

Business

# ‘Hacking’ the brain: Silicon Valley entrepreneurs turn to fasting and ‘smart drugs’

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Employees at San Francisco startup Nootrobox don’t eat on Tuesdays.

The weekly fast isn’t an extreme money-saving move by a scrappy, bootstrapping company. Instead, Nootrobox team members swear withholding food for 36 hours — they stop eating Monday night — improves their workplace focus and concentration.

“We’re actually super productive on Tuesdays,” co-founder and CEO Geoffrey Woo said. “It’s hard at first, but we literally adopted it as part of the company culture.”

Woo and other entrepreneurs are using fasts and other tricks to “hack” their brain chemistry like they would a computer, hoping to give themselves an edge as they strive to dream up the next billion-dollar idea. Known by insiders as “biohacking,” the push for cognitive self-improvement is gaining momentum in the Silicon Valley tech world, where workers face constant pressure to innovate and produce at the highest levels.

Some use vitamins or other nutritional supplements known as nootropics or “smart drugs” to improve their cognitive function. Others have a more expansive view of brain-enhancers, taking off-label prescription drugs, small doses of LSD or Russian pharmaceuticals not approved for consumption in the U.S. Like-minded entrepreneurs exchange dosage tips via online message boards such as Reddit, which has almost 73,000 readers on its Nootropics thread.

“Entrepreneurs and executives and investors are not normal people,” said San Francisco-based Dr. Molly Maloof, who emphasizes nutritional supplements with her biohacking clients — C-suite employees at top-tier Silicon Valley tech companies. “They are like high-performance race cars that are nonstop moving, and they need pit stops more often than normal people.”

Research into the cognitive benefits of nootropics is still in its early stages, and some experts worry about the long-term health effects of ingesting potent synthetic smart drugs, which are largely unregulated. Some users have reported side effects including headaches, upset stomach, insomnia, anxiety and depression.

Dr. Reid Blackwelder, past president of the American Academy of Family Physicians, said it concerns him that customers are ordering such drugs online without consulting a doctor, because some of the substances seem to have a powerful impact on the brain. And much of the research on the cognitive benefits of these substances is supported only by studies using animals, Blackwelder said.

“I have not heard of much in the way of exciting evidence that supports these products to a point that I would routinely be recommending them to patients,” he said.

For Woo, who founded nootropics company Nootrobox, biohacking poses one central question: “Can we enhance humans?”

Woo, his Nootrobox co-workers and other techies interested in the same question break their weekly fast with a meal at San Francisco restaurant Elmira every Wednesday morning. The purpose of the fasts is to achieve a state of ketosis, which means the body has run out of carbohydrates and instead is burning fat for fuel. Ketosis has been shown to affect the brain in various ways — it helps prevent seizures in children, for example — and some biohackers say it keeps them focused and alert.

“By the end of the day I just have way more energy,” said Katie Fritts, founder of San Francisco-based Underclub, an underwear subscription service.

But fasting isn’t for everyone. San Francisco-based software engineer Yan Zhu, who breakfasts with the Nootrobox group but isn’t employed at the company, gave it up after a few weeks.

“It was just endless suffering and wanting to die,” she said.

Most of the dozen attendees scarfing eggs, potatoes, bacon and yogurt with granola at a recent Wednesday breakfast also use nootropics and didn’t hesitate to discuss their “stacks,” or supplement combinations.

Nootropics run a broad spectrum, starting with mild substances such as caffeine and the amino acid theanine, a relaxation agent. Racetams — a group of synthetic compounds that produce varying degrees of brain-boosting and stimulant-type effects — also are popular, and can be purchased online without a doctor’s OK. Prescription narcolepsy drug Modafinil and Parkinson’s treatment Selegiline also are used off-label.

Ayumi Yu, a software engineer at San Francisco-based Entelo, says she takes Modafinil three days a week to stave off the symptoms of sleep deprivation.

“I’m a big fan of that because it just makes me feel normal and mostly rested,” she said.

Dr. Vinh Ngo of Smart Med in San Francisco specializes in nootropics and works with patients from Facebook, Google, Uber, and other tech startups. Ngo says his treatments — including amino acids, nutritional IV drips, prescription drugs and testosterone therapy for men — are intended to help clients become better versions of themselves.

“Instead of preventing illness, we’re actually optimizing health,” Ngo said.

George Burke, who runs a San Francisco nootropics and biohacking meet-up group called Peak Performance, says he takes one-tenth of a hit of LSD every few days to treat his diagnosed ADD. It helps him visualize creative solutions to work-related problems, he said.

“Until it becomes legal, then I certainly have to be careful,” Burke said. “However, I’m working in an industry and a culture where many professionals understand how to get ahead, how to supplement, and how to optimize their performance.”

The pills for sale on the Nootrobox website are of a milder variety. They contain vitamins, minerals and amino acids such as magnesium, theanine and melatonin, all of which co-founder Woo says the Food and Drug Administration sees as safe dietary supplements.

Competitor Nootroo, another San Francisco-based nootropics company, sells a daily memory, attention and physical endurance-boosting regimen that combines Russian drugs Noopept and Phenylpiracetam. Neither is approved by the FDA, and Phenylpiracetam has been banned by the International Olympic Committee and the World Anti-Doping Agency. But experts say the FDA doesn’t crack down on companies selling these unapproved drugs.

“This is kind of a Wild West,” Maloof said.

The San Francisco doctor recommends her clients take various supplements and smart drugs for energy and sleep, and use fasting as a cure for jet lag, but there’s a lot going on in the nootropics field that concerns her. For example, Maloof says some techies are taking GHB, commonly referred to as the “date-rape drug,” to help them sleep — a practice she calls dangerous.

The FDA doesn't recognize nootropics as a class of drugs, but they can be considered dietary supplements if they contain only vitamins, minerals and amino acids found in food. Even though supplements don't require FDA approval the way pharmaceutical drugs do, companies are supposed to register with the agency and undergo periodic inspections.

But the dietary supplement industry is one of the most challenging areas the FDA is tasked with regulating, agency spokeswoman Lyndsay Meyer said. It's worth more than \$35 billion a year, and the FDA's supplement team consists of about 24 people and a budget of less than \$5 million.

"The truth of the matter," she said, "is we have limited resources and we have to prioritize the resources we do have on safety."

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