

EXTREMES



ALL TO BE

THE LEG LENGTHENING

By JOE KITA

Vertically challenged men are paying up to \$80,000 to have their legs broken, caged, and then lengthened. The gain: 3 inches. The pain: extraordinary.

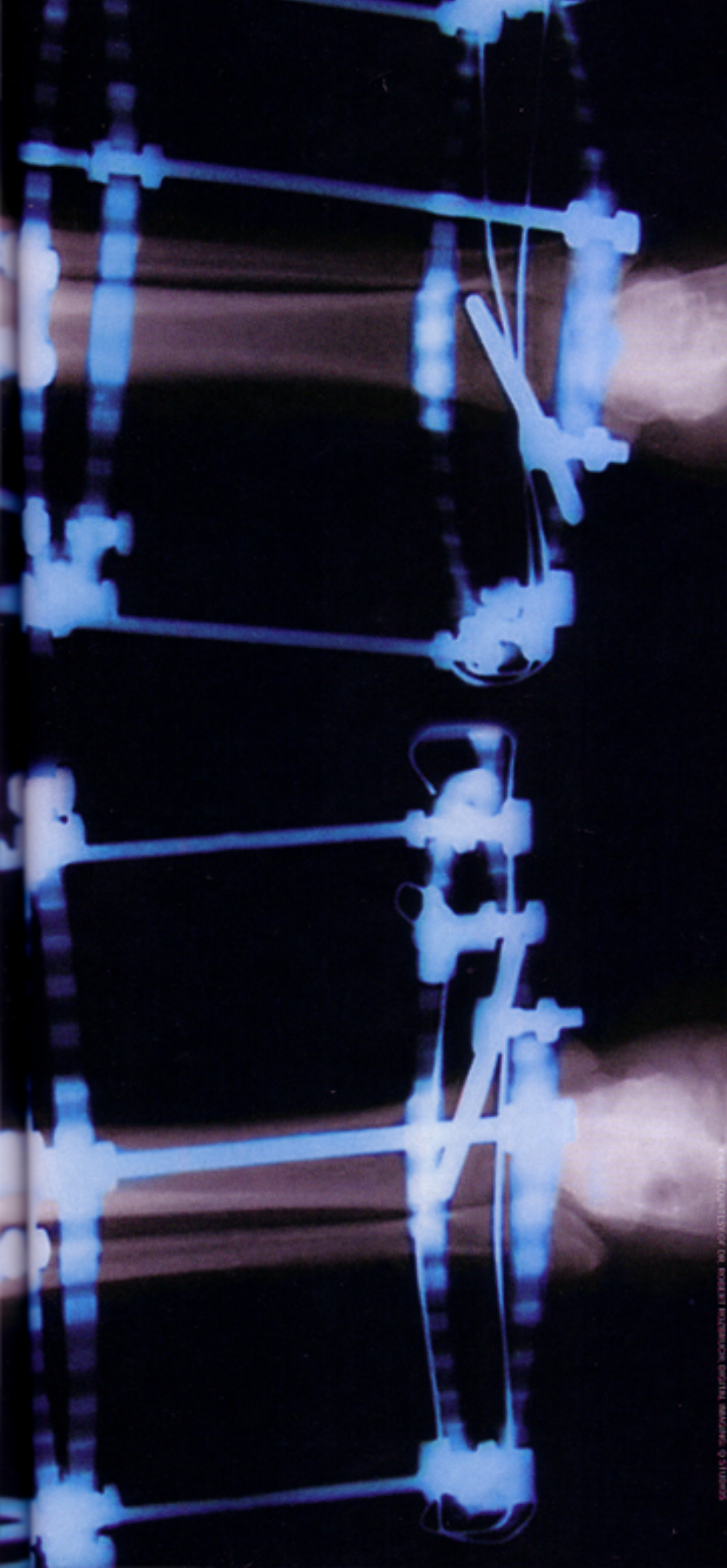


PHOTO COURTESY OF DR. ROBERT ROZENDORN, ORTHO, WASHINGTON, D.C.

he cages surround Jim Conran's legs like little scaffolds. Each has 11 metal pins that screw into his broken bones. Every 6 hours, he must turn these pins ever so slightly in order to tighten wires that pull the bones apart and align them correctly. He has been doing this now for 68 days. And all the time, the pain has been intensifying.

"It's like tuning a violin," he explains. "With each turn of the knobs, the ligaments and muscles and skin come under more tension. Each day everything gets tighter. It's incredibly painful." So much so that Conran* won't allow himself to sleep for longer than 3 hours. "I'm frightened I'll miss a dose of medication, and the pain will get ahead of me," he says. Recently, he was given morphine, and that's helped somewhat. But he's still confined to a wheelchair and can stagger only short distances around his Manhattan apartment.

Before you start pitying Conran, you should know that he was not in a horrible accident that shattered his legs, nor does he suffer from a birth defect that's finally being corrected. No, he is an otherwise healthy, 45-year-old, single attorney who is paying \$70,000 for this voluntary procedure. In fact, he's been looking forward to this for much of his life. Despite how it seems, he is living his dream.

You see, Jim Conran is 5'5 $\frac{1}{4}$ " tall. Or rather, he was 5'5 $\frac{1}{4}$ " tall. In the past few months, he has "grown" 1 millimeter per day (about $\frac{1}{25}$ ") by turning his 22 pins ever so precisely. And as he's done so, new bone has been steadily forming in the gaps where the segments of tibia and fibula are being pulled apart. When he last checked—and he checks daily—he was 5'8 $\frac{1}{4}$ ". When he (hopefully) reaches his goal height of 5'9" and this violin tuning ends, he's confident his life will finally be in harmony.

*Patients' names have been changed.

SHORT. IT'S A FIVE-LETTER WORD THAT carries four-letter connotations for men below the national average of 5'9". Unless you're one of them, you don't know how much it hurts to be called that.

Imagine this scenario. You've been accepted at Harvard, West Point, and Annapolis. You're an A student. You've won seven varsity letters, and you nearly qualified for the Olympics. Yet to get into West Point (your first choice), you must meet a height requirement of 5'6". You're slightly below that. So the night before your admittance physical, you have your father repeatedly whack you on top of the head with a textbook in order to raise a bump. Next day, you officially measure in at 5'6 $\frac{1}{16}$ ". You go on to graduate with honors, serve your country overseas, and eventually end up as an aide to the president of the United States. And you know, your whole life long, that you might have missed all of this—by a quarter inch.

"From a very early age, you start getting clear, institutionalized messages that you're less desirable," says George Holdt, the soldier in question, who, like Conran, is now undergoing limb lengthening. "From the violence you experience in school to the behavior you encounter throughout your social and professional life, the discrimination is always there."

Today, height requirements in any workplace are largely a thing of the past (the military's cutoff is now 5'). But it's an example of the frustration that is the legacy of the



diminutive man. And no, it isn't his imagination. Numerous scientific studies have verified the advantages of height. For example, taller men . . .

. . . *Are more likely to be hired.* When recruiters in one study from Eastern Michigan University were asked to choose between two equally qualified candidates who differed in height, 72 percent chose the taller applicant.

. . . *Make more money.* Graduating seniors at the University of Pittsburgh who were 6'2" or taller enjoyed starting salaries \$4,000 higher than counterparts 5'5" or under. Economists at the University of Pennsylvania even estimate that added height is worth nearly 2 percent in additional income per inch per annum.

. . . *Are chosen as leaders.* Nancy Etcoff, Ph.D., a professor of psychology at Harvard medical school, points out in her book *Survival of the Prettiest*, "the easiest way to predict the winner in a United States election is to bet on the taller man." Of 43 American presidents, only five have been significantly below average height. What's more, Etcoff cites a study of Fortune 500 CEOs that found that more than half were taller than 6 feet, and just 3 percent were shorter than 5'7".

. . . *Make better first impressions.* Surveys by Henry Biller, Ph.D., a professor of psychology at the University of Rhode Island and co-author of *Stature and Stigma*, show that compared with shorter men, guys of average and above-average height are seen as "more mature, uninhibited, positive, secure, masculine, active, complete, successful, optimistic, dominant, capable, confident, and outgoing."

While all of this pisses off short guys, what really bothers them is how they're viewed by women. Walter W. Windisch, Ph.D., is a psychologist in Towson, Maryland, who evaluates short men who are considering limb lengthening. "The average patient," he notes, "is 28 years old, male, college educated, professional, of some financial means, the

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product of parents who expressed concern about height, and, in every case, single."

Indeed, if you read the personals section of your local newspaper or log onto any online dating service, you'll find lots of ads from women listing height preferences. Why are they so particular, especially when they're paying by the letter? Certainly a portion of it stems from the statistics cited earlier—that

Booster Shots

SOME DOCTORS BELIEVE THEY'VE DISCOVERED THE VACCINE FOR SHORTNESS. IS IT WORTH IT?

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ost short men were short children—while everyone else seemed to be adding inches daily, their own growth spurt had sputtered and stalled. What they needed was a way to jumpstart their skeletons. Today's short kids have one: human growth hormone therapy.

As the name implies, human growth hormone (HGH) is a substance the body produces to control growth during childhood. It does this by causing the liver to secrete another hormone called IGF-1, which in turn triggers the actual bone growth. Some children have a deficiency of HGH, and until recently, they were the only ones given injections of a synthetic version of the hormone. But in July 2003, the FDA approved HGH therapy for any child in the bottom 1.2 percentile in projected adult height (determined using bone x-rays), regardless of whether he or she has an HGH deficiency. A projected adult height of less than 5'3" for a man or 4'11" for a woman qualifies a child for treatment.

But it isn't a one-shot deal. In order for HGH injections to have any chance of working, they must be given daily until the child reaches full adult height. This can mean 14 years of needles if started at age 3. And even then, extra inches aren't a given. "The results of growth hormone treatment in otherwise normal short children have been very variable," says Ab Sadeghi-Nejad, M.D., chief of the pediatric endocrinology unit at Tufts-New England Medical Center, "ranging from zero benefit to possibly 3 inches." What's more, there's a small chance of side effects later on, such as an increased risk of hip dislocation, diabetes, and possibly cancer.

So is it worth it? "If my child were deficient and were going to end up 4 feet tall, it would be a no-brainer," says Mitchell Geffner, M.D., a pediatric endocrinologist at Los Angeles Children's Hospital. But if it's a question of giving HGH to healthy children who are predicted to become short adults, neither Dr. Geffner nor Dr. Sadeghi-Nejad is ready to sign on. "In addition to the fact that it's not guaranteed to be effective and has potential side effects, the question remains," says Dr. Sadeghi-Nejad, "do you want to stick needles in your son or daughter every day for years for the sake of an inch, or an inch and a half?"

—KATE DAILEY

taller men earn more and enjoy a higher social status. Some of it also comes from Hollywood, where leading ladies routinely look up into the eyes of the tall, dark, and handsome man. It's the romantic ideal. But a good chunk is also based on an almost primitive assessment. Is he a good provider, a worthy protector, a gifted procreator? And on some anthropological level, it's as if she ultimately decides the short man is not. Less than one-half of 1 percent of women marry men who are shorter than they are, according to Etoff.

"Someone once asked Sigmund Freud, 'What is the goal of life?' and his answer was, 'To love and to work,'" says Windisch. "That's a fairly good summary of what's bugging these guys. They're looking to love and be loved, to work and be valued. It's just that their stature, something totally beyond their control, is keeping them from it."

ABOUT 2,500 KILOMETERS EAST of Moscow, at the western edge of Siberia, is the Ilizarov Scientific Center for Restorative Traumatology and Orthopaedics. Located in the Russian city of Kurgan, in the shadow of the Ural Mountains, it was founded in 1971 by Professor Gavriil Abramovich Ilizarov. Decades earlier, faced with treating a large number of World War II veterans with complicated limb

fractures, he began experimenting with "circular external fixators" to keep bones aligned and to speed healing. Their use as limb-lengthening tools, however, was discovered by accident. While Ilizarov was on vacation, a nurse adjusted a fixator in the wrong direction. When he returned and examined the patient's x-ray, he noticed new bone forming in the gap. This set the stage for a variety of new applications, including the correction of leg-length deformities, bow legs, achondroplasia (dwarfism), and, lately, short stature. More than a half century later, the Ilizarov method—as it's come to be known—is still being used in a surprisingly unevolved form throughout the world.

Here's how it works: After taking a series of x-rays to map out the precise dimensions of the bones, the surgeon orders a regional anesthetic and makes two half-inch-long incisions in each leg (usually below the knee). Using a surgical chisel, he then cracks the tibiae and fibulae, being careful to disrupt as little of the surrounding tissue as possible. (Note: When a doctor breaks your legs, it's called an "osteotomy.") Next, he attaches the circular aluminum frames. This requires piercing each leg with 11 arrow-sharp carbide pins and pushing them in until they bottom out against bone. The pins are of varying



Rod-awful: After the frames are removed, long rods are sometimes inserted in the bone cavities for extra support.





Paul Steven Miller (seated) protects the rights of other short men, while Dror Paley, M.D., offers them a boost—in inches and esteem.

lengths and diameters, with the thicker ones being positioned closer to the breaks for added stability. Once the pins are in position, the surgeon slowly screws them into the hard calcium-and-collagen shell that surrounds the marrow. The rest is comparatively straightforward: Affix the adjustment wires to the pins, sew the two osteotomy incisions shut, treat and bandage the pin wounds. For all that's involved, the entire operation takes just 2½ hours. Patients typically remain in the hospital for 2 to 3 days, after which they can take a dozen or so steps.

But this is the easy part. The frames usually stay on for 3 to 6 months, during which time the bones are gradually separated. This is called the "distraction phase." All but one of the men we spoke with said that, even with heavy doses of narcotics, such as Vicodin, the resulting pain was just on the edge of bearable.

"It will reduce the toughest man to a crying little girl in a matter of weeks," says Jack Turner, a 39-year-old salesman who "grew" 2½ inches as a result of this surgery.

"It's an act of aggression against your own body," adds Conran.

Just as difficult is the helplessness that results. Patients are dependent on wheelchairs, walkers, and the supportive arms of friends and relatives to get around. Most are bedridden except for periodic doctor visits and daily physical therapy. Work is out of the question. This is true not only during the distraction phase but also for 3 months or more after the frames come off and the new bone is hardening. "You need somebody to take care of you virtually all the time," says Rick Morgan, another patient. "Sometimes you can't even reach the bathroom."

Although some doctors make lofty promises, most legs won't tolerate being stretched past 3 inches. It's not the bones that balk, but rather the muscles and tendons that surround them. Overall, there's a 25 percent complication rate from this surgery, with the most frequent problem being pin-site infection. That's why patients are given a prescription for oral antibiotics, which they're told to begin taking at the first sign of redness, tenderness, or discolored drainage at the pin entry points. If an infection goes unnoticed, it will spread into the deep leg tissue and then the bone.

IF YOU'RE A SHORT MAN SEEKING salvation through surgery, you've probably heard of the International Center for Limb Lengthening, in Baltimore. An affiliate of Sinai Hospital, the ICLL was the first facility of its kind in North America and remains the largest—half of all the limb lengthenings for height are performed here. The bulk of its business, however, deals with correcting functional deformities. "I'm very strict when it comes to doing this surgery on otherwise healthy people," says 47-year-old chief surgeon Dror Paley, M.D., himself 6'. "In fact, I try to dis-

"I've had some real nutcases—people willing to do unbelievable things for a few extra inches."

A less common but still serious complication is nerve damage. In one study review of 814 limb lengthenings, approximately 10 percent of patients had experienced some form of temporary nerve damage, characterized by chronic pain or impaired motor skills.

But the most catastrophic possibility doesn't present itself until the frames are removed. Even though the doctor will have taken x-rays to gauge structural integrity (the whiter the area, the stronger the bone), there's still a chance that what took months of agonizing pain and tens of thousands of dollars to build will, at the moment of truth, snap. Or the new bone will hold, only to buckle and break weeks later. Either way, doctors call this a refracture; there's a one-in-12 chance of its happening.

courage it. The magnitude of what you have to go through is so large, it's not in the realm of having your nose done or your tummy tucked."

Dr. Paley generally will not operate on men over 5'6" (or women over 5'2"), and he requires that all prospective patients first undergo an intensive, 10-hour psychological exam by Windisch. Only about 10 percent go on to have the operation. "You must be careful," says Dr. Paley. "I've had some real nutcases—people who were willing to sell their houses, steal their wives' money, do unbelievable things for a few extra inches."

Depending on the facility and the specifics of the case, those inches typically run between \$50,000 and \$80,000. When limb lengthening is done on a healthy person, medical insurance won't pay for it. **CONTINUED on page 146 >>**