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New Hope for an Old Scourge

BY CLAUDIA CORNWALL

Arthritis is a debilitating disease that affects millions of Canadians, but treatments are improving rapidly

CATHERINE HOFSTETTER is the president of a Toronto construction company that has sales of $250,000 a month and employs 20 people. She says, "I like to go 110 miles an hour with my hair on fire." But 12 years ago, at the age of 37, she came to a screaming halt. The big toe on her left foot started aching and swelling. Then the pain spread rapidly to other joints. "I walked like Frankenstein," she says. She couldn't lift her hands over her head. She

PHOTO: © RICHARD PIERRE

couldn't open her mouth wide and had trouble eating. Thin already, she lost 30 pounds. The pain was excruciating. "I couldn't believe there was pain like that in the world," she says.

Six weeks after her toe began to hurt, she was given a diagnosis: rheumatoid arthritis (RA), a disease affecting about 300,000 Canadians.

RA is an autoimmune disorder that races through the joints like fire. It causes inflammation and destroys the bone-covering cartilage, a substance so smooth that no man-made material has yet been able to duplicate it. It can also affect organs such as the heart, lungs and eyes.

Hofstetter was given NSAIDs (non-steroidal anti-inflammatory drugs). These drugs combat pain but don't actually prevent destruction of the joints. For that, she was given a succession of DMARDs (disease-modifying anti-rheumatic drugs) to slow her overactive immune system. They worked for a while, but four years ago they failed completely. "I went into a tailspin," she says.

Luckily for Hofstetter, Enbrel, one of a new class of drugs known as biologics, had just become available. Both DMARDs and biologics suppress the immune system, but they do it in different ways. Dr. Edward Keystone, a rheumatologist and professor of medicine at the University of Toronto, says, "DMARDs carpet bomb the immune system, but biologics are smart bombs." The biologics selectively target TNF, a hormone we all have, but which RA patients have in excess. Keystone says, "TNF drives the inflammation; it's like pouring oil on the fire."

Hofstetter noticed the benefit of the new drug right away. The DMARDs had always taken several months to work. But Hofstetter got her first injection of Enbrel on a Tuesday, and by Sunday she was gardening. Her fatigue had vanished. She no longer needed Tylenol to get through the day. She got her life back.

According to Keystone, about 30 percent of RA patients are not helped by DMARDs and should receive biologics. It's important for them to get the biologics quickly since, with RA, most of the joint destruction takes place in the first two years. If they do get them promptly, 90 to 95 percent of the joint deterioration will be prevented. For the first time, there is real hope for people who used to face a bleak future.

Four million Canadians age 15 and over—one out of six—have arthritis, but there are misconceptions about the disease. Often people think that it only affects the elderly. Not so: About 1.5 million arthritis sufferers in Canada are under the age of 55, and one in a thousand children under the age of 16 have it. Calgary teenager Aaron Beckett was 13 when he developed an unusual complex of symptoms: fatigue, a sore hip, excruciating pain in his eyes. He was missing school and spent a lot of time sleeping on the couch and watching TV. He could hardly walk. It took a year before a doctor recognized what he had—ankylosing spon-

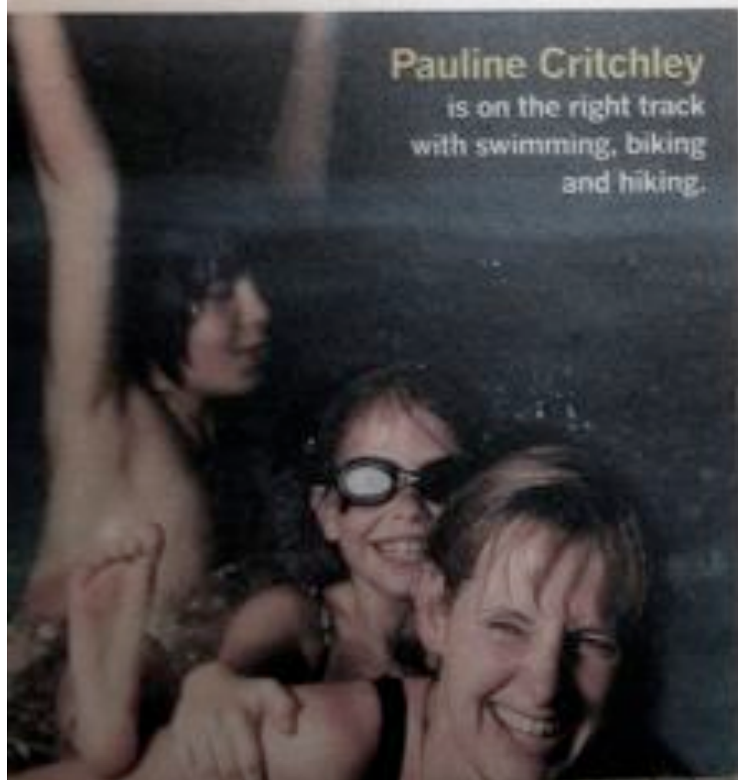
dylitis, another inflammatory autoimmune disorder. It affects about two percent of the population, mostly young men. Unchecked, it can move up the spine and cause the vertebrae to fuse together.

For Aaron, the magic bullet was naproxen. His mother, Karen Beckett, says, "I couldn't believe the difference it made, in just two days. You know how a kid runs down the hall and kicks his heels together? He could do that. Before, he was almost in a wheelchair."

While arthritis is not usually fatal, according to Statistics Canada, two out of 100,000 die annually of arthritis or related conditions. That's more people than die of melanoma, asthma or HIV/AIDS. It is also very expensive, costing Canada an estimated $4.4 billion annually—directly, for medications, physician services and hospital stays; and indirectly, because of lost productivity and expenses related to disability.

However, the good news is that physicians have been learning a great deal about the more than one hundred varieties of arthritis and are better able to control many of them.

PAULINE CRITCHLEY is a 47-year-old North Vancouver woman who has two children and works as an administrative assistant. When her hip started aching constantly in February 2004, she had a pretty good idea what the problem was. Her father and his siblings had all suffered from osteoarthritis. An X-ray confirmed her suspicion. She had moderate osteoarthritis in her right hip and mild to moderate in her left. This is the most common form of the disease, affecting one out of ten adults or about three million Canadians. It often runs in families. Old age, obesity and previous joint injury all increase the risk of developing osteoarthritis.



Pauline Critchley is on the right track with swimming, biking and hiking.

A short course of an anti-inflammatory soon brought Critchley's pain to a manageable level. She went back to her usual routines. This included long-distance running, which she found to be a good "stress buster." Seven months later, she

had another serious flare-up. This time she had to give up running. But her doctor encouraged her to remain physically active, provided she chose sports that were not high impact. Now she bikes once or twice a week, snowshoes or hikes, and swims 3,000 metres three times a week. "I notice that when I'm not as active, I'm more sore," she says. "I am on the right track."

Dr. Bill Bensen, a rheumatologist at McMaster University and St. Joseph's Hospital in Hamilton, agrees. "Keeping your muscles strong helps save your joints. It will help keep osteoarthritis from happening, and if you do get it, it won't progress as quickly." Exercise can also help to keep your weight down. "Even a ten percent reduction in weight can take significant stress off the joints," says Bensen.

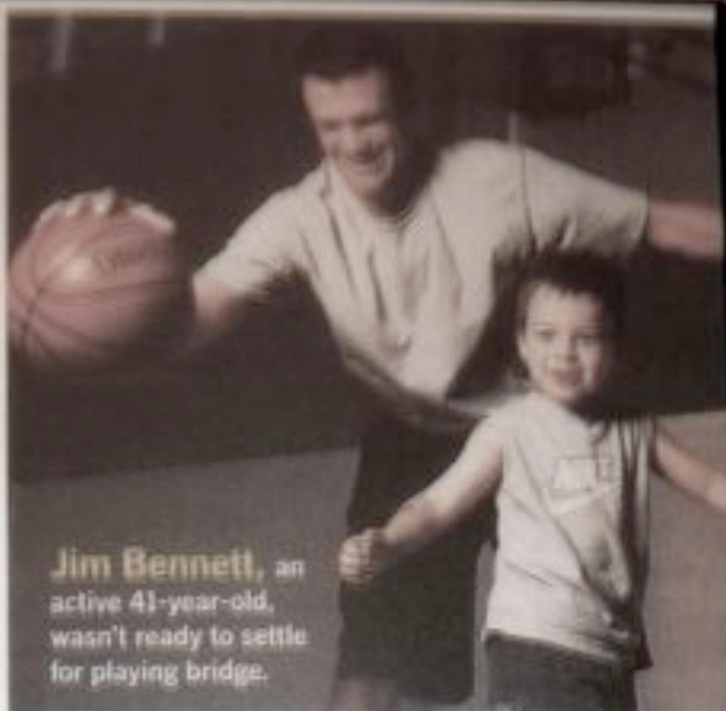
Drugs for Osteoarthritis. When Critchley had her first major flare-up, she was prescribed Vioxx to reduce the pain and inflammation. The drug, called a COX-2 inhibitor, was part of the NSAID family. After 1999, it soared in popularity because it caused fewer cases of gastrointestinal bleeding than older drugs. However, in September 2004, because of fears that Vioxx increased the risk of heart attacks and strokes, its manufacturer, Merck and Company, withdrew it from the market. Critchley was switched to the more traditional naproxen. Still, it may be that there is a place for some COX-2 inhibitors in our medical arsenal. Another COX-2 inhibitor, Celebrex, is currently approved for use in Canada, although not for people who have heart disease or who are at risk for it.

For patients who can't tolerate NSAIDs in pill form, there are NSAID creams to rub on an affected joint. Viscosupplementation—the injection of gel-like substances (hyaluronates) into the joint to supplement the lubricating properties of the synovial fluid that is already there—can help those with osteoarthritis in the knee.

Recent advances in understanding the causes of osteoarthritis are giving researchers the tools they need to design even more effective drugs. Dr. Jean-Pierre Pelletier, a professor of medicine and the head of the Arthritis Centre at the University of Montreal hospital centre, is among the world's experts leading this charge. He says, "We used to think cartilage was like a piece of linoleum which becomes old and degraded if you walk on it too much. Now we know that more than mechanical factors are involved." Pelletier has focused on the role of enzymes that are part of the body's normal repair processes. He has shown that trauma to the joints causes the overproduction of these enzymes, which then "chew up" the cartilage.

New Surgical Techniques. In 2001-02, Canadian doctors performed 44,792 total hip and total knee replacements, an increase of nearly 40 percent over 1994-95, according to the Canadian Institute for Health Information. But newer, less invasive operations to restore joints ravaged by arthritis are also gaining favour.

One problem with traditional hip replacements is they only last ten to 15 years. While the operation can be repeated, the second hip replacement is likely to have an even shorter lifespan. Younger people who need hip operations, therefore, will probably be interested in a newer, less invasive procedure which may last longer.



Jim Bennett, an active 41-year-old, wasn't ready to settle for playing bridge.

Dr. John Antoniou is Canada's whiz kid of orthopedic surgery. He started college at 16 and went into medical school at 18. Now an assistant professor at McGill University and a surgeon at the Jewish General Hospital in Montreal, he was the first doctor in North America to perform what is called an articular surface replacement (ASR) in March 2004. He removed only the diseased portion of the hip socket and femur and replaced the worn surfaces with two thin metal surfaces. Antoniou believes ASR has the potential to last longer than the traditional hip replacement for two reasons. First, more of the patient's own bone is preserved, and thus results in a more natural joint motion. Second, the implant is made entirely of metal, whereas a traditional hip replacement is made of metal and plastic. "This innovation could potentially double or triple the life expectancy of a traditional hip replacement, but we won't know for sure, of course, until it's been around for 30 or 40 years," says Antoniou.

Jim Bennett, who is 41 and works for a software company in Vancouver, developed arthritis in his hip ten years ago. An avid athlete, Bennett liked to run, hike, ski, bike and play basketball. In February 2005 he went all the way to Montreal to have Antoniou resurface his hip—an operation that B.C. medicare paid for. "The big advantage for me, being a young guy, is that with the resurfacing, you can go back to being active," says Bennett. "With a total hip replacement, most of the surgeons said I should take up bridge." By April, Bennett was working out on a stationary bike and going to physio twice a week to build up his strength. "I feel great," he says. "I definitely plan to go back to running, hiking and skiing." ■