

Stanford Hospital Health Notes

special feature

A community health education series from Stanford Hospital & Clinics

New Sports Medicine Breaks Old Age Barriers Speeding the Healing of Common Injuries

Kevan Del Grande is soft-spoken and gentlemanly, as befits a 75-year-old grandfather, owner of a long-successful business and community-minded patron of the arts. Put him on a handball court and that version of Del Grande is gone. Here is a man whose competitive spirit drives the hard play required in this grueling sport with a no-holds-barred speed and an agility that belies his age.

He started playing handball six decades ago, ventured into tournaments at 50 and continues to beat opponents 20 years his junior. He shows no signs of slowing down, but he, like other athletes, whether recreational or competitive, lives with the possibility of injury. And Del Grande would be the first one to say thank you to his doctors at the Stanford Hospital & Clinics Sports Medicine Division of the Department of Orthopaedics.

Del Grande had played with such conviction and force over the years that by age 71, he had shredded his shoulder joint's protective sleeve of muscles and tendons, commonly called the rotator cuff. The cuff is essential to the arm's

movement at the shoulder—when it is not functioning, even daily chores are painful or impossible.

What Del Grande found at Stanford Hospital is a program that reflects the advances in sports medicine that have exponentially speeded recovery and improved outcomes. Instead of a procedure that mandated a six-inch long incision across the shoulder, the new minimally-invasive arthroscopic approach leaves scars no more than a quarter inch long. Instead of being limited by repairs that might wear out within a relatively short time, even under normal use, surgeons now have available sutures and other repair components that are longer lasting and much stronger.



Norbert von der Groeben

Stanford Hospital's Sports Medicine program is always busy, seeing more and more patients each

Without strong shoulders, handball is impossible. Here, Del Grande reaches out to swat back the ball as it flies toward him.



Norbert von der Groeben

Kevan Del Grande, 75, took up tournament handball play 25 years ago. He has learned to live with injuries and the surgery that is sometimes necessary.

year, said its chief, Dr. Gary Fanton. "More people are participating in sports and the age of the recreational athlete is going up every decade. We are maintaining our youth into the later decades of life, but unfortunately, the muscle can't always keep up."

Wear and tear adds up

Now, almost half the injuries the Orthopaedics Clinic physicians see involve the rotator cuff, an area deep inside the shoulder that is naturally tricky to negotiate in surgery. The cuff sits beneath a protective layer of other muscles, including the deltoid, which rounds the shoulder and is also essential for normal shoulder movement. Before surgeons had the tools to slip between the muscle fibers and down into the rotator cuff, they

had to detach the muscle, creating an additional injury that would take months to heal. In athletes—or anyone who is active, the deltoid is especially developed, making it even more difficult to get to the cuff. Once at the cuff, surgeons needed to separate the muscles enough to maneuver sutures.

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—Dr. Gary Fanton, Chief Sports Medicine Division

For athletes, such tearing and consequential repair procedure could finish a high-level competitive athletic career. The Hospital's Orthopaedics program has become very familiar with that possible outcome. For several years, its doctors have served as physicians for the San Francisco Giants, the San Francisco 49ers, the U.S. Olympic Decathlon team, Stanford University's championship athlete teams, at the 2002 and 2003 U.S. National Track and Field championships and for other groups whose performance depends on shoulder strength, including Ballet San Jose.

Del Grande is an example of a recreational athlete who remains competitive. In 1998, his tournament victories earned him a place in the Northern California Handball Association Hall of Fame. He was named as a grand master in the U.S. Handball Association Hall of Fame in 2003. That was the year he turned 70 and won singles and doubles divisions in his age group at the World Handball Association.

The following year, he finally paid attention to his right shoulder. "It was sore and I just kept playing on it," Del Grande said. "I have a tendency to play with injuries and consequently had a number of problems that probably would have been better served by laying off."

Handball stresses every part of the body. Playing in a court whose legitimate field includes all four



Norbert von der Groeben

Del Grande's surgeon Timothy McAdams sees many patients who have an injured rotator cuff, the set of muscles and tendons that allow us to move our shoulders.

Preventing Sports Injuries

None of us need to be told that physical activity is good for us, immediately and long-term. However, whether it is sports or a visit to the gym or a brisk walk around the neighborhood, moving our bodies sometimes results in injury. To avoid such injuries, remember these suggestions:

- Don't exercise or play when you're already injured until you've seen your doctor. The old adage about playing through pain is not good advice. Your body needs time to heal from an injury or you risk reinjury and a longer recuperation.
- Don't push your body too hard. Getting enough rest is important. Those muscles and joints need a break after strenuous activity. If you're exhausted, so are they. Many sports injuries occur after several days of hard play.

- Exercise different muscle groups. If you run one day, do some free weight lifting the next day. By giving all your muscles regular workouts, you develop whole body strength.
- Warm up and cool down. Warm up for your warm up. Research studies have shown that the traditional static stretches can actually rob muscles of their strength. Do a slow jog or brisk walk for a few minutes, then mix static and dynamic stretches. After exercising, stretch again.
- Wear proper safety gear if recommended.

For more information, call the Stanford Hospital & Clinics at (650) 723-4000.

walls and the ceiling translates into the need to be both right- and left-handed at very high speed. And, Del Grande said, "You don't actually jump up the side of the walls, but you're going full speed to get the ball and the wall is not very forgiving." Remember—Del Grande is 75.

Transition to arthroscopy

When, finally, he saw Stanford orthopaedic surgeon Timothy McAdams, surgery was his only option and, finally, arthroscopy had come to the shoulder. It had been recent: McAdams, who graduated from medical school in 1995, was trained in the long-incision procedure. However, in the six years of advanced training in surgical orthopaedics that followed for him, the tools and techniques of arthroscopic surgery developed as the norm. In 2001, the transition from the old, open shoulder entry to arthroscopy's less damaging procedure was complete.

"I plan to be an athlete all my life."

—Kevan Del Grande, handball champion and Stanford Sports Medicine patient

It is not simple surgery. Physicians use a very different set of skills. With open surgery, the doctor holds the surgical tools in his hands and uses them. With arthroscopy, the surgeon is operating remotely, seeing inside the body with a tiny surgical camera and managing sutures and graspers. Instead of looking right down into



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McAdams was trained in open shoulder surgery, but today, the preferred approach to rotator repair is with small arthroscopic instruments.

the body, the surgeon must triangulate his or her actions.

Today, all rotator cuff surgeries are performed arthroscopically and because that does so much less collateral damage, patients can go home the same day. Along with the new procedural instruments, physicians use newly developed sutures and anchoring bolts to reattach the cuff's tendons to bone. Stronger plastics makes the sutures more durable and the redesigned anchor can be made of material that ultimately melts away when the healing is complete.

Seeking more knowledge

Stanford Hospital sports medicine doctors are looking forward to their move to the new Stanford Medicine Outpatient Clinic in Red-

wood City, opening in February. There, the Orthopaedics Department will have a substantially improved and expanded area for state-of-the-art surgical, clinic and workspace that will enhance their research to clear the next set of hurdles.

"We're working with the University's sports medicine program to understand the body in action more completely," Fanton said,

"and to develop new training techniques and new ways to retrain and recuperate after injury. Better methods of healing will likely be at the cellular and biochemical level."

Corralling the body's own growth factor-loaded proteins is being widely studied, McAdams said. Those proteins, injected directly into an injured area, might one day be a routine part of healing.

And, added Fanton, perhaps addressing stoic folks like Del Grande. "We're looking at repairing tendon problems before they become huge."

That is all good news for Del Grande. He is back to winning national singles titles. "I plan to be an athlete all of my life," he said. The improvements in development—might just make it possible for him to do that, even at his full speed ahead pace.



Norbert von der Groeben

Del Grande is back in the game, playing the way he always has: full speed ahead.

Stanford Hospital & Clinics is known worldwide for advanced treatment of complex disorders in areas such as cardiac care, cancer treatment, neurosciences, surgery, and organ transplants. Consistently ranked among "America's Best Hospitals" by U.S. News and World Report, Stanford Hospital & Clinics is internationally recognized for translating medical breakthroughs into the care of patients. The Hospital is part of the Stanford University Medical Center, along with the Stanford University School of Medicine and Lucile Packard Children's Hospital at Stanford.