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How to Live Forever: The (Mad?) Science Hollywood Is Using to "Cure" Death

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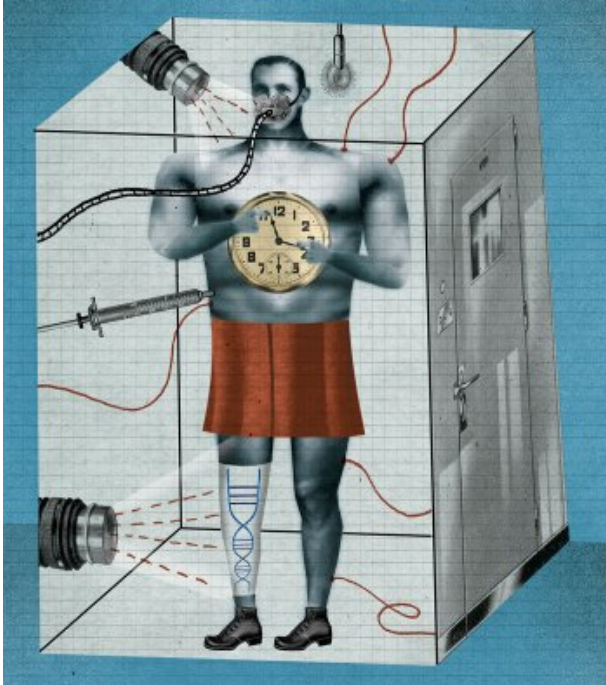


Illustration by: David Plunkert

It's not just about anti-aging. "Longevity" is the new buzzword as Hollywood embraces all sorts of technology, from an altitude machine favored by tennis star Novak Djokovic to L.A.'s hot new treatment: the very deep freeze

This story first appeared in the Sept. 19 issue of The Hollywood Reporter magazine.

"I have no intention of dying," **Sumner Redstone** ^[5] told *THR* in January. Redstone, now 91, has made no secret of his longevity regime. It begins with a breakfast of goji berries, "Green Machine" smoothies and tomato juice — followed by a fish dinner and a shot of vodka for its "wonderful" antioxidant properties. The mogul also says he exercises 90 minutes a day. Redstone has kept his promise so far, though he, like the rest of us, can't elude the Grim Reaper forever.

Theoretically that might change one day as society finds itself at what feels like a tipping point. From Master Cleanses to laser peels to Restylane injections, or — to cite the latest craze — intravenous vitamin infusions like "Myers' cocktail," Angelenos never will find themselves at a loss for quick anti-aging fixes ^[6]. But merely looking younger no longer is enough. Hollywood wants to live longer and feel younger, and to that end a growing number of establishments at the cutting edge of science (and at least a few dubious alternatives) are ready to feed the new appetite for longevity. Taken to its extremes, health care's sunny future could, in the mind of "regenerative medicine" theoretician and biologist **Aubrey de Grey**, cure death entirely.

"It's not even a hypothesis; it's just obvious," insists de Grey, a Cambridge-educated Englishman who lives in Mountain View, Calif., where he heads the Strategies for Engineered Negligible Senescence Research Foundation. ("Senescence" is the lyrical term for the study of biological aging.) "The human body is a machine," he adds, simplifying the premise of his 2007 book, *Ending Aging: The Rejuvenation Breakthroughs That Could Reverse Human Aging in Our Lifetime* (St. Martin's Press). "Like any other machine, it can be subjected to preventative maintenance that will keep it going indefinitely by removing and replacing parts, just the way we do for a car." De Grey has drawn the attention of such Hollywood notables as **Edward James Olmos** and DJ **Steve Aoki**, who samples a de Grey lecture on his upcoming album *Neon Future* [7]. Says Aoki of de Grey's claims, "It's not science fiction."

Such optimism has transformed anti-aging into an \$88 billion industry. To learn more, this reporter ventured into the eye of the longevity storm, a journey that led me to get naked in egg-shaped pods, endure subfreezing temperatures and sprint on a treadmill until I collapsed. In short, my quest for immortality nearly killed me.

I'm encased in a plastic pod straight out of *2001: A Space Odyssey* [8]. Standing outside, a muscle-bound man repeatedly shouts "Clear!" into a walkie-talkie. Each time he does, I gulp deeply to pop my ears, which keep clogging as if I'm in an aircraft that is rapidly changing altitude. This strange device is called a Cyclic Variations in Adaptive Conditioning machine, and proponents say prolonged exposure to its altitude-simulating technology gives one a vigorous aerobic workout without moving a muscle. Top-ranked tennis pro **Novak Djokovic** swears by it, the Internet tells me.

I stumbled upon this pod by accident after wandering into the Beverly Hills Rejuvenation Center, one of scores of hormone-replacement therapy (HRT) clinics that have sprouted up throughout Los Angeles like cold-pressed juice bars. Situated nowhere near Beverly Hills — on a wide stretch of Sepulveda Boulevard in West L.A. — the clinic boasts a friendly proprietor, **Dan Holtz**, who greeted me. A former general contractor and lifelong bodybuilder with no medical training, Holtz now oversees a thriving HRT business. Customers have their blood analyzed by "staff doctors" and are prescribed a cocktail of "age-defying miracle hormones." Do you have suboptimal levels of testosterone, thyroid hormones, dehydroepiandrosterone (DHEA), adrenaline or pregnenolone? There's a gel/cream/pill/syringe for that. Take a "stimulation test," and if you fail, you're cleared for human growth hormone — though be prepared to spend more than \$1,200 a month for injections. Much has been written about Hollywood's obsession with HGH [9] and its reputed ability to burn body fat, promote lean muscle mass, render skin more elastic, decrease cholesterol, improve vision, restore sex drive and more. Its most notable celebrity adherents are **Sylvester Stallone**, nabbed in 2007 [10] at Sydney Airport smuggling 48 vials in his bag, and **Suzanne Somers**, who in recent years has refashioned herself into an HRT guru. Pausing to pop a hormone pill, Holtz detailed the clinic's spectrum of age-deferring services, including a reference to sending patients "to Panama City for stem-cell infusions."

I began to wonder whether I might prefer a more white-coat approach. That brought me to The Body Well, an upscale facility in West Hollywood overseen by Dr. **Mike Carragher**, a lean physician who specializes in "age management medicine." For a \$4,000 annual fee (excluding the cost of hormones, which average \$400 a month and can hit four times that if patients take HGH), Carragher runs clients through a diagnostic gantlet that includes a physical exam, a full blood panel, a cardiovascular risk profile and a computer quiz that tests for early signs of dementia. He then tailors a plan, prescribing whichever hormones he deems necessary. Many of his clients, like 39-year-old *Teen Wolf* [11] showrunner **Jeff Davis**, are busy entertainment executives seeking a boost to survive grueling production schedules. "I wanted not just a doctor, but I wanted to be able to live a little better and figure out how to manage stress and energy well," says Davis, who started on a low HGH dosage. "That's scary to everyone, I know, especially when you look at Sylvester Stallone and how many vials a day he probably uses. But Dr. Mike told me it's all about maintaining the right levels of hormones and stuff."

Alas, HRT likely will not help you live longer. So says UCLA medical school professor Dr. **Rita Effros**, president of the Gerontological Society of America. "It's dangerous to willy-nilly pump people with hormones just because the level of that hormone has gone down," she says. "Growth hormone doesn't seem to be panning out as a solution to aging. People say they feel young again, but it can do a lot of bad things too. When one hormone level goes down, others may be compensating."

That made me second-guess a prospective existence marked by invigorating daily injections [12] and jaunts to Panama City. Maybe I needed something more clinical, where I could wear a really nice bathrobe. That brought me to the California Health & Longevity Institute in Westlake Village. This "lifestyle transformation destination" was founded by **David Murdock**, chairman and CEO of Dole Food Co. Like Redstone, Murdock is a 91-year-old billionaire with designs to stick around as long as possible. The magnate consumes several smoothies a day — he adds banana peels for extra fiber — and has devoted a chunk of his fortune to spreading the longevity gospel. Every major Hollywood studio contacts CHLI, which features an on-premises Four Seasons hotel, for "deluxe" physicals (cost: \$3,650) for their executives that aim to give patients actionable information to live longer. The daylong sessions include a state-of-the-art exam, nutrition and fitness consultations, a resting metabolic rate (RMR) test and

a 50-minute massage.

It was there I was told to step inside another space capsule: the Bod Pod. I had to strip to my underwear and don a blue stocking cap before being sealed inside an Air Displacement Plethysmography chamber to determine my body-fat composition (21.1 percent, if you must know). Later, I lay on a table wearing a clear plastic helmet, which fed my breath into a computer to measure my RMR. ("You'll feel a little like E.T.," forewarned the technician.) But nothing matched my VO₂ max test, which required that I bound up a comically steep treadmill with a mask and hose strapped to my head and six electrodes glued to my chest. As the treadmill sped up, I had to point to a sign numbered one to 10 to express my suffering. When I reached 10 a little more than 11 minutes later — at that point, I was running 8.5 mph at a 15.5 percent incline — the torture was over. The test measures the maximum amount of oxygen your body can use during vigorous exercise, considered a superlative metric of physical fitness and an ideal indication of one's "biological age." My score was 51, apparently "superior" for a 42-year-old. As if I wasn't already feeling superior, my trainer told me that VO₂ max — which can be improved with exercise — is the "strongest indicator of future health."

But panting on a treadmill seemed prosaic compared to unlocking secrets of my genome. Of all the recent advancements in longevity science, none is more cutting-edge, or mysterious, than DNA sequencing. For answers, I sought geneticist **J. Craig Venter**, one of the first people to sequence his entire genome. That was in 2000, when the task demanded nine months and \$100 million. Today, that process requires only three days and \$1,500. Venter, who owns the San Diego-based Human Longevity Inc., tells me he is equipped to sequence 100,000 genomes annually when the service opens to the public in March, providing customers with their complete genome: 6 billion letters of chemical code. It's an alien language we've barely begun to understand, but with the help of his new chief data scientist, **Franz Och** — the German genius who was the architect behind Google Translate — Venter predicts "massive discoveries" during the coming years. "Our goal is to move to a preventative medicine paradigm versus treating diseases after they occur," he says. "This is the start of the future of human medicine."

It's easy to be excited by those claims, but Dr. **Dennis Slamon**, chief of UCLA's hematology-oncology division, says it's all coming too soon. "There are a lot of people out there saying, 'We can sell you good health if you pay attention to what we do,' which is genome sequencing," says Slamon, portrayed by **Harry Connick Jr.** in the 2008 Lifetime movie *Living Proof* [13]. "But I have yet to see them actually make an impact."

Perhaps the path to longevity is straight and narrow — and boring. A yogi friend [14] told me about **Hariakhan Baba Maharaj**, a man who supposedly lived for thousands of years in caves high in the Himalayas. His secret? *Ayurveda*, a Sanskrit word meaning "life knowledge" and the basis of an ancient form of Hindu healing. To learn more about Ayurvedic medicine, I spoke with **Mas Vidal**, a leading L.A.-based practitioner whose past clients include **Jim Carrey**, **Paula Abdul** and Maroon 5's **Jesse Carmichael**. Ayurveda states that one will live longer by attaining a balance among three bodily humors: *vata* (wind, which covers everything from breathing to flatulence), *pitta* (bile, for digestive processes) and *kapha* (bodily fluids such as mucus, blood and other unmentionables). That's achieved through drastic simplification: adopting a whole-food, meatless diet; eliminating alcohol and caffeine; practicing yoga and meditation daily; waking at sunrise and sleeping by 10 p.m.; and drinking water no colder than room temperature. "Those are the basic things we start everybody on," says Vidal.

Leaving enlightened but bummed at the prospect of a balanced life without iced coffee, I moved on to the coldest spot on Earth, which happens to be on La Cienega Boulevard. There, a business called Cryohealthcare promises visitors relief from inflammatory problems — everything from rheumatoid arthritis to musculoskeletal injuries and autoimmune disorders. The process, overseen by the handsome Germany-born Dr. **Jonas Kuehne**, costs \$65 a treatment and involves stripping to one's underwear (or naked if you're a woman); donning a robe, knee-length socks, gloves and a surgical mask; and entering a chamber that resembles a time machine. Aply so as you are hurled back to the Ice Age, your body engulfed in a terrifying cloud of vapor and the temperature plummeting to -220°F. (The lowest natural temperature ever recorded has been -128.5°F in Antarctica.) Kuehne says such low temperatures stimulate cells to produce proteins called cytokines that fight inflammation. When I emerged 90 seconds later, did I feel great? Maybe at first, but that might have been euphoria about still being alive. I then was invited to do it again, which I agreed to for some inexplicable reason. A few hours later I began to not feel well at all, and for several days the skin on my legs felt a little freezer-burned.

But that's hardly the case for TV writer **Jhoni Marchinko** (*2 Broke Girls* [15]), who calls herself a "walking billboard" for the service and says it has changed her life. "I sleep better. I have more energy. I have no pain in my body for the first time since I was 21," gushes Marchinko, who has persuaded many Hollywood friends to try the service — including, she says, the head of a premium cable network.

The claims of Cryohealthcare's deep-freeze treatment, none of which has been tested by the **FDA** [16], stop short of immortality. Not so for its distant cousin cryopreservation, however. The urban legend that **Walt Disney** had his body frozen after death is not true, but it is an option today. Most recently, the body of famed computer coder **Hal**

Finney was flown to the Alcor Life Extension Foundation in Scottsdale, Ariz., shortly after he died Aug. 28 of ALS. That night, his fluids were replaced with a proprietary chemical solution called M-22. His body then was chilled to -320°F and placed in an aluminum pod suspended within a 450-liter tank filled with liquid nitrogen. There, Finney will remain in suspended animation, or biostasis, until he can be revived. (Full-body cryopreservation costs \$200,000, but one can preserve one's brain for a mere \$80,000.) Exactly how or when that might be achieved is unclear, but according to the Alcor website, the key lies in nanotechnology, by which molecule-sized devices could "recover any preserved person in which the basic brain structures encoding memory and personality remain intact."

Maybe Redstone will be waiting with a smile and a chilled vodka shot in each hand.

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