

LIFE in the FAST LANE

Can starving yourself for days at a time extend your years and make you smarter?

by Mark Ellwood

HIT THE

t had been a stressful few years for 51-year-old Australian hotelier Rob Potter-Sanders. Converting a ramshackle *masseria* in Puglia, Italy, to a chic boutique hotel, he gained weight from eating poorly, struggled to sleep more than six hours each night, and was smoking more than ever. On the recommendation of a friend he booked 10 days at a spa near Lake Constance in Germany.

Although the idea may sound glamorous, this was no indulgent retreat; **Buchinger Wilhelmi** (*buchinger-wilhelmi* .*com*) puts the "spa" in "Spartan." Since the 1950s, clients have flocked to the discreet, expensive clinic for one reason: to submit to a regimen devised by Dr. Otto Buchinger, a German military physician who championed the health benefits of responsible, medically supervised fasting.

The leafy, modern clinic with 150 rooms ranging from modest singles to spacious suites has promoted the benefits of calorie restriction since its inception, but a rash of recent studies is boosting the profile of the theory. Contemporary proponents suggest both intermittent and periodic fasting schedules maximize benefits. Buchinger Wilhelmi's thesis is the latter, suggesting a reduction in calorie intake for several days, back to back, every few months. ▷

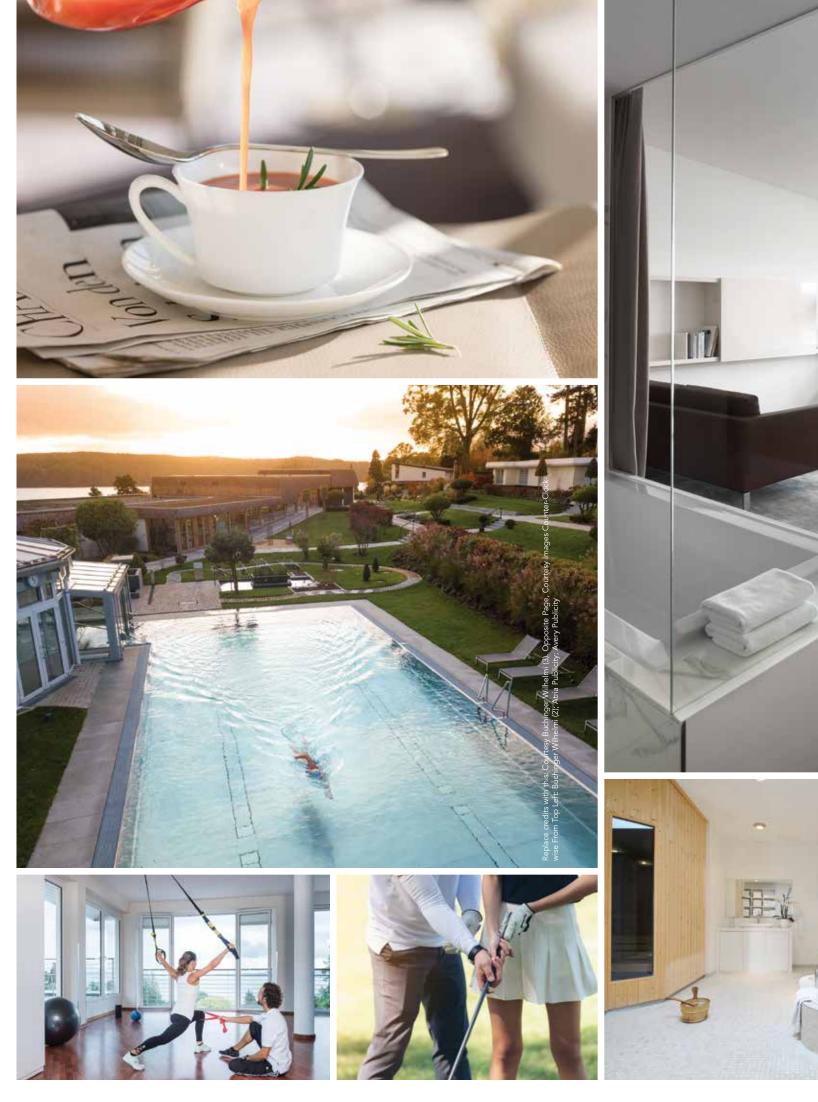


At first, the idea didn't appeal to Potter-Sanders. "Normally, I panic if I'm going to miss dinner and I eat within five minutes of waking up," he says. "But fasting absolutely changed everything for me."

The hotelier adhered strictly to the doctor's 10-day program, built around an extended period when calorie intake is restricted to 250 or fewer per day. While the spa guests fast, they're encouraged to join bracing walks in the nearby forests or swim in the pool (there are even cooking classes for the masochistic). Meanwhile, medical staff take daily readings of vital statistics and conduct treatments aimed at purging the body of toxins: Afternoons include daily liver compresses, for instance, swaddling the body with a hot water bottle to stimulate the organ's self-cleansing. After he spent 10 days following this protocol, Potter-Sanders lost almost 15 pounds; he also saw his cholesterol and blood pressure return to normal.

On the side of intermittent fasting, the highest-profile proponent is Californiabased researcher Valter Longo, who authored the book The Longevity Diet. Longo prescribes a standard diet for 350 days a year. Three times a year he recommends his precise, five-day meal program to send the body into a fasting state. British TV producer and author Michael Mosley's regimen is synonymous with this approach via his own bestselling book, The Fast Diet. There's no definitive science as to whether periodic or intermittent fasting is more effective, though both seem to produce benefits. They have the same goal: Beyond simple weight loss, fasting increases what doctors call your "health span"—not only living longer but avoiding infirmity while you do.

Peter Bowes, a longtime BBC reporter in Los Angeles, has explored the fasting phenomenon in depth; he now hosts the Live Long and Master Aging podcast. The fundamental scientific underpinning for both regimens, he explains, centers on a naturally occurring hormone, insulin-like growth factor 1 (IGF-1), that's produced by the liver. It's crucial for healthy growth in childhood, but high levels of IGF-1 in adults are believed to significantly increase the risk of certain diseases, including colorectal and breast cancers. Per Bowes, studies have consistently shown that fasting diets reduce its levels in the body, which then remain lower than normal even when calorie restriction is eased and so increase your potential health span.





The body undergoes another beneficial process during fasting known as autophagy (you might call it the Captain America effect). Fasting forces the body to flush out defective cells, like white blood cells, and replace them with healthy new ones, much like the Super Soldier Serum that upgraded Captain America's scrawny physique.

Indeed, in the weeks after fasting, Bowes swears he's fitter and can lift heavier weights at the gym. Calorierestricted diets force the body into a state known as ketosis. "This is when you burn fat in your body for energy, as opposed to glucose, because there's no glucose left," says Bowes. It impacts



more than just weight loss—it sharpens cognition, too. "You experience this mental euphoria, whereby your brain seems to be working faster, and you're more alert and responsive."

This aspect of the practice drew neuroscientist Mark Mattson from Maryland's National Institute on Aging to study fasting. His much-viewed TEDx Talk is titled "Why Fasting Bolsters Brainpower." As he explains, ketones are much-welcome, chemical by-products of the process of ketosis in the body. "They optimize your metabolism in a way that protects against diabetes and cardiovascular disease, but they also stimulate cells to optimize their functionality." (No wonder Peter Bowes feels like a Super Soldier.)

What's more, ketones increase production of a specific protein: brainderived neurotrophic factor, which has been shown to protect neurons against stress and promote the formation of new synapses—two effects that play a critical role in avoiding dementia.

Back in the 1950s, Dr. Buchinger was commonly considered a quack for his passionate belief that fasting could have life-changing impacts on your health. But he had firsthand evidence, successfully committing to calorie deprivation to help him walk after septicemia-related rheumatism left him wheelchair-bound. Certainly, Potter-Sanders would agree about the noticeable impact.

"My skin was amazing, and I didn't know I had a little arthritis in my fingers well, until it disappeared during my stay," he marvels. The effects weren't solely physical, either. "I have never been so calm, so happy, and so relaxed." After his first 10-day stay, he returned for two more trips, and he's planning a two-week stay this November. "You have so much energy when you do this, and I want to keep the energy. It changed my life." And probably lengthened it. ▷



SWEAT IT OUT

A global charge of outdoor boot camps is proving that fresh-air fitness can have a long-term impact.



It's a real-life farmer's walk: 26-year-old Tom Kemp, a former hockey player turned personal trainer, began using a corner of his family's 600-acre arable smallholding near Stansted Airport, outside of London, as an impromptu outdoor gym.

"Farm Fitness originated from training with bits of old and surplus machinery I found lying around the farm. I used anything I could find, such as chains or iron weights that could be used for a workout," he says. Kemp had helped at the farm since he was a small child, so he knew the equipment well: stacks of tractor tires, for example, were ideal for box jumps, while smaller tires stood in for barbells once wedged at either end of discarded axels.

Kemp found the intense, alfresco workouts both enjoyable and highly effective, so he reasoned a few existing clients might want to join him. Inadvertently, he stumbled onto a business. Those ad hoc circuits morphed into Farm Fitness (farmfitness.co.uk), an outdoor, boot camp-style training program that offers group classes, personal training sessions, and corporate packages for the likes of Nike and Red Bull. Participants rely on updated riffs on manual labor to improve their fitness: jumping jacks, push-ups, and hand weights are replaced with pulling and pushing metal equipment, carrying sandbags, and slamming chains.

Kemp's latest piece of machinery is an old quad bike, complete with off-road tires, upcycled as a prowler that can be pushed off-road and around the fields-almost anywhere on the property. His classes follow the rule of compound, carry, and conditioning: each routine combines a compound exercise like squats or deadlifting with carry (farmer's walks or similar), plus burpees and ball jumps for conditioning. Kemp has even converted an old outhouse nearby into an indoor gym should the notorious British weather prove too dreary, though he rarely uses it. "We have built a resilient community who trains week in and week out," he says proudly. "They're not fazed by bad weather conditions or getting wet and muddy, as the workouts are so rewarding."

The British entrepreneur isn't alone: Farm Fitness is part of a new category of workouts built on mud, sweat, and (occasional) tears-many of them responding to the phenomenon of the MAMIL, or "middle-aged man in Lycra." Instead of splurging on a Ferrari, men like chef Gordon Ramsay have used their midlife crisis to trim their midriffs via extreme outdoor exercise. Andrew Wilson runs D.R.I.L.L. (outdoorfitness.co.nz), a fresh air-powered boot

camp that's spread across New Zealand, the spiritual home of extreme sports. "It all started when a group of my clients wanted to head outdoors for a change, and I noticed a difference in their mood," he says. Now, Wilson runs HIIT-style classes across the country, with plans to expand to Australia soon. He's also overseen group outings to participate in Tough Mudder (toughmudder.com), the mud-spattered endurance race that's become a worldwide phenomenon since entrepreneur Will Dean launched it after studying the idea during his Harvard MBA.

Though it's dubbed a race, the 8- to 10-mile course doesn't time its competitors. Instead, Tough Mudder emphasizes teamwork to help everyone get through 25 fiendishly constructed obstacles, whether it's a field of wires charged with 10,000 volts of electricity or a cooking spraycovered pipe they must try to climb. The adult obstacle course has become a phenomenon, inspiring everything from tattoos (the firm claims that more than 1,000 course alums have chosen to ink its logo on their bodies) to a passel of adrenaline-charged competitors: Zombie Mud Run, Warrior Dash, and even the hazing-like Spartan Race, which penalizes those who fail at any obstacle with instructions to complete 30 burpees as penance. There are gentler alternatives available stateside, too. Google alumna Alexandra Kenin is the founder of **Urban Hiker** (*urbanhikersf.com*) in San Francisco. She uses the city's steep terrain, from sand dunes to stairways, as a backdrop for bracing hikes that combine sightseeing with exercise. In Colorado, herb farmer Cindy Jones of Colorado Aromatics (coloradoaromatics.com) lays out mats between her rows of lavender while it's in bloom to create aromatic yoga classes. Since this herb is known for its ability to reduce anxiety and stress, Jones believes the classes can be

especially impactful.

Certainly, science suggests that so-called "green exercise" like this has greater demonstrable benefits than an indoor class or two. Researchers from California Pacific Orthopedic showed that men who opt for alfresco exercise lose, on average, 7 pounds more than their gym-bound counterparts and have 6 percent less body fat. Another study, run by a subsidiary of the universities of Exeter and Plymouth in the United Kingdom, found that those who exercised outdoors enjoyed it more and were more likely to stick to the regimen long term.

That's great news for Kemp, who is planning to launch e-books outlining his training courses for those too far away to sign up for his classes; and franchising, so that farms can add a second, unlikely revenue stream alongside arable or cattle. "Whenever I go back to an indoor gym now, I feel claustrophobic," he says. "When you're in that red zone of your heart rate, you really want to be out in the fresh air." -Mark Ellwood



DNA mapping may be the key to a tailor-made diet and exercise routine.

Dr. Sharad Paul (drsharadpaul.com), a skin cancer surgeon in New Zealand, always began treatment regimens with a DNA test. "Increasingly for many cancers, we tailor treatment depending on the presences or absence of specific genes," he says. "Then I thought: We do this all the time for illness, what about day-today things, for example, caffeine? Why don't we do some gene tests for wellness?" That revelation led him to launch the RxEvolution GT21 Gene Test. The \$300 service uses 23andMe-style genomics to create a personalized exercise and diet program, tailor-made according to genetic proclivities.

After submitting a small sample of saliva by mail, Paul reviews the results and writes a plain-language report. This doesn't detail your heritage, but rather your health. It will outline everything from a predisposition to the main food intolerances to how genetic variations can affect your body's response to different forms of exercise. Perhaps you're prone to exhaustion, and it could be offset by upping those naturally low levels of iron, he says. "One in five people have a gene that causes them to metabolize vitamin C improperly, so doubling or tripling your intake can help overcome the slow, but gradual increase in weight, blood pressure, or sugars that this gene-variant causes. Knowing this may help you stay healthier and skinnier more easily."

The GT21 gene test can also boost the impact of any exercise. Put simply, some genes predispose us toward endurance (marathon running, for example) while others emphasize power (like weightlifting).

"If you're more suited for power exercises, you'll get more bang for your buck from even light weights and tailoring your fitness regimen accordingly," he explains. For instance, the test could flag that you're prone to injuring your Achilles heel, so you know to wear protective footwear, or it could offer reassurance for the next time your enthusiasm is strained by an especially grueling class: You might be highly motivated to exercise, but sadly, not a natural-born athlete.

Paul's work has widespread applications. For individuals, of course, it's the perfect starting point for a personal trainer or nutritionist, but there are more strategic options. He has started collaborating with local schools to advise rugby coaches about which positions their pupils are genetically best suited to play. \bullet —*M.E.*