

Winter 2008

Foundation News

Steadman ♦ Hawkins Research



photo: John Kelly

FOUNDATION FOCUS

The 20th Anniversary of a Vision That Became a Reality

By Mike Egan, Chief Executive Officer, Steadman♦Hawkins Research Foundation

In 1988, Dr. Richard Steadman had a vision of documenting the results of every patient treated at the Steadman-Hawkins Clinic, but he didn't have a vehicle to make his vision a reality. As a result, he founded what is now known as the Steadman♦Hawkins Research Foundation — the perfect platform to house a base of scientific evidence that would support some of his innovative orthopaedic techniques, including the breakthrough procedure of microfracture.

This year we are celebrating the 20th anniversary of the Foundation. It has become an internationally recognized research institute that is leading the world in sports medicine clinical research. The Foundation makes it possible to collect, organize, analyze, and make available to the world's medical and research communities hundreds of data points on every Steadman-Hawkins patient. We don't pick and choose whose data will be entered into the database. We include everybody. This vast collection of information positioned the Foundation as a leader in evidence-based medicine long before the term became popular.

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An International Center for Research and Education—Keeping People Active

2006 Charitable Giving Figures*

In 2006, charitable giving reached another record: \$295.02 billion. Individuals, the most important category, increased their giving 4.2% to \$222.9 billion. Giving by individuals accounted for 75.6% of all of 2006 giving.

Bequests, an important source of funds for non-profits, came in at about \$22.9 billion, a 2.1% decline. Bequests represent roughly 7.8% of the estimated total.

Grant-making by foundations rose 12.6% to \$36.5 billion, or 9.1% of the total. Donations by corporations or corporate foundations declined by 7.6% to \$12.2 billion.

*Source: Giving USA Foundation

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SELECTIVE SUPPORT

What we have today in the Foundation is a research institute that allows organizations and individuals to be selective in their support of research programs. If they feel strongly about anterior cruciate surgery, hip arthroscopy, shoulder conditions, high-tech diagnostic tools, or any number of other ongoing research initiatives, the Foundation can provide an avenue to channel their interests in the right direction.

Everyone who supports a research study, whether it's at Stanford, the Mayo Clinic, the Hospital for Special Surgery in New York, or Steadman-Hawkins, wants to know how efficient the organization is going to be with their money. At Steadman-Hawkins, the answer to that question is that we're more than twice as efficient as other research institutions because our overhead is half as much. (Our current "Patients in the News" donor, Lee Schmidt (page 11), commented that a deciding factor in her decision to fund a research project at the Foundation was that "we had confidence in the way our donation would be used.")

TEAM EFFORT

An important element in the realization of Dr. Steadman's dream is the people around him. Many of the key staff members, doctors, Howard Head rehabilitation personnel, board members, and scientists have known him since the inception of the Foundation.

I was fortunate to have met Richard Steadman before the Foundation began. In fact, my company was the first corporate contributor in the late 1980s. We made a substantial donation because Dr. Steadman was such a believable and sincere person. The qualities embodied in his personality have been transferred to the Foundation and have allowed it to raise more than \$33,000,000 over the past 19 years. Those funds have made it possible to reach our ultimate goal, which is to create the number one sports medicine research institute in the world.

Richard Steadman's personality and vision have attracted an extraordinary number of world-class physicians and scientists. I was particularly impressed when I heard that Dr. Marc Philippon had been recruited out of the University of Pittsburgh to come to Vail. At a relatively young age, he already has a worldwide

Not If, But When

When do you want to make a difference? You can easily make a gift that won't impact your cash flow or portfolio — one that complements your personal lifestyle and financial goals, but allows you to change the future. That's a powerful difference to make, but to do so you need only remember the Foundation with a bequest in your will or revocable trust or designate the Foundation a beneficiary of a portion of your retirement plan.

To make a difference today, you can create a named fund that provides funds, expendable today, for any of our programs — from our Fellowship Program to our Biomechanics Research Laboratory. For example, you can create the fund in your name or to honor a loved one to further education and research in the areas below:

The "O.B. Shelburne" Fellowship Fund

The "John Smith" Fund for Gene Therapy in Cartilage Development

The "Gustafson Family Foundation" Five-Year Academic Chair

Or call us. We would be pleased to discuss opportunities to create a fund that matches your specific interests. If you are considering a bequest, we invite you or your advisor to call us for the bequest language you need.

**For more information, please contact
John McMurtry at 970-479-5781 or john.mcmurtry@shsmf.org.**



photo: John Kelly

reputation in hip arthroscopy. We have started to establish a succession process for the Foundation, and Dr. Philippon is a perfect example of the kind of person who will carry on the type of work begun by Dr. Steadman.

PLANNING FOR THE FUTURE

We are in the planning stages of developing a world-class facility to house our sports medicine institute, and we are working with various constituencies in Vail to make that happen. On our 25th anniversary, we plan for the institute to be a fully operational orthopaedics-only hospital, imaging, and rehabilitation center with a staff of 20 physicians.

We are also very excited about several events during 2008 that will celebrate the Foundation's accomplishments and give a preview of where we're headed in the future.

One of those events was a reception held on March 5 at the de Young Museum in San Francisco during the annual meeting of the American Academy of Orthopaedic Surgeons. Many physicians, industry executives, colleagues, former Steadman-Hawkins Fellows, and donors joined us at the celebration. It was just one of the ways to express our appreciation for their support. Other 20th anniversary events will be announced very soon.

Finally, we also want to thank the doctors, patients, sponsors, staffers, board members, supporters, and especially donors for helping us carry out the vision Dr. Steadman had 20 years ago when he established this Foundation.



STEADMAN-HAWKINS UPDATE

Publications, Presentations & Research

Karen Briggs, M.B.A., M.P.H., Director of Clinical Research, reports that 2007 was a record year for Foundation research, resulting in the following publications and presentations:

- More than 20 journal publications
- More than 20 book chapters
- More than 40 research projects and presentations at national and international meetings:
 - Annual meeting of the American Academy of Orthopaedic Surgeons (AAOS)
 - World Congress on Osteoarthritis
 - International Society of Arthroscopy, Knee Surgery, and Orthopaedic Sports Medicine
 - International Cartilage Repair Society

At the AAOS Sports Medicine Section, the Foundation had double the presentations (10) compared to the University of Pittsburgh, Hospital for Special Surgery (New York City), Harvard, and Kerlan Jobe.

Mike Torry, Ph.D. (see page 4), Director of the Biomechanics Research Laboratory, also reports a prolific year in 2007:

- Eleven conference abstracts; nine submitted in 2008
- Seven refereed publications; eight in review or in preparation
- Six invited lectures
- Media coverage: NBC Today Show, National Public Radio, the *Vail Daily*

February 2008 *American Journal of Sports Medicine*

The lead editorial in the February 2008 *American Journal of Sports Medicine*, "The Next Generation," by Bruce Reider, refers to the many new cartilage repair techniques that have been proposed and used the past ten years. His editorial stressed that these new techniques are more costly than microfracture, in some cases more invasive, and have not been proven to be superior. Dr. Steadman pioneered microfracture and the Foundation developed and validated the procedure.

As an example, autologous chondrocyte implantation (ACI) was greeted in the mid-1990s with an initial period of enthusiasm. This was followed with a "growing awareness of its inherent limitations and potential complication. The inescapable facts are that ACI required two surgical procedures, including an arthrotomy and periosteal harvest, and was technically demanding, not to mention costly."

Mike Torry, Ph.D., Director of the Biomechanics Research Laboratory, reports that the paper "A Biomechanical Analysis of Youth Pitching Mechanics," Hackett T, Torry M, et al., has been accepted by the *Journal of Pediatric Orthopaedics*. The purpose of this research is to increase our understanding of youth baseball pitching mechanics. This new knowledge will aid parents and youth

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photo: John Kelly

Dr. Michael Torry

MEET OUR TEAM

Dr. Michael Torry Selected to Attend The National Academies Keck Futures Initiatives

By Jim Brown, Executive Editor, *Steadman♦Hawkins Research Foundation News*

Michael R. Torry, Ph.D., Director of the Biomechanics Research Laboratory at the Steadman♦Hawkins Research Foundation, was one of only 100 scientists in the world invited to be a participant in the National Academies Keck *Futures Initiatives* that convened recently in Irvine, California.

The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and the National Research Council, collectively known as the National Academies, underwrites the Futures Initiatives, a program designed to stimulate new ways of thinking and to break down the barriers that have traditionally existed between various research disciplines. These experts serve as volunteers to address critical national issues and give unbiased advice to the federal government and the public.

"I was recommended by Dr. Savio Woo, a member of the Steadman♦Hawkins Research Foundation Scientific Advisory Committee," says Dr. Torry. "It was a very unique opportunity. Being one of the 100 participants was a great honor—the greatest of my career. I am very grateful to Dr. Woo for giving me this opportunity. He could have chosen many, many others instead.

"We were assigned to one of ten sub-groups, each with a problem to solve during the four-day conference. The general theme was the role of nature, nurture, and chance in regard to the human aging process. Our sub-group looked at cellular and molecular mechanisms of biological aging. One challenge was to address the problem. We were instructed and expected to think outside of the box and employ any and all skills and assets [regardless of cost] to get to the best answer. Starting to think

openly and freely like that was initially very strange to most of us, who typically work under strict budgetary mandates. The other was getting your viewpoint across to nine other people with very diverse opinions. In many ways, the whole working structure and the small-group dynamics was a psychological experiment in and of itself. The room we were in and the dialogue wasn't always warm and friendly. Everyone's ideas and viewpoints were openly weighed, critiqued, refuted, and rebuffed.

"The experiences outside of the formal meetings were just as interesting and helpful as the formal proceedings," recalls Dr. Torry. "On one occasion, I had lunch with the president of Aetna Insurance, who talked about the nuances of managing a \$24 billion budget for his company. On another chance meeting, I spoke at length on a personal level with Dr. Eric R. Kandel, winner of the 2000 Nobel Prize in Physiology or Medicine. I met a 23-year-old guy with his Ph.D. who runs his own lab at M.I.T. and a young woman who is the foremost leader in the world (recognized and decorated by the World Health Organization) for discovering different methods to remove scum from standing water and ponds so it can be turned into viable drinking water. I could go on and on. There were some amazing people there. It was quite a humbling experience on all levels."

OTHER AWARDS

This is not the first honor Dr. Torry has received. While completing his Ph.D. at Southern Illinois University, he was given the Doctoral Dissertation Award, the university's highest student achievement honor. In 1999, he received the Clinical Biomechanics Award from the International Society of Biomechanics. In 2000, he was recognized with the Scherb/Novartis Award for the best clinical paper by the International Society of Biomechanics; and in 2001, he was a finalist for the Neer Shoulder Award for research published in the *Journal of Shoulder and Elbow Surgery*. The next year he co-authored a paper that won the *Journal of Biomechanics* Award at the World Congress of Biomechanics. Since

2004 he has served as president of the Biomechanics Interest Group for the American College of Sports Medicine, while making presentations around the world, publishing numerous papers, and reviewing others for scientific journals, including the *Journal of Orthopaedic Research*, the *Journal of Biomechanical Engineering*, the *European Journal of Applied Physiology*, and the *Journal of Applied Biomechanics*.

BEYOND AWARDS

However, being honored by prestigious national and international organizations is not what Dr. Torry does on a daily basis. In his position as Director of the Biomechanics Laboratory at the Foundation, he oversees an average of 7-10 projects every year. They include trying to discover the cause of the disproportionate number of anterior cruciate ligament (ACL) injuries in female athletes and investigating the types and causes of hockey injuries.

One of the most important and most time-consuming research efforts is the development of dual-plane fluoroscopy, which combines MRI/CT and X-ray data to record real-time movement. This technology will create a set of 3-D images that can be viewed from any perspective, and it will be accomplished with an unprecedented degree of accuracy.

"With this research tool we can educate doctors about what is happening inside a joint and help them make more informed clinical decisions," explains Dr. Torry.

Dr. Torry adds that he and other scientists and physicians are able to conduct their research and earn worldwide recognition because of the special Steadman◆ Hawkins Research Foundation environment. "The Foundation is a research entity, the Clinic represents the medical/hospital component, and the Howard Head Sports Medicine Center is the rehabilitation arm — all separate legal entities, but all working together under the same roof without the bureaucracy associated with other medical and academic institutions. It's a very unique place."

A GRATEFUL DISPOSITION

"I have enjoyed great success in my career already, but I also know many, if not most of these accolades would not be possible without the right support. It starts with my parents (married 50 years in April), who made sacrifices to put three kids through college. My older twin brothers, Don and Ron, hold Ph.D.s in physiology and immunology and have their own impressive research laboratories and careers. Combined, that is 33 years of college! Then there is my wife, Greta, a closet scientific researcher in M.B.A. clothing who keeps me thinking. There are also my former advisors, Drs. Steve McCaw and Paul DeVita at Illinois State University and East Carolina University, who gave me the basic educational skills for success. Current advisors such as Drs. Woo, Arnoczky, Pandy and Ho continually encourage and challenge my group to excel. Staff members Drs. Shelburne and Giphart have taken the biomechanics research to unprecedented levels. And of course, there is Dr. Steadman, who had the vision to create this place. None of these experiences would have been possible without these people."



Dr. Mike Torry at the controls of the skating treadmill.

photo: John Kelly

rotator cuff rehabilitation programs are based on anecdotal clinical observation. Along with our colleagues from Harvard and Vail, we have recently published several papers that systematically reviewed current medical literature on shoulder rehabilitation. In these studies we have developed rehab protocols that are based on the best available knowledge of basic science and clinical observation. These protocols are now being implemented, taking into account important variables such as the underlying tissue quality and structural integrity of the surgical repair.

EVIDENCE-BASED TREATMENT

A major focus of the Steadman-Hawkins Research Foundation is evidence-based medicine. We had two recent articles on rotator cuff rehabilitation, including "Rehabilitation of the Rotator Cuff: An Evaluation-Based Approach," published by the *Journal of the American Academy of Orthopaedic Surgeons*, and an invited article entitled "Rehabilitation for Rotator Cuff Tears," which was co-authored with Dr. Colin Looney (Fellow, class of 2007) and physical therapists Dirk Kokmeyer and Christy Allwein, for the Italian journal *Minerva Ortopedica e Traumatologica*. These articles summarize the current evidence-based information regarding the basic science of rotator cuff tendons. Moreover, they serve as systematic analyses of the elements that affect rotator cuff disease progression and the biological components of the healing process, such as anatomy and biomechanics, disease properties, tendon healing abilities, and rehabilitation factors. The articles also highlight specific guidelines for non-surgical and surgical management for tendon injuries.

While most patients with rotator cuff disease will benefit from surgery, there are some patients in whom surgery may not be indicated (the very elderly, those with significant other diseases, etc.). The ultimate goals in such patients are to eliminate pain and restore function. The initial objectives are to decrease swelling and restore pain-free motion. Once pain-free motion is achieved, strengthening programs can teach the remaining rotator cuff tissues to compensate for the torn tendons.



Dr. Millett repairing a rotator cuff using an arthroscope.

In most instances, rotator cuff tears should be repaired surgically, as the results from surgery are better than non-operative treatment; and furthermore, we know that rotator cuff tears tend to progress with time, becoming larger, more painful, and more functionally debilitating. After surgical repair, it is important to protect the cuff tendon because excessive early loading can result in a re-tear. If the cuff tissue quality is good and the repair construct is strong, early assisted motion can be recommended. Therefore, in all but the smallest repaired tears, the arm should be protected for at least four to six weeks while the tendons heal back to the bone.

Another key to postoperative treatment is adequate pain control. Optimally, physical therapy should be started after the procedure in the postoperative care unit and continued twice a day for the next few days. The shoulder team in Vail works closely with the anesthesiologists, who can provide long-acting nerve blocks to minimize postoperative pain. Physical therapy begins with daily sessions and then tapers to six to three days a week, depending on the progress. After four to six weeks, patients begin moving their arm on their own and wean it from the sling. Strengthening begins at seven to ten weeks, depending on the severity of the tear, and progresses to advanced strengthening at around 16 weeks. Full activity with return to sports such as golf and tennis is typically allowed at four months after surgery.

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The treatment of rotator cuff disease presents unique challenges for the orthopaedic surgeon, therapist, and patient. Thanks to the work of the shoulder team at the Steadman♦Hawkins Research Foundation, we are achieving better outcomes for our patients, with more answers and fewer questions. A major goal of the shoulder team is to track patients through their continuum of care from initial assessment, to surgery, through rehab and recovery, and then to follow their progress over time. We currently have several ongoing projects that will provide additional insight as they come to fruition. Patients' recoveries from surgical treatment are tracked based on yearly questionnaires that assess improvement of shoulder function in an effort to improve the quality of patient care. The data is then analyzed and shared with the clinical and rehab teams in a continuous quality improvement process. The entire effort is team-driven and, in the end, not only allows our patients to achieve better outcomes but also allows our physicians to have more information so that our patients can be better educated on what to expect during treatment and recovery.

Millett PJ, Wilcox RB, O'Holleran JD, Warner JJP. Rehabilitation of the Rotator Cuff: An Evaluation-Based Approach. *Journal of the American Academy of Orthopaedic Surgeons*. 14 (10): 599-609, Oct 2006.

Hatch RGF, Gobeze R, Millett PJ. Stiffness After Rotator Cuff Repair. In *Complications in Orthopaedics: Rotator Cuff Surgery Monograph*. Editor, Green A. *Journal of the American Academy of Orthopaedic Surgeons*, Jan 2007.

Looney CG, Kokmeyer D, Allwein CS, Millett PJ. Rehabilitation for Rotator Cuff Tears. *Minerva Ortop Traumatol*, to be published in 2008.



Smith & Nephew Endoscopy Awards Grant To Support Research and Education

After six years of successful collaboration with Steadman♦Hawkins Research Foundation researchers, Smith & Nephew Endoscopy, a leading provider of arthroscopy tools and techniques, has renewed its commitment to the Foundation.

In 2002, Smith & Nephew Endoscopy awarded the Foundation an educational grant for orthopaedic and arthroscopy research. As part of the grant, Smith & Nephew Endoscopy provided state-of-the-art endoscopy devices for use in the Steadman-Hawkins BioSkills Lab.

"Our partnership with the Steadman♦Hawkins Research Foundation has resulted in valuable research that helps us, as a medical device innovator, learn more about joint injuries and the most effective way to treat them," said Mike Frazzette, president, Smith & Nephew Endoscopy. "We are pleased that the research our grants underwrite will help patients around the world resume their active lifestyles."

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PATIENTS IN THE NEWS

Lee Schmidt: A Lesson in the Art of Giving

By Jim Brown, Ph.D., Executive Editor,
Steadman•Hawkins Research Foundation News

Lee Schmidt is a Santa Fe artist and photographer. She is also a wife, mother, grandmother, businesswoman, horse-woman, teacher, and civic volunteer — all worthy titles, but to an outside observer, the thing Lee Schmidt does best is give. She is a third-generation philanthropist with a family history — perhaps even a family mandate — of donating time, resources, and energy to causes that make differences in the lives of people around the world. Her grandfather established the Wheless Foundation, which has given substantial amounts of money to medical research (including the Steadman•Hawkins Research Foundation), educational institutions, religious organizations, and charities. And that's just the short list.

Lee's father, a leader in the oil and gas business, has a well-documented record of generosity and involvement with the Shreveport, Louisiana, community. "At 91," says Lee, "he is still the driving force behind the Wheless Foundation. He made me a member of the Foundation's board and taught me a lot about the process of making grants."

Lee and her three adult children, Tracey, Emily, and Hobson, established the Gumbo Foundation in 2002. The title reflects Lee's Louisiana roots and a wide variety of causes supported by the Foundation. She is president, her children are board members, and her husband Paul, a prominent Santa Fe attorney who specializes in estate planning, serves as secretary-treasurer and counsel and executes the decisions of the board.

"Our grants," explains Lee, "have been made to food banks, environmental organizations, medical centers, animal shelters, hurricane Katrina rebuilding efforts, art education, international aid agencies, and institutions of higher learning, including Centenary College [where Lee graduated and later served as a trustee], MIT [her father's alma mater], Tulane, Georgia Tech, Emory, and the University of North Carolina."



Lee Schmidt with her friend Fagin.

GETTING TO VAIL

Lee had experienced a series of orthopaedic problems, including a torn rotator cuff and detached tendon. "I had lost function of my right arm and hand to the point of not even being able to hold a glass of water," she recalls. A Santa Fe friend suggested that she call the Steadman-Hawkins Clinic and try to schedule an appointment with Dr. Richard Hawkins, the renowned shoulder surgeon who joined Dr. Richard Steadman in 1990. Within two weeks she was in Vail and saw Dr. Hawkins, who performed surgery to repair her rotator cuff and reshape her shoulder socket.

Over the past eight years, she has been treated by Dr. Peter Millett, Dr. Randy Viola, and Dr. David Karli for other orthopaedic problems. "Every time I put on a coat, reach up to do anything, or paint on my easel, I think of Dr. Millett," she says. "The outcomes were 100 percent what he promised me. I would go back to Dr. Millett without hesitation, and I would recommend him to anyone who has a shoulder or knee problem.

"I consider myself a walking ad for the Steadman-Hawkins Clinic.

"When Dr. Viola gave me his cell phone number to call if I had any questions or problems related to my medical condition,"

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“I can’t tell you how many times I’ve given a Newsletter or a copy of one of its articles to someone else. I encourage those of you who are reading this issue to share it with friends and relatives.”

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says Schmidt, “I realized that this was a different kind of place. It turned out to be just one way that Steadman-Hawkins Clinic and Foundation staff members go out of their way to make you a part of their team.”

WAITING ROOM READING MATERIAL

During a visit to the Clinic, she picked up a copy of the *Steadman♦Hawkins Research Foundation News*. At first, the programs described in the newsletter seemed to be interesting reading, but the more she read, the more she started to consider a possible relationship between the Wheless Foundation and the Steadman♦Hawkins Research Foundation. That interest led to a series of annual grants.

In 2002, the support expanded to include grants from the newly formed Gumbo Foundation. Again, the *Steadman♦Hawkins Research Foundation News* played a useful role in the process. The newsletter insert included an envelope to send a donation or to get more information. Lee did neither. Instead, she called the Foundation for details and spoke with Vice President for Program Advancement John McMurtry.

John sent her two proposals. One involved the Foundation’s Fellowship Program, which enables young physicians to come to Vail and continue their orthopaedic training with some of the world’s elite scientists and surgeons. The second was an opportunity to partially fund the development of dual-plane fluoroscopy. This technology will allow surgeons to look inside a person’s knee, hip, or shoulder joint during real-time movement with comprehensive accuracy.

“I asked John to let me talk with my children about which option to choose,” she says. “All three of them wanted to support the research project. My experience

on the other side of fundraising efforts influenced my decision. Some grant money comes more easily than others, and I sensed that research projects like this one might have more difficulty in getting outside funding. Also, with Steadman-Hawkins, we have confidence in the way our donation will be used.”

The Gumbo Foundation’s five-year commitment to dual-plane fluoroscopy technology will make it a pioneer in supporting research that will change the face of orthopaedic surgery.

SPREADING THE WORD

“I want to tell people who might consider supporting the Steadman♦Hawkins Research Foundation that they can be part of an effort that helps in exponential ways,” Lee volunteers. “The Foundation shares its data and research findings with other physicians. The Fellows spread the expertise they acquire at Steadman-Hawkins with their patients and colleagues from now on. Supporting the Foundation is a way to support healing everywhere in the country.”

Lee also has some kind words for the Newsletter and some advice for those who read it. “I had no personal contact with the Foundation before reading the Newsletter, but the invitation to become a supporter was inviting, it presented a giving alternative that our group could handle, and it told me whom to call and how to get more information. I called them. They didn’t have to call me.

“I can’t tell you how many times I’ve given a Newsletter or a copy of one of its articles to someone else. I encourage those of you who are reading this issue to share it with friends and relatives,” she concludes.

Lee Schmidt first came to Steadman-Hawkins to receive something as a patient, not to give. That quickly changed. She started giving back to the Foundation and continues to do so. She can’t help herself. It’s in her DNA. It’s who she is. Now she’s an unofficial, unabashed, unpaid advocate for the life-changing work being done by the Steadman♦Hawkins Research Foundation. She thinks you ought to be one, too.



SPORTS AND WELLNESS

About Your Shoulder....

By Christy Allwein, P.T., O.C.S.

Editor's note: Christy Allwein is an outpatient orthopaedic and sports physical therapist at Howard Head Sports Medicine Center in Vail, Colorado.

The shoulder is truly an amazing joint. It affords mobility in nearly 180 degrees in three different planes of motion, while providing stability to carry on an infinite number of activities. Whether it's climbing a ladder or climbing a rock, tomato planting or pole planting, your shoulder provides both the mobility and the stability to complete the task.

The four joints of the shoulder complex include the **scapulothoracic joint**, the **glenohumeral joint**, the **acromioclavicular joint**, and the **sternoclavicular joint**. All four joints attach by ligaments and/or muscles. The glenohumeral joint, once referred to as a ball and socket joint, is now more accurately described as a golf ball on a tee to depict the structure of the larger "ball" of the humeral head on the shallow glenoid "socket." This description illustrates the reason for the shoulder's dynamic capabilities.

Shoulder mobility does come with a price, however. The range of shoulder disorders and their causes are numerous. Rotator cuff tears, shoulder instability, arthritis, and "frozen shoulder" rank among the most common. The shoulder relies largely on muscles to provide stability for the joint. By keeping the shoulder musculature flexible and strong, the risk of shoulder injury decreases.

The best way to prevent shoulder injury is to maintain both strength and flexibility and get immediate treatment for minor shoulder injuries. Taking care of injuries early can prevent them from becoming larger problems. Almost every shoulder can benefit from exercise after being screened appropriately for any underlying pathology.

When designing a program for the shoulder, I always look first at the movement patterns of both shoulders in various planes. Are the movements symmetrical and pain-free? Are the right muscle groups firing at the right times? Is the range of motion smooth and full? Analysis of the movement pattern helps to key in on weaknesses or imbalances that necessitate a

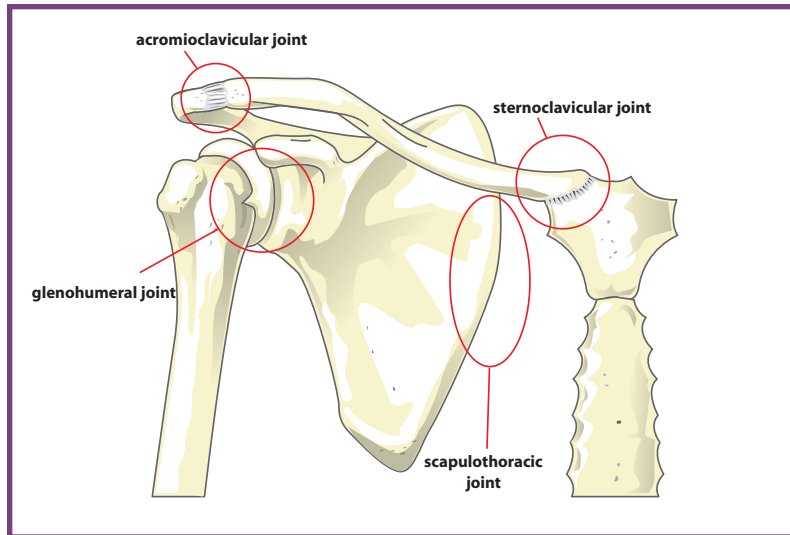


Illustration: Marty Bee

tailored home exercise program. Strength testing can further identify muscles needing attention. If the motions of the shoulder are pain-free, smooth, symmetric, and full, then a generalized shoulder program is appropriate.

Starting with the **glenohumeral joint**, a good rotator cuff strengthening program is essential for injury prevention. Two great exercises for the rotator cuff are external rotation and internal rotation. For *external rotation* (figure 1a), secure a band in a closed door close to the floor. Place a medium-sized rolled towel between your elbow and side. Grab the band and pull up and out, keeping the elbow at a 90-degree angle (figure 1b). Return slowly to the start position.

For *internal rotation*, the motion is similar, only now the resistance band is secured at the top of a closed door. Place a medium-sized towel roll between your elbow and side. Grab the band and pull down and in, keeping the elbow at a 90-degree angle (figure 2a). Return slowly to the start position (figure 2b).

The **scapulothoracic joint** can be strengthened with *forward punches* and *reverse rows*. To perform a *forward punch*, attach the resistance band in a door just below chest level. Facing away from the door, grasp the band and, starting with the elbow bent at your side (figure 3a), punch the arm forward with an extra reach at the end with the elbow straight (figure 3b). Return slowly to the start position.

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The four joints of the shoulder complex include the scapulothoracic joint, the glenohumeral joint, the acromioclavicular joint, and the sternoclavicular joint.



Fig 1a External Rotation



Fig 1b External Rotation



Fig 2a Internal Rotation



Fig 2b Internal Rotation



Fig 3a Forward Punch

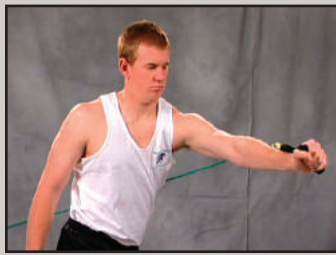


Fig 3b Forward Punch

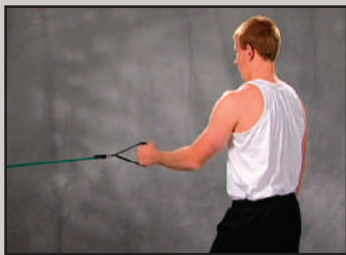


Fig 4a Reverse Row

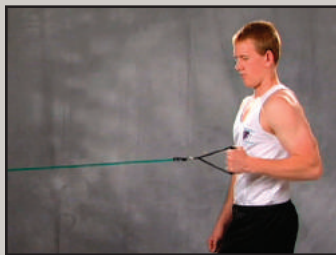


Fig 4b Reverse Row



Fig 5 Cross Arm Stretch



Fig 5 Cross Arm Stretch



Fig 6 90/90 Stretch

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Reverse rows can be easily performed by reversing the direction. With the resistance cord in the same position as the forward punch exercise, stand facing the resistance cord (figure 4a), and pull the elbow back just past the body (figure 4b). Return to the start position slowly.

For each of the exercises, the resistance should be adequate to cause fatigue at about 12-15 repetitions. Once basic rotator cuff and scapular training is mastered, you can progress to multi-planar and sport-specific exercises with the help of a physical therapist, athletic trainer, or personal trainer.

General flexibility is also important in maintaining proper shoulder function. Two very effective stretches include the *cross arm stretch* (figure 5) and the *doorway 90/90 stretch* (figure 6). Hold each for 60 seconds at the point where a mild to moderate stretch is felt, and repeat 2-3 times. Exercises targeting core and lower extremity strength as well as a good aerobic conditioning program will round out your training program.

The dichotomy of the shoulder makes it one of the most fascinating and diverse joints in the body. To work effectively, it must be both dynamically mobile and enduringly stable. When all of the muscles, bones, ligaments, and cartilage structures are working in perfect accord, we can best use our shoulder, whether to lift a backpack onto our back or lift a kayak over our head. Be sure to keep yours in good working order by keeping it both strong and flexible!



Why Exercisers and Athletes Don't Drink Enough While Working Out

Adapted from the Gatorade Sports Science Library/Sports Science Exchange

During exercise, many athletes and recreational exercisers seem to avoid drinking, even though they know that rehydration is likely to improve their performance.

The amount and frequency of taking in fluids is determined not only by the physiological signals in our bodies that tell



photo: John Kelly

our brains when it's time to start or stop drinking, but also by the types of beverages that are conveniently available, by what we have learned about drinking during exercise from coaches, fellow athletes, and parents, and by a variety of other physical and emotional factors.

To help us better understand why athletes typically don't drink enough to replace the body fluids they lose during exercise and to provide us some tips on how to improve athletes' rehydration practices, the editors of Gatorade's Sports Science Exchange asked a panel of experts in this field to address some of these issues. Following is a summary of their conclusions. Each conclusion is followed by a comment from one of the panel members.

- Most athletes lose substantially more body fluids through sweat than they replace by drinking during exercise. This so-called "voluntary dehydration" can have serious implications for health and performance.

Comment: "When I work with athletes, I address fluid intake before, during, and after exercise training before I tackle any other diet issues. Using this approach, I try to convey the primary role that fluids play in performance and in preventing heat illness. Athletes who increase their fluid

intake during training often feel the positive effects immediately."

- An athlete's failure to drink sufficient fluids is caused by many factors, including 1) the physiological inhibition of thirst that occurs after moistening the mouth with a beverage, 2) the uncomfortable sensation of fluid in the stomach, 3) poor access to beverages during exercise, 4) poor quality of available beverages, and 5) a lack of education about the need to drink during exercise.

Comment: "Surprisingly, if cold palatable beverages are within arm's length of well-trained, experienced, exercising athletes, most do drink enough to offset sweat losses. However, if they have to move even a short distance to get a drink bottle, voluntary dehydration usually occurs. This suggests that a complex behavioral component is involved in determining fluid consumption by exercising athletes. In less experienced athletes during exercise, and in almost all athletes after exercise, fluid intake rarely balances sweat loss."

- After becoming dehydrated, elderly individuals tend to drink less than their younger counterparts.

(continued on page 16)



photo: John Kelly

(continued from page 15)

Comment: "Many studies have shown that dehydrated older individuals feel less thirsty and consume less fluid than do their younger counterparts. This is true even when older and younger people experience the same degree of dehydration. As we age, we seem to lose the ability to appropriately sense the loss of blood volume that accompanies dehydration, and we respond by drinking less."

- Athletes can be trained to become "better drinkers" before, during, and after exercise.

Comment: "Athletes can be trained to drink more fluids, but whether or not most of them can be trained to drink enough during exercise to replace all fluids lost in sweat is questionable. I encourage athletes to 'train their guts' to tolerate more fluids while they train their muscles to tolerate more exercise. By giving them specific guidelines for how much and when to drink and ensuring that they practice drinking during training, they can see for themselves how replenishing fluids benefits their performance. I like to attend practices and serve as a 'fluids and fuels' coach."

- Improving the flavor of a beverage can dramatically increase the consumption of fluids during exercise.

Comment: "One of the many factors that contributes to insufficient drinking during exercise is the poor quality of the available beverages. For example, if the beverage is chilled and flavored, drinking can be more than doubled when compared to plain unchilled water. Optimizing the flavor and providing flavor variety can increase fluid consumption even more."

- Although athletes will drink more of a cool beverage than a warm one, the temperature of the drink has no important effect on core body temperature.

Comment: "Cold beverages are more palatable during and after exercise, and this greater palatability will increase fluid consumption by athletes. Drinking cold beverages causes a slight transient cooling of the upper digestive tract, but this has only a trivial effect on core body temperature. The amount of heat generated by the contracting muscles is much greater by comparison."



(continued from page 3)

coaches in teaching safe pitching techniques to children and adolescents with the hope of reducing or eliminating injuries in Little League pitchers.



British Medical Journal Ranks Evidence-Based Medicine as a Top Medical Breakthrough

FOUNDATION LEADS THE WAY

The development of evidence-based medicine (EBM) by researchers at McMaster University in Hamilton, Ontario, has been selected by the prestigious *British Medical Journal* as one of the 15 greatest medical breakthroughs of the past 166 years. Other medical milestones include the development of anesthesia, antibiotics, the birth control pill, and vaccines.

Dr. Marc Philippon, a member of the Board of Directors of the Steadman-Hawkins Research Foundation and one of the world's leading orthopaedic hip surgeons, earned his medical degree from McMaster.

EBM is healthcare practice based on integrating knowledge gained from best available research evidence, clinical expertise, and patient values and circumstances. Readers of this pre-eminent medical journal nominated 70 milestones, then a panel of editors and advisors narrowed the field to 15.

According to an article published by the *British Medical Journal*, "Evidence-Based Medicine: Increasing, Not Dictating, Choice,"¹ the milestone evolved from changes in our culture with a growing recognition that:

- The systematic synthesis of all reliable information on a topic has greater value than traditional reviews.
- Bias can explain results in many individual studies, and randomized clinical trials are now recognized as the study design that is best suited to avoiding bias in questions of intervention effectiveness, although other types of study may be better for other types of questions.
- Tragedy can result from paying attention to poor quality evidence instead of good quality evidence.
- Clinicians need information, and they don't get enough from the sources they typically use.
- The medical literature is growing exponentially, and there is not enough time in the day to read even the good content.
- Undesirable gaps and variation in practice exist.

When Dr. Steadman established the Foundation 20 years ago, his objective was to create the best clinical



photo: John Kelly

research group in the world for sports medicine and EBM. It is something that has been practiced ever since, and it has been the starting point for research at the Foundation. The practice of EBM was a key factor in Dr. Philippon's decision to join Dr. Steadman in Vail.

Since 1993, the records of every patient seen at the Steadman-Hawkins Clinic have been entered into a database. Approximately 670 pieces of evidence-based information, objective and subjective, exist on every patient. There are now more than 15,000 knees (meaning surgical procedures on knees), 5,000 shoulders, and more than 2,000 hips in the database. Patient outcomes are tracked 5-10 years after surgery. The goal is to monitor progress over a number of years to determine how long patients experienced continued improvement and whether they required additional surgery. The evidence-based information related to patient outcomes is made available to physicians around the world through presentations and publications, contributing to their continuing medical education.

Examples of how the Foundation's database has changed surgical procedures include the development and validation of microfracture. Thirteen years ago only a small percentage of the world's surgeons performed microfracture, a procedure to grow and repair cartilage. Today, because of the research of the Foundation and the publication of its findings, it is a procedure routinely used by orthopaedic surgeons to relieve pain and slow the progression of arthritis in the knee. More than one million patients around the world have benefited from this procedure.

1. Evidence Based Medicine: Increasing, Not Dictating, Choice, *British Medical Journal*, January 6, 2007, Kay Dickersin, professor, Department of Epidemiology, Johns Hopkins University Bloomberg School of Public Health; Sharon E Straus, associate professor, Department of Medicine, University of Calgary, Calgary, Alberta, Canada; Lisa A Bero, professor, Department of Clinical Pharmacy and Institute for Health Policy Studies, University of California, San Francisco.

FREQUENTLY ASKED QUESTIONS

HOW IS EVIDENCE-BASED MEDICINE USED TO GUIDE PATIENTS?

Dr. Peter Millett writes (see page 6): Thanks to the work of our clinical research scientists at the Foundation, we are achieving better outcomes for patients, with more answers and fewer questions. A major goal of our program is to track patients through their continuum of care from initial assessment, to surgery, through rehab and recovery, and then to follow their progress over time. Patients' recoveries from surgical treatment are tracked based on annual questionnaires that assess improvement of function in an effort to improve the quality of patient care. The data are analyzed and shared with the clinical and rehab teams in a continuous quality improvement process. The entire effort is team-driven and, in the end, not only allows patients to achieve better outcomes but also to provide physicians with more information in order to better educate patients on what to expect during treatment and recovery.

HOW ARE STEADMAN-HAWKINS FELLOWS SELECTED?

Considered one of the most elite orthopaedic sports medicine fellowship programs in the world, the Steadman-Hawkins Fellowship Program in Vail receives nearly 150 applications every year from orthopaedic residents who wish to spend a year after residency with our physicians and research foundation to gain sub-specialty training in knee, shoulder, and hip sports medicine. A fellowship selection committee made up of the attending surgeons in the Steadman-Hawkins Clinic and Dr. Bill Rodkey, Director of Basic Science Research, carefully review each application and chooses approximately 15 candidates to interview personally in Vail. These candidates spend two days in Vail, learning the details of our yearlong Fellowship Program and interacting with our physicians, current Fellows, and research staff. After the personal interviews, the fellowship selection committee chooses six Fellows to join our program. A network of more than 150 Steadman-Hawkins-trained Fellows currently practice across the United States and internationally.



photo: John Kelly



photo: John Kelly

SAVE THE DATES

Steadman-Hawkins On the Links

**THE PEPSI 2008 STEADMAN-HAWKINS
SANCTUARY GOLF TOURNAMENT,
PRESENTED BY RE/MAX INTERNATIONAL
SET FOR AUGUST 14, 2008**

Proceeds from the fifth annual tournament will support the development of new procedures and methodology to battle degenerative arthritis. The team event will include a shotgun start with a modified scramble. The tournament is open to the public and has previously included invitees from the Denver Broncos, local celebrities, and Colorado golf pros. Sanctuary organizes and hosts charitable events to support organizations devoted to the arts, children, health care, and crisis management. To date, more than 209 charities have raised more than \$39 million to benefit the constituents they serve.

Renowned course architect Jim Engh, *Golf Digest's* first-ever "Architect of the

Year" in 2003, designed the course that protects a private oasis of 220 acres, effectively complementing the 40,000 surrounding acres of dedicated open space.

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The Steadman♦Hawkins Research Foundation is grateful to Dave and Gail Liniger, owners and co-founders of RE/MAX International, who created this unique opportunity for the Foundation to develop and enhance relationships with those who support our mission.

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The sunglasses and ski goggles incorporate the very best polarized technology available. There is something for everyone. Go to www.habervision.com and enter Affinity Member Code: FOUNDATION, or click on the link below. There is no expiration date. Share the code! Shop and enjoy.

Winter 2008

Foundation News

Steadman♦Hawkins Research



photo: John Kelly

Compliments of
Steadman-Hawkins Fellow,
Luis Urrea, M.D.

FOUNDATION FOCUS

The 20th Anniversary of a Vision That Became a Reality

By Mike Egan, Chief Executive Officer, Steadman♦Hawkins Research Foundation

In 1988, Dr. Richard Steadman had a vision of documenting the results of every patient treated at the Steadman-Hawkins Clinic, but he didn't have a vehicle to make his vision a reality. As a result, he founded what is now known as the Steadman♦Hawkins Research Foundation — the perfect platform to house a base of scientific evidence that would support some of his innovative orthopaedic techniques, including the breakthrough procedure of microfracture.

This year we are celebrating the 20th anniversary of the Foundation. It has become an internationally recognized research institute that is leading the world in sports medicine clinical research. The Foundation makes it possible to collect, organize, analyze, and make available to the world's medical and research communities hundreds of data points on every Steadman-Hawkins patient. We don't pick and choose whose data will be entered into the database. We include everybody. This vast collection of information positioned the Foundation as a leader in evidence-based medicine long before the term became popular.

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An International Center for Research and Education—Keeping People Active

2006 Charitable Giving Figures*

In 2006, charitable giving reached another record: \$295.02 billion. Individuals, the most important category, increased their giving 4.2% to \$222.9 billion. Giving by individuals accounted for 75.6% of all of 2006 giving.

Bequests, an important source of funds for non-profits, came in at about \$22.9 billion, a 2.1% decline. Bequests represent roughly 7.8% of the estimated total.

Grant-making by foundations rose 12.6% to \$36.5 billion, or 9.1% of the total. Donations by corporations or corporate foundations declined by 7.6% to \$12.2 billion.

*Source: Giving USA Foundation

(continued from page 1)

SELECTIVE SUPPORT

What we have today in the Foundation is a research institute that allows organizations and individuals to be selective in their support of research programs. If they feel strongly about anterior cruciate surgery, hip arthroscopy, shoulder conditions, high-tech diagnostic tools, or any number of other ongoing research initiatives, the Foundation can provide an avenue to channel their interests in the right direction.

Everyone who supports a research study, whether it's at Stanford, the Mayo Clinic, the Hospital for Special Surgery in New York, or Steadman-Hawkins, wants to know how efficient the organization is going to be with their money. At Steadman-Hawkins, the answer to that question is that we're more than twice as efficient as other research institutions because our overhead is half as much. (Our current "Patients in the News" donor, Lee Schmidt (page 11), commented that a deciding factor in her decision to fund a research project at the Foundation was that "we had confidence in the way our donation would be used.")

TEAM EFFORT

An important element in the realization of Dr. Steadman's dream is the people around him. Many of the key staff members, doctors, Howard Head rehabilitation personnel, board members, and scientists have known him since the inception of the Foundation.

I was fortunate to have met Richard Steadman before the Foundation began. In fact, my company was the first corporate contributor in the late 1980s. We made a substantial donation because Dr. Steadman was such a believable and sincere person. The qualities embodied in his personality have been transferred to the Foundation and have allowed it to raise more than \$33,000,000 over the past 19 years. Those funds have made it possible to reach our ultimate goal, which is to create the number one sports medicine research institute in the world.

Richard Steadman's personality and vision have attracted an extraordinary number of world-class physicians and scientists. I was particularly impressed when I heard that Dr. Marc Philippon had been recruited out of the University of Pittsburgh to come to Vail. At a relatively young age, he already has a worldwide

Not If, But When

When do you want to make a difference? You can easily make a gift that won't impact your cash flow or portfolio — one that complements your personal lifestyle and financial goals, but allows you to change the future. That's a powerful difference to make, but to do so you need only remember the Foundation with a bequest in your will or revocable trust or designate the Foundation a beneficiary of a portion of your retirement plan.

To make a difference today, you can create a named fund that provides funds, expendable today, for any of our programs — from our Fellowship Program to our Biomechanics Research Laboratory. For example, you can create the fund in your name or to honor a loved one to further education and research in the areas below:

The "O.B. Shelburne" Fellowship Fund

The "John Smith" Fund for Gene Therapy in Cartilage Development

The "Gustafson Family Foundation" Five-Year Academic Chair

Or call us. We would be pleased to discuss opportunities to create a fund that matches your specific interests. If you are considering a bequest, we invite you or your advisor to call us for the bequest language you need.

**For more information, please contact
John McMurtry at 970-479-5781 or john.mcmurtry@shsmf.org.**



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David Kuppersmith
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Greta Campanale
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Joe Kania
Coordinator

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Mark Your Calendar:

AUGUST 6-9, 2008

Fourteenth Steadman♦Hawkins Research Foundation Fellows Meeting.

Vail Plaza Hotel, Vail, Colorado. For more information, contact Greta Campanale at (970) 479-5782, greta.campanale@shsmf.org.

AUGUST 14, 2008

Pepsi 2008 Steadman-Hawkins Golf Classic, presented by RE/MAX International at Sanctuary in Sedalia, Colorado.

For more information, contact John McMurtry at (970) 479-5781 or rachele.palmer@shsmf.org

Your Legacy, Our Future. Please remember Steadman♦Hawkins Research Foundation in your will, trust, or other estate plan.



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RESEARCH UPDATE

Rotator Cuff Disease and the Shoulder: Evidence-Based Medicine at Work at the Steadman♦Hawkins Research Foundation

By Peter J. Millett, M.D., M.Sc.
Marilee Horan, B.S.

Editor's note: Dr. Millett is a Partner at the Steadman-Hawkins Clinic in Vail and Director of Shoulder Surgery. He is a pioneer in the surgical arthroscopic treatment of rotator cuff tears, and he specializes in disorders of the shoulder, knee, and elbow, as well as all sports-related injuries. Marilee Horan is a research associate in the Department of Clinical Research at the Steadman♦Hawkins Research Foundation.

The shoulder is one of the most fascinating and complex joints in the body. Because of the shoulder's great mobility, the arm can be positioned in space to allow us to do so many wonderful activities. This mobility comes at a price, as it places significant stresses on the soft tissues that restrain the joint. As such, shoulders can easily be injured during activities of daily living, sports, or work. The types of shoulder problems are myriad, and they may be from acute traumatic injury or from natural age-related degeneration (breakdown) of the soft tissues. The rotator cuff, which is an important series of tendons around the shoulder, is among the most frequently injured structures. Rotator cuff disease is a common and often debilitating condition that affects millions of Americans. We believe that the management of rotator cuff injuries is a rapidly evolving area of orthopaedic surgery that is both challenging and rewarding.

CAUSES OF ROTATOR CUFF DISEASE

Rotator cuff tendons frequently become injured from overuse, from age-related degeneration, or from traumatic events such as falls while skiing. Recreational sports and occupations that require repetitive overhead motion can put significant strains on the rotator cuff

muscles and tendons. Over time, such tendons become weaker and break down. Ultimately, the process can lead to complete tears of the rotator cuff tendons. Most individuals who develop rotator cuff disease have pain, which is often particularly troubling at night. As the disease progresses and the rotator cuff tendons tear, weakness and loss of function also occur. When the pain is severe or the loss of function significant, surgical treatment may be needed. Full-thickness tears of the rotator cuff tendons do not heal spontaneously without surgical intervention. Therefore, surgery is often required to restore the anatomy so that pain can be eliminated and function can be restored.

Newer, less invasive techniques have been developed to surgically treat rotator cuff tears. We were one of the first to publish on the technique of using a double row of fixation for rotator cuff repairs. The "double row" repair was not only a stronger method of fixation, but it also more closely restored the tendon insertion to normal on the bone, creating more surface area for healing. Our laboratory studies and clinical studies by others are showing that better outcomes can be achieved using these techniques.

Another important variable in the successful treatment of rotator cuff tears is appropriate rehabilitation. Many current



The "double row" repair was not only a stronger method of fixation, but it also more closely restored the tendon insertion to normal on the bone, creating more surface area for healing.

Millett PJ, et al. Mattress Double Anchor Footprint Repair: A Novel, Arthroscopic Rotator Cuff Repair Technique. Arthroscopy. 2004, 20(8) : 875-9.

(continued from page 7)

Dr. Millett examining an athlete with a rotator cuff tear.



The *Journal of the American Academy of Orthopaedic Surgeons* published another article by our co-authors, Drs. Hatch and Gobezie from Harvard, highlighting some of the complications that can occur after rotator cuff surgery. In this paper, we report that stiffness can be an unfortunate complication that can occur after rotator cuff tendon surgery. Stiffness is fortunately exceedingly rare with the newer arthroscopic techniques, but historically it has been reported to occur in 4 percent to 10 percent of cases. While a small amount of stiffness may be tolerated, substantial losses in motion can be very debilitating, particularly when it is associated with pain.

RISK FACTORS

There are several risk factors for developing shoulder stiffness after rotator cuff repair. These include diabetes, low pain tolerance, infection, and a propensity toward scarring. Early recognition of stiffness after rotator cuff repair is key, as early and appropriate intervention at this time will usually take care of the problem and result in a successful outcome. The best preventive measures are to perform the surgery skillfully so that the repair is strong and motion can be initiated early, to design and follow an appropriate rehabilitation program with an experienced therapist, and, if the problem arises, to recognize it early and act accordingly. Having skilled therapists with open lines of communication among patient, therapist, and surgeon is incredibly important. We

have been fortunate to work closely with Dirk Kokmeyer and Christy Allwein of the Howard Head Sports Medicine Center in Vail. The two senior therapists direct the shoulder rehab program, and together we have one formal and several informal weekly meetings with our clinical team of Fellows, nurses, and assistants. At the meetings we not only discuss the rehab progress of their patients but also new ideas for research or improved patient care.

It's a real team effort. We have a group that is innovative without barriers to communication. We know what is working, and when a problem arises, it is recognized early and treated quickly and appropriately. It is a very unique situation.

The collaboration between the clinical and rehab teams is perhaps our greatest asset. The ability for the surgeons to work so closely with our therapists and our researchers results in dramatically better outcomes for our patients. Our clinical team works intimately with the physical therapists to ensure that the rehabilitation patients receive after rotator cuff surgery is individualized and based on the best scientific evidence available.

DOCUMENTING OUTCOMES

The final step in the process is documenting the outcomes of patients who have undergone surgical repair of their rotator cuff tears. This is accomplished through precise research questionnaires and detailed clinical follow-up exams. These measures assess not only the objective measures of outcome, such as shoulder range of motion and strength, but also the subjective measures of outcome, such as patient satisfaction and return to activity. The shoulder research team, as part of the Clinical Research Department of the Steadman•Hawkins Research Foundation, compiles and evaluates all this data so that we can practice the highest form of evidence-based medicine, that is, evidence that has been generated from our very own patients. The team is headed by Marilee Horan, who brings a tremendous wealth of practical experience.



photo: John Kelly

(continued from page 9)

“Smith & Nephew is a leading supplier of the systems, implants and tools necessary to perform arthroscopic surgery,” says Mike Egan, Foundation CEO. “They have a worldwide presence and are dedicated to providing innovative products to orthopaedic surgeons focused on sports medicine procedures. We are very pleased to continue our comprehensive relationship with them. Important industry relationships like this one are vital to carrying out the Foundation’s mission of allowing active people to remain active after injury. Sports medicine arthroscopic surgery in all joints is continually evolving. The surgeons’ technical skills, coupled with innovative technology from industry, allow for improved patient outcomes. Our relationship with Smith & Nephew is a model for an industry-research partnership.”

During the 2005-6 fellowship year, the Smith & Nephew grant underwrote six research programs and more than 55 educational programs conducted at the Foundation. Smith & Nephew also provided lab equipment to support the educational programs and the studies.

“These studies will result in a better understanding of new treatments for arthroscopic injuries, and expand the knowledge around hip and knee arthroscopy, ultimately leading to improved patient care,” said Joe Darling, Senior Vice President and General Manager of Smith & Nephew Endoscopy’s Arthroscopic Repair business unit.

Abstracts of the research were presented at key arthroscopy meetings, including the American Academy of Orthopaedic Surgeons (AAOS) and the Biennial Congress of the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) in Florence, Italy, last spring.

Among the studies was research that:

- Determined the probability of football players’ returning to competition after arthroscopic hip procedures.
- Described the prevalence of related injuries with posterior meniscus tears, as well as the risk of re-injury after repair.
- Classified different types of labral tears in the hip. This research will help determine what other structural defects need to be considered during repair procedures.
- Determined whether hip alpha angles — the measurement of anterior femoral head-neck offset—are significantly higher in contact athletes such as hockey and football players, when compared with non-contact athletes such as dancers and golfers. This research may have future implications in early screening programs for youth football and hockey.

“It’s a privilege to have developed a long-term association with the Steadman◆Hawkins Research Foundation and its talented researchers,” said Jerry Goodman, Senior Vice President and General Manager of Smith & Nephew’s Capital Products business unit. “This partnership benefits us as a company and orthopaedic patients everywhere, because the research generated from the Foundation supports us in our drive for innovative techniques that help get people moving again.”



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Research Associate

Lauren Matheny
Research Associate/Bioskills Coordinator

Connor Hay
Research Intern

Greg Lichtman
Research Intern

Katie Maland
Research Intern

Tiffany Tello
Research Intern

BIOMECHANICS RESEARCH LABORATORY

Michael Torry, Ph.D.
Director of Biomechanics Research Laboratory

Kevin B. Shelburne, Ph.D.
Senior Staff Scientist

J. Erik Giphart, Ph.D.
Staff Scientist

Takashi Yanagawa, M.A.
Staff Scientist

Tyler Anstett
Research Intern

John Brunkhorst
Research Intern

J.D. Pault
Research Intern

Nils Horn
Research Intern

Sepp Braun, M.D.
Research Intern

EDUCATION

Greta Campanale
Coordinator

VISUAL SERVICES

Joe Kania
Coordinator

Tage Plantell
Coordinator

Mark Your Calendar:

AUGUST 6-9, 2008

Fourteenth Steadman♦Hawkins Research Foundation Fellows Meeting.

Vail Plaza Hotel, Vail, Colorado. For more information, contact Greta Campanale at (970) 479-5782, greta.campanale@shsmf.org.

AUGUST 14, 2008

Pepsi 2008 Steadman-Hawkins Golf Classic, presented by RE/MAX International at Sanctuary in Sedalia, Colorado.

For more information, contact John McMurtry at (970) 479-5781 or rachele.palmer@shsmf.org

Your Legacy, Our Future. Please remember Steadman♦Hawkins Research Foundation in your will, trust, or other estate plan.



Steadman♦Hawkins
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