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Kin-Joe Sham and John Dinusson of OrthoCor Medical with the Active Knee System. The device is manufactured in China in a plant owned by Sham's father. OrthoCor expects to launch the device in the middle of next month.

GETTING A LEG UP

• Using magnetism and heat, OrthoCor Medical's device is designed to provide help for battered knees.

By JANET MOORE • jnmoore@startribune.com

The single-room office of OrthoCor Medical has the distinct aura of a young start-up company — mismatched furniture, disheveled desktops and a maze of boxes shoved here and there.

Located in the University Enterprise Laboratories business incubator in St. Paul, the tiny three-person firm is on the cusp of rolling out its core (and so far, its only) product — a unique knee brace that, according to the company, provides

temporary relief of joint pain and arthritis and, longer term, reduces swelling and pain.

This is a particularly frenetic time for the privately held firm. After receiving Food and Drug Administration (FDA) clearance late last year to market its signature OrthoCor Active Knee System, company officials are busy preparing a mid-March launch for the device. That means lots of last-minute phone calls and e-mails, sometimes well into the wee hours, to shore up details.

The marketing push will ultimately target the nation's 60,000 or so chiropractors, beginning in the Upper Midwest. The potential \$370 million mar-

ket is huge and fractured — aging baby boomers with their telltale deteriorating joints. And the Weekend Warriors among them, whose dedication to sporadic exercise extracts a decided toll on their bodies, especially their knees. Another potential market: the elderly who are fearful of knee replacement surgery and in need of temporary pain relief.

The company's knee system combines heat with pulsed electromagnetic field (PEMF) technology — electrical energy that sends a series of magnetic pulses through injured tissue to reduce swelling and, by extension, pain. John Dinusson, OrthoCor's CEO, says PEMF therapy has been around for decades, as has the use of heat to treat joint pain. But the OrthoCor device is unique because it com-

Brace continues on D2 ▶

TRYING TO GET A LEG UP

◀ BRACE FROM D1

bines the two, he adds.

The device, perfected by an engineering class at the University of Minnesota, is made of heavy-duty fabric that is strapped onto the knee. Two disposable “pods,” which are the size of a quarter and snapped into tiny docking stations, deliver the heat and activate the electromagnetic therapy. A small “black box” on the device contains a rechargeable battery and microchip, which controls the therapy that’s delivered over a two-hour period. And during that time the patient can move about normally.

Some months ago, OrthoCor officials approached Joseph Sweere, a professor at Northwestern Health Sciences University in Bloomington, and asked him to assess the device. Sweere, a chiropractor, was intrigued. “I thought it was novel, very straightforward, safe and user-friendly,” he said.

But cutting through the clutter of knee braces and therapeutic devices now on the market — those available by prescription or over-the-counter — could prove daunting for OrthoCor. A prescription from a doctor or chiropractor is needed, and the

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\$249 device is not reimbursed by insurance.

“I think it will gain a following, it will sink or float on word of mouth,” said Sweere, who has received no remuneration from OrthoCor.

Another alternative

As more pain-prone patients become aware of the potential side effects of over-



Provided by OrthoCor Medical
OrthoCor Active Knee System

the-counter painkillers, such as ibuprofen, and tire of the smell and mess of creams, balms and patches, they may be inclined to try a product like OrthoCor’s, Sweere said.

Dr. Scott Anseth, an orthopedic surgeon who heads Abbott Northwestern Hospital’s orthopedic surgery department, is not familiar with OrthoCor’s product, but he says he’s seen many knee braces come and go.

“I tend to be very pessimistic about these braces; there are a lot of them out there and they tend to be pretty expensive and insurance typically doesn’t pay,” he said. “A lot of braces don’t have scientific studies to back them up. For me to prescribe a brace, I’d like to see scientific stud-

ies showing the people with the brace were better off than those who didn’t use it.” (The kind of FDA clearance the OrthoCor knee system received did not require clinical trials on patients.)

Dinusson, a career venture capitalist and investment banker, has bankrolled the company through \$1 million raised by angel investors, most of them from Minnesota. He is joined by Kin-Joe Sham, an MIT-educated engineer and Guidant Corp. alum who serves as vice president of research and development. The OrthoCor device is manufactured at Sham’s father’s factory in China.

One of the board members, Dr. Darryl Barnes, is an orthopedic specialist in the Mayo Clinic hospital system who has served as a team physician for the Cleveland Browns football team and pro basketball’s Cleveland Cavaliers, according to the company bio. (Citing Mayo policy, Barnes declined to comment on his role at the company.)

Beyond next month’s launch, company officials hope to expand the technology to treat wrists, ankles and the lower back.