



Photo: John Kelly

INSTITUTE FOCUS

## We Have an Important Announcement

By Mike Egan, Chief Executive Officer, Steadman Philippon Research Institute

The Steadman Hawkins Research Foundation Board voted unanimously at its meeting in December 2009 to change its name to the *Steadman Philippon Research Institute (SPRI)*.

Dr. Marc Philippon joined the Vail Clinic in 2005, and already he is a well-known expert in the treatment and rehabilitation of sports-related hip injuries and disorders. Dr. Philippon's contributions to our research efforts have been considerable, to say the least. Thus far, he has produced more than 54 articles and 300 presentations under our auspices. His integrity and leadership capabilities, coupled with his technical innovations in the field of hip arthroscopy, make him an ideal addition to the marquee of our research organization. His dedication to the principles of joint preservation and keeping people active matches Dr. Steadman's philosophy exactly. Most importantly, these physicians' emphasis on the importance of evidence-based medicine is paramount in their approach to research.

The Steadman Sports Medicine Research Foundation was created in California by Dr. Richard Steadman in 1988 as a nonprofit organization to investigate causes and remedies for

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knee injuries and disorders. It became the Steadman Hawkins Sports Medicine Foundation in 1994, four years after Drs. Steadman and Hawkins founded the Clinic in Vail. Then, in 2004, the name was changed to the Steadman Hawkins Research Foundation.

Since Dr. Hawkins went to South Carolina in 2004 to start a clinic there, our focus on knee and shoulder research has widened to include other areas of sports medicine. The Institute's departments of Education, Biomechanics, Basic Science, and Imaging have grown exponentially. Our Clinical Research database (under the direction of Karen Briggs, M.P.H.) has expanded to become the largest in the world for knees and shoulders. All our departments are staffed by talented professionals dedicated to helping conduct research that will improve the practice of orthopaedics over time.

In 2009, the Biomechanics department earned international recognition for its work in biplane fluoroscopy. At present, our Basic

Science department is conducting exciting research using stem cells and platelet-rich plasma. In Education, the current group of Fellows is outstanding, and next year's candidates are exceptional. Guided by our distinguished Scientific Advisory Committee and our commitment to conducting meticulous research, we expect to produce valuable new data in the coming years.

On behalf of our board members, researchers and staff, thank you for your interest and past support. Our success — indeed, all of our work — is funded by friends like you who step forward to make certain our research continues. We are counting on your continued support of the Steadman Philippon Research Institute (SPRI). We will keep you updated on our work throughout the year. Please refer to our Fall Newsletter (of which we are very proud) for more information on recent research projects. Our Web site address is now [www.sprivail.org](http://www.sprivail.org).



## *A Year of Uncertainty*

So far, 2010 has been a year of uncertainty when it comes to retirement accounts, the charitable income tax deduction, traditional IRAs and Roth IRAs. One thing is certain...conditions will continue to change, but as of press time, here are highlights of current items being impacted.

### • **Charitable Giving and the Charitable Income Tax Deduction:**

With President Obama's effort to limit the federal income tax charitable deduction to 28 percent, some taxpayers in higher tax brackets could be taxed more for their gift. For example, currently a couple at the 35 percent tax bracket is able to claim itemized deductions at this rate. If a fully deductible gift of \$100,000 were made today, their income taxes would be reduced \$35,000. By reducing income taxes by \$35,000, the \$100,000 gift effectively "cost" only \$65,000. In this same example under the Obama plan, the 28 percent limit would reduce their taxes only \$28,000. This would raise the "cost of the gift" to \$72,000 and in essence result in increased income tax liability on \$7,000 (the difference between \$65,000 and \$72,000).

You may want to speed up gifts planned in future years to this year and take advantage of a full tax deduction available in 2010.

### • **Charitable Giving Through Your Traditional IRA:**

Congress has not yet extended last year's law allowing people to give up to \$100,000 to charity from a traditional, tax-deferred IRA. However, it very well may do so given the popularity of that law. If Congress reinstates the same policy, one benefit for individuals with already significant income is that charitable gifts from retirement accounts can count toward the required minimum annual withdrawals for those 70 ½ or older. Directing the required minimum distribution to charity allows the distribution requirement to be fulfilled and at the same time does not increase reportable taxable income.

### • **Roth IRAs:**

If you have a traditional IRA but would prefer the income-tax-free benefit of a Roth IRA, you can now convert your traditional IRA into a Roth IRA. But there is a tax-catch: You will have to pay taxes on the funds transferred from your traditional IRA into your Roth IRA.

Why? To transfer a traditional IRA account to a Roth, "equilibrium" has to be established. If you have a traditional IRA, you funded it with "pre-tax" dollars. This allowed you to reduce your taxable income the year you made a contribution so when you withdraw

## Steven Read Uses His Experience, Energy, and Passion to Support the Mission of the Institute.

By Jim Brown, Executive Editor, *SPRI News*

Here is the prototype of a Steadman Philippon Research Institute Board Member: (1) a person who exemplifies the Institute's mission of keeping active people active; (2) a successful, innovative leader; (3) an individual who is willing to commit time, energy, and resources to building the premier independent sports medicine institute in the world. One more thing: This person would be even more valuable if he or she could bring years of experience on similar boards.

Steven Read, a member of the SPRI Board of Directors for more than a decade, not only represents the prototype, he may well be the prototype. He is Founding Partner of Read Investments, a commercial real



*Steven Read driving at the 24 hours of Le Mans.*

estate development corporation in Berkeley, California, and Co-Owner/Co-Chairman of Grocery Outlet, Inc., a retail food store chain in the western states, Hawaii, Texas, and Louisiana. He sits on six boards, all nonprofit, including the University of San Francisco, the United States Ski and Snowboard Foundation, and the Steadman

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the income you will have to report it as taxable income. Conversely, Roth IRAs are funded with after-tax dollars. Since taxes have already been paid, funds withdrawn from Roth IRAs are tax-free. Paying taxes on previously tax-deferred funds from your traditional IRA equalizes the tax status of the money that will go into a Roth.

You have the option of spreading these taxes over two years if you make this transfer. We do encourage you to consult your tax advisor to navigate the tax liabilities from this transaction. An offset to the tax liability is charitable giving. If you are converting to a Roth IRA, consider combining that with a charitable gift to the Institute. You can take advantage of the charitable income tax deduction to offset some of the tax liability from the conversion.

### • Estate Tax:

Under a 2001 tax law signed by President Bush, the estate tax falls to zero in 2010. Under the Bush law, there was a progressive increase in the dollar amount of an estate that was exempt from estate tax – \$3,500,000 was exempt in 2009. In 2010, the estate tax falls to zero. On January 1, 2011, however, the estate tax returns and the dollar amount exempted before imposition of estate taxes

will only be \$1,000,000. Congress is expected to take action on the estate tax this year, although the outcome is unclear.

### Honoring Your Philanthropy

In the midst of all this, how do you decide the best way to honor your philanthropic objectives and meet your financial goals? If you are hesitant while the picture remains unclear, we encourage you to consider combining different giving plans.

- You can make an outright gift of cash or appreciated assets that supports our programs immediately and gives you income and capital gain tax advantages.
- You can fund a gift that will provide a lifetime income along with income and capital gain tax savings.
- You can give through a bequest in your will or beneficiary designation on your IRA account to continue your support beyond your lifetime.
- You can also combine these different giving plans to optimize income and tax benefits.

Please contact John McMurtry, Vice President, Program Advancement, at [mcmurtry@sprivail.org](mailto:mcmurtry@sprivail.org) or 970-479-9797 with any questions.



## STEADMAN PHILIPPON UPDATE

## U.S. Olympic Skiers Set Record for Medals Won Athletes Benefit from Institute Research

February brought us the 2010 Winter Olympics, where three great Americans who have directly benefited from Institute research claimed seven out of eight Olympic medals for the U.S. in alpine skiing.

Two orthopaedic specialists from SPRI, Drs. Bill Sterett and Tom Hackett, were volunteering as team physicians when Lindsey Vonn, a former patient of Dr. Sterett's, won a gold in women's Downhill and a bronze in women's Super G.

Julia Mancuso, who has been treated by pioneering hip specialist Dr. Philippon, brought home silver medals in both women's Downhill and women's Super Combined.

And Bode Miller, whose career was saved by Dr. Steadman in 2001 when his torn ACL underwent "healing response," captured gold in men's Super Combined, silver in men's Super G, and bronze in men's Downhill.

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Bode Miller of the United States competes in the slalom portion of the men's Super-combined at the Vancouver 2010 Olympics in Whistler, British Columbia, Canada, Sunday, Feb. 21, 2010. (AP Photo/Alessandro Trovati)



Lindsey Vonn of the United States, the gold medal winner, center, celebrates with her compatriot Julia Mancuso, silver, left, and Austria's bronze medalist Elisabeth Goergl during the medal ceremony for the women's Downhill at the Vancouver 2010 Olympics in Whistler, British Columbia, Wednesday, Feb. 17, 2010. (AP Photo/Alessandro Trovati)

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Philippon Research Institute, which he refers to as his most stimulating and one whose fellow members are, he says, overwhelmingly qualified.

### INJURY LED TO INVOLVEMENT

Like many of those who support the mission of the Institute, Steven first came into contact with the Steadman Clinic, and later, the Steadman Philippon Research Institute, because of an injury. "I had three knee injuries over a period of 15 years," he explains, "and I was fortunate enough to be able to see Richard Steadman the day after my first ski accident. I was one of those aggressive recreational athletes who was able to take advantage of Dr. Steadman's approach to sports medicine before many others. His 'healing response' technique gave Dr. Steadman a competitive advantage because it was putting highly paid athletes back into competition three to five months faster than knee reconstruction procedures.

"Later, when I was asked to serve on the Board, accepting the invitation was an easy decision and an honor," he says. "The approach of the Institute was something with which I was very familiar, that is, using evidence-based medicine to maintain wellness, extend the length of a person's physically active life, and enhance physical and mental performance."

### A GOOD FIT

Steven is a near-perfect match for the work of the Board in many other ways. He began skiing as a toddler and he was a scholarship athlete on three NCAA championship ski teams at the University of Utah. He also participates in road biking, he races vintage cars, he plays golf, and he enjoys fly-fishing. Did we mention that he believes in staying active?

"I grew up in a family that encouraged athletics," he says. "Sports taught me the values of self-discipline and preparation — make that over-preparation."

Read embraces the theme described in Malcolm Gladwell's *Outliers: 10,000 Hours*, and he applies it to his work and to the work of the Institute. "It takes 10,000 hours of preparation and experience for one hour — or sometimes, one minute — of execution," says Read. "That level of dedication and mastery of intuitive skills are what

Steadman Philippon doctors and researchers must possess to develop creative and groundbreaking solutions to orthopaedic care.”

His family apparently also taught him the values of long-term commitment and priorities. He has been married to his “kindergarten sweetheart,” Mary Ann, for 40 years, has three children and six grandchildren. You can ask him about his business, but he would prefer to tell you a story about someone in his family.

#### THE BUSINESS PART OF BUILDING

Although his business and sports background are impressive, perhaps his most important contribution to the Institute comes from his experience as a board member at other institutions. At Duke University, he was instrumental in identifying and funding more than \$900,000,000 of building projects. In a similar capacity on the board of Fine Arts Museums of San Francisco, he was in charge of a \$200,000,000 project that resulted in the 2005 re-building of the M. H. de Young Memorial Museum. The museum is now considered one of the most unique architectural structures in the world.

#### GIVE BEFORE YOU GET

“Life needs to honor those who ‘give’ before they ‘get.’ The Institute promotes this philosophy of giving,” says Read. “This belief is reflected through its practices, research, publications, and especially by sharing its knowledge with the world’s medical community.

“Once you are executing,” says Read, “a lot of things in life have to be intuitive. Preparation and experience allow you to make quick, well-informed decisions. At the end of the day, you are steering with your accelerator, not looking into the rear view mirror.

“The Board is encouraged to in the same way to contribute its work and wisdom to advise the Institute through its many years of diverse cumulative experience to maintain the Institute’s leadership in research-based orthopaedics.”

#### ALIGNMENT IS THE KEY

Steven Read is an example — perhaps a prototype — of a fast-moving, give-before-you-get leader who shares his talent and passion with a research organization

going in the same direction. He calls it alignment — like-minded people sharing the same vision, making the same commitment, and working together to help people maintain a level of physical and mental performance ingrained into their lifestyle.



## Steadman Hawkins Foundation Becomes Steadman Philippon Research Institute

## Steadman Hawkins Clinic Becomes the Steadman Clinic

Two associated organizations of international renown, dedicated to the advancement of orthopaedics and keeping people active, have changed their names. Founded in 1990 and formerly the Steadman Hawkins Clinic, *The Steadman Clinic* will continue its seminal work in the diagnosis and treatment of orthopaedic injuries and disorders. In addition, the Steadman Hawkins Research Foundation becomes the *Steadman Philippon Research Institute* (SPRI), and will carry forward its 22-year history of investigating the causes, prevention, and treatment of orthopaedic disorders.

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Photo: John Kelly

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Knee surgeon Dr. Richard Steadman established the Steadman Sports Medicine Foundation in 1988 after recognizing the need for an official research entity to prove theories about surgery, healing, and the rehabilitation of knee injuries and disorders. The Institute's focus has widened to include all areas pertaining to orthopaedics in the human body in four areas of research: basic science, clinical, biomechanics, and imaging. Notably, this organization has established one of the largest knee, shoulder, and hip databases in the world and has published over 150 articles and research papers in peer-reviewed journals. "Everyone can relate to Dr. Steadman's original vision of keeping people active, and this mission has attracted accomplished board members, scientists, researchers, and business people who have taken a personal interest in the success of the Steadman Philippon Research Institute," added J. Michael Egan, president and CEO of SPRI.

Dr. Steadman invented the microfracture procedure in the early 1980s, and today this technique — a combination of surgery and specific rehabilitation — is widely used throughout the world. He was also one of the first to design rehabilitation that introduced the concept of moving the joint after surgery. The standard treatment at that time was immobilized ligaments and joints during recuperation, a practice that has since been abandoned in favor of more active rehabilitation, which has been proven to speed the

recovery process. Many of the best athletes in the world, from the U.S. Ski Team to players from every team in the NFL and most major league baseball and soccer teams, have chosen Dr. Steadman as their knee doctor.

Now Steadman has taken an important step to ensure the continuity of his mission, "Keeping People Active," by naming Steadman Clinic hip expert and managing partner Dr. Marc J. Philippon to the marquee of the new Steadman Philippon Research Institute (SPRI).

"Marc Philippon has a well-deserved international reputation for his work in the treatment of sports-related hip injuries. He has treated numerous Olympic and professional athletes, returning them to full competition. Some of these athletes have gone on to break records in their sports following recovery from hip surgery. We are very fortunate to have Dr. Philippon in Vail," commented Dr. Steadman. "He is a talented surgical innovator in the treatment of disorders and injuries of the hip and a pioneer in the development of arthroscopic instruments for hip surgery. He is especially skilled at addressing complex mechanical problems in the hip. This, coupled with his integrity and leadership qualities, makes him an ideal addition to our research organization. Thus far, he has produced more than 54 articles and 300 presentations under our auspices."

"I am honored and pleased to be associated with Dr. Steadman in such a dynamic and productive organization. His precedent-setting work in the field of orthopaedics and the Institute's research are held in high regard by the people and organizations I admire," said Dr. Philippon.

Dr. Philippon created a hip fellowship program at the University of Pittsburgh Medical Center in 2001. After joining the Vail Clinic, he integrated his fellowship program into the Institute's existing sports medicine fellowship. Since then, Dr. Philippon developed a novel reconstructive technique to treat athletes with deficient labrums. This procedure has allowed professional athletes to return to their sports and its use has been expanded to include other appropriate patients. It has been validated through the Institute's clinical database on outcomes. Three of Dr. Philippon's former Fellows are now team physicians with NFL, NBA, and MLB teams.



Photo: John Kelly



Dr. Tom Clanton joined the staff of the clinic in August of 2009. He is a talented surgeon who has a worldwide reputation in the treatment of foot and ankle disorders and injuries. This spring, Dr. Rob LaPrade, an accomplished knee surgeon and researcher from Minnesota, will also join the Steadman Clinic. The Steadman Clinic is pleased to announce that former co-director of the shoulder service at Harvard, Dr. Peter Millett, has recently been named Chief of the shoulder service for the clinic.

### THE STEADMAN CLINIC PHYSICIANS

- **Dr. Richard Steadman**– knee injuries and disorders
- **Dr. Marc Philippon** – sports-related injuries and disorders of the hip
- **Dr. Thomas O. Clanton**– foot and ankle injuries and disorders and sports medicine
- **Dr. William I. Sterett** – sports medicine, trauma, and injuries of the knee and leg; Team Physician for the U.S. Women’s Ski Team
- **Dr. Peter J. Millett** – shoulder surgery and sports medicine
- **Dr. Randy W. Viola** – hand, wrist and elbow injuries, sports medicine, limb reattachment
- **Dr. Donald S. Corenman**– spine injuries and disorders
- **Dr. David C. Karli**– physical medicine and rehabilitation, non-operative spine and sports injuries, and regenerative medicine
- **Dr. Tom Hackett** – sports medicine, injuries of the shoulder, elbow and knee; Team Physician for the U.S. Snowboard Team
- **Dr. Sanjitpal (Sonny) Gill**– spine injuries and disorders and sports spine injuries

When asked why the Clinic name has been changed to the Steadman Clinic, Dr. Steadman replied, “We want to emphasize the fact that we now treat all areas in orthopaedics, not just knees and shoulders. In addition, when Dr. Hawkins relocated to South Carolina in 2004, our paths naturally diverged, and it is appropriate for Vail to now choose the brand ‘*The Steadman Clinic.*’”

### THE STEADMAN CLINIC

The Steadman Clinic ([www.steadmanclinic.net](http://www.steadmanclinic.net)) in Vail, Colorado — with one additional clinic in Frisco, Colorado — is internationally recognized for developing and refining surgical and rehabilitation tech-



Photo: John Kelly

niques that have promoted faster and more successful healing of injured joints. Its focus is as much about helping grandparents stay active with their grandchildren in the sports they enjoy, such as skiing, as it is about extending the careers of scores of Olympians and professional athletes, by helping them get back in the game. Founded in 1990, its physicians are among the best trained and most experienced in sports medicine and orthopaedic surgery. At the Steadman Clinic, the physician, patient, and therapist work as a team, from diagnosis to rehabilitation, to achieve the best possible outcome. The Steadman Clinic works closely with Vail’s Steadman Philippon Research Institute (SPRI) by sharing its clinical data with the Institute. Twitter: @SteadmanClinic

### STEADMAN PHILIPPON RESEARCH INSTITUTE

The Steadman Philippon Research Institute (SPRI) ([www.sprivail.org](http://www.sprivail.org)) is dedicated to keeping people of all ages physically active through orthopaedic research and education in arthritis, healing, rehabilitation, and injury prevention. Founded in 1988 by orthopaedic surgeon Dr. Richard Steadman as the Steadman Sports Medicine Foundation, the 501(c) (3) charitable organization has influenced the practice of orthopaedics throughout the world. Based in Vail, Colorado, it has become one of the most published organizations in sports medicine research and education.



EDUCATION

## Visiting Scholars Program Brings French and Brazilian Physicians to the Institute

Dr. Jean-Yves Schoenahl and Dr. Leandro Ejnisman will spend a year observing, assisting, researching, and writing before taking their knowledge and skills to Europe and South America.

By Jim Brown, Ph.D., Executive Editor

Two orthopaedic surgeons, Dr. Jean-Yves Schoenahl of Strasbourg, France, and Dr. Leandro Ejnisman of Sao Paulo, Brazil, are spending a year at the Steadman Philippon Research Institute as participants in the SPRI Visiting Scholars program.

The physician-scholars will work with Steadman Philippon surgeons and scientists to learn new surgical techniques, observe clinical practices, attend professional meetings, conduct research, and submit the results of their research to orthopaedic journals.

Dr. Schoenahl received his medical training at the University of Strasbourg (formerly Louis Pasteur University), where he will return later this year to continue post-graduate studies. He was invited to participate in the SPRI Visiting Scholars program after being selected from candidates throughout

Europe. The European component of the Scholars program was developed in conjunction with Arthrex, Inc., an orthopaedic medical device company founded by its president, Reinhold Schmieding.

### GETTING THE CALL

"I first learned about the Steadman Clinic and the Steadman Philippon Research Institute when I read that some professional soccer players in Europe had gone to Vail to be treated for their injuries," recalls Dr. Schoenahl. "Of course, I also knew about Dr. Richard Steadman because of his worldwide reputation in sports medicine and his microfracture procedure. One of the doctors in France had worked with Dr. Peter Millett when he was in Boston, and he encouraged me to apply for the Visiting Scholars program. He told me that Steadman Philippon would be the best place for me to improve my surgical skills and to conduct research."

"Jorge Paulo Lemann (one of the most important business leaders in Brazil) supports SPRI's Visiting Scholar program and is also a major sponsor of the Brazil Institute of Health Technologies, which pays for my scholarship," explains Dr. Ejnisman, who was awarded his scholarship over a field of 20 applicants.

Dr. Ejnisman recently completed his formal medical education at the University of Sao Paulo and will focus on hip surgery. "I knew about the international reputation of Dr. Marc Philippon, and my brother, who is also a physician in Brazil, had spoken with him. I applied for the Visiting Scholars position, sent them my credentials, and was interviewed in Rio de Janeiro. When I got



Dr. Leandro Ejnisman



Dr. Jean-Yves Schoenahl, left, with Dr. Peter J. Millett.

Photos: Joe Kania



the news that I had been accepted into the program, it was a very happy day.”

### MAKING THE TRANSITION

For Drs. Schoenahl and Ejnisman, the transition to the U.S. has been smooth. “Vail is a very pleasant place,” says Jean-Yves. “The people in the town and at Steadman Philippon are very open-minded and eager to help. The city has an international feel and it is easy for people from other countries to meet others. This is true; I’m not saying it just to be nice.”

Both also had the advantage of communicating with their predecessors in the Visiting Scholars program. Dr. Schoenahl got advice of Dr. Florian Elser of Germany, and Dr. Ejnisman was helped by Dr. Bruno Goncalves Souza.

“He told about his experience and what to expect when I arrived in Vail and began my work at the Institute,” says Dr. Ejnisman. “I was even able to move into the same apartment where Dr. Goncalves lived.”

Language, which is a major adjustment for many people, has not been an issue for Leandro, probably because he speaks five languages. Although Dr. Schoenahl did not have conversational English experience when he arrived in November of 2009, his language skills are very impressive. He says he still has problems with understanding slang, but so do many Americans.

### DAILY ROUTINES

Now that both men have settled into their routines at the Institute, their schedules are filled with spending time in the operating room, attending to clinical duties, going to in-house education sessions, reading about research conducted at the Institute, and working on their own research projects.

Dr. Ejnisman, whose focus at the Institute is hip arthroscopy, observed more than 20 procedures performed by Dr. Philippon in just his first two weeks at the Institute. Dr. Schoenahl, whose research will center on management of the shoulder joint, spends much of his time observing, assisting, and working with Dr. Millett.

“What I notice here is that the surgeons are very involved in current research,” says Dr. Schoenahl, “and it shows in their procedures. They want to do what is best for their patients.”

“What surprised me about Dr. Philippon is how friendly he is,” says Dr. Ejnisman.

“To be such a famous guy, he is a really open person. He knows everybody and speaks to everybody. In the operating room, what he does isn’t easy, but he is a very skilled and experienced physician who makes it look easy.”

### WHAT’S NEXT

At the end of their year at SPRI, Dr. Schoenahl and Dr. Ejnisman will return to their countries. Dr. Schoenahl will resume his studies in Strasbourg and Dr. Ejnisman will begin his practice in Sao Paulo. Both would eventually like to continue as orthopaedic surgeons, teach medical students, and conduct research.

“There are still many questions yet to be answered regarding hip arthroscopy,” says Dr. Ejnisman. “I’d like to do research to answer some of those questions.”

“The Visiting Scholars program has given us a great opportunity to improve ourselves and to discover a new culture,” says Dr. Schoenahl. “It is very important for us to spread the knowledge of orthopaedic surgery and sports medicine at the Steadman Philippon Research Institute to the rest of the world.”



## RESEARCH UPDATE

# Institute Research Shows Benefit of Hip Arthroscopy in Injured Professional Hockey Players

By Karen Briggs, M.B.A., M.P.H., Director, Clinical Research

Hockey is one of the top four professional sports played in the United States. The National Hockey League is made up of many players from Canada, where hockey is the official winter sport. The NHL, however, is an international league with players coming from more than nine countries.

Approximately 1.4 million people around the world play hockey, with just under 570,000 in the United States. Ice hockey requires repetitive motion and high impact. Ice hockey is a full-contact sport and carries a high risk of injury. Not only are the players

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moving at around 20–30 miles an hour (32–48 kilometers per hour), quite a bit of the game revolves around the physical contact between the players. Skate blades, hockey sticks, shoulders, hips, and hockey pucks all contribute. The number of injuries is quite high.

Goaltenders experience extreme hip motion due to their use of the butterfly position. The hockey stride also places the hip in flexion, abduction and external rotation. Hip injuries are common in hockey and are considered a cause of significant disability and are a potential cause of early retirement. A study recently published in the *American Journal of Sports Medicine*, authored by Dr. Philippon, reported the outcomes and return to sport in NHL hockey players who were treated with hip arthroscopy for labral tears and femoroacetabular impingement.

The study included nine defensemen, 12 offensive players, and seven goaltenders who had hip arthroscopy. The average age at the time of surgery was 27 years. The average time to return to skating/hockey drills was three months. Players completed a follow-up questionnaire at an average of 24 months after arthroscopy. The Modified Harris Hip Score, which is a patient-derived outcome score used to measure function, improved from 70 preoperatively to an average of 95 at follow-up. The players were very satisfied with the outcome of the surgery. An important result of the study showed that players who delayed surgery had more chondral damage.



The study concluded that arthroscopic treatment of the professional hockey player (NHL) for debilitating hip pain allowed for return to sport accompanied with high patient satisfaction. This study highlighted the need for early intervention after injury. The earlier the players were treated, the less chondral damage and the earlier they returned to the ice without sacrificing a decline in long-term function.

Arthroscopic hip surgery does not require as much surgical trauma as does open hip surgery. Another recent study demonstrated the long rehabilitation required in hockey players following open hip surgery. The study showed that hockey players returned to hockey in seven months. In the study by Dr. Philippon, the players returned to hockey in three months. This study demonstrated that arthroscopic hip surgery allows for shorter rehabilitation and quicker return to sport. This is one of the few sports in which results have been published in both open and arthroscopic surgery.



## Research to Determine Whether Specific Footwear Will Reduce Lower Extremity Injuries

By Michael R. Torry, Ph.D., Director, Biomechanics Research Laboratory; Jake Krong, M.S., Research Intern

Over 30 million Americans are classified as recreational runners. Despite advances in footwear technology, over half of these runners will miss time each year due to injuries such as plantar fasciitis, Achilles tendinitis, and knee pain. These injuries are associated with overpronation, or excess eversion motion of the rearfoot, and therefore running shoe companies have designed footwear with the goal of reducing this motion.

Traditional motion-capture methods have not allowed us to see how the bones of the foot move within a shoe, and how the foot interacts with the materials in a shoe. Biplane fluoroscopy, however, allows measurement of individual bone motion within the foot to sub-millimeter accuracy. Such levels of precision have never been achieved in quantifying foot motion during walking and running.

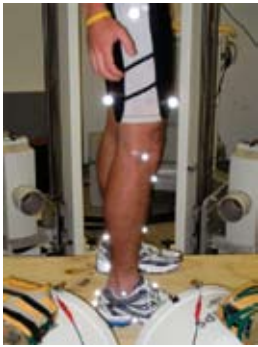


Figure 1



Figure 2

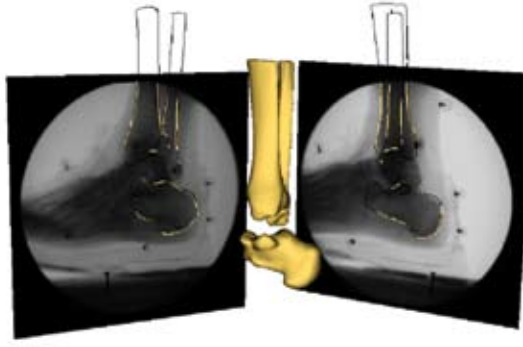


Figure 3

Figure 1: Biplane fluoroscopy images are taken of a subject's neutral foot alignment

Figure 2: A three-dimensional model of the foot reconstructed from a CT scan

Figure 3: Bone models matched to fluoroscopy images during a running trial

In a collaborative study sponsored by Saucony, five runners were tested in the biplane fluoroscopy system. Saucony created four pairs of shoes with and without different types of technology. The base shoe was a basic cushioned running shoe that did not contain any of the technology that Saucony uses in their footwear to reduce rearfoot motion. The **medial post** model contains a higher density cushioning material on the inside of the shoe, which is meant to prevent the foot from rolling inwards (pronating) too much. The **crash pad** model contains a heel insert that is designed to align the foot on a neutral, forward path while it is touching the ground. The **shelf** model is the shoe that Saucony sells to consumers, and it contains *both* the medial post and crash pad.

The overall eversion range of motion was lowest in the shelf model. The two models



Figure 4

Saucony running shoes with medial post and crash pad identified

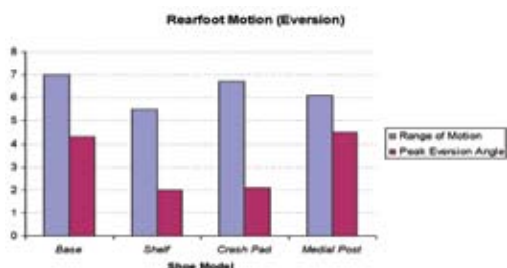


Figure 5

Comparing two different important rearfoot motion variables (range of motion and peak eversion angle, both measured in degrees) across four different shoe models.

that included the crash pad were both very effective in reducing peak eversion angle. Therefore, Saucony's consumer (shelf) model is most effective at reducing excess rearfoot motion. This is the first dataset that describes how running shoe technology affects foot motion with the accuracy and precision of biplane fluoroscopy.

In addition to running, subjects also walked and ran barefoot through the biplane fluoroscopy system, and images were also collected after a treadmill fatigue protocol. This additional barefoot data, which is currently being analyzed, will give us important information about the normal ranges of motions of the small bones in the foot. The fatigued running data will help us understand how shoe technology affects motions when the muscles of a runner are tired, which would be the case at the end of a longer run or race. We hope to use this information to understand how specific footwear types may reduce lower extremity injury prevalence.

We recommend that you visit a specialty running store when purchasing a new pair of running shoes. It is difficult to generalize among people who may exhibit variation in running mechanics, arch type, weekly mileage, and many other factors. In general, however, a runner with a flat foot (low arch) who tends to over-pronate will most likely need a motion control shoe with stability features such as medial posting. A runner with a moderate arch height whose foot follows a more neutral path (does not roll inward as much) might only need a lighter-weight cushioned shoe without as much stability. Even in that case, features such as the crash pad will optimize a neutral path while the foot is in contact with the ground.







Colorado Rockies  
pitcher Aaron Cook.

## Ongoing Research in Baseball Medicine Provides Further Clarity for Treatment and Care

By: Thomas Noonan, M.D.

Dr. Noonan is an orthopaedic surgeon and principal in the Steadman-Hawkins Denver Clinic

Injury has been a part of baseball as long as the game has existed. For decades, many injuries were essentially untreatable and ended many promising careers. More recently, baseball medicine has advanced and prolonged the careers of many players. The cause of injury, however, has remained somewhat clouded. Our ongoing research has provided clarity as we have established the relationship between certain throwing parameters and clinically significant injury.

Through our relationship with the Colorado Rockies Major League Baseball Club, we recently showed that a lack of shoulder strength (specifically external rotation and elevation) correlates with an increased risk of injury requiring shoulder or elbow surgery. These findings were presented at the American Orthopedic Society for Sports Medicine annual meeting in July 2009. Armed with this information, we can hopefully design better training programs for our pitchers to improve their strength and decrease their risk of injury.

Additional biomechanical studies have been performed with Dr. Michael Torry, the director of the biomechanics department at the Steadman Philippon Research Institute. Complex video analysis of major league pitchers was performed at spring training

and then used to calculate various biomechanical parameters. These pitchers were then followed over an extended period of time to look for incidence of injury.

One study showed a significant relationship between pitch velocity and elbow injury, with higher velocity correlating with a higher incidence of injury. An additional study showed a significant relationship between increased elbow valgus torque/shoulder internal rotation torque and elbow injury. This will be presented at the American Academy of Orthopedic Surgeons/American Shoulder and Elbow Society Combined Meeting in Miami, Florida, in April 2010.

These studies are significant in that they prove causal relationships between certain biomechanical parameters and injury in baseball. In the past, these relationships had been speculated but not proven. With scientific evidence of these relationships, care delivered to these athletes can improve, not only at the professional level but also at the amateur and youth levels. We will continue to strive to better understand these injury mechanisms and prolong the careers of these athletes.



### SPORTS AND WELLNESS

## Leading You Down the Road to Recovery

By Steve Stalzer, M.S.P.T., S.C.S.

Managing Partner, Howard Head Sports Medicine Centers

Chances are if you are reading this newsletter, you have had exposure to the Steadman Clinic by seeking the best available medical care for an injury or pain. For those who have had surgery or treatment with one of the physicians at the clinic, your initial exposure to therapy likely seemed to be just a part of the experience. Your therapist may have appeared as an extension of your physician's team. The purpose of this article is to ensure that you receive the most out of any therapy experience you may need for future bumps, bruises, or surgeries. Use the tips below as a roadmap for finding a rehabilitation specialist.

First, select a therapist who works closely with your physician. At Howard Head Sports Medicine, we have had the privilege

of working with the Steadman physicians for over 25 years. Supporters of therapy, the Steadman Clinic physicians believe, is an integral and valuable part of the healing process. Before Dr. Clanton joined the clinic, two therapists from our team traveled to Texas to learn about his surgical procedures and rehabilitation that accompany the advanced surgical techniques being provided by this world-renowned physician.

The Steadman Clinic physicians and Howard Head Sports Medicine therapists have partnered to develop protocols that match rehabilitation with surgical techniques, ensuring that you are provided with the most appropriate and effective care.

At home, make sure your therapist understands your physician's rehabilitation guidelines and philosophy. Close communication between your therapist and physician will help you progress at the right pace. Your therapist can also help identify if things are not on track and may require follow-up with your physician.

Choose a specialist. Like physicians, therapists complete general training in all areas. Some remain generalists, while others specialize in areas such as pediatrics, hand therapy, orthopaedics, and sports medicine. Just as you would not want a general surgeon operating on your knee, you also would not choose a general therapist to provide therapy following a meniscus repair or ACL reconstruction. Find a therapist who has completed a residency or holds an advanced certification such as OCS (orthopaedics), SCS (sports), or CHT (hand therapy).

Visit a clinic that practices evidence-based medicine. Therapists who are involved in research and modify treatment techniques and therapy programs based upon research will provide you with the best rehabilitation possible. By collaborating with physicians at the Steadman Clinic and researchers at Steadman Philippon Research Institute, Howard Head Sports Medicine has been able to validate exercises through EMG studies and modify rehabilitation protocols based upon clinical research data. Rehabilitation should continue to be modified according to advances in surgical procedures as we learn more through clinical outcomes.

Finally, choose a therapist with whom you enjoy working. You will know in the first five minutes of your first session if you are on the right track. Presence in conversation and establishing a connection are more



than good customer service. These form a foundation of a relationship that will help you meet your goals on the road to recovery. Your therapist should provide you with the motivation and inspiration to help you through the rough days.

By selecting a therapist who is a great fit for you and committing yourself to a proper rehabilitation program, you are taking a great step in the right direction on the road to recovery.



## Powerful Prevention from Vitamin D

By Melanie Hendershott, R.D., C.S.O.

Editor's Note: Melanie is the outpatient dietitian for the Shaw Regional Cancer Center in Edwards, Colorado

### WHAT IS VITAMIN D?

Vitamin D is more like a hormone than a vitamin. Our bodies manufacture vitamin D when sunlight hits our skin. The risk of vitamin D deficiency increases during the winter season. The rays of the sun are inadequate during the winter months if you live north of the 37 north latitude, as we are here in Eagle County (see Figure 1). A lighter skin person needs approximately 6-8 minutes with 25 percent of body exposure (arms and legs) to make 1,000 IU Vitamin D at noon on June 21. For those with darker skin, the need increases 18 minutes without sunscreen.

Unfortunately, there are only a few foods that naturally contain vitamin D, making it very difficult to obtain enough from the diet. Milk is fortified and natural sources primarily come from seafood. Because of our long winter months and low dietary intake of vitamin D, supplementation is often necessary to maintain proper levels.

(continued on page 14)

### RISKS OF VITAMIN D DEFICIENCY

Risk factors for vitamin D deficiency include age older than 65 years, exclusively breast-fed infants, dark skin, low sunlight exposure, sedentary lifestyle, and obesity. According to a recent article from Harvard Medical School, approximately one-third of adults are either in the deficient or insufficient vitamin D categories. Also, 75 percent of those with cardiovascular disease are low in Vitamin D. In fact, having adequate vitamin D levels between 30 and 60 ng/ml can result in a 35 percent decreased risk of cancer; up to 80 percent reduced risk of breast cancer; up to 60 percent reduced risk of colon cancer; decreased risk of cancers of the pancreas, advanced prostate, ovary, non-Hodgkin’s lymphoma, kidney, leukemia, and endometrial cancer; 49 percent decreased risk of fractures; 72 percent decreased risk of falls, 13 percent reduction in blood pressure; and even a 77 percent reduced risk of influenza. Vitamin D deficiency is also associated with increased risk of autoimmune deficiencies such as multiple sclerosis, type 1 diabetes and lupus. Therefore, eliminating vitamin D deficiency could be one of the most important public health advances of our time.

### KNOW YOUR LEVEL

Like knowing your cholesterol, it is important to have your vitamin D level

checked. Ask your doctor to add the test to your regular blood work. Another option is to get a \$40 home test kit from Grassroots Health ([www.grassrootshealth.org](http://www.grassrootshealth.org)), a non-profit organization that focuses on vitamin D. Vitamin D deficiency is defined as levels less than 20 ng/ml and insufficiency at 20 to less than 30 ng/ml. Normal levels are 30-100 ng/ml (see Table 2). Repletion guidelines for deficient and insufficient levels are to take 50,000 IU per week for eight weeks, then recheck and repeat as necessary until normal levels are reached.

### SUPPLEMENTATION RECOMMENDATIONS

The American Academy of Pediatrics recommends that infants and children have 400 IU/day within the first few days of life with supplementation, the formula, or milk (1 liter). For adults, the Harvard article recommends 800 to 1,000 IU vitamin D supplementation as the easiest way to obtain adequate amounts.

### MORE RESEARCH

A new study funded by the National Institutes of Health is looking for participants. The study is called The **VIT**amin D and Omega-3 Trial (**VITAL**) and will be investigating men and women taking 2000 IU vitamin D and 1 gram Omega-3 daily for reduced risk of heart disease, stroke, and cancer. If you are interested in participating or want more information, visit their website at [www.vitalstudy.org](http://www.vitalstudy.org).

### MAIN MESSAGE

Vitamin D can be a large factor in chronic disease prevention, but only if you know your levels are adequate. Please ask your doctor to check not only your level, but to consider checking the levels of all their patients. It could be lifesaving.



**Table 1**  
A Partial List of Foods that Naturally Contain Vitamin D

Food	Serving Size	Vitamin D (IU)
Oysters	3 oz	545
Salmon (wild)	3 oz	1,000
Cod-liver oil	1 teaspoon	450
Catfish	3 oz	425
Bluefish	3 oz	415
Mackerel	3 oz	395
Trout (farmed)	3 oz	375
Salmon (farmed)	3 oz	275
Sardines (canned in oil)	3 oz	230
Halibut	3 oz	170
Tuna (bluefin)	3 oz	170
Tuna (canned in water)	3 oz	135
Shrimp	3 oz	120
Milk*	1 cup	100
Cod	3 oz	80
Mushrooms (Shiitake)	2 oz	55
Mushrooms (Chanterelle)	2 oz	50
Sole/flounder	3 oz	50
Bass (freshwater)	3 oz	35
Swordfish	3 oz	35
Clams	3 oz	30
Egg (whole)	1	25

Note: IU = International Units.

\* Milk is listed here as a reference and not a natural source. Whole, low-fat, or non-fat/skim milk is supposed to be fortified with 100 IU of vitamin D per cup, but past studies have not yet definitely proven the reliability of the fortification process. Studies have suggested that many dairy products are under fortified with vitamin D despite claims in the label.

Medscape Source: Dermatol Nurs © 2009 Jannett Publications, Inc.



Figure 1.

Table 2. Blood Levels of Vitamin D	
25(OH)D3	Health Implications
Ng/ml	
<20	Deficiency, high risk of various conditions- Requires repletion
20-29	Insufficiency, mild risk of various conditions – Requires Repletion
30-100	Sufficiency, decreased risk of various conditions
>100	Possible unsafe level
>150	Toxic levels, impossible to achieve with sun exposure alone



## **Publications, Presentations, and Research Institute Research Leads the World.**

**Karen Briggs, M.B.A., M.P.H.**, Director of Clinical Research, reports that 2010 will be another prolific year for the Institute as numerous papers have been accepted by prestigious medical and scientific societies and journals.

### **2010 Annual Meeting of the American Academy of Orthopaedic Surgeons**

The 77th Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS), New Orleans, March 9-13, accepted four podium and four poster presentations highlighting Institute research.

The Academy provides education and practice management services for orthopaedic surgeons and allied health professionals. The Academy also serves as an advocate for improved patient care and informs the public about the science of orthopaedics. Founded as a not-for-profit organization in 1933, the Academy has grown from a small organization serving less than 500 members to the world's largest medical association of musculoskeletal specialists. The Academy now serves more than 34,000 members internationally.

### **PODIUM PRESENTATIONS**

*Use of an Unloader Brace for Medial or Lateral Compartment Osteoarthritis of the Knee.*

*Tegner Index and Lysholm Scores Assess Activity and Function 6 Years Post Collagen Meniscus Implants.*

*Outcomes Following Arthroscopic Labral Repair in the Hip: Prospective Minimum 2-Year Follow-Up.*

*Relationship Between the FABER Test and the Radiographic Alpha-Angle in Patients With FAI.*

### **POSTER PRESENTATIONS**

*Outcomes Following Hip Arthroscopy With Microfracture.*

*Decreased Femoral Head-Neck Offset Maybe a Possible Risk Factor for ACL Injury.*

*Outcomes of Displaced Clavicle Fractures: Non-Operative Vs. Intramedullary Fixation.*

*Decision-Making in Treating Diaphyseal Clavicle Fractures: Is There Agreement Among Surgeons?*

### **2010 Arthroscopy Association of North America, May 20-23, Hollywood, Florida**

The Arthroscopy Association of North America (AANA) is an accreditation council for continuing medical education. AANA exists to promote, encourage, support, and foster the development and dissemination of knowledge of arthroscopic surgery in order to improve upon the diagnosis and treatment of diseases and injuries of the musculoskeletal system.

#### **AANA accepted the following presentations:**

*Optimization of Magnetic Resonance Imaging of the Anterior Bundle of the Ulnar Collateral Ligament: A Randomized Controlled Trial of 3 Patient Positions.*

*Subcoracoid Impingement: Factors Associated With the Size and Location of the Coracohumeral Interval.*

The following research will be presented at AANA as e-posters:

*Hip Arthroscopy in The Patient 50 Years and Older.*

*New Method To Assess CAM Impingement and the Risk of Chondral Damage Using AP Pelvis Radiographs.*

*Subcoracoid Impingement: Factors Associated With a Narrow Coracohumeral Interval in Patients Who Underwent Coracoidplasty.*

*Comprehensive Arthroscopic Management (CAM) of Shoulder Osteoarthritis in Young Active Patients.*

### **2010 European Society of Sports Traumatology, Knee Surgery and Arthroscopy Annual Meeting, June 9-12, Oslo, Norway**

The European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA) promotes the exchange of information data covering research into the scientific and practical aspects of knee ailments.

ESSKA has accepted the following five podium and two poster presentations for the annual meeting.

#### **Podium Presentations:**

*Knee Outcomes Data Collection in a Sports Medicine Practice With a One-Page Form.*

*Analysis of Scores To Document Outcome Following Hip Arthroscopy Meniscus Tear Types and Patterns Correlate With Function and Activity Levels at Least Two Years After Partial Meniscectomy.*

*Function and Return to Activity Outcomes Six Years After Partial Meniscectomy Vs. Collagen Meniscus Implants Assessed With Lysholm Scores and Tegner Index.*

*Hip Arthroscopy in the Patient 50 Years and Older.*

(continued on page 16)

(continued from page 15)

**Poster Presentations:**

*Viscosupplementation Injections Augmented with Corticosteroid for Knee Osteoarthritis: Patient Expectations and Clinical Outcomes.*

*Use of an Unloader Brace for Medial or Lateral Compartment Osteoarthritis of the Knee.*

**Mike Torry, Ph.D.**, Director of the Biomechanics Research Laboratory, reports that 19 abstracts have been accepted by the Orthopaedic Research Society for its 2010 annual meeting and one abstract was accepted by the Society of Military Orthopaedic Surgeons for its annual meeting.

**2010 Annual Meeting of the Society of Military Orthopaedic Surgeons (SOMOS) Annual Meeting, December 13-17, 2010, Vail, Colorado**

The purpose of the Society of Military Orthopaedic Surgeons is to provide a forum for the interchange of medical knowledge as it relates to the practice of Orthopaedic surgery in the military. SOMOS shall hold at least one general meeting each year. The annual meeting is primarily of a scientific nature. Previous conferences have generated over 500 in attendance.

**SOMOS accepted the following abstract for presentation:**

*Does Biceps Tenodesis Alter Shoulder Kinematics? A Novel Approach In Vivo Biplane Fluoroscopy Study.* C. Dewing, M.D., M.C., U.S.N.; F. Elser, M.D.; JE Giphart, Ph.D., J. Krong, M.S.; D. Peterson, M.S.; MR Torry, Ph.D.; PJ Millett, Ms.C., M.D.

**56th Annual Meeting of the Orthopaedic Research Society, March 6-9, New Orleans**

The Orthopaedic Research Society (ORS) is dedicated to the advancement of orthopaedic research and to the translation of basic and clinical research to clinical practice. The ORS carries out this mission primarily by disseminating knowledge and by promoting the development of basic and clinical scientists. The ORS also advocates for increased resources for research, and increases public awareness of the impact of orthopaedic research.

**ORS has accepted the following 19 abstracts for presentation:**

*Deep Hip Muscle Function During Gait.* Decker MJ, Krong J, Peterson DS, Torry MR, Philippon MJ.

*Temporal Predictors of Anterior Tibial Translation In Healthy Adults.* Peterson DS, Shelburne KB, Giphart JE, Krong J, Steadman JR, Torry MR.

*In Vivo Knee Kinematics Under Increasing Demand Of Functional Activities: A Bi-Plane Fluoroscopic Assessment.* Torry MR, Shelburne KB, Peterson DS, Krong J, Giphart JE, Steadman, JR.

*Method for Determining Scapulo Thoracic Motion In The Lat Pulldown in Healthy Subjects Using Bi-Plane Fluoroscopy.* Anker CR, Shelburne KB, Hackett TR, Duffy P, Peterson DS, Krong J, Hageman L, North A, Torry MR, Giphart JE.

*Tibio-Femoral Kinematics of Soft and Stiff Landings: A Bi-Plane Fluoroscopic Study.* Peterson DS, Shelburne KB, Giphart JE, Krong J, Steadman JR, Torry MR.

*The Relationship of Lower Extremity Alignments, Knee Laxity and Anterior Tibial Translation During Drop Landings: A Bi-Plane Fluoroscopic Study.* Torry MR, Peterson DS, Shelburne KB, Krong J, Giphart JE, Steadman JR, Woo S L-Y.

*Hip Rotation Function of the Pectineus Muscle.* Decker MJ, Krong J, Hageman LR, Torry MR, Philippon MJ (2010), Torry MR, Peterson DS, Shelburne KB, Krong J, Giphart JE, Steadman JR, Woo S L-Y.

*Thigh Strength Does Not Correlate With Anterior Tibial Translation During Drop Landings: A Bi-Plane Fluoroscopic Study.* Torry MR, Peterson DS, Shelburne KB, Krong J, Giphart JE, Steadman JR, Woo S L-Y.

*A Comparison of Muscle Contributions to Belly Press and Lift Off Tests With Simulated Obesity.* Yanagawa T, Torry MR, Shelburne KB, Hackett TR, Pandy MG.

*Comparison of Two Normalization Schemes For Knee Kinematics Derived from Bi-Plane Fluoroscopy.* Peterson DS, Shelburne KB, Giphart JE, Krong J, Steadman JR, Torry MR.

*In Vivo Tibia-Femoral Contact Patterns in the Natural Knee During Jump Landing.* Clary CW, Laz PJ, Giphart JE, Torry MR, Rullkoetter PJ, Shelburne KB.

*A Musculoskeletal Model of the Hip for the Calculation of Muscle and Joint Loads During Physical Activity.* Shelburne KB, Decker MJ, Philippon MJ, Torry MR.

*Hip Joint Forces During Squatting Exercise Predicted With Subject Specific Modeling.* Shelburne KB, Decker MJ, Philippon MJ, Torry MR.

*Muscle Forces at the Hip During Squatting Exercise.* Shelburne KB, Decker MJ, Philippon MJ, Torry MR.

*Anterior Hip Muscle Forces During Ice Hockey Sprint Starts.* Shelburne KB, Torry MR, Krong J, Decker MJ, Philippon MJ.

*Effect of Long Head Biceps Tenodesis on In Vivo Glenohumeral Translations During Loaded Forward Flexion Using Biplane Fluoroscopy.* Giphart JE, Millett PJ, Dewing CB, Elser F, Peterson DS, Krong J, Hageman E, North A, Torry MR.

*Effect of Clavicle Shortening on In Vivo Acromioclavicular Rotations During Lat Pull Downs Using Bi-Plane Fluoroscopy.* Giphart JE, Shelburne KB, Hackett TR, Duffy P, King J, Peterson DS, Krong J, Hageman E, North A, Torry MR.

*Muscle And Joint Loading At The Shoulder During The Forward Punch Rehabilitation Exercise.* Yanagawa T, Torry MR, Shelburne KB, Hackett TR, Pandy MG.

*Comparison of Six Degrees of Freedom Glenohumeral Kinematics During Abduction, Scaption and Forward Flexion In Healthy Subjects Using Biplane Fluoroscopy.* Giphart JE, Millett PJ, Anstett T, Brunkhorst JP, Peterson DS, Krong J, Shelburne KB, Torry MR.

### **American Academy of Orthopaedic Surgeons (AAOS) Recognizes Dr. Peter Millett**

Congratulations to Dr. Millett for being the inaugural recipient of the AAOS Achievement Award. The spirit of this new recognition program is to encourage and celebrate active volunteer involvement by our membership.

In a letter to Dr. Millett, Dr. Joseph Zuckerman, AAOS president, wrote, "It is indeed an honor for me to recognize Academy members like yourself whose volunteer efforts support our colleagues, the Academy and the orthopaedic profession. You and the other Academy Fellows who give of yourselves are the reason for the strength of the Academy in all of its endeavors, as well as the world of orthopaedics."

## **In the Media**

**USA Today** featured the Institute, Dr. Marc J. Philippon, and Dr. Richard Steadman in the **February 22** article, ***Athletes Embrace Cutting-Edge Doctors, Methods To Speed Recovery***, by **Jorge L. Ortiz**.

Both doctors and the Institute were prominently featured throughout the article and in the side-bar, ***Doctors Athletes Rely On:***

***Knees:*** Richard Steadman. A pioneer in microfracture surgery and the co-founder of the renowned Steadman Hawkins Clinic in Vail, Colo. Much sought-after by skiers and soccer players. Patients have included Joe Montana, Bruce Smith, Kobe Bryant, and Carlos Beltran.

***Hips:*** Marc Philippon. A consultant to teams in the four major sports, Philippon has advanced the use of



Photo: John Kelly

*joint-preservation techniques through arthroscopic hip surgery. His patients have included Alex Rodriguez, Greg Norman, Mario Lemieux, and Kurt Warner.*

*In addition, researchers at the Steadman Philippon Research Institute in Vail, Colo., recently have concluded a study on the effects of stem cells on cartilage regeneration.*

**The January 13 and 14 issues of the *New York Times* covered the story of New York Mets center fielder Carlos Beltran, who underwent arthroscopic knee surgery by Dr. Steadman, In the January 13 article, *Surgery for Beltran Means He's Likely Out Until May*, journalist Ben Shpigel writes, *The Mets said that it was Beltran's decision and that his "personal physician," Dr. Richard Steadman, a noted orthopedist, performed the surgery in Colorado.***

**During the Winter Olympics, *The Wall Street Journal* journalist Matthew Futterman cited Institute VP for Program Advancement and former US Ski Team coach John McMurtry in articles February 13, *The Old Men on the Mountains*, and February 18, *The Americans Win Another Rodeo.***

*In an event such as the Olympics, with so much at stake, the mental aspect can and usually is the deciding factor, said former U.S. Alpine Coach John McMurtry. Very often the favorites in the Olympics falter and a dark horse breaks through. The favorites carry the burden of expectations which can factor into the final result. Lindsey (Vonn) is a tremendous athlete and is physically and mentally dominant. She radiates confidence.*







Photo: John Kelly

FREQUENTLY ASKED QUESTIONS

**WHAT ARE THE MOST SIGNIFICANT BREAKTHROUGHS OR ACCOMPLISHMENTS IN TERMS OF RESEARCH OF THE INSTITUTE?**

Dr. William G. Rodkey, chief scientific officer, answers: In Basic Science we've been able to define the underlying molecular and cellular biological events that occur within the healing response for ACL injuries. Also, the work we've done on microfracture was a major event, especially in identifying the importance of removing calcified cartilage as part of the process and of being able to quantify molecular and cellular events at two, four, six, and eight weeks following the microfracture procedure. In doing so, we've been able to validate the rehabilitation protocol.

The most important event in Clinical Research has been the development of a comprehensive patient database that is almost unique in the world. It is significant because we were doing evidence-based medicine (EBM) before there was even such a term. Now it's one of the hottest buzz words in the medical and medical research communities.

In Biomechanical Research, probably the most important milestone is our advance in computer modeling of various areas of the body, and manipulating those models based on actual human images.

Our newest department, Imaging Research, will allow us to do things that will impact the other three divisions. For example, we might be able to image patients (rather

than animals) periodically and correlate those images with Basic Science findings. In Clinical Research, we're already collecting data that enable us to correlate imaging results with our long-term studies of clinical outcomes. In Biomechanics, our researchers will be able to incorporate images into their computer models of shoulders, hips, and knees.

**OVER THE PAST 20 YEARS, WHAT IS THE MOST SIGNIFICANT DEVELOPMENT IN TERMS OF THE INSTITUTE'S ORGANIZATION?**

Dr. Rodkey: It is the fact that the Institute has evolved from an idea — the brain-child of Dr. Steadman — into a structured organization with four distinct divisions. The organization and the physicians and scientists it has attracted have allowed the Institute to become one of the world leaders in orthopaedic research. That position is based on our peer-reviewed publications, national and international presentations, and clinical outcomes.

**WHAT ARE THE IMPLICATIONS OF IMAGING RESEARCH FOR RESEARCH BEING CONDUCTED BY THE INSTITUTE?**

Dr. Charles Ho, director of Imaging Research, comments: Until now, imaging has not been included in the Institute's already massive database. By incorporating the results of imaging into that database, there will be a stronger tie to what happens in the clinic. In fact, what happens in the Clinic is the database. Now we will be able to see how imaging has influenced treatment and outcomes.

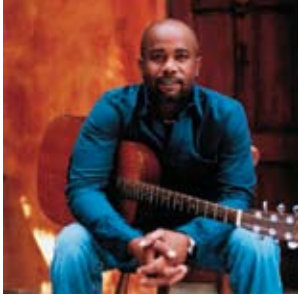
We are now knocking on the door of a whole new area of treatment. With our new imaging capabilities contributing to patient evaluation and treatment, we may be able to stabilize, arrest, or reverse the degeneration of tissue before a tear or defect in a joint occurs. We hope we can contribute to understanding, developing, and validating the type of diagnosis and treatment that no one has been able to do previously.



SAVE THE DATES

## Darius Rucker in Concert

July 8 is the date for our annual summer fundraiser. Darius Rucker, the Country Music Association 2009 Horizon Award winner and nominee for 2010, will perform at the Gerald Ford Amphitheater in Vail, Colorado. The evening will also include a sit-down dinner with live and silent auction.



## Steadman Philippon on the Links

**THE 2010 STEADMAN PHILIPPON RESEARCH INSTITUTE GOLF CLASSIC, PRESENTED BY RE/MAX INTERNATIONAL, SET FOR AUGUST 19, 2010**

Proceeds from the seventh 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. Sanctuary organizes and hosts charitable events to support organizations devoted to the arts, children, health care, and crisis management.

Through 2009, more than 260 charities have raised more than 47 million dollars 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.

*Golf Digest* listed Sanctuary as the best new private course in 1997. Gary McCord, CBS golf analyst and senior PGA tour professional, has said, "Sanctuary is simply the most spectacular golf course I have ever seen."

The Steadman Philippon Research Institute is grateful to Dave and Gail Liniger, owners and co-founders of RE/MAX International, who created this unique opportunity for the Institute to develop and enhance relationships with those who support our mission. Sponsorship opportunities and team slots are available now. More information can be obtained by visiting our website ([sprivail.org](http://sprivail.org)) under "Upcoming Events," or by calling the Development office at (970) 479-5781. To request an invitation or for more information on other upcoming events, please contact John McMurtry.



Photo: John Kelly

## Habervision Is Here!

The Steadman Philippon Research Institute would like to offer all our supporters and their families and friends the opportunity to purchase the new and exciting line of Habervision Polarized Eyewear products and accessories at a 50 percent savings! A portion of the proceeds from each sale goes to the Institute.

The sunglasses and ski goggles incorporate the very best polarized technology available. There is something for everyone. Go to [www.habervision.com](http://www.habervision.com) and enter Affinity Member Code: FOUNDATION. There is no expiration date. Share the code! Shop and enjoy.



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*The Steadman Philippon Research Institute is dedicated to keeping people of all ages physically active through orthopaedic research and education in the areas of arthritis, healing, rehabilitation, and injury prevention.*

**ADMINISTRATION**

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*President and Chief Executive Officer*

Marc Prisant  
*Executive Vice President and Chief Financial Officer*

William G. Rodkey, D.V.M.  
*Chief Scientific Officer*

Amy Ruther  
*Human Resources and Accounting Manager*

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*Vice President for Program Advancement*

Sheri Wharton  
*Director of Special Events*

Maricela Pinela  
*Development Associate*

**BASIC SCIENCE**

William G. Rodkey, D.V.M.  
*Director*

**BIOMECHANICS RESEARCH LABORATORY**

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*Director*

J. Erik Giphart, Ph.D.  
*Senior Staff Scientist*

Jacob Krong  
*Intern*

Casey Myers  
*Intern*

Wes Pennington  
*Intern*

Jean-Yves Schoenahl, M.D.  
*European Visiting Scholar*

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Karen K. Briggs, M.B.A., M.P.H.  
*Director*

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*Coordinator*

**OFFICE OF INFORMATION SERVICES**

Joe Kania  
*Coordinator*

Barry Eckhaus  
*Coordinator*

**Mark Your Calendar:**

**JULY 8, 2010**

Darius Rucker, in concert.  
The evening includes a sit-down dinner  
with live and silent auction.  
Vail, Colorado

For more information, please contact  
Sheri Wharton at 970.479.5788  
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**AUGUST 19, 2010**

2010 Steadman Philippon Research Institute  
Golf Classic, presented by RE/MAX International  
at Sanctuary, Sedalia, Colo.

For more information, contact John McMurtry  
at [mcmurtry@sprivail.org](mailto:mcmurtry@sprivail.org),  
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**Executive Editor:**

Jim Brown, Ph.D.

**Your Legacy, Our Future. Please remember Steadman Philippon  
Research Institute in your will, trust, or other estate plan.**