms of their disease also eased.

The fasting brain benefits also from more, or more readily available, neurotransmitters: more mood-lifting serotonin, more opioids, and more endocannabinoids, the body's own cannabis.⁴⁸ Fasting also prompts a neuroendocrine axis that runs between the brain and adrenal glands to decrease the baseline level of stress hormones like adrenaline and noradrenaline in roughly the same way exercise does.

These changes in the nervous system likely explain, at least in part, why the Buchinger patients enjoyed reprieves from their brain fog, depression, headaches, and other pains.

Some of the patients' improvements, the Buchinger team suggested, probably came from other cellular renovations, like repairs to DNA that was damaged during their infections. Such repairs are of no small importance since DNA is the set of

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instructions that guides the body's numberless labors. As I mentioned earlier, DNA is often damaged during a COVID infection by an excess of reactive oxygen species. But when we fast, we not only produce fewer ROS; we also make more antioxidants that neutralize surplus ROS, and we become more adept at repairing DNA.⁴⁹ In a simple but telling experiment at Germany's Albstadt-Sigmaringen University, scientists drew blood from volunteers before, during, and after a modified fast and then damaged the DNA in the blood cells with ultraviolet radiation.⁵⁰ Before fasting, the cells of some volunteers had trouble repairing the irradiated DNA, but during and after fasting the cells of those same volunteers became much more skilled at fixing the damage.

The Buchinger researchers thought their patients might also have been helped by fasting-induced autophagy. Our cells are forever trying to prolong their useful lives by fixing worn-out parts, but when parts become too tattered to repair, they have to be discarded or recycled. Autophagy, from the Greek roots for *eating the self*, is the recycling process. When a cellular part is to be recycled, the cell envelops it in a kind of vat that it builds for the purpose and into which it pours acid. Once the part is dissolved, its broken-down constituents are sent elsewhere to become the building blocks of new parts. Autophagy goes on all the time but only at a very low rate because our bodies are too busy with other chores like processing nutrients from our food. During fasting, our bodies send autophagy to new heights. In one trial of overweight adults, a mere four days of narrowing the daily eating window to six hours in the morning and early afternoon caused autophagy to increase 22 percent, an extraordinary jump for so brief an intervention.⁵¹ In mice with Charcot-Marie-Tooth disease—a dire malady that robs

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nerves of their ability to conduct electricity and turns simple motor tasks into an ordeal—fasting caused an uptick in autophagy, which in turn led to healthier nerves and improved motor abilities.⁵² Researchers have recently learned that an increase in autophagy also helps cells rehabilitate structures damaged by viruses and may help clear RNA that lingers after a viral infection.⁵³ This could be critical for sufferers of viral aftermath because RNA is the genetic code a virus uses to replicate itself.

Fasting might also help sufferers of long COVID by inducing cells that are too broken to be repaired or recycled to destroy themselves.⁵⁴ The body routinely orders this kind of cellular suicide, called apoptosis, to stop defective cells from doing harm, but as with autophagy it ordinarily does so at a low rate. Fasting amplifies the rate. When the faster refeeds, stem cells replace the recently sacrificed cells with healthy new cells, including new immune cells.⁵⁵ For at least some parts of the virus-ravaged body, fasting provides a literal fresh start.

The Buchinger researchers further hypothesized that changes to the gut microbiome—the two to five pounds of bacteria and other microorganisms that are our constant intestinal companions—may have helped their patients. The best of our bacterial guests help us digest food, make vitamins we can't do without, regulate our immune system, and protect us from their less-agreeable cousins, while the worst of them repay our hospitality by contributing to, or possibly causing outright, obesity, leaky gut, heart attack, colorectal cancer, lupus, rheumatoid arthritis, and much else of an objectionable and sometimes terminal nature. Which bacteria thrive—helpful or harmful—depends on what we feed them. Research has shown that the healthiest bacteria flourish

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on minimally processed plants, apparently because they adore nothing so much as fiber, which is found only in plants.⁵⁶ The unhealthiest bacteria revel in meat, dairy, alcohol, and refined sugars. Scientists know COVID can disorder the microbiome, but they don't fully understand the consequences.⁵⁷ They also know fasting can reorder the microbiome, although again in ways we're only beginning to apprehend. We know, though, that prolonged fasting wipes out both healthy and (apparently even more so) unhealthy gut bacteria⁵⁸ and that if fasters then refeed on fiber-rich plants, their guts will be reseeded with healthy bacteria, which will crowd out unhealthy competitors.⁵⁹ Better still, as the healthy bacteria digest the fiber in the plants, they'll produce short-chain fatty acids, which can lessen inflammation throughout the body, keep the immune system well ordered, and protect the workings of the heart, brain, liver, and other organs.

The Buchinger review of mechanisms wasn't exhaustive. Only in passing, for example, did the clinicians suggest their patients might have benefited from improved blood flow, from the slimming of fatty livers, or from enhanced insulin function. But we don't need an all-inclusive treatise to grasp the vital argument: because fasting starts or accelerates so many healing mechanisms, and because the manifestations of such healing—renewed energy, clearer thinking, better mood, stronger muscles, less pain, sounder sleep—are the sorts of changes the Buchinger fasters experienced, it's not far-fetched to suppose that fasting reversed their long COVID. And if fasting did so in a diverse group of patients with diverse versions of the disease, why not in others? And, I might add, since fasting appears to have restored me as well, why not against other forms of viral fallout?

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Let's pause a moment to review the bidding.

A class of terrible diseases is ravaging many millions of people, and orthodox medicine is all but powerless to improve, let alone fully restore, them. Now comes a group of well-respected clinician-researchers who tell us in a peer-reviewed journal that they have observed, and to a degree have quantified, the reversal of symptoms of long COVID in patients who fasted under their care. Other fasting doctors and self-experimenters around the world report much the same.

We have long known that fasting can ameliorate or even cure diseases with symptoms similar to long COVID. We have also long known that fasting works not by placebo effect (at least, not only by placebo effect) but by inducing a host of actual renovations in our cells that are potent and that occur throughout the body. We know further, from multiple large studies, that fasting under the care of experienced doctors is one of the safest therapies in medicine, its rate of serious complications below 1 percent. Finally, we know that unlike the side effects from most drugs and procedures, nearly all of fasting's side effects are benign. Even if a fast doesn't cure your long COVID, it is apt to leave you with lower blood pressure, lower blood sugar, a less fatty liver, an elevated mood, and other salubrious consequences.

Knowing all of this, shouldn't sufferers of long COVID and other viral fallout at least consider fasting under a doctor's care? Indeed, I think we can go further. Surely physicians, once informed of the above facts, have an obligation to educate their patients with viral fallout about fasting's potential, and the physician who fails to do so commits an ethical lapse. The same goes for scientists. Those who now research long COVID and other viral fallout, as well as

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the agencies that fund such research, surely have a moral imperative to direct at least a portion of their efforts toward fasting. We need only a few randomized, controlled trials to put the question to rest.

It is all little enough to ask.

Doubters

AND YET DOCTORS, scientists, and journalists who have made long COVID their concern find such tame suggestions beyond the pale. Or so I conclude from their thoroughgoing silence about, and lack of inquiry into, the Buchinger case series. As I write, virtually no researchers have cited the Buchinger paper, nor to my knowledge has any reporter treated it in a publication of note.

When I have brought the Buchinger cases to the attention of doctors and scientists who work on long COVID, their replies have run from the wintry to the Siberian. This isn't altogether surprising. It's the rare physician or researcher who has received even an hour's instruction on fasting or the body's broader self-healing mechanisms. In both medicine and the sciences, training is steeped in the wonders of the pill, potion, and procedure (which, let there be no mistake, are sometimes wondrous indeed) and in the deeply self-serving doctrine that says most cures arise from the brilliant minds of doctors and scientists, not from the humble bodies of patients. The many doctors and scientists I wrote or spoke to were thus well primed by education and professional norms to see charlatanism in my suggestion of a potential cure through fasting.

In their partial defense, it's indeed wise to be cautious about case reports like those in the Buchinger paper. Medical journals

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publish them by the tens of thousands a year, and to respond to this deluge with “Call me when someone has done a randomized, controlled trial” can be sensible. Certainly this is so for disorders of little consequence (myopia, knee sprain) or disorders of great consequence for which we already have a safe and effective treatment (heart attack, malaria). But the rationale evaporates in the face of a savage disease with no remedy, especially when the therapy newly proposed has been proven safe and many of its curative mechanisms have been elucidated.

What’s more, when it comes to fasting, the cry “Wait for an RCT” is meaningless because we’ll probably never get one. I say this with some confidence because over the past century fasting’s promise has been clinically demonstrated for any number of diseases, yet we have virtually no RCTs. The reasons are simple: fasting clinics don’t make the kind of profits that would allow them underwrite RCTs, the main funders of medical research—Big Pharma and Big Medical Device⁶⁰—have no interest in showing that fasting might work better than their pills and gadgets, and government funding agencies, which exist in no small part to enrich the makers of those pills and gadgets, are disinterested for the same reasons.

The case of fasting for high blood pressure, which I raised earlier, illustrates the point. This so-called silent killer claims half a million American lives a year, and to hear the authorities tell it, it cannot be cured. Yet for a quarter century we have had good peer-reviewed studies showing—about as well as any studies short of RCTs can—that fasting reverses hypertension with vastly more success than pill or procedure has ever done. All we lack to nail down the final bit of proof is a thorough RCT. (A small RCT has

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been published, but with only five days of fasting it was too short to clinch the case.⁶¹ Even so, it produced impressive drops in blood pressure.) But we haven't yet had and may never have such an RCT because to show the worth of a simple, safe, effective therapy for high blood pressure would threaten the flow of Prinivil and Zestril.

If that sounds too cynical, consider the matter from another angle. Imagine that a group of respected doctor-researchers had reported in a peer-reviewed journal that a relatively safe, well-established drug—Ozempic, say—seemed to have reversed long COVID in their patients. Would their report have been greeted with the same disdain as the Buchinger paper? Or would scientists and funders have tripped over themselves, purses thrown wide, to conduct RCTs on the drug for long COVID? And wouldn't battalions of doctors—not caring to wait for the results of those RCTs—now be prescribing Ozempic “off label” to many thousands of long COVID patients? That, of course, is precisely what has happened with Ozempic for weight loss.

The journalists I pitched were no more open-minded than doctors and scientists. Although most of their publications had written of the agony of long COVID and had bemoaned the lack of cure, when I set before them the evidence in this essay—evidence, that is, of a possible cure that was credible, safe, and backed by long use and sound research—I was met not with the kind of skeptical curiosity that would have done credit to our profession but with an aloof hush. Even editors who in the past had favored my pitches with a negative reply didn't bother with so much as a “Thank you, no.” Their silence was not hard to interpret. It was the editorial shorthand for contempt.

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Had they been called on to explain themselves, I'm sure they would have said they weren't in the business of endorsing "remedies" as unproven as fasting, certainly not on the basis of a mere case series. With the doctors, they would wait for an RCT. Leave to one side the many instances when these sober gatekeepers of our news pages have reported anecdotes for preposterous "remedies" with far less research behind them (and often with side effects much more malign) than fasting. The real problem with their position was the same as with the doctors' and scientists': withholding a safe and plausible treatment makes no sense for a dire disease with no known remedy. And since only a great public outcry will move government funders to sponsor an RCT for fasting and long COVID, refusing to report on the Buchinger cases all but guarantees we'll never get such a trial.

Imagine, once more, how journalists would have responded had I told them that clinicians seemed to have reversed long COVID with Ozempic. I would bet a decade of my life that the story would have landed on someone's front page within the month, and articles of equal prominence would have hastily followed in major publications the world over.

But deaf as journalists have been, still more frustrating were the stoppered ears of my fellow sufferers of viral fallout. I shouldn't have been surprised. I had met with similar reactions from sufferers of other diseases to whom I'd brought the news that fasting might help them. When I have recited the evidence to these victims—to people with hypertension or rheumatoid arthritis, with idiopathic hypersomnia or type 2 diabetes, or with half a dozen other diseases—I have been greeted with frank incredulity at best, hostility at worst. Some victims of long COVID told me that if a

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disease as crushing as theirs could be rolled back by going a handful of days without food, surely doctors, scientists, or the media would have told them.

“Well, I’m the media,” I would reply, “and I’m telling you.”

But who was I to them? Just some guy out to promote himself. I was one among many mountebanks who assured them their salvation lay in charcoal, crystals, or chakras—methods to be discussed and questions answered in a webinar next Tuesday for \$29.95. Never mind that the information I was offering was free. My proposal was simply too fantastic to be true.

I’ve come to see that many such people think I’m trivializing their plight. They seem to believe, even if they don’t articulate it, that if their disease could be whisked away with so simple and homely a therapy, their suffering would be cheapened. Or worse: in the case of long COVID, the ease of the cure might vindicate the idiots who have told them their trouble is all in their head, that they simply lack the character to get out of bed. Many sufferers believe, consciously or no, that an illness as catastrophic as long COVID requires a cure proportionately grand. A sophisticated breakthrough from a gleaming lab will do. A fast will not.

Wired against fasting

IN ONE SENSE, all of these people—scientists, doctors, journalists, sufferers—were simply expressing their particular version of a nearly universal trait: we humans disdain therapeutic fasting. Only a tiny minority of us can hear that fasting can heal, and fewer still act on it.

Much of the hostility is simply explained: we all like to eat. A fed creature outbreeds the one that starved to death every time, so evolution has given us a fine appetite and a strong distaste for its opposite. Ignore these cues, and physical discomfort follows, at least for the novice faster. That alone is reason enough for most people to eschew fasting.

But the discomfort of fasting doesn't fully explain our collective abhorrence of it. After all, many millions of us regularly subject ourselves to discomforts of body and mind in pursuit of health. We diet. We go to the gym. Sometimes we even turn off our screens when our dopaminergic pathways urge us to do otherwise. But in my experience even people who know it's healthy to mildly stress the body respond to the fact that fasting can heal by saying it couldn't possibly be so or that it might be but they themselves would never do anything so drastic.

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Only a small minority view fasting scientifically, which is to say free of prejudice. The majority dare not because, I think, to look at fasting with dispassion invites a change to one's behavior. He who acknowledges that the frequency with which he eats is bad for his health will be compelled to contemplate whether to eat less often—and *that* is a thought few of us can stomach. When it comes to fasting, even people who aspire to health usually prove to be like the liberals who profess concern for the climate but drive an SUV. We humans are wonders at ignoring evidence that would suggest we change our indulgent behavior.

Our disdain for fasting is abetted by yet another force: our widely held belief that bodies don't heal themselves of grave diseases—doctors do. This belief is essentially religious in that it is taken on faith and nearly immune to reason. I have learned again and again that it doesn't matter how much evidence you pile on the body's side of the ledger. You can show that fasting's power to heal is the result of countless natural experiments executed by a near infinitude of cells across more than a billion years and that the results of those experiments have been so literally vital to life that, as I have said, nearly all animal species can repair themselves when they stop eating. But to this evidence most people will say or imply that doctors—whose craft, let us not forget, began to emerge from hokum and hucksterism only a century and a half ago⁶²—must know more than a billion years of evolutionary trial and error. So when doctors say fasting is bunk, bunk it must be. The aura of the physician's white coat—which, if you'll permit another aside, was donned in a desperate, farcical, and ultimately successful attempt to bring the atmosphere of the laboratory to a much-mocked, tradesman-like profession—is mighty indeed.

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This sort of medical fundamentalism is all but inevitable in an age infatuated with technology. Many technologies are indeed worthy of our esteem, but we now dispense our regard so indiscriminately that when we become ill we think getting “healthcare” means getting technology, which is to say medicine, rather than getting well. Certainly we don’t try to heal ourselves. We go to the hospital. And well we should for a stroke or a torn ligament. But how many of us, having been treated for the thrombosis, having received the fell news of diabetes, having grown obese or depressed or impotent, ask whether we have made errors in what or when we eat (or how we move or breathe or sleep or stress or love) that may have contributed to our fate? Even among those who examine their errors, how many will actually change how they eat, move, breathe, sleep, stress, or love? We have become a people who instead turn to Lipitor, Prilosec, and Ambien, which our doctors too happily peddle.

It’s understandable that as medicine grows more complex, fewer of us will have the time, and fewer still the education, to sort through its bewildering intricacies. To some degree, we all must rely on experts like doctors and scientists for information and judgment. But what a pickle this puts us in. Inclined by evolution to enjoy eating and avoid its opposite, oblivious to our inborn capacity to heal ourselves of certain disorders, habituated to pills and procedures, too busy and too unlettered to evaluate the evidence ourselves, we are well poised to heed the white coat and ridicule therapeutic fasting.

That’s the bad news. There is, however, some small good news. While all that I have just said may be true of us as a people, not a particle of it need apply to the scientifically minded individual.

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Information about health is more freely available today than ever before, and writings on fasting by researchers, clinicians, and the odd journalist are no longer obscure. You often have to look beyond the popular press to find these writings, but they exist, whether online or in libraries and bookstores.

If my correspondence is any guide, a hardy minority of free thinkers around the world has sidestepped the obstacles to fasting, is incorporating the practice into their lives, and is reaping the benefits. There's no reason why people who struggle with long COVID or other viral fallout shouldn't join them. Even in the absence of randomized, controlled trials, sufferers have little to lose and may have much to gain from a supervised fast. For some, hope may at last be at hand.

Coda: Handwashing

MY VIRUS CAME to me, I suspect, from a tent. At the time I fell ill, I was laid up at home for a couple of weeks nursing bruised metatarsals, and during that time I saw just two people: my wife Jennifer and the UPS driver. Because Jennifer and I are among the COVID-cautious stragglers who continue to mask in public, neither of us had been sick since the start of the COVID pandemic in early 2020 until my illness in late 2023. Nor had we, so far as we knew, transmitted a contagion to anyone else. Jennifer showed no sign of infection before, during, or after my illness, and while it's of course possible that she was an asymptomatic carrier who passed me the virus, it would have been some feat to have escaped entirely unscathed from so vicious a bug. My guess is I got the virus from another source.

The teamster showed no sign of infection either and quite possibly didn't have one. But the maker of the tent he delivered had asked for my signature, and the electronic tablet he handed me was the sort of device—passed from hand to hand, rarely if ever sanitized—that was notorious as a vector of disease. Although respiratory diseases like COVID are spread almost entirely through infected droplets in the air, other viruses travel from hand to surface, whence they hitch a ride to another hand and, luck holding,

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onward to mouth, nose, or eye. Knowing this, I had told myself when I heard the teamster's knock to wash my hands after signing. But by the time he left, it had slipped my mind. Two days later my symptoms started. I don't imagine I'll forget again anytime soon to wash my hands when called for.

Coda: Masking

I CONTINUE TO mask in public for the same reasons I have done so from the start of the pandemic: I wish to spare both myself and others the sort of pain I endured with my virus—or a fate even worse. It's long been clear that COVID can lastingly damage the brain, heart, lungs, and other organs, and it can also of course kill outright.

Five years ago I would have thought my motives for masking—neither to harm others nor to be harmed—were, if not universal, at least widespread. I now know they're aberrant. If surveys can be trusted, only one in ten Americans still masked with any regularity in 2023, despite the repeated COVID surges we underwent that year. The number must be much smaller now. Most people I know never mask at all anymore. And yet as I wrote the first draft of this essay, in January of 2024, the current surge in COVID was the second greatest of a pandemic we had yet to leave behind, no matter how many of us acted as if we had. In 2022, the last year for which I could find a number, my unmasked compatriots blithely passed COVID from one person to the next until at least a quarter million Americans were dead of it.⁶³ That toll is a dozen times the dead from flu in the US in a typical year,⁶⁴ and even a quarter million is an understatement since many doctors, coroners, and next of kin

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refuse, for political and other reasons, to list COVID as a cause of death.

The choice to sicken and kill, year in and year out, hundreds of thousands of perfect strangers—young and (especially) old, hale and (especially) weak, rich and (especially) poor, Democrat and Republican—rather than place a strip of fabric over one’s face, even during severe COVID surges, seems to me the perfect emblem of our cruel age. I don’t suppose I’ll ever understand how so many of my familiars, including people I know to be generous and loving in other contexts, can look themselves in the mirror each morning. But that is a topic for another volume.

To underscore

FASTING IS SO fraught a topic that to write about it, no matter how clear one tries to be, is to invite misinterpretation. So that there may be no misunderstanding of a few crucial points, let me reiterate:

I am not saying that fasting can *certainly* cure long COVID or other viral fallout. The title of this essay is interrogatory for a reason. We may yet learn the Buchinger patients were relieved of their long COVID and I of my long virus by something other than fasting. Although such a possibility seems unlikely, it remains conceivable, and to deny it would be foolish. We won't know for sure whether fasting can reverse long COVID until we have much more evidence, preferably from randomized, controlled trials, which—here another point I wish to underscore—are emphatically needed.

Second, even if fasting is someday proven to cure certain cases of long COVID or other viral fallout, these diseases are so variable that it would surprise me if fasting succeeded against all their iterations. Just because fasting cured me, if indeed it did, does not mean it will cure you.

Third, I am not counseling anyone who is sick to fast for multiple days unsupervised. I believe fasting doctors are right to urge people who aren't in perfect health to fast under a physician trained in the therapy. Although I myself have fasted for many days

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unsupervised, the story of my first fast in this essay and my ensuing trip to the hospital should make clear that fasting without medical oversight is perilous even for fasters of long experience.

Lastly, anyone who fasts for a day or more, whether in a clinic or elsewhere, would do well to heed several safety precautions, like guarding against fainting and dehydration. The full gamut of precautions is best learned at a clinic specializing in fasting or, at the very least, from a doctor trained at such a clinic. To make an extended fast without following those precautions would be beyond reckless. Unfortunately, doctors so trained are rare, and fasting clinics rarer still, especially outside Europe. My website, www.SteveHendricks.org, has a brief list of the better known clinics and doctors specializing in fasting. I endorse none of them (nor do I oppose any of them), but if you are considering a fast of multiple days, I encourage you to look at their websites and judge their merits yourself.

About the author



Steve Hendricks is a freelance reporter and the author, most recently, of *The Oldest Cure in the World: Adventures in the Art and Science of Fasting*. One of his earlier books, *The Unquiet Grave: The FBI and the Struggle for the Soul of Indian Country*, made several best-of-the-year lists. He has written for *Harper's*, *Outside*, *The Washington Post*, and many other publications. He lives in Boulder, Colorado, with his wife, a professor of family law, and his dog, a border collie cross.

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