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THE FOREVER YOUNG ISSUE

A Drug's Promise (or Not) of Youth

Growth hormone is the anti-aging industry's most potent and controversial weapon. Some say it works wonders. Some say it could shorten your life.

By Brian Alexander

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I have traveled to the Palm Springs Life Extension Institute in search of Dr. Edmund Chein. Instead I find Tiffany Caranci. Tiffany is 20 years old and looks exactly how you might expect a 20-year-old named Tiffany to look: platform heels, low-slung skirt, hair streaked blond and black. She's brazenly sexy, and so very young.

I am a man and not very young. I have entered that disorienting neverland of middle age where you can't tell if women like Tiffany smile because you remind them of their fathers or because they think you're hot. I'm pretty sure Tiffany is smiling at me as I walk into Chein's clinic because she's a receptionist and gets paid to smile, but my ego scouts for any sign from her to justify the voice in my head that's saying: "You've still got it, brother." This neediness, of course, proves that I don't have it, and I don't mind admitting that right now I'd like it back. Well done, Tiffany.

I've come to meet the good doctor, but he is elusive, lying low on the advice of his lawyer. I don't leave though. The clinic sees, maybe, two people on a busy day, and it is so quiet I can almost hear my youth hissing out of me. So when Candice Dillon, Chein's 24-year-old director of new-patient relations, emerges from somewhere behind Tiffany and offers to show me just how far gone I am, I figure why not?

She ushers me to a small room beyond the reception desk and hands me off to still another pretty young woman who whips out a tourniquet to plump my vein. She pricks me with a needle and begins filling three vials that will be sent off to a lab and tested for an array of hormones.

The Life Extension Institute, founded in 1994, is built on a simple theory. Dr. Neal Rouzier, who owns a similar clinic in the same building as Chein's, once explained it this way: "Losing hormones is nature's way of helping us die." If we top them off to the levels of 25-year-olds, we will not only stay buff but extend our life spans.

It is growth hormone, along with testosterone and estrogen, to which the field of modern anti-aging medicine owes its existence. Chein, an early adopter of GH, believes in its magic so strongly that he has staked his living, and possibly his freedom, on promoting it. Inside his clinic, in a drab stucco-and-wood professional building within walking distance of the Palm Springs airport, hang a few photographs that explain why. Intended as visual testimonials, the images show an elderly couple posing like bodybuilders. She wears a bikini. He flexes on a podium, his butt cheeks proudly clenching a disturbingly bright blue thong. I wonder if it was fear of such displays that years ago led Palm Springs Mayor Sonny Bono to ban thong-wearing in public. But I get the message. No matter what my age, I can go back.

A week before my visit to the institute, I had received an e-mail relaying a glitch in my plan to talk with Chein. The California Medical Board had recently put him on five years' probation and, apparently wary of getting in deeper trouble, he would speak to me only if the following notice prefaced this article:

"This is not a paid advertisement. Everything expressed by Dr. Chein is strictly his personal opinion and is not meant to attract patients."

That didn't mean Chein wasn't eager to see me. "I am sure you will do an excellent job in showing Dr. Chein's amazing work here at the clinic and the great advancements he has made in the anti-aging community," Dillon wrote in an e-mail. But in the end, Chein backed out of our meeting. It seems the federal government is after him again. The Drug Enforcement Administration is investigating him, Dillon explained, for allegedly illegally exporting growth hormone. His lawyer says he is not guilty. In 2000, Chein was charged in federal court with smuggling growth hormone, but the case was dismissed.

The federal scrutiny might not be entirely unwelcome, because it plays into Chein's self-image as a persecuted prophet, a Moses on a quest to lead medicine out of the wilderness. "God," he tells me in an e-mail after my visit to the clinic, "wanted me to discover the importance of hormones in aging and to promote the mission to the world."

The use of hormones to curb aging dates to at least the late 1800s, when Frenchman Charles Édouard Brown-Séquard, then 72, injected himself with a mixture of ground-up testicle, semen and blood from dogs. Afterward, he claimed, he could bound up stairs. Other scientists and physicians tried similar experiments, but by the start of World War II, it was clear that they didn't work, and that injecting people with bits of animal gonads was a bad idea. Life-extensionists moved on to other approaches, everything from dietary supplements to meditation. They even created the ultimate bailout option, cryonics. But most realized that what they really needed was a legal, powerful drug.

Then, in 1977, Genentech scored a biotechnology breakthrough by using gene-splicing to engineer bacteria that would produce human growth hormone, at the time used mainly to treat dwarfism in children. Until 1985, when synthetic growth hormone hit the market, GH had to be harvested from the pituitary glands of dead people, making it extraordinarily expensive. It was also dangerous. It could, and sometimes did, transmit disease.

The tiny market for growth hormone took off in 1990, when Dr. Daniel Rudman, a researcher at the Medical College of Wisconsin, reported in the *New England Journal of Medicine* that he had injected growth hormone into a dozen older men at a Veterans Administration hospital. The shots returned their hormones to youthful levels, increased their bone density, the thickness of their skin, their lean muscle mass. Body fat melted away.

The media pounced on the news, as did a 59-year-old Texas entrepreneur named Howard Turney. He persuaded a doctor friend to prescribe growth hormone. The drug was still virtually unavailable outside the realm of pediatric endocrinology. "So I went to Mexico and found a doctor who treated kids for dwarfism," he says. "I went down every 90 days and brought back a supply."

Turney loved the results, and even his reluctant doctor pal was impressed. Friends wanted to know his secret and begged him to supply their own stash. Turney decided that instead of bringing growth hormone to the Americans, he would bring the Americans to growth hormone. In 1993, he opened the El Dorado Rejuvenation and Longevity Clinic near Cancun. As it gained notoriety, Turney says, the "Mexico bureaucracy" began to interfere. He shuttered the clinic in 1994, though not before an El Dorado associate held the founding meeting there of the American Academy of Anti-Aging Medicine. And not before Turney counseled about two dozen doctors who were eager to practice anti-aging medicine in the United States, including, he says, Chein. "I introduced him to GH," Turney says, a claim Chein denies.

Turney, now 75, has since changed his name to Lazarus Long, after an immortal character in Robert Heinlein sci-fi novels. He says he has injected growth hormone to slow aging longer than any other human and that, except for a recent surgery to remove blood clots from his head, he feels great. He is vigorous enough, in fact, to lead his own virtual country, a libertarian paradise dubbed New Utopia that he likes to say is located on an offshore reef near Belize.

Though he suffered a setback in 2000 when the U.S. Securities and Exchange Commission stopped him from selling bonds to finance his "nation," he holds the title of Prince Lazarus and governs from his Florida apartment. He owes it all, he says, to growth hormone. "I am convinced if I had not begun taking it I would be dead by now. I am here to tell you everybody I know of who has taken it has benefited."

However Chein came into the anti-aging field, he was due for a career change.

Chein earned his medical degree from the American University of the Caribbean in 1980, two years after it opened. He made his living in Los Angeles as a doctor in part by testifying as an expert witness in personal injury cases. In 1990, he was convicted of perjury after he recited phony credentials on the stand. (The California Medical Board later went after him for wrongly claiming he was a lawyer, had a medical degree from Cornell University and a specialty in orthopedic surgery.) According to court records, the conviction was overturned on appeal because the lies were immaterial to the case.

In the early '90s, Chein left Los Angeles because, he says in an e-mail, "the political climate was stressing me out." He recast himself an anti-aging doctor and opened the Palm Springs clinic. And why not? Here was a medical practice for healthy people with discretionary funds—about \$5,000 to \$7,000 a year for the kind of hormone therapy Chein advises—and the willingness to give themselves a once-a-day shot in the hip.

Insurance policies don't cover anti-aging care, so you had a clientele paying out of pocket, eliminating paperwork hassles and overhead. Best of all, if you worked it right, you could sell the stuff with a markup to patients you had to see just once. As long as the patient thinks he's staving off the reaper, the checks roll in and the growth hormone gets FedExed out.

The FDA approved GH primarily to treat dwarfism in children, and the feds say (not that they do much about it) that doctors are breaking the law by prescribing GH for adults who haven't been diagnosed with two very specific, narrowly defined ailments, neither of which is related to having a birthday every year. On the other hand, one of those ailments is a growth hormone deficiency, and since GH declines with age, you could argue that anyone over 30 suffers a lack of it. A lot of doctors must be making that argument, considering that one study estimated that about 30% of GH prescriptions in the U.S. are being written for treatments unapproved by the FDA, according to a Journal of the American Medical Assn. article published last October.

Chein disagrees with anyone who says that what he's doing is illegal, and with suggestions that he might be in the business just for the money. "I already have fame worldwide and I already have financial success," he says in an e-mail. "I believe in this cause, and that's why I fight for my mission."

Whether for money, for altruism or for God, Chein helped pioneer the anti-aging business model that has fueled a worldwide boom. In the last two years, Pfizer's growth hormone sales have jumped to \$808 million from \$481 million. Eli Lilly, Serono, Genentech and other GH makers have also reported gains. The companies don't report how much they owe these gains to anti-agers.

At the Life Extension Institute, I sit in a room across the hall from the shrine of the bikini-clad oldsters, about to take the H-Scan test, a bunch of drills run on a souped-up PC. The idea is to measure my "biomarkers of aging," and I doubt a computer can do that. When I later call S. Jay Olshansky, a University of Illinois public health professor who specializes in aging research, he backs me up. "There is no such thing as a machine that can measure aging." But at the moment, I am perfectly happy to suspend disbelief. I can't wait to suspend disbelief.

And within minutes I am perspiring because I am taking the tests with a vengeance. Every time a light glows, I smash the corresponding red button as fast as I can, supposedly proving I have cat-like "visual reaction time."

Maybe I am so motivated because Dillon punched into the PC a baseline age of 19 just to show me how much I have crumbled. We'll just see about that. During test number 7, I blow into a tube and the machine charts my lung volume. The graphic on the monitor curves way above the normal range for 19-year-olds.

"Yes!" I say to myself, imagining teenage boys in awe of my virile manhood. "In your face, punks!"

And yet, when the testing is complete, Dillon shakes her head pitifully over my readout. On the scale of typical 19-year-olds, I didn't even register. Don't feel bad, she says. Patients often say "'Oh my memory is fine,' but this shows it's not."

"So," I ask her, "people come in saying, 'I am feeling good,' and then take the test and see they aren't?"

"Right. You might be feeling good for 35 or 40, but we say, 'Let's make you feel great!' "

I do get one bit of good news. My 45-year-old eyes are better than 53% of 19-year-old men.

Daniel Rudman, the Medical College of Wisconsin researcher, was horrified by the impact of his 1990 study. He died in 1994, insisting up to the end to whoever would listen that any use of growth hormone for anti-aging was wildly premature. His widow tried to keep his name off any promotional materials. Still, in 1997, when American Academy of Anti-Aging Medicine founder Ron Klatz published "Grow Young with HGH," he dedicated the book to Rudman, whose "vision and pioneering human research with growth hormone for anti-aging marked the beginning of the end of aging, and the birth of the 'ageless society.' "

Rudman was worried because growth hormone is a key spoke in what endocrinologists call the "GH/IGF-1 axis." Growth hormone stimulates the production of insulin growth factor 1, which, in turn, affects everything from sugar-regulating insulin to sex steroids such as testosterone and estrogen. A chart of these hormone interactions looks like a map of the London Underground drawn by MC Escher. And as with that massive subway, one train at one stop can wreak havoc with the whole system. "The right word is 'overwhelming,' " says Dr. Marc Blackman, a scientist-physician with the National Institutes of Health who studies hormones and aging. "It is extremely complex."

Researchers still know little about the influence of supplemental growth hormone on cancer cells, diabetes and other diseases, which is one reason why the medical establishment condemns its use for anti-aging. It's not just the feds or the editor of the New England Journal of Medicine or the American Medical Assn. that frown, either. Dr. Stephen Coles, head of the Los Angeles Gerontology Research Group, has been a leader in the modern anti-aging movement since its inception and can't wait for an effective youth restorer, but when it comes to growth hormone, he says, "The extent of our ignorance is profound."

Life extension can be achieved in lab animals, and research being conducted on mice and monkeys will probably pay off for humans someday. But so far, Blackman says, studies show that restoring growth hormone to old animals actually shortens, not lengthens, their life spans.

Chein dismisses this evidence, citing Rudman and his own research, and says that the medical establishment has singled him out for persecution.

He's certainly had an interesting relationship with the California Medical Board. The board put him on probation in 1995, instructed him to take a class in prescribing medications in 1998 and revoked his license in 2000, saying he had, among other things, erroneously diagnosed a patient with hypopituitarism and adrenal insufficiency and treated her with GH. Chein appealed, and a Superior Court overturned the revocation that same year.

Now Chein is on probation again, accused by the board of a number of offenses, including failing to do necessary blood work on patients and using his sister's DEA license to obtain controlled substances. Chein has agreed to take another class in prescribing medicine as well as courses in medical records-keeping and ethics.

Many in the anti-aging field are embattled. In 2000, Illinois fined American Academy of Anti-Aging Medicine founders Klatz and Bob Goldman for using "MD" behind their names. They acquired medical degrees from the Central America Health Sciences University in Belize in 1998 but the state doesn't recognize the designation.

And prominent scientists such as Olshansky have lambasted anti-aging practitioners, not because the scientists believe anti-aging is a myth but because it's a myth right now. "We are pushing for the very thing the anti-aging people say already exists," Olshansky says. At a 2004 gerontology confab in Australia, he went so far as to accuse Klatz and Goldman of, basically, being snake-oil salesmen. They responded by filing a \$120 million defamation suit. Olshansky argues that he was expressing an expert opinion in an academic forum. The case is winding its way through the courts.

The backlash is working, in a way. "Anti-aging" is giving way to terms such as "wellness medicine" and "preventive medicine." "I think a lot of people have left 'anti-aging' behind because of the disreputable elements of the academy and Chein," says Dr. Daniel Cosgrove, who runs the WellMax clinic on the grounds of the La

Quinta resort near Palm Springs. The American Academy of Anti-Aging Medicine website lists him as a practitioner. Cosgrove prefers to describe his practice as involving "early detection and prevention" and makes no claims that he can prevent aging.

Even Neal Rouzier, who has the clinic upstairs from Chein's institute, eschews "anti-aging." "We're all trying to get away from that term," says Carolyn Rouzier, his wife and business manager. Their outfit is called Preventive Medicine Clinics of the Desert. Cenegenics, a Las Vegas clinic featured on "60 Minutes," went another popular route with its biotech-sounding name.

Dick Mandell, one of Chein's patients, chooses to "look past controversies." Unlike some clients who have been compensated for talking up Chein to the press, Mandell insists he's a pro-bono booster. He pooh-poohs safety concerns as namby-pamby. After all, if the governing bodies of amateur and professional sports ban growth hormone, it must really work. Chein's all-girl staff pampers him, and he pays less for his growth hormones than some of his friends who go to similar clinics elsewhere.

Mandell is a smart, sophisticated guy, a Princeton man, class of '61, a graduate of Penn Law, '64. He'll be 67 in July. He actually looks 67, though a fit and healthy 67, with a trim body, brilliant blue eyes and skin overcooked by the desert sun. After law school, he went to work on Wall Street and, man, it was a gas. The girls wore white gloves and pearls for cocktails, he wore suits, and life played to a Sinatra soundtrack.

He came west, to Long Beach, in 1971 to work for the Retla Steamship Co. Soon he was flying around the world. "It was a grand bachelor's life, first class all the way, chasing stewardesses." There was a foray into thoroughbred horses, a stint in Puerto Rico, skiing, tennis. He wanted to keep the ball rolling.

So he sought out Chein, who prescribed not only GH but testosterone, progesterone and dietary supplements. His waning libido returned. He charged the net. His thinking perked up. And, he says, "I am very sexually active."

Like many patients, he's unfazed by the theory that growth hormone might shorten, rather than lengthen, life. Who cares? "I do not want to live if I am not healthy. You know, unhook the tube."

The Palm Springs Life Extension Institute has recently expanded its services into the burgeoning med-spa arena by adding an aesthetician, and as I prepare to leave Dillon tells me she will block the exit until I receive a facial from another young woman, named Catheren. I am militantly anti-primping. But Catheren promises I'll walk out glowing like a peach-faced boy. She slathers my face with goo and it feels good.

And on my way out I pass by Tiffany, who compliments my radiant skin but doesn't exactly invite me home, and then I climb into my car and drive west on the 111, beyond the giant windmill farms, and the water storage ponds that keep the valley alive, and I see a billboard, a message from God, apparently, who wants me to know this: "Life is short. Eternity isn't."

Brian Alexander is a contributing editor at Glamour and writes for MSNBC, Outside and others. He is the author of "Rapture: How Biotech Became the New Religion."