TOP STORIES

ShoreBank's mortgage-rescue effort extends to troubled borrowers from other banks

A cure for congestion, but is Chicago ready?

Sparks fly over Chicago's 'last urban forests'

Political climate warms to carbon offsets, farmers dig in

Students, pick up your pencils and prepare to focus

FEATURED COVERAGE

Despite economy, people are going to concerts -- just not to see new bands

Bush health worker 'conscience' rule being scrutinized by Obama

CHICAGO LIFE

Is a Fort Sheridan golf course a green idea?

Will perform poetry for food

Chicago soccer star hits a life-saving net

VIDEO

Does the gas really have to be premium?

Economy may not, but auto show goes vroom

Rhoda Baer / NIAMS Image Gallery
The vial contains knee cartilage recovered from a total knee replacement. Researchers are using stem cells in the cartilage to attempt to engineer more cartilage to repair joint lesions.

Doctor for Chicago Bulls revolutionizes treatment for

As the economy worsens, animal shelters fill up

SCIENCE

UIC chief of robotic surgery committed to being on the cutting edge

The stars come out at the Adler for the International Year of Astronomy

Educators engineer programs to excite students about science

BUSINESS

Political climate warms to carbon offsets, farmers dig in

Spooked consumers do little for retailers in February

ShoreBank's mortgage-rescue effort extends to troubled borrowers from other banks

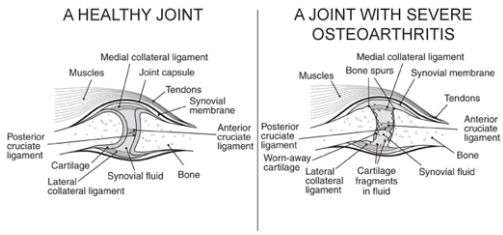
cartilage damage

BY **KIMBERLY WEISENSEE**
MARCH 04, 2009

Dr. Brian Cole specializes in orthopedics, mountain climbing and treatments for athletes who include the Chicago Bulls and the White Sox.

He is the head team physician for the Bulls and co-team physician for the White Sox.

He is also the section head of the Cartilage Restoration Center at Rush University Medical Center where he is researching transplants that restore cartilage, save joints and can spare people procedures such as knee replacements.



NIAMS Image Gallery

This illustration compares a healthy joint to a joint with severe osteoarthritis. In the healthy joint, the ends of the bones are encased in smooth cartilage and protected by the joint capsule with a membrane lining that produces fluid. In the damaged joint, the cartilage is worn, burn spurs grow out and the fluid increases causing the joint to feel stiff and sore. Click to enlarge photo.

Related Links

National Institute of Arthritis and Musculoskeletal and Skin Diseases

Cartilage Restoration Center

John Golden's Everest Expedition

The Center is funded by the National Institutes of Health as the nation's specialized center for osteoarthritis research and the World Health Organization considers it a key collaborating center in the field of osteoarthritis.

In addition to his work as a practicing physician and researcher, Cole is also a professor of orthopedics, anatomy and cell biology at Rush University Medical Center.

He took a few minutes out of his busy schedule to explain cartilage transplants and why he believes in his work.

Are there any sports or activities that make someone prone to cartilage damage?

A large number of the patients have had traumatic injuries in football or other contact and collision sports where they have injury to a knee or ligament. The clock starts ticking after that injury, and the cartilage wears over time. In treatment, part of the cartilage is removed and the patient does fine. Then five to 10 years down the road they start to get arthritis forming in the area where the injury occurred or where cartilage was removed.

So my college athlete friend who had scar tissue removed in her knee could have gotten a transplant done instead?

It's not that simple. The first line of treatment for most people is an

arthroscopy to allow the area to breathe and clean up. We see how they do. If they don't do well, then transplantation is considered. [An arthroscopy uses a camera-guided tube with optical viewing fibers as part of a procedure to clean out scar tissue in a joint.]

How many types of cartilage transplants are there?
There are at least 20 or 30 transplant options in practice around the world. One way is to harness the body's ability to repair cartilage is called an arthroscopic microfracture where a surgeon creates a small hole in the bone to make the bone bleed into the surrounding area. The bone has primitive cells that heal to form normal cartilage.

If that fails, the patient qualifies for a local transplant called an osteochondral autograft, which is comparable to a hair-plug transfer. The surgeon takes cartilage and bone from the healthy part of the joint and moves it to the damaged area.

A highly advanced and FDA-approved cartilage regeneration technique is called an autologous cartilage cell implantation. Cells are harvested from the patient's cartilage, cultured and re-implanted in the damaged area to repair and restore the cartilage.

For major defects, there are cartilage and meniscus transplants (the meniscus is a C-shaped piece of cartilage in the knee) from organ donors.

How many cartilage transplants have you done?
I've been practicing for 11 years, so I've done well over 1,000 transplants or joint-saving procedures.

What is Rush's Cartilage Restoration Center treatment focus?
It is a multi-disciplinary approach to offering non-joint replacement alternatives to otherwise young active patients who are not good candidates for joint replacement because of their age. We try to find alternatives to joint replacement, and those tend to be transplantation-type procedures.

It's multi-disciplinary because I work with biochemists, biomechanics, anatomists and surgeons. We test and practice procedures in an animal laboratory and then implement them in the clinic. We also have a large database tracking these patients six months after their procedure and then every year after that.

Is there any patient you've had who exemplifies the success of cartilage transplantation?
We've been really excited about Chicagoan John Golden, an executive at CNA insurance. At 38 years old, he was in great shape but couldn't walk and had more than 15 surgeries done because of an old football injury. I performed a double cartilage transplant on John. Now he is 42, and he's going to climb Mt. Everest

this spring.

Did he need any rehab after the procedure or were the results immediate?

Rehab is a huge part of recovery. Without his rehab, John wouldn't be where he is now. He started rehab in Chicago, but then he went to Athletes Performance in Arizona.

He saw me about a year after he started his rehab program. I got interested when I saw what great shape he was in. He got me so into his rehab program that I went on a four-day climb up Mt. Rainier in Washington State (14,410 feet above sea level) with him last year. It was an incredible experience.