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## Personal Business; Trying to Roll Back the Biological Clock, for a Price

By SANA SIWOLOP

MANY Americans have been re-evaluating their priorities since Sept. 11, and for some people that means paying closer attention to their health. There has even been a rise in interest in so-called anti-aging clinics.

At one clinic, the Kronos Optimal Health Centre in Phoenix, inquiries and bookings are up about 40 percent over the last month, according to Casandra M. Noone, the director of clinical operations. And at another, the Cenegenics Medical Institute in Las Vegas, "we've actually had more inquiries than we've ever had," said Dr. Alan P. Mintz, the chief executive.

Both clinics, like many others that have sprung up around the country in recent years, promise to help patients look or feel younger by emphasizing changes in diet and exercise, along with vitamins and prescribed medications that are supposed to stem or treat age-related changes in the body. They include antioxidants and "youth hormone" treatments like the human growth hormone, testosterone and DHEA, which stands for dehydroepiandrosterone.

But do the treatments work? And are they safe?

There are no easy answers to those questions, because anti-aging therapy is a broad and emerging science. The clinics, for example, are not monitored by any independent agency like the Food and Drug Administration, and they offer different levels of treatments, prices and medical expertise. Some clinics, including Cenegenics and Kronos, even take issue with the term "anti-aging"; they say they focus more on slowing the aging process.

Critics say that while anti-aging medicine has not led to any known injuries or deaths, many therapies are still unproven -- not to mention expensive, in some cases costing tens of thousands of dollars a year. They say that in most cases, the effects of the therapies stop when treatment ceases and that many of the promised results can often be accomplished through a simple regimen of proper diet, exercise and regular physicals, and without potential side effects. (Some of the known side effects of DHEA, for example, include acne and irritability.)

Still, anti-aging practitioners say business is growing. Over the next year, Kronos, which opened its doors in August 1999, plans to expand in Texas, California and New York. Kronos says it has about 500 active patients, and it typically charges around \$3,000 for initial consultations and tests. The Cenegenics Medical Institute, which says it has had several thousand patients since its inception in 1997, has also opened a clinic in Tokyo and plans to eventually expand to Israel. Last year, it started a physician partnership program that expands its services through doctors nationwide -- it has signed up 100.

ON its Web site, [www.worldhealth.net](http://www.worldhealth.net), the American Academy of Anti-Aging Medicine in Chicago says it has 10,000 members in about 60 countries but does not provide a breakdown of how many of those members are medical doctors. Anti-aging practitioners say much of that growth has been in the last three years, after the group began certifying health care professionals. The academy began certifying medical doctors and doctors of osteopathy in the practice of anti-aging medicine in 1997; about 400 have been certified. Physicians must complete written and oral examinations, among other requirements, and attend at least two of the academy's medical conferences. Certification was expanded two years later to include others like chiropractors, dentists, pharmacists, nurses and physician assistants. There are now about 100 anti-aging clinics in the United States, according to the academy.

The academy's program, though, has yet to gain the blessing of established medical groups like the American Medical Association or the American Board of Medical Specialties. And the American Association of Clinical Endocrinologists, whose members specialize in hormonal medicines, has expressed concern about the growing use of treatments, particularly testosterone and human growth hormone replacement therapy. In a survey last year, many of the members said they felt pressured by some patients to give them prescriptions for products that promise to be a "magic pill," when they may not always be appropriate or safe.

Despite the criticism, most anti-aging practitioners say they are filling what consumers tell them is a huge vacuum in health care. "We take care of patients who have concerns about aging and who go to their doctors, but who can't get much help because they don't have a disease yet," said Dr. Joseph M. Raffaele, an internist at Anti-Aging Medicine Associates in Manhattan.

Dr. Raffaele says his medical practice has about 400 patients, mostly baby boomers and retirees, some of whom pay \$1,000 monthly fees that include any therapies they might need, as well as home delivery of those therapies from a local pharmacy. He says his practice tries to look at all aspects of how a patient lives, including diet and exercise, and does not prescribe a therapy that lacks "a reasonable amount of clinical data" to support it.

But critics say some anti-aging clinics take a far less encompassing approach or are not nearly as cautious. Some offer controversial measures like chelation therapy, which was approved by the Food and Drug Administration only for removing lead in the bloodstream but which some clinics say is effective in improving blood circulation or fighting hardening of the arteries. Others appear to be mail-order houses for either spray or pill forms of human growth hormone, which medical researchers in general say are useless because the drug needs to be injected.

Dr. Huber Warner, associate director of the biology of aging program at the National Institute on Aging, said many therapies pitched by anti-aging clinics are probably based on some kernel of evidence that they should work. At least one study, for example, found that DHEA increased energy and libido in women, though other research was inconclusive. Short-term studies of human growth hormone, which is responsible for bone and tissue growth and begins to decline after age 30, have shown that it both reduces body fat and increases muscle mass. So far, however, human growth hormone has not been studied for either long-term safety or efficacy. And Dr. Warner sees some reason to be cautious: tests in mice, for example, have shown that the hormone can decrease life span by 30 to 50 percent, he said.

Jonathan Thatcher, chief executive of the Kronos center, says his clinic prescribes human growth hormone only to adults who are truly deficient in it, rather than to simply fight aging. "We probably have the most conservative approach to hormone replacement therapy in the industry," he said.

Dr. Robert N. Butler, a gerontologist who now runs International Longevity Center USA, a nonprofit policy and education group in Manhattan, also worries that many consumers are turning to anti-aging clinics -- often at \$2,000 a visit -- to be tested extensively for so-called aging biomarkers, or physical signs associated with aging, like changes in blood composition, muscle mass or immune functions. Gerontologists have searched for such markers for years, but they have yet to find a common thread for everyone. "We simply don't have the equivalent of a blood pressure cuff for testing aging," Dr. Butler said.

Dr. Warner agreed. "There is so much variation in body chemistry and physiology among people that it's still easier to look at a group of people and guess how old they are" rather than go through biomarker testing, he said.

Such testing, though, remains popular. The Kronos Optimal Health Centre, for example, routinely measures its patients for some 150 biomarkers. Christopher B. Heward, a Kronos vice president for research and development, says his company checks patients for more traditional biomarkers like visual acuity, reaction times, and hand-grip strength, all of which generally decrease with age.

BILLY H. WALTERS, 63, an investment banker, said he was clearly showing some signs of aging three years ago, when he began visiting Anti-Aging Medicine Associates in Manhattan. His initial goal was to look younger, but he says he now feels that way, too. While he often became winded after just an hour of tennis, he says he is now good for more than two hours. And while he often grew tired after long hours at his Manhattan office, he says he now is in top

form throughout his 11- to 12-hour days. "I feel 10 years younger," Mr. Walters said recently, crediting the human growth hormone that was prescribed for him and which he now injects into his thigh six days a week.

Winfield H. Peterson, 72, a retired electronics engineer in Vancouver, Wash., said he had become more energetic and had regained his sex drive since visiting Cenegenics in Las Vegas about six months ago. He takes supplements of DHEA and gives himself weekly testosterone injections.

While he was pleased by what he described as a newfound vigor, he said that since the terrorist attacks last month, he had found another reason for seeking treatment -- he wants to return to work to help provide electronics to the military. "I want to stick around, because in this time of devastation those of us who have been around for a while may have some wisdom to offer the world," said Mr. Peterson, who underwent triple bypass surgery three years ago.