

Life In Motion

Issue 3 / 2019



**Lumbar
Stenosis**

**Middle aged
knee pain**

High ankle Sprains
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regular turned ankle

**Fly Fishing
Injuries**

Hip Pain
in young adults

ACL injuries
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References: 1. DePuy Synthes Trauma. Analysis—Femoral Recon Nail, Anatomical Study. Ref. 0000271671. 2. DePuy Synthes Trauma. Analysis—Femoral Recon Nail, Proximal Nail End. Ref. 0000271887.

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Greetings from UOA

University Orthopaedic Associates



Darleen Caccavale, CEO

We are excited to bring you our third annual issue of the UOA "Life in Motion" magazine featuring articles from our highly skilled and nationally recognized orthopaedic surgeons. As New Jersey's leading orthopaedic practice, we have been treating families for their musculoskeletal needs for more than 45 years. Dedicated to providing the most current, highest quality, personalized healthcare services available, it is a privilege to offer information that can help you understand a variety of common orthopaedic ailments and to share some of the cutting edge procedures that are pioneered and utilized by our physicians and staff.

Since our inception in 1972, we continue to grow with increased providers and locations; our commitment to the pursuit of excellence in orthopaedic treatment, medical education and training, clinical and bench research, and the promotion of community health has un-wavered. Each of our physicians is fellowship trained, board certified or board eligible, and each strives to provide the highest level of patient care based on the best available medical evidence. Providing care for pediatric through adult ages, our physicians have subspecialty training in sports medicine, upper extremity, spine, joint replacement, foot and ankle, trauma, physical medicine and rehabilitation. Our patients experience the latest technology and concepts available coupled with compassionate care. With in-house MRI, digital x-ray, musculoskeletal ultrasound, DXA scan, on-site surgi center, physical and hand therapy and our Sports Performance and Wellness programs, our patients experience a continuum of care that is second to none in the state of New Jersey.

With academic appointments in the Department of Orthopaedic Surgery at Rutgers, Robert Wood Johnson Medical School, our physicians train future orthopaedic surgeons. This educational experience is a two-way street with residents gaining vital experience through teaching and physician mentoring and our physicians benefit as they must stay cutting edge with the newest orthopaedic procedures and current research. Ultimately, the patient is the benefactor of this educational component. From the clinical setting to the sidelines, you will find several of our physicians at local high schools and collegiate sporting events as we provide care to athletes from Rutgers, Princeton, and Rider Universities as well as US Rowing.

UOA is continually involved with new research and with educational programing for physicians, physical therapists, athletic trainers, and the community. To learn more about current research or upcoming educational opportunities, please visit our website at www.uoanj.com. The site also offers an array of information that includes general office information, detailed information about physician training, educational resources to understand your medical condition, the latest UOA news, announcements, and an interactive patient portal to update information or request patient information. UOA is also active with social media, including Facebook, Twitter, YouTube and UStream.TV.

The physicians and staff at UOA would like to thank the generous sponsors for their support of this publication. We would also like to thank our patients, referring physicians, therapists, and athletic trainers for the opportunity that you have given us to serve you and we look forward to exceeding your orthopaedic needs each and every day.

— Darleen Caccavale, CEO

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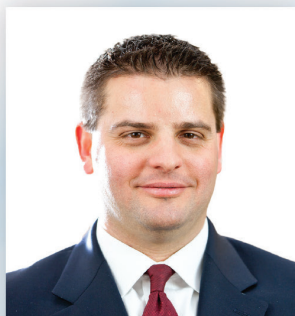
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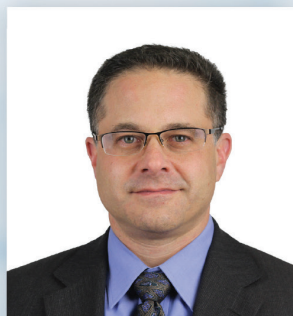
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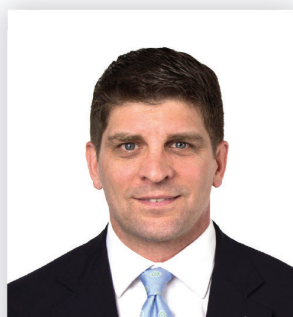
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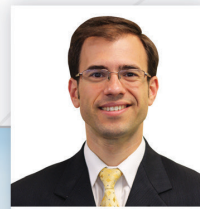
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Spine Surgery



Dr. Charles J. Gatt
Sports Medicine &
Arthroscopic Surgery



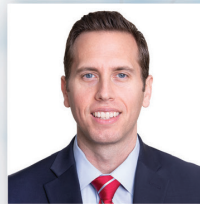
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Please join University Orthopaedic Associates in congratulating sports medicine surgeon, Dr. Patrick Buckley, for his top finish at the 12th Biennial International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) Congress. Dr. Buckley was one of four finalists for the John J. Joyce Award for best elbow, wrist, or hand abstract read at the conference. More than 200 papers were submitted at the Congress.

Dr. Buckley's paper, titled "Variations in Blood Supply From Proximal to Distal in the Ulnar Collateral Ligament of the Elbow," studied 18 cadaver ulnar collateral ligaments (UCLs). Dr. Buckley and his team found that the proximal end (the end closest to the shoulder) had many blood vessels, whereas the distal end (the end closest to the fingertips) had significantly less vascularity.

This has implications in the healing and treatment of UCL injuries based on the location of the ligament that has been damaged, the team concluded. UCL injuries are common in overhead throwing athletes, especially baseball, and continue to be common in adolescent and adult baseball athletes. Being at the forefront of research on UCL injuries allows the sports medicine specialists at UOA to treat an athlete with a UCL injury and help return them to their sport.

The ISAKOS Congress is the world's largest international sports medicine conference. It took place this year between May 12 and May 16 in Cancun, Mexico.

Like all of our healthcare providers, Dr. Buckley embodies the spirit of curiosity and the desire to always keep learning that makes UOA the top orthopaedics provider in the state. We are grateful to have such dedicated practitioners as Dr. Buckley and the rest of the team here at UOA.



Congratulations Dr. Gatt!

It's been a busy and productive year for Dr. Charles J. Gatt, Jr., as he and his team have received multiple awards for their involvement in scholarly research and excellence in sports medicine. In July, he and his research team were recognized by the American Orthopaedic Society for Sports Medicine when they received the 2018 Excellence in Research Award for their work on developing a meniscal replacement for the knee. In January of 2019, Dr. Gatt was recognized again when he received the David G. Moyer Team Physician Award. The

annual award, presented by the Eastern Athletic Trainers Association (EATA), honors a team physician who, over the years, has exemplified the qualities of an expert clinician, educator or researcher. Dr. Gatt currently provides orthopaedic care for Rutgers and Rider University, and Montgomery High School athletes. He also serves on the medical advisory committee for the NJSIAA and advocate for the athletic training profession while also serving the community in which he lives and works.



Dr. David Polonet, MD has recently been named the Director of Perioperative Services at Jersey Shore Hospital.
Congratulations Dr. Polonet!



Cris Beiro, MD

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Arthroscopic Surgery*



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Welcomes New Doctors

Many of our physicians participate in research in many different areas of orthopaedics. Most of these studies eventually end in formal publication in the form of articles in refereed journals, chapters in books, and in some instances formal textbooks. Physician involvement in research highlights UOA's commitment to providing the most advanced care to our patients. We take pride in the accomplishments of our physicians and their involvement in advancing the field of orthopaedics.

Ongoing Research at UOA– Current Studies

- Impact of Two different Physical Therapy Programs in the Rehabilitation of Patients Undergoing Anterior Approach Hip Replacement Surgery

- Primary Investigator – Stephen Kayiaros, MD

- IRB Study Pro20140001090

- Enrollees are patients who are undergoing Anterior Hip Replacement surgery and who are going home directly from the hospital after surgery.

- To learn more about the study and what it entails, please visit: www.uoanjan.com/research-studies

- OnQ Trac Study

- Primary Investigator – Charles J. Gatt, Jr, MD

- Physicians participating in the study: Dr. Gatt, Dr. Bechler, Dr. Monica

- IRB Study – Pro20170002037

DESCRIPTION: The purpose of the proposed study is to assess the effectiveness of infusion pain pumps for postoperative pain management in outpatient sports medicine surgery. The vast majority of surgical procedures for sports injuries are performed in the outpatient setting; postoperatively, most of these patients receive a prescription for narcotic pain medication. As an adjunct, preoperative nerve blocks have been used to control pain in the early postoperative period; however, the duration of action is hours and patients have significant pain when the effects of the nerve block decrease. Recently, the use of infusion pain pumps has been added to the treatment regimen. These pumps can provide up to three days of pain relief, likely decreasing narcotic use. This study proposes to compare the effectiveness of preoperative nerve block and infusion pain pump for postoperative pain management in outpatient sports medicine surgical cases.

- PLT - ACL Reconstruction

- IRB Study – Pro20170000656

- Primary Investigator – Charles J. Gatt, Jr, MD

- Participating Physicians – Dr. Gatt, Dr. Bechler

DESCRIPTION: The purpose of this study is to evaluate the functional outcomes and clinical efficacy of Peroneus Longus (PL) allograft Anterior Cruciate Ligament (ACL) in primary reconstructive knee surgery. The ACL is a ligament that connects the tibia (leg bone) to the femur (thigh bone) and is located in the center of the knee. Its purpose is to prevent the tibia (leg) from moving forward relative to the femur (thigh). Once the ACL is injured it can only be reconstructed or replaced since it cannot heal. The reconstructive surgery requires the use of a graft to replace the ligament. Many types of grafts can be used and one surgical choice is an allograft. An allograft by definition is tissue from a donor other than the patient. In this case, the allograft is a peroneus longus tendon from a cadaver donor that has been sterilized and prepared by a FDA approved tissue bank. (The peroneus longus is a superficial muscle in the lateral lower leg, and its tendon is a standard one preserved in tissue banks for use as sterile allografts, particularly for anterior and posterior cruciate reconstructions.)



Recent Publications:

Validation of the Shin Pain Scoring System: a novel approach for determining tibial bony stress injury. Nussbaum ED, **Gatt CJ Jr**, Epstein R, **Bechler JR**, **Swan KG**, Tyler D, Bjornaraa J. *Orthop J Sports Med* 2019 {accepted for publication}

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Relationship Between Sports Participation After Revision Anterior Cruciate Ligament Reconstruction and 2-Year Patient Outcome Measures. MARS Group, Including **Bechler JR, Gatt CJ**, et al AM J Sports Med. 2019 Jul;47(9):2056-2066. doi: 10.1177/0363546519856348. Epub 2019 Jun 21. PMID: 31225999

Outcomes after Minimally Invasive versus Open Lumbar Fusion within an Enhanced Recovery Pathway: A Retrospective Cohort Analysis of Prospectively Collected Data. **Verma R MD MBA**, Wetmore D MD, Qureshi S MD MBA, Soffin E MD PhD. Status: Podium presentation at the HSS Annual Fellows Research Presentations – New York, NY in June 2019.

Artificial Disc Replacement in Spine Surgery. Othman Y BS, **Verma R MD MBA**, Qureshi S MD MBA. Annals of Translational Medicine. October 2019.

Improvement in Back and Leg Pain and Disability Following Adult Spinal Deformity Surgery: Study of 324 Patients with 2-year Follow-up and the Impact of Surgery on Patient-reported Outcomes. **Verma R MD MBA**, Lafage R PhD, Scheer J BS, Smith J MD PhD, Passias P MD, Hostin R MD, Ames C MD, Mundis G MD, Douglas B MD, Kim H MD, Bess S MD, Kleinberg E MD, Schwab F MD, Lafage V PhD, and the International Spine Study Group. Spine. 2019 Feb 15; 44(4):263-269

In Process Publications:

Axillary View in Proximal Humerus Fractures

Zachary Vrendenburgh, **James T. Monica**,

Abstract:

Background: Proximal humerus fractures are common injuries in the elderly population and significant time, patient discomfort, and cost is incurred by evaluating the shoulder with multiple x-ray views. The necessity of a complete shoulder series including an axillary or axillary equivalent x-ray to assess for concurrent dislocation is unclear.

Methods: A retrospective review of patients with proximal humerus fractures presenting over an eight year period to a level 1 trauma center was performed. X-rays were reviewed by orthopedic residents and attendings before and after the addition of an axillary or axillary equivalent view to assess for dislocation of the glenohumeral joint and to determine if the fracture is operative.

Results: Adding the axillary view significantly increased the number of correct diagnosis from 90.5% to 96.0% (OR 3.52 (95% CI 2.51-4.93), $p < .001$) and decreased the percent of missed dislocations from 17.2% to 10.9% (OR 0.496 (95% CI 0.310-0.793), $p < .004$). Less reviewers were unsure of dislocation status after the axillary view was included in the series (13.6% vs 4.5%; OR 0.235 (95% CI 0.117-0.312) $p < .001$). Addition of the axillary view had no influence on the proportion of cases determined to be operative (31.7% vs 34.0%; OR 1.12, $p = .246$). Diagnostic and therapeutic decision making was also more consistent after addition of an axillary view.

Conclusions: The inclusion of an axillary view to a standard shoulder series in patients with proximal humerus fractures improves the diagnostic accuracy, decreases the number of missed dislocations and improves the consistency of diagnostic and therapeutic decision making.

Level of Evidence: 3 – Diagnostic Study

Keywords: Proximal Humerus Fracture, Axillary View, Shoulder Dislocation

Recent Regional/ National Presentations:

Kayiaros S - “Synthetic Mesh Allograft Reconstruction for Extensor Mechanism Insufficiency” Dexter K Bateman, Jared S Preston, Stephen Kayiaros, Alfred J Tria. American Association of Orthopaedic Surgeons Annual Meeting, Las Vegas, NV, Mar 2019.

Kayiaros S - “Synthetic Mesh Allograft Reconstruction for Extensor Mechanism Insufficiency” Dexter K Bateman, Jared S Preston, Stephen Kayiaros, Alfred J Tria. American Association of Hip and Knee Surgeons Annual Meeting, Dallas, TX, Nov 2018.

Gatt CJ – “Management of Adolescent Bony Stress Injury” 71st Annual Eastern Athletic Trainers Association Meeting, Valley Forge, PA

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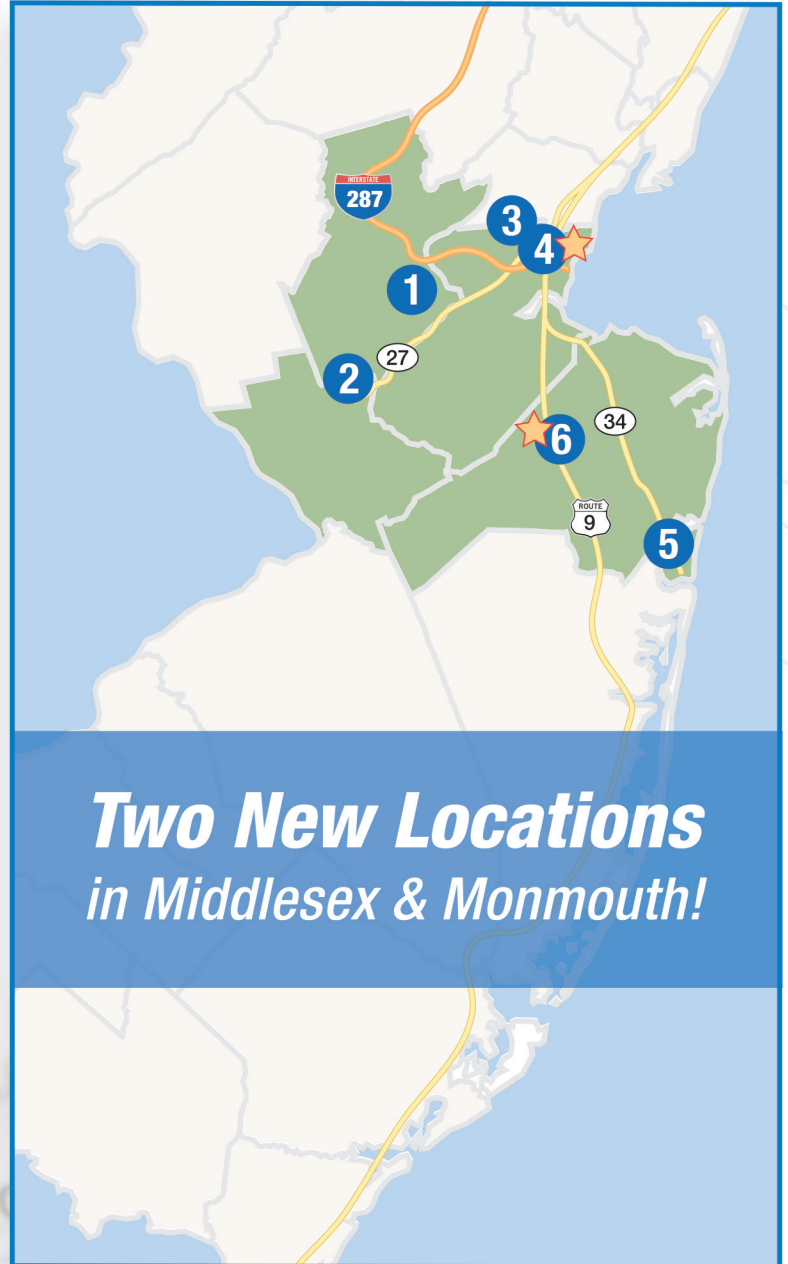


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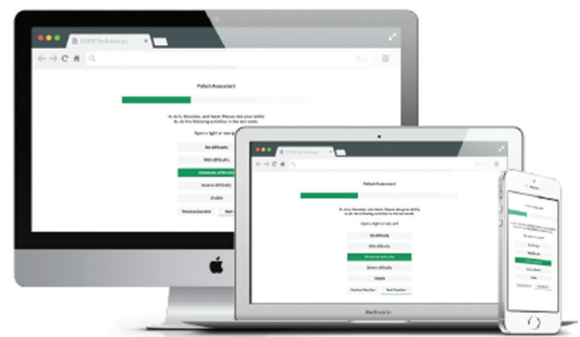


Those Darn Surveys

Surveys have become a common part of our everyday lives. Whether you have visited a website, purchased a product, or fit a certain demographic, you will most likely receive some form of a survey. It can be overwhelming and create frustration.

At UOA we value our patients, their time, and we strive to provide the highest level of patient care. Our physicians understand that each patient is unique and they strive to provide the appropriate care for each individual. We recognize that our patients bring expertise to the care conversation and we want to fully involve you in the decision-making process. Doctors and patients need as much data as possible to make an informed decision about what treatment is best.

One of the ways we accomplish the task of individualized care is through the judicious use of Patient Reported Outcome Measures (PROMs) or surveys which help to define your function, quantify your pain, highlight your goals and chart your recovery process. The PROMs we utilize have been validated and approved by the American Academy of Orthopaedic Surgeons and provide us with important predictive analytics in order to tailor your treatment plan, chart your recovery and to maximize the attainment of your goals. PROMs also provide valuable patient education through their integration and continued monitoring of your recovery beyond the clinic. Their completion provides important information to our physicians and can help to positively influence your care.



You'll take the assessment from home, on any device.

SAMPLE QUESTION

What amount of pain have you experienced when going up or down stairs?

☐ None ☐ Mild ☐ Moderate ☐ Severe

UOA will be utilizing PROMs with our Surgical patients who will receive the designated PROMs at specific time points in their care. (example: Pre-surgery, 1 month, 6 months, and 1 year post surgery) We recognize that everyone's time is important and therefore the PROMs we utilize have only 5-20 questions, are easy to complete and will be sent via text, or email with a UOA logo, with a message from your physician.

Hopefully when you see a UOA survey, you will understand that it has value to you, your doctor and it is a necessary part of your care.



BY CHARLES J. GATT, JR., MD
AND PATRICK S. BUCKLEY, MD

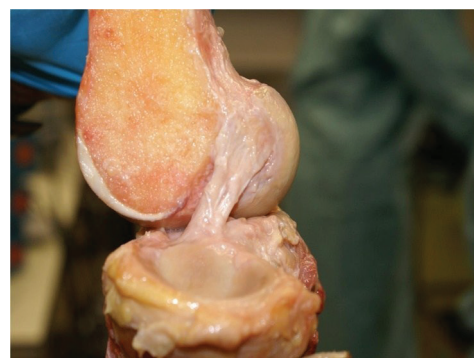
ACL Injuries in Children and Adolescents

It has been frequently emphasized that children are not simply “small adults.” Children and adults are different anatomically and physiologically in many ways. Knee injuries in children and adolescents frequently demonstrate these differences.

The primary difference between an adult and child knee is the growth center or physis. These are regions at the end of the femur and tibia on both sides of the knee that provide most of the growth of the leg. The physes are usually the weakest part of the knee. The same injury pattern that would tear a ligament or cartilage in a mature, adult knee is much more likely to fracture the bones through the growth center in a child’s knee.

“Adult” type knee injuries can, however, occur in the child. Anterior cruciate ligament (ACL) tears were once thought to be extremely rare in children, but are now receiving more attention in recent years. It is unknown whether or not the rise in the number of reported ACL tears are recently related to increased awareness by physicians, better diagnostic techniques, such as MRI and arthroscopy, or that possibly more kids are involved in competitive sports. The true occurrence of

ACL tears in the pediatric population is unknown, but injuries most often occur in non-contact circumstances, specifically during activity that involves deceleration or change of direction forces. Often one may describe feeling a ‘pop’ at the time of injury and swelling of the knee is common.



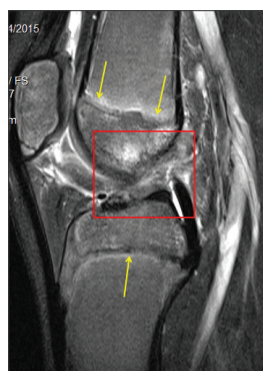
The treatment of ACL tears in the young, athletic, skeletally mature (adult) knee is usually ligament reconstruction. For younger patients, it would seem waiting until growth is near completion prior to surgery would be appropriate. However, recent evidence is indicating that delaying surgical treatment is associated with a high probability of long-term knee impairment due to recurrent instability, damage to other parts of the knee, and sports-related instability. In other words, the risks of nonsurgical treatment may be greater than the risks of surgery.



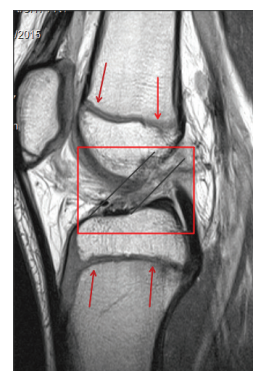
Open physis/growth plate



ACL graft crossing both growth plate



Torn ACL



Location of ACL ligament, arrows note growth plate of femur and tibia



ACL reconstruction usually involves placing a tendon graft through drill holes in the femur and tibia. Unfortunately for younger patients, the growth centers in the knee are directly in the path of these drill holes. It has been shown that standard reconstruction in the growing child or adolescent may cause a growth abnormality leading to leg length inequality, or to angulatory deformity at the knee. The younger the child, the greater the chance of deformity, and the more severe the deformity is likely to be.

For the vast majority of cases, the adolescent athlete is close to skeletal maturity by the age of 15 or 16, the risks to growth are extremely small, and a standard ACL reconstruction is usually performed. However, for younger patients, alternative techniques have been developed recently to try to lessen the possibilities of growth arrest. These techniques involve placing

the graft in a non-anatomic position, or one that does not completely duplicate normal ligament function. This is done by either drilling holes that go around rather than through the growth centers, or by avoiding holes altogether, and wrapping the graft around the bone.



These procedures were originally designed to be a temporary measure to control symptoms and instability until maturity, when a traditional reconstruction could be done. Recent evidence is suggesting that these procedures are rather durable and in many cases are not requiring later “adult type” ACL reconstructions.

ACL injury is a relatively common injury in sports and most orthopedists know how to reconstruct the ligament, but may not routinely perform the procedure. When managing an ACL injury whether adult, adolescent, or child, **EXPERTISE REALLY DOES MATTER!** All of the sports medicine specialists at UOA are fellowship trained and perform a large volume of ACL surgery in patients of all ages, including growing children and high level athletes. Additionally, our sports medicine specialists are well versed in revision surgery for knees that have been reinjured after reconstructive surgery.

Our physicians work closely with the anesthesiologists at the time of surgery in order to minimize post-surgical pain. Our surgeons communicate regularly with our in-house physical therapists and sports performance specialists to address any issues that may occur in the recovery process. Patients at UOA truly do benefit from a comprehensive, team approach to ACL injury care which offers you the best chance for an excellent outcome and successful return to an active lifestyle.



Born to Run

...and Knee Surgery Won't
Slow Me Down!



Like Bruce Springsteen, Mason Robinson from Somerville, NJ was **born to run**, but rather than through the “swamps of Jersey”, Mason did his running on the track and football field. Coming out of high school in 2007, he was one of New Jersey’s fastest athletes of all time as he ran a 10.51 second, 100 meter race at the NJ Meet of Champions. His time made him the 7th fastest in state history which helped to earn scholarship offers to several high-profile college football programs and making him one of the most sought after high school running backs in New Jersey in 2007. Mason decided to stay home and accept a scholarship to play running back for the football team at Rutgers, and serve as the heir apparent to Ray Rice.

Fast forward to August, 2009 and Mason finally got his chance to show the Rutgers faithful his football skills and showcase his magical speed. “I was nervous, but excited to showcase my skills in the newly revamped Rutgers stadium. On the first play from scrimmage, I took the handoff and darted through the line of scrimmage, I made a cut, my knee hyperextended and I knew something wasn’t right”. After bracing his knee and giving it another try, it gave out again and he was pulled from the game.



"I wasn't in pain, but I knew something just wasn't right. The next day it didn't swell much, but I knew something was wrong when I tried to stand up and I felt pain" remarked Robinson. An MRI the following day revealed a torn Anterior Cruciate Ligament (ACL). Mason couldn't believe it. "I could still run and move laterally, and I always thought ACL tears would be more debilitating, so I sought a second opinion with Dr. Charles J. Gatt, Jr who confirmed the finding of a torn ACL". "Dr. Gatt took a lot of time with me that day to explain what was wrong and why I needed to get it fixed. He took time to discuss all the options and he was really patient and answered all my questions. I felt very comfortable with him doing my surgery." After several weeks of rehab, Dr. Gatt reconstructed Mason's ACL on September 23, 2009.

A couple of weeks out from surgery, "my knee felt great! It was stable and I worked extremely hard with the athletic trainers to get it strong. By Winter break I could run full speed and no one could catch me! I felt like nothing had ever happened to me. I wasn't officially cleared for full return till Spring ball in April, as I really needed to get in and get tackled, make a hard cut, test it out to make sure mentally I was ready to go". However, when Mason was cleared to return, he found himself moved to wide receiver and punt returner in order to capitalize on his speed. "It was a new position that was really different than running back and it took some time for me to learn the routes and how to play wide receiver. After the first scrimmage of the Spring and the first live period of hitting and tackling I knew I was 100% and ready to go. My knee felt great".

Mason suffered another injury to his right knee in September of 2011 while playing cornerback in practice when his foot got stuck in the turf and he twisted his knee while covering a wide receiver. Once again he was informed that he had torn the ACL in his opposite knee. "I wasn't mad, I just had the mindset, OK, how fast can I get back? I knew the process and I knew what needed to be done. Dr. Gatt also did my second surgery and I was

back full go and ahead of my scheduled return." noted Robinson.

After his playing career at Rutgers was over, Mason still had dreams of playing in the NFL. During the 2013 Rutgers Pro day, Mason ran a 4.35 second 40 yard dash that day which was the fastest of all Rutgers players. Though he wasn't drafted, he was signed as a free agent rookie with the Tampa Bay Buccaneers in 2013. In 2014 during a tryout for the Philadelphia Soul of the Arena Football League, Mason was timed at 4.27 seconds in the 40 yard dash.

Two ACL surgeries later, he is faster than he was before his first ACL surgery. He is a testament to perseverance, hard-work and a never-give-up spirit. "I found the right doctor to fix my ACL. Dr. Gatt was great! I'm a testament to his abilities as a surgeon. How many people can say after two ACL injuries they come back and run faster than they did before? With hard work, dedication, and a good support team, you can definitely come back stronger and better than before".

"My suggestion for other's who may suffer an ACL tear is don't let your injury keep you from being who you want to be. Don't let it define you or derail your dreams. If you are struggling, don't be afraid to talk to someone and get help. Work hard every day and, eventually, you will be successful."



Mason Robinson is now the CEO and head coach of Shock The World, a fitness and training foundation where he shares his knowledge and experiences with others who are looking to succeed in fitness and in life. Follow Mason on Twitter: ShockTheWorld, Instagram: Shock_The_World or email him shocktheworldtraining@gmail.com. Also check out Mason's story on the Heads N Tales Podcast, Episode #46 - <http://www.headsntales.org/>



Instrumented Testing of the ACL Injured Knee

BY DEAN PINCIOTTI, PT

At UOA, millimeters matter, and especially when you talk about injury to the Anterior Cruciate Ligament (ACL) of the knee. The ACL ligament is a ligament found on the inside of your knee that helps to prevent anterior translation (shifting forward) of your tibia. Determining the looseness of your knee matters when you consider ACL injury and return to play considerations after ACL surgery. For this reason, we incorporate objective testing into our decision making process by using the KT-1000.

History of Instrumented Testing: Instrumented testing of the knee began in 1971 when Kennedy and Fowler measured knee laxity with a clinical stress machine and serial radiographs. Then in 1983, Dr. Dale Daniel et al, introduced a commercially available device called the KT-1000. Since 1983, there have been a number of other devices introduced into the marketplace. Reliability and reproducibility are major concerns when using any instrumented testing device. The KT-1000 has been the device that has stood the test of time and remains one of the most commonly cited and clinically used arthrometers in the literature and it continues to be studied in clinical research at our Center.

KT-1000 Testing: The KT-1000 is a knee arthrometer or instrument to measure the motion of a joint as compared with the uninjured side. The instrumented knee testing is painless and performed at 30 and 70 degrees of knee flexion while the patient comfortably lies on a table. When performing the test, the examiner will apply a load that is perpendicular to the axis of the knee and the unit will objectively measure

the amount of tibial translation. One of the primary uses of the instrument is the verification of a suspected ACL tear. The data retrieved are not meant to replace the hands of the Orthopedic Surgeon, but to supplement and document more accurately the severity of the suspected pathologic laxity. Decisions regarding treatment options may hinge on accurate assessment from instrumented testing. In general, a 3mm difference in side-to-side comparison is indicative of an ACL tear or pathology. The higher the measurement in bilateral comparison (<5 mm of displacement), the greater the instability. In our experience, it has identified some knees with lax ligaments which may appear normal on MRI, as well as other knees that may have good secondary restraints which may not require a reconstruction of the ligament. Having more objective information allows the physician and patient to make a better informed decision on their treatment options. We are one of the few facilities in New Jersey that offer this specific ligament testing

Center for Rehabilitation Approach to ACL Rehab Our approach to ACL injuries includes preoperative physical therapy as well as KT-1000 testing. The KT-1000 is not always available at other facilities or the expertise in this area. Instrumented knee arthrotometer (KT-1000) testing is available at the Center for Rehabilitation and Sports Excellence at our Somerset location. This is an essential piece of objective testing for any injured athlete who suffers an ACL injury pre and post operatively. Please feel free to contact our office by calling (732) 537-0200 to schedule an appointment with our KT-1000 physical therapist.



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BY KENNETH G. SWAN, JR., MD

Middle Aged Knee Pain

Middle aged, chronic knee pain slowing you down? Perhaps an old football injury, chronic meniscal injury, a cartilage defect, or some osteoarthritis can really put a damper on your activity. Our magazine is titled “Life in Motion” because we are committed to enhancing patient function. At UOA we care about your well-being and we’ve got options to keep you active and moving.

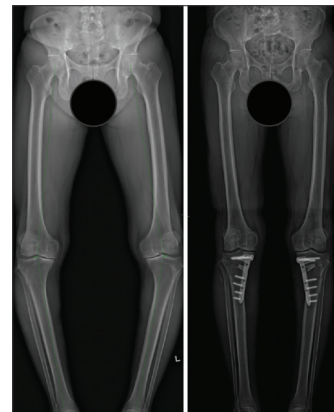
For those experiencing chronic knee pain, it’s important to start with a thorough evaluation by one of our fellowship trained, board certified physicians who will thoroughly evaluate your knee for signs of injury or wear and tear. After identifying the problem, they will discuss all of your options and include you in the decision making process. Our goal is to find an answer that best fits your goals and lifestyle.

Some knee pain may be caused by tight or weak muscles which create a muscular imbalance and contribute to abnormal forces on your knee joint. Identified early enough, our physical therapy staff can design a program specifically tailored for you to improve your pain, mobility and function.

Other patients may be candidates for an injection of a biologic or “gel” intended to improve the lubrication within your knee. We don’t take joint injections lightly, we assure that all injections are done in a sterile environment with your knee properly prepped and cleaned in order to minimize risks for infection.

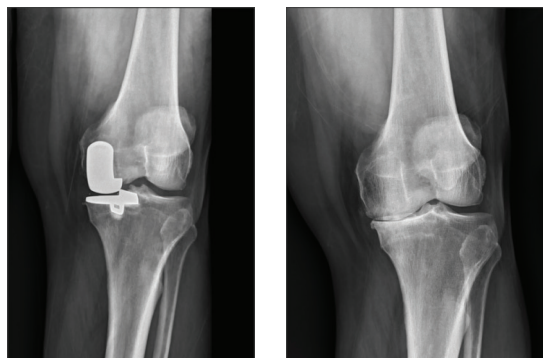
Patients with meniscal, cartilage, or ligamentous injuries may benefit from an arthroscopic/minimally invasive procedure where the physician utilizes small incisions to insert small instruments into the knee joint to directly visualize and repair a problem. Our surgeons have received the highest level of training, are involved in cutting edge meniscal, cartilage, ligamentous research, and their expertise offers you the best option for optimal outcomes.

For those who have worn out one side of the knee joint resulting in malalignment (knock kneed or bowed-legged), but are too young for a total joint replacement, our physicians may recommend a high tibial osteotomy (HTO) where the top part of your tibia is cut and wedged open in order to “re-align” your knee. HTOs are typically for the young and middle aged patients whose lifestyle may be too rigorous to allow for knee replacement surgery. This same day procedure can alleviate knee pain and allow return to a very active lifestyle. HTOs may also delay the need for joint replacement by slowing or stopping destruction of the knee. A recent study in the journal Knee found that at 5 years post HTO surgery, 84% of patients did not need a joint revision, at 10 years 65% and 15 years 55% of patients did not need to undergo joint replacement surgery. The risk for total knee arthroplasty (joint replacement) increased with older age and with females who had HTO.



An alternative to HTO surgery is the use of a uni or partial joint replacement. Unicompartmental Knee Arthroplasty (UKA) involves replacing only one side of the knee joint with

a partial joint. This is particularly appealing for patients who may not be good candidates for HTO such as older patients or patients who may have more extensive focal arthritic disease. A study by Kim in the International Journal of Orthopaedics found that outcome rates at 12 and 24 months were similar between UKA vs. HTO patients with 94% of UKA vs 75% of HTO patients active in sports at 24 months.



There is no difference in initial revision rates between UKA and HTO procedures. UKA offers less post-operative pain and fewer complications and is as effective as HTO (as both procedures can offer a relief of pain and dysfunction). The other major advantage of UKA compared to a full knee replacement is that it is less invasive, it preserves all the

ligaments, and hence, the natural biomechanics to the knee, and it has a much quicker recovery.

In the event that your knee joint has advanced osteoarthritis and hasn't responded to alternative procedures, a total knee arthroplasty (TKA) (joint replacement) may be an option for you. Our joint replacement specialists have done thousands of joint replacements, are highly skilled, trained in the latest TKA procedures including the use of intra operative robotics intended to offer the optimal joint placement and maximize patient outcomes. Current literature suggests that physicians, like those at UOA, who perform a high volume of arthroplasty surgeries, have less complications, and result in better outcomes than general orthopaedic surgeons who perform a lower volume of joint arthroplasty.

Another consideration for patients is post-operative pain and function. The anesthesiologists who work with our physicians during surgery frequently utilize nerve blocks and pain pumps to minimize post-operative pain, reduce reliance on opioids, facilitate early motion and a quick recovery. In fact, many partial and total knee replacement patients are now candidates to have the procedure performed as a same-day procedure in a surgery center rather than as an inpatient in a hospital. It is the team approach that offers our patients optimal operative outcomes.



UOA has numerous options for our patients who are suffering with chronic knee joint pain. To find out which option is best for you, schedule an appointment with one of our knee and joint replacement specialists who will provide a comprehensive evaluation and discuss all your options. At UOA, we really do care about your "Life in Motion".



BY MARK S. BUTLER, MD



Fly Fishing Injuries

What's not to love about fly fishing? It's a uniquely peaceful sport that pits the skills of a man to match the hatch and delicately drop a small fly in order to entice a hungry fish to bite. It might be unthinkable that such a relaxing sport can be associated with pain in the shoulder, elbow, wrist and hand. In fact, a study of fly fishing injuries done at Montana State University, found that overuse injuries in fly fishing are actually quite common as nearly 75% of professional fly fishermen noted pain in at least one location in their upper extremity. This finding is a little surprising, though not counter intuitive. The movement is actually more complicated than other throwing motions because it involves throwing in a back and forth direction. This can put strain on the upper extremity in ways that no other sports do. For most fisherman, the thought of suffering an injury while fishing is not one of their first considerations when they prepare their gear for the upcoming fishing season, but maybe it should be?

In a survey of 292 fly-fishing instructors done by researchers at Montana State University, 50% reported shoulder pain, 39% reported elbow pain and 36% reported wrist pain. 74% reported pain in at least one of those locations and 1/4 reported that the pain was moderate to severe. 27% reported that they had changed their casting style because of the pain.¹

There are many factors which can lead to overuse injuries, but in fly fishing some of the most common factors have to do with technique and equipment.

When considering techniques that may contribute to overuse injury, fly-fishermen must consider the impact of their grip style, casting method, stance, and hauling which are all key components to a successful cast.

Grip Style

There are several grip styles associated with fly fishing. Thumb-on-top, V-Style, and finger-on-top are the most common with 85% of the surveyed instructors using the thumb-on-

top method. The differences in grips influence the position and movement of the thumb, forefinger and wrist. Each grip is good for different fishing situations and variety actually reduces overuse injury and makes you a better fisherman if you can perfect various styles. Whichever grip you prefer, fishermen should find a comfortable way to hold the rod for each grip and be consistent as there is some motor learning associated with each grip. The key to a good grip is to use proper form, keeping your wrist straight and avoid snapping, except in the v-cast where it is part of the technique. Those who used the V-style grip indicated less shoulder pain. Gripping the rod or line too tightly can increase muscle tension, fatigue, pain, nerve compression in the hands, and loss of sensitivity. Too much tension in the grip can send waves down your fly line, impact your cast and can be corrected by relaxing your grip.

DeQuervain's tendinitis is one type of injury commonly seen in fly fishing. It is an overuse injury that irritates the tendons of the thumb, causing them to swell and creating pain. The Thumb-on-top grip is the one that causes the most strain on this tendon. Altering your grip when pain with thumb motion is first noticed is recommended to reduce tendinitis of the thumb. Icing, wearing a thumb spica splint at night and short term use of anti-inflammatory medication like Ibuprofen or Naproxen may also be helpful if pain is persistent.

Casting Motion

There are two motions in fly-casting: back cast and front cast. The back cast moves the line from in front to behind the caster. The forward cast moves the line from behind the caster forward. In all casting motion, the fisherman should remember to keep their elbow close to the body and maintain shoulder blades in a stable position. Sharp snapping of the line can be harmful to the wrist, elbow, and shoulder muscles and ligaments. Tension in your grip and arm can create recoil into your shoulder which can stress and fatigue your shoulder



“All Americans believe that they are born fishermen. For a man to admit a distaste for fishing would be like denouncing mother-love or hating moonlight.”

— John Steinbeck

muscles. Practicing a relaxed method of casting helps to decrease overuse problems of the shoulder.

Casting can be done overhead, sidearm or elliptically which is a combination of overhead and side arm. This is often called oval or Belgian casting. As with your grip, it helps to vary your delivery in order to reduce repetitive motions. The overhead casting technique is associated with less overall pain. Fisherman should try to move casting workload from their wrist to the bigger and stronger, shoulder muscles.

Slow down your casting to improve your accuracy and decrease the strain on your shoulder. Studies analyzing arm movements noted that peak elbow and shoulder forces increased with longer casts. Those who fished 10 days a year or less showed significantly higher wrist velocities, while more experienced fishermen showed much higher shoulder velocity.

Fishermen should not overlook the value of a good stance. A good stance allows for better balance, hip and glute activity and will transfer body weight between feet, facilitating strength to the cast.

Hauling

Hauling is a method of loading the rod to increase line speed and casting distance. It is achieved by pulling the fly line with the non-casting hand in the middle of the fly-casting stroke. Those who utilize hauling reported significantly more pain in the wrist, elbow and shoulder. Hauling probably increases torque on the arm. It can be an advantageous technique, but it should be used judiciously by less skilled and conditioned fishermen.

Balanced Equipment

Most fishermen understand that heavier rods, reels, and lines need

to be used for heavier fish but they often don't understand the role that balance plays within their equipment. If the rod and reel are not balanced it can add unnecessary strain to your hand, wrist, and forearm. If the reel is too heavy, you will feel increased tension particularly on the underside of your hand from the little finger down to the wrist and the bottom of the forearm. In the survey of fishing instructors, increased fly rod weight was associated with greater pain ratings. Those who fish for saltwater fish have higher prevalence of severe pain after casting which is probably due to utilizing heavier fishing equipment.

Researchers found that the median length of a fly rod is 9 feet. For each additional foot of length, the odds of reporting pain in the shoulder, elbow or wrist increased by 46%. There were no significant associations found between rod action and pain measures.

Preventing Overuse Injuries

- Practice and improve your technique. Master the different grip and casting techniques so you can vary your casting and minimize overuse of a single method.
- Make sure your body is in good shape. Strengthen the muscles of your body including your rotator cuff, arm and forearm muscles.
- Maintain overall fitness levels.
- If pain is present while fishing, alter your mechanics or take a break. If pain is present after fishing and persists more than 48 hours, seek an evaluation from one of our fellowship trained physicians. For information about a strengthening program please schedule an appointment with our physical therapy department.

Reference:

1) McCueTJ, “Upper Extremity Pain Seen with Fly-Casting Technique: A survey of Fly-Casting Instructors” Wilderness and Environmental Med 2004; 15(4): 267-273



Shoulder Replacement Using BLUEPRINT™ 3D Planning Software

Shoulder replacement can offer new hope for patients suffering from chronic shoulder pain and loss of mobility. Today, orthopedic surgeons who specialize in shoulders are using BLUEPRINT™ 3D planning software to virtually perform surgery before entering the operating room. Studies have shown that the use of 3D planning and 3D printed guides has increased the precision of implant positioning which is linked to better long-term results and decreased complication rates in shoulder replacement.^{1,2,3,4}

To learn more about shoulder replacement with BLUEPRINT™ technology, visit:
shoulderblueprint.com or liftmyarm.com



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1. Joseph Iannotti, MD, PhD, Justin Baker, PhD, Eric Rodriguez, BS, John Brems, MD, Eric Ricchetti, MD, Mena Mesiha, MD, and Jason Bryon, MS. Three-dimensional pre-operative planning and a novel information transfer technology improve glenoid component positioning.
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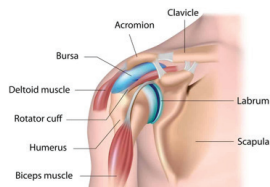
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BY PRASHANT BAKHRU, MD
BOARD CERTIFIED MUSCULOSKELETAL RADIOLOGIST
PRINCETON RADIOLOGY

Diagnosing Common Shoulder Problems

From scratching your back, to grabbing something overhead, to throwing the perfect pitch, you rely every day on the range of motion provided by your shoulders. You probably don't give your shoulders much thought, however, until one of them is causing you pain or making ordinary tasks difficult.



This illustration of the shoulder highlights the major components of the joint.

Anatomy of the Shoulder

What most people refer to as the “shoulder joint” is actually a complex system made up of five joints and three bones which, in combination with ligaments, tendons, and muscles allow your arms to move in different directions. Your shoulders have a

greater range of motion than any of the other joints in your body as long as you are not experiencing joint pain or other issues.

Diagnosing Shoulder Pain

If you are having severe shoulder pain and/or limited range of motion, it is important to see your doctor to determine the cause of your discomfort. He or she will begin by discussing your personal medical history and performing a physical examination. Due to the many different structures that make up the shoulder, and the various issues that may be causing your symptoms, your doctor will also likely order diagnostic testing to get a closer look and make a definitive diagnosis.

Most commonly, an MRI of the shoulder will be ordered. MRI uses a powerful magnetic field, radio waves and a computer to produce detailed pictures of the bones, muscles, tendons, and blood vessels within the shoulder joint without the use of ionizing radiation.

Some problems that may require an MRI of the shoulder include:

- dislocation of the shoulder joint
- degenerative disease, such as arthritis
- rotator cuff tears
- bone fractures
- sports-related injuries
- unexplained pain and/or swelling
- decreased range of motion

The remainder of this article will focus on the most commonly affected structure in the shoulder – the rotator cuff, which every year, according to the American Academy of Orthopedic Surgery (AAOS), causes approximately 2 million people in the US to visit a doctor.

Rotator Cuff Injuries

The shoulder girdle is composed of three bones: the upper arm (humerus), shoulder blade (scapula), and collarbone (clavicle). The acromion is part of the scapula located just above the rotator cuff tendons. You can feel it as a bony prominence on the top of your shoulder. Rotator cuff muscles and tendons form a cover around the top of the humerus and stabilize it to the scapula. A normally thin sac of fluid called a bursa is situated on the top of the rotator cuff. This bursa lubricates



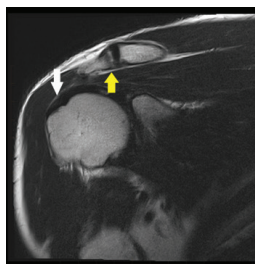
the area between the rotator cuff and acromion allowing the tendons to glide freely.

When the rotator cuff tendons are injured or damaged, this bursa can become inflamed and painful. The result is a condition known as bursitis. Bursitis often occurs in association with rotator cuff tendinitis.

Shoulder pain from rotator cuff tendinitis and impingement is one of the most frequent sources of pain and is optimally evaluated with MRI imaging. Let's look at a few examples.

Figure 1

The image to the right shows a normal shoulder MRI. The rotator cuff tendon is uniformly dark (white arrow). It is firmly attached to the top of the humerus. Note the smooth concave border of the acromion and joint between the clavicle and acromion. (yellow arrow).

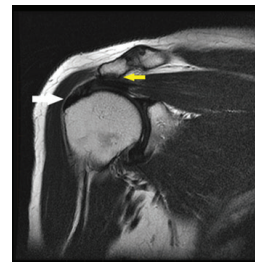


With the onset of arthritis, bone spurs often develop at the AC joint and along the undersurface of the acromion. Shoulder impingement occurs when you lift your arm to shoulder height,

the space between the acromion and rotator cuff decreases. The acromion may in some cases rub against and “impinge” the tendons and the bursa, causing tendonitis and bursitis.

Figure 2

Our next patient has tendonitis. The tendon is thickened and brighter than normal but still attached to the humerus (white arrow). There are degenerative changes with bony spurs arising from the AC joint and acromion impinging on the rotator cuff (yellow arrow).



Continued irritation over a period of time (also referred to as degeneration) is a common cause for rotator cuff tears particularly in older patients.

A single traumatic event can also lead to a tendon tear. These tears can be partial thickness, with some tendon fibers remaining intact, or full thickness.

Figure 3

This final example demonstrates a full thickness tendon tear. The tendon (yellow arrow) is retracted from the top of the humerus with intervening bright fluid.



In conclusion, shoulder discomfort is a common symptom that sends patients to their doctor. MRI is the imaging study of choice for evaluating a painful shoulder. MRI provides exceptional visualization of the most common shoulder injuries to the rotator cuff tendon. Shoulder MRI can show where a tear is located within the tendon, the amount of tendon retraction, the prominence of muscle atrophy, and the quality of the remaining tendon.

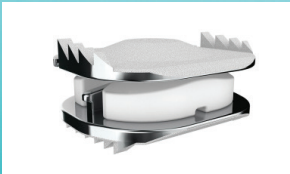


BY GINO CHIAPPETTA, MD

Managing Neck Pain



Neck pain is a significant public health problem worldwide with many different causes and options for treatment. Most commonly, neck pain is caused by muscular fatigue, postural faults which may cause muscular spasm, and limitation of neck motion. Neck pain which is associated with radiating pain, numbness, weakness, and reduction of motion should be considered significant and evaluated by a medical professional.



Initial work-up includes a thorough clinical exam and x-rays to rule out fracture or spinal pathology that may be causing your neck pain. Depending on the results of the clinical exam and x-rays, an MRI may also be utilized to identify the source of your disability and pain.

The first course of treatment involves physical therapy to reduce pain and improve neck function. Anti-inflammatory medication may also be prescribed to help with pain reduction.

If a course of physical therapy and conservative treatment does not improve the neck pain, additional testing or intervention may be necessary. Progressing treatment may include an epidural injection in order to provide more aggressive relief of symptoms.

Those with a herniated disc, bony abnormality, or stenosis who fail conservative treatment, may be candidates for surgical intervention. Surgical intervention including the use of a cervical disc replacement, cervical fusion, or laminectomy are highly successful surgeries to reduce neck pain and disability.

Historically, Anterior Cervical Discectomy and Fusion (ACDF) surgery has been the gold standard procedure for reducing neck pain caused by a herniated disc or painful segment. The procedure offers a 90 percent success rate, but is associated with limitations in range of motion, adjacent segment degeneration over time involving the segments above and below the level of fusion.

More recently, Cervical Total Disc Replacement (TDR) surgery has become an option for some patients with one or two segment disc degeneration. TDR surgery removes the disc and an implant is used to occupy the disc space and maintain significant cervical motion. The procedure can be done on an outpatient basis with otherwise healthy patients.

In a recent meta-analysis published by Xu in the Journal of Orthopaedic Surgery and Research found that associated segment degeneration and reoperation rate was significantly lower in TDR vs ACDF. Conversely, the National Swedish Spine Registry (Swespine) determined that in patients with cervical degenerative disc disease and radiculopathy, decompression plus TDR surgery did not result in clinically important outcomes after 5 years, compared with decompression and ACDF. In a recent study performed by Gao and published in World Neurosurgery found that both ACDF and TDR showed significant improvement in terms of Japanese Orthopaedic Association Score and Neck Disability index. The literature highlights the role and success of both procedures for eliminating disc related pain and disability.

At UOA we have extensive experience performing both TDR and ACDF procedures. The surgical procedures are very similar in technique and most patients are discharged to home the same day from surgery. Our patients have achieved excellent results while reducing pain, improving function with low complications and reoperation rates. Our advanced training and surgical expertise allows us to offer patients the best available options for managing their neck pain and maintaining their active lifestyle.

To make an appointment to discuss your neck pain with one of our fellowship trained spinal surgeons, please call 732-537-0909.



BY JAMES T. MONICA, MD

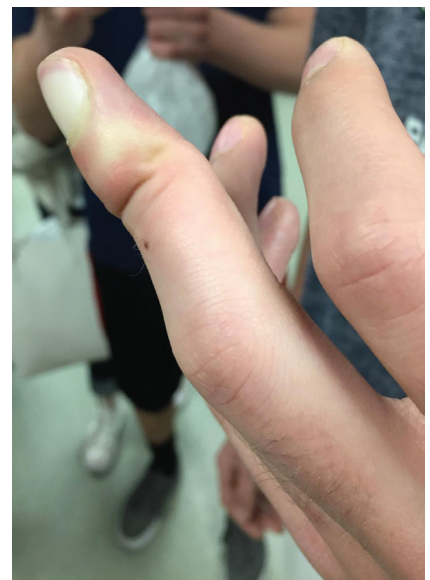
Hand Injuries Among High School Athletes

According to the National Federation of State High School Sports Associations there are over 8 million students competing in high school sports¹. Increasing participation in sports comes an increased risk of injury. Historically, sports and recreation have been shown to be associated with a greater incidence of pediatric wrist injuries.² Participation in sports has been cited as the most common cause of fracture in both boys and girls.³ Hand and wrist injury (HWI) among high school athletes is a fairly common finding, but one that deserves a thorough evaluation and prompt treatment.

In an 11 year review of injuries reported to the Reporting Injuries Online (RIO) High School sports injury registry, Johnson reported in the Journal of Pediatrics⁴ that hand and wrist injuries (HWI) accounted for 8.5% of all reported injuries. Football, boys lacrosse, softball, wrestling, gymnastics and field hockey were noted to have the highest incidence of HWI. Injury rates were higher in games than they were in practices. In comparable sports (baseball/softball,

basketball, soccer) girls had similar rates of injury to boys. The most common HWI categories were fracture (45% of reported injury), contusion (bruise) (11.6%), and ligament sprain (9%). HWI occurred most frequently as a result of contact with another player (41%), contact with playing apparatus (30%) or contact with playing surface (25%). In nearly half of HWI, athletes returned to play in <7 days, however 12% of injuries required >3 weeks for return to play.

Injuries can also occur to tendons of the hand/wrist and are commonly seen with lacerations but can also occur from a forced flexion or extension of the finger joint. Tendon injuries in adolescents are more common in the hand of males and more frequently involve a single extensor tendon which are injured by a hyperflexion of the finger joint. Flexor tendon injuries also occur and are associated with a forced extension of the finger while the finger is contracting as is the case in football when one grabs the jersey of another player as the opponent is pulling away trying to avoid being tackled.





In the case of gymnastics, wrist injuries can be very debilitating and result in premature closing of the epiphysis or center of growth of the radius. This growth arrest can result in chronic pain and dysfunction of the wrist. This issue commonly arises when young gymnasts are learning how to do back hand spring progressions for their floor routines and are subjected to repetitive loading of the wrist joint. Gymnasts can prevent wrist injury by wearing wrist guards and limiting the repetitive overloading of the wrist with activity.

Disability time varies greatly with type and significance of injury. Those injuries that require surgery account for some of the greatest time loss from sports. Time to return to play varies by type of injury, sport and position played.⁵ In a 2016 study performed by Tirabassi, found that in 5 boys sports, (Baseball, basketball, ice hockey track and field and wrestling) and 2 girls sports (field hockey and softball) hand or wrist fracture was one of the most common reasons for medical disqualification either for the season or athletes career.⁶

Once evaluated and cleared by a physician, Licensed Athletic Trainers play a vital role in helping athletes to safely return to sporting activity. In many cases, athletes can return to play with HWI wearing a cast, protective splint or protective taping as long as the device is appropriately padded, approved by the physician and supervising official. In New Jersey, athletes must also provide a clearance note from the supervising physician allowing participation with a special device.

In addition to impacting a student's participation in sports, hand and wrist injuries can impair a student's ability to write, type and participate in normal activity. One study, by dePutter

in 2012 in the Journal of Bone and Joint Surgery, noted that hand and wrist injuries across age groups were ranked as the most expensive category of injuries in regards to health care and productivity costs. In fact, hand and wrist injuries ranked higher

than knee injuries, lower limb fractures and skull-brain injuries.⁷ Lack of recognition and improper care for a HWI can result in permanent deformity and disability impacting normal function. For this reason, it is important for all hand and wrist injuries to be evaluated by a physician trained in the appropriate management of HWI.

If you have suffered a HWI and would like to be evaluated by one of our highly trained Upper Extremity specialists, please call 732-537-0909 to schedule an appointment.

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BY MATHEW MCDONNELL, MD

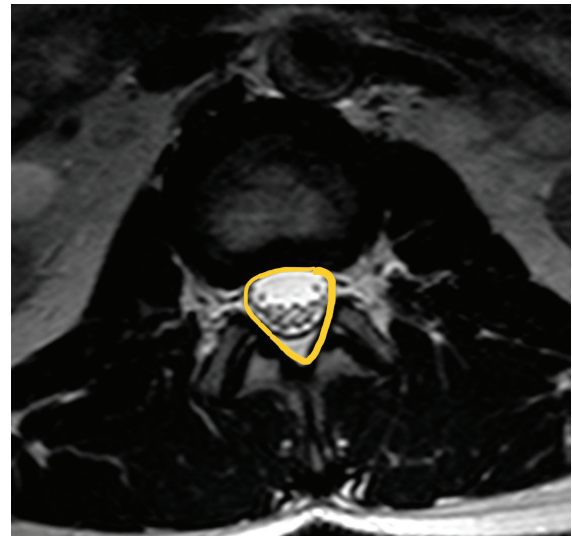
Lumbar Spinal Stenosis

Lumbar spinal stenosis (LSS) is a common condition associated with degeneration of the spine with aging. As the spine ages, so do the discs separating the vertebrae. The discs become less soft and spongy and lose their height which may cause bulging of the hardened disc into the spinal canal. Additionally, bone spurs develop and the joints and ligaments overgrow. These changes will create narrowing of the spinal canal which contains the nerves that come off the spinal cord and travel through the lower back to the legs (Figure 1a and 1b). While the condition may affect younger patients due to developmental causes, it is more often a degenerative condition that affects the middle age and elderly. Narrowing of the spinal canal usually occurs slowly, over many years or decades. Sometimes the condition may be present without symptoms. Symptoms may develop due to inflammation, compression of the nerves or both as the condition worsens.

Lumbar spinal stenosis can lead to debilitating symptoms:

1. Worsening back pain
2. Pain travelling to one or both lower extremities (commonly referred to as sciatica)
3. Cramping or fatigue of the legs when standing/walking
4. Symptoms that commonly improve when sitting to rest and when bending forward such as leaning on to a cart or walker
5. In extremely rare and severe cases, loss of function of the legs or loss of normal bladder or bowel function can occur.

The diagnosis of lumbar spinal stenosis is suspected after assessment of the clinical symptoms and physical examination. Regular x-rays are part of the initial workup but ultimately the



condition is diagnosed with MRI. CT scans with myelography (dye) can be used to make the diagnosis for patients that are unable to get an MRI. X-rays help identify other conditions commonly associated with spinal stenosis including degenerative spondylolisthesis (slippage of one vertebra over another) or degenerative scoliosis (curvature of the spine).

Treatment options vary widely and may include medications to manage discomfort, bracing, exercise and physical therapy, epidural steroid injections, or surgical decompression. The approach to treatment is tailored to each patient's individual situation. Usually treatment efforts start with more conservative measures such as medication or therapy. Surgical decompression is advised for those patients who have moderate to severe pain, who have experienced a worsening of symptoms, and failed initial conservative treatment.

Medications are prescribed primarily for symptomatic pain relief and enable patients to go through the initial phase of therapy, but should not be utilized as a long term measure. Non-steroidal anti-inflammatory drugs (NSAIDs) are the most common first line agents. There is no evidence to support the use of one over another and for some, acetaminophen may be clinically effective. Opioids and muscle relaxants have not been shown to be superior to NSAIDs or acetaminophen in formal study, and are therefore rarely prescribed. Other agents such as gabapentin have been studied, but their role remains unclear at this time. Use of a continuous electrical stimulation in the form of a TENS unit (Transcutaneous Electrical Neuro Stimulation), acupuncture, massage, and mobilization may be beneficial for pain as well.

Physical therapy for lumbar spinal stenosis usually involves a combination of core and muscular strengthening along with flexibility training. While physical therapy cannot cure spinal stenosis, often patients will experience significant improvements in pain and function. A limited course of physical therapy is usually always part of the initial treatment discussion and conservative measures.

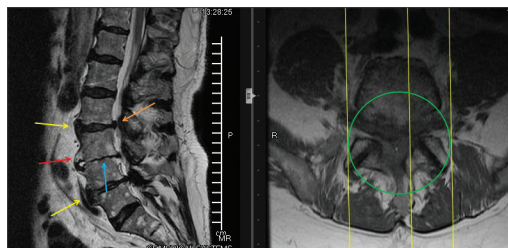
For patients who do not improve with conservative treatment and who have severe symptoms which limit their activity, or patients that have neurologic compromise, surgical intervention is generally recommended. Studies have shown that delaying surgery for a period of conservative treatment is not associated with worse surgical outcomes.

Candidates for surgery:

1. Back and leg pain limits normal activity such as walking and significantly impairs quality of life
2. Progressive neurologic deficits such as the development of weakness, foot drop, numbness in the legs
3. Difficulty standing or walking (neurogenic claudication)
4. Medications and physical therapy have not been effective
5. Loss of normal bowel/bladder function

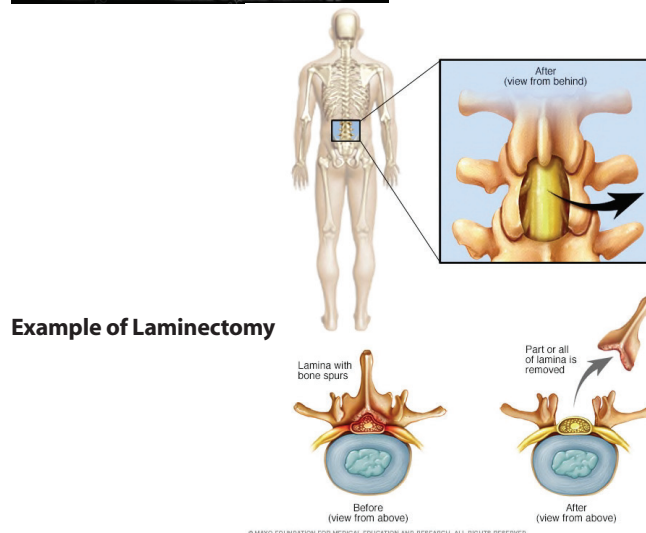
There are different types of surgical approaches for treating lumbar spinal stenosis and which include open, minimally invasive, and endoscopic procedures. The best surgical option should be determined on the basis of anatomic location of the stenosis, the number of levels involved, and whether or not spinal instability or deformity also needs to be corrected. The goal of each approach is to decompress the compromised neural elements, relieve pain and improve function. The most common surgery for spinal stenosis is a lumbar laminectomy

procedure (Figure 2). This procedure involves removing the bone, bone spurs, and ligaments that are compressing the nerves. This procedure may also be called a “decompression”, essentially opening up the narrowed spinal canal. If arthritis has progressed to spinal instability, a combination of decompression and stabilization or spinal fusion may be recommended.



Lumbar Stenosis Accumulation of Changes

- **Yellow arrows – anterior disc herniation**
- **Orange arrow – posterior disc herniation into spinal canal, decreasing canal space**
- **Red arrow – osteophyte formation on anterior vertebrae**
- **Blue arrow – severe joint arthritis**
- **Green circle – canal stenosis (narrowing)**



Example of Laminectomy

Lumbar Spinal Stenosis

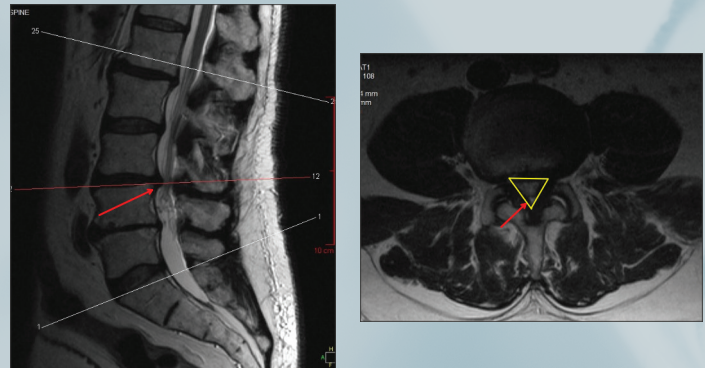
CASE STUDIES

CASE ONE

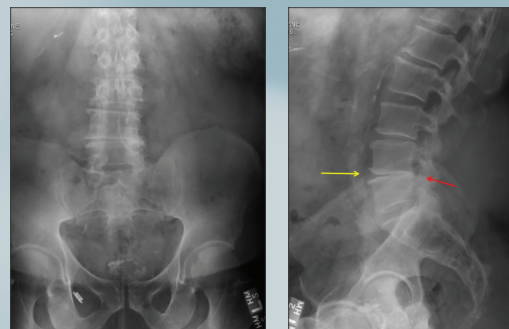
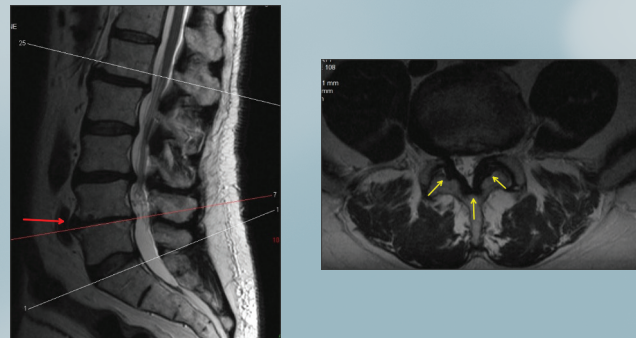
72-year-old Male with bilateral buttock pain radiating posterior thigh, calf pain present for over 6 months. No back pain. Symptoms occurred when standing/walking for about 5 minutes. He had significant walking limitations/intolerance. Legs felt weak when walking and the legs would sometimes go numb. Unfortunately, his symptoms did not improve with physical therapy. An epidural injection was performed. Symptoms improved for several weeks after epidural.

Patient chose to move ahead with surgery. A lumbar laminectomy of L3-L4 and L4-L5 was performed.

Surgery gave the patient complete relief of radiating leg pain, complete return of strength and significant improvement in walking.



MRI showed spinal stenosis, pictures above illustrate bulging discs, red and yellow arrows in picture below demonstrate arthritic overgrowth.



CASE TWO

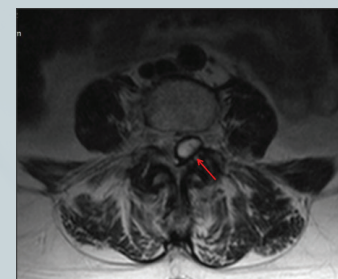
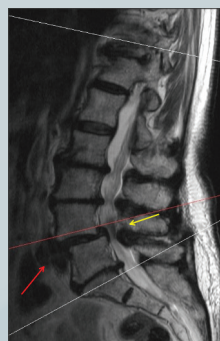
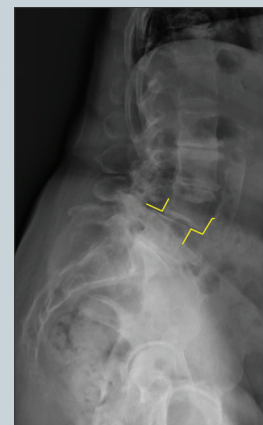
80-year-old female with low back pain and pain radiating down bilateral buttocks, posterior thigh to knees. Symptoms were mild for 1 year, then became progressively worse over a 3 month period. She was unable to stand or walk for more than 5 minutes. Symptoms completely relieved when sitting. Subjective weakness/fatigue of legs when walking. Initial treatment with medications and physical therapy helped manage symptoms for the first year but she declined functionality in the last 3 months.

X-rays demonstrated a spondylolisthesis (a slippage at the L4-L5 vertebrae which indicates instability) and MRI demonstrated spinal stenosis in multiple areas as well as a facet cyst which can develop from arthritic joints and cause nerve compression.

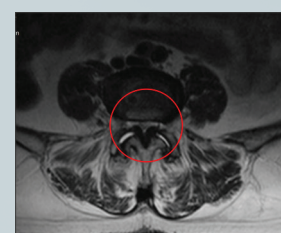
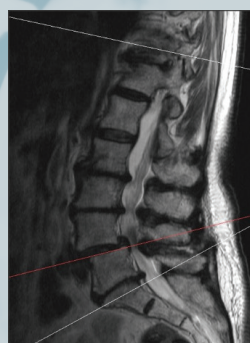
She had a laminectomy performed to relieve all the areas of stenosis and a spinal fusion was performed at L4-L5 to stabilize the unstable area.

After surgery, she had substantial pain relief and improved ability to walk without pain.

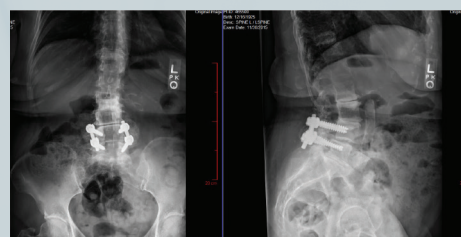
Slippage of one segment on another (Spondylolisthesis) – yellow outline



Facet cyst – red arrow



Spinal canal stenosis – red circle





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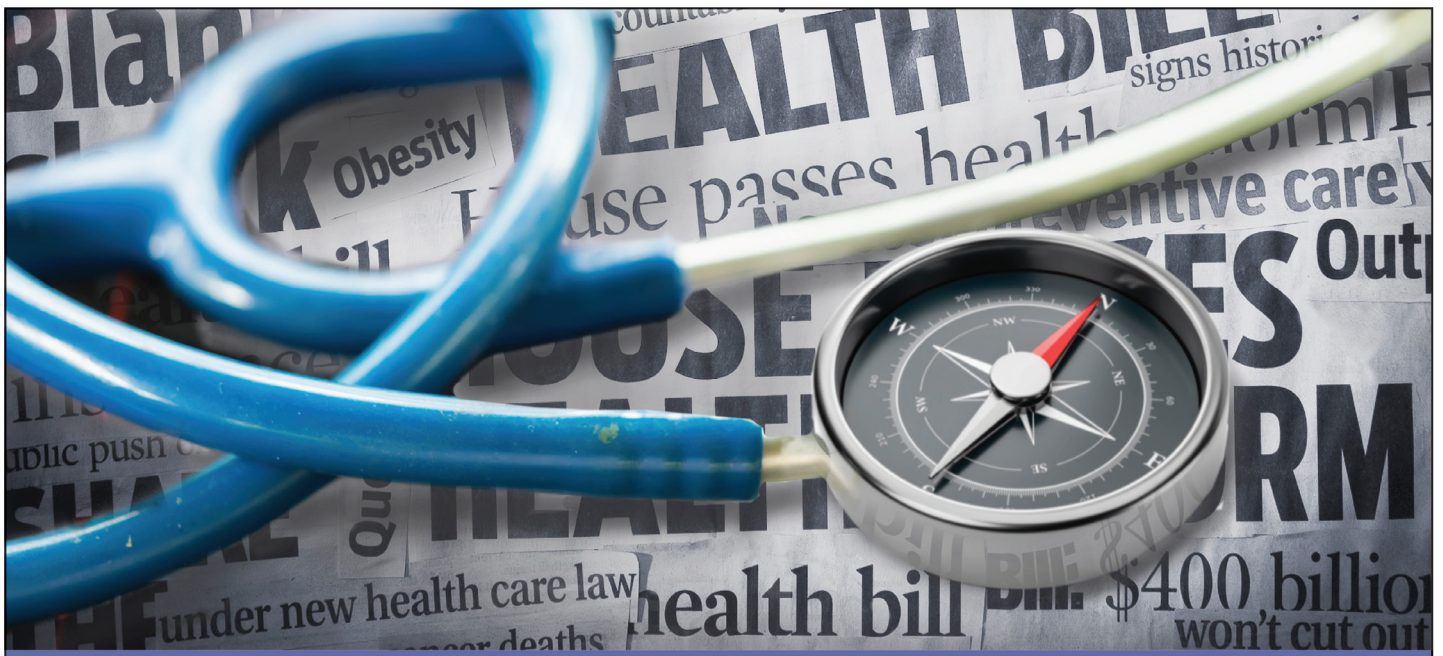
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BY JUSTIN FLEMING, D.P.M., F.A.C.F.A.S

High Ankle Sprains

More than just your regular turned ankle and we've got a solution.



Anyone who watches college or professional sports has probably heard of a high ankle sprain. Whether you are Tua Tagovailoa from the University of Alabama, Olivier Vernon from the Giants, Jack Eichel from the Buffalo Sabres, or the Brewer's pitcher Gio Gonzalez who injured his ankle while fielding a ball during the NLCS, high ankle sprains can really impact performance resulting in long term pain and disability. A study done by Miller in 2012 and published in the journal Sports Health surveyed physicians and athletic trainers who work with professional athletes and determined that high ankle sprains were the most difficult foot and ankle injury to treat. However, thanks to an improved understanding of the injury and advances in surgical technique, high ankle sprains no longer need to be the most challenging foot and ankle problem to treat.

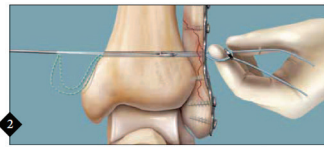
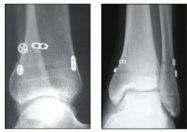
High ankle sprains, or injuries to the ankle syndesmosis, normally occur when the foot is planted and slightly turned out, the knee moves over the foot and the body rotates over the side of the fixed foot. Most commonly this happens when someone falls onto the outside of a player's lower leg, but in the case of Gonzalez, it can happen as the body is rotating when he was trying to field a ball in an awkward position.

High ankle sprains are different than the classic ankle sprain that injures ligaments on the outside part of your ankle.

There are two bones of the lower leg, the tibia and the fibula, and there are ligaments which hold these two bones together. The two bones act like a wrench to grip the square bone within the ankle called the talus. If you think of a wrench gripping a nut, and you think of the ligaments like the tension adjuster of the wrench, if the wrench isn't tight, it can't grip the nut. If the bones of the lower leg aren't held tightly together, they can spread and even increased millimeters of motion be problematic.



Symptoms of a high ankle sprain generally radiate above the ankle joint and the patient is unable to push off or generate any power. The patient loses their ability to hop and push off of the foot. High ankle sprains can take several weeks to several months to heal and, in some cases, surgery may be indicated



**Illustration of the tight rope procedure.
The mechanism of the injury.**



Swelling above the ankle joint proper indicating a “high ankle sprain”

to fix the injured ligaments. The key to a good outcome is prompt recognition and aggressive treatment which includes x-rays, perhaps an MRI and a thorough clinical examination. Failure to recognize and properly treat a high ankle sprain may result in chronic pain, disability, loss of motion and premature osteoarthritic changes to your ankle joint. It is an injury you don't want to try and walk off, but it is one that may be treated surgically using a tightrope, which is an extra strong suture-like material that is capable of holding the bones together. It is put in place via minimally invasive surgery and followed up with an aggressive rehabilitation program aimed at strengthening the muscles of your lower leg.

Justin Fleming, DPM, FACFAS, is a foot and ankle surgeon with University Orthopaedic Associates who has advanced training in the utilization of the tightrope for high ankle sprains. “It’s a nice surgical technique often only utilized for professional athletes, who consider time and function important. In some cases athletes have returned to play sports again in 2-3 weeks. This technique is available for the physically active patient who wants to get back to high level activity in the shortest amount of time. It truly is revolutionary.” notes Dr. Fleming.

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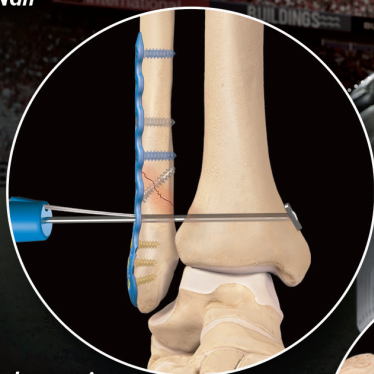
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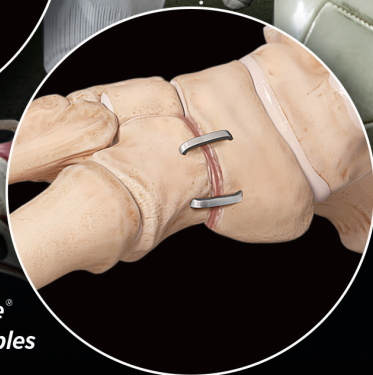
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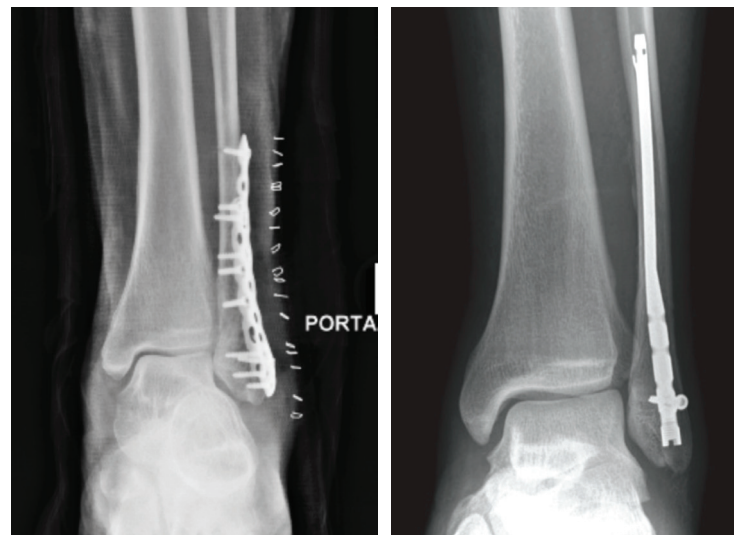
BY JUSTIN FLEMING, D.P.M., F.A.C.F.A.S

Minimally Invasive Surgery for Unstable Ankle Fractures

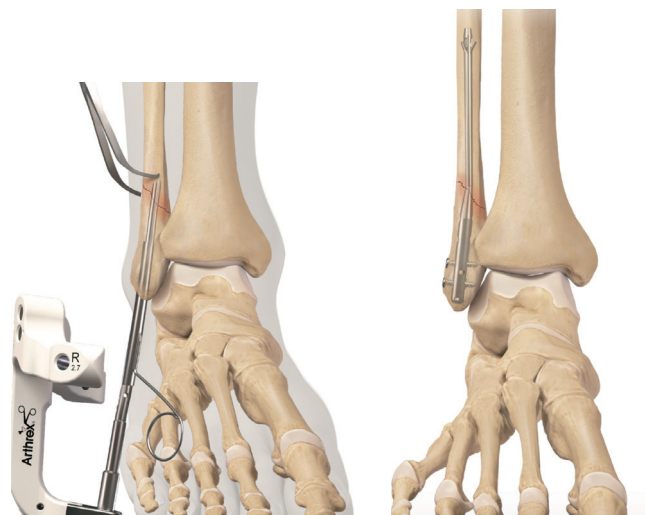
Over the past 10 years surgeons have been adopting small incision(s) or minimally invasive surgery techniques as an alternative to traditional open surgery. Minimally invasive surgery has multiple benefits for the patients which include smaller incisions, quicker healing and shorter surgical times, lower risk for infection and wound healing complications, less scarring, less postoperative pain and shorter recovery times. All surgical specialties have made large strides to perform surgery minimally invasive. In orthopedics, minimally invasive joint replacement, arthroscopic joint repairs and even minimally invasive spine surgery are now possible.

Traditionally, the surgical repair of ankle fractures has been done through large incisions with the use of screws and plates to stabilize the broken bones. UOA is proud to offer minimally invasive ankle fracture surgery. The same technology and concepts that are applied to thigh and leg bone fractures are used to treat fibular fractures (the outside ankle bone that is most commonly injured). Instead of screws and plates a “nail” or “rod” is placed through the center of the bone to provide proper alignment. This minimally invasive method significantly reduces wound complications and pain related to the screws and plates that can slow healing and hinder recovery.

While the patient is under anesthesia a small incision is created over the fracture to restore alignment. After the fracture is placed back into alignment a small incision is created and a drill is used to open the center of the bone for placement of the nail. The nail is then inserted and secured to the bone using two to three small screws. The stability of the fracture is tested and the ankle joint is viewed using x-ray before the incisions are closed. The procedure typically lasts less than one hour and patients go home the same day. Based on the complexity of the fracture patients may be able to begin walking in as early as 2 weeks.



On the left, traditional ankle fracture repair using screws and plate through a formal open incision. On the right, minimally invasive method using small incision approach with “fibular nail”



Fracture reduction and placement of fibular nail.



Above, several small incisions utilized to repair an ankle fracture. On the left, post operative appearance 6 weeks after surgery with minimal scarring.



First postoperative visit with traditional open ankle fracture surgery.

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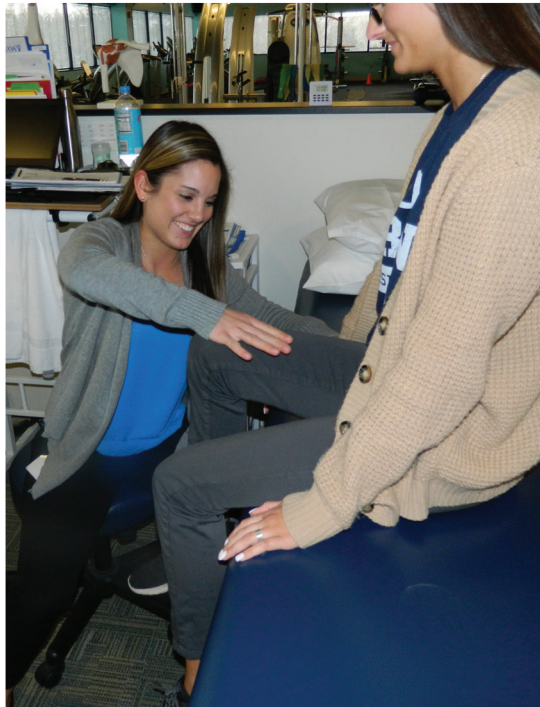
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BY PATRICK BUCKLEY, MD

Hip Pain in Young Athletes with a Focus on Femoroacetabular Impingement (FAI)

Hip pain is a common complaint for many patients who present for an orthopaedic evaluation. Due to the number of overlapping structures that can cause pain around the hip, a detailed history and physical exam is important to determine the cause of the pain and the correct treatment course. In the active lives we live, hip pain can prevent us from exercising, enjoying recreational activities, playing sports, working, and sometimes even sleeping. The purpose of this article is to provide a basic description of some conditions that cause hip pain in young athletes and the potential treatment options for each.

Muscle Strain: There are numerous muscles surrounding the hip that insert onto bones via strong fibrous structures called tendons. Although a muscle stretch is usually a good thing we do to “warm up” prior to activity, a muscle can be stretched to a point of damage, which occurs on a spectrum from muscle strain to complete muscle tear. Overuse of these muscles, particularly after a period of inactivity, or following a one-time injury, can cause soreness or an actual tear of these muscles that can be quite painful. Keeping our muscles and body well hydrated, allowing for proper warm-up, and maintaining proper conditioning are effective strategies to prevent muscle strains when we are active. Usually, muscles strains are best treated with rest and gradual return to activities.

Trochanteric Bursitis / Iliotibial Band Syndrome: The iliotibial band is a thick, fibrous structure that is confluent from muscles in our buttocks and hip area and runs from the outside of our hip, down our leg, and inserts on the outside of our knee. When we lose flexibility in the muscles of the hip and leg, our “IT band” becomes tight and can cause increased friction as it moves over bony prominences of the hip and the outside of the knee. Patients often complain of pain on the outside of their hip or knee, from “bursitis”, which is

inflammation and thickening of the bursal sacs present over these prominences designed to allow for normal motion. Climbing stairs, walking on uneven ground, and lying on one’s affected side often becomes painful. The treatment for trochanteric bursitis usually involves anti-inflammatory medication, physical therapy to work on stretching and strengthening the muscles in the buttocks and the outside of the hip, and occasionally a cortisone injection.

Stress Fracture: A stress fracture occurs from overuse when repetitive forces cause swelling and possibly a small crack in the bone. Often this injury occurs from sharply increasing the amount or frequency of an activity without allowing for proper rest and adjustment of our body to this new level of activity. This injury is often associated with runners or athletes who undergo some form of change in their training like a significant increase in their mileage in a short period of time without doing so in a gradual manner. Persistent pain, especially in the groin, should not be ignored and is your body’s way of telling you to cut back. Persistent or significant pain that impacts your performance should be evaluated by a healthcare provider. Stress fractures can often be managed non-operatively with a period of rest and recovery. However,

advanced stress fractures may require surgery and should be evaluated by a healthcare provider.

Femoroacetabular Impingement (FAI): Femoroacetabular impingement, also known as “FAI”, is a common cause of hip pain in athletes and young adults. FAI is a condition that develops when there is an abnormal contact between the “ball” (femoral head) and “socket” (acetabulum) during normal hip motion. Patients can develop a “bump” on the ball (CAM impingement), or their socket can be too deep (Pincer impingement) or shallow (dysplasia), causing abnormal movement within their hip joint. Combined with repetitive activities of hip flexion required for many sports, this condition can lead to labral tears, cartilage damage, and pain that limits an athlete’s ability to perform in their sport. Often manifesting as groin pain, FAI is frequently exacerbated by high flexion activities and can alter bony mechanics of the hip, leading to muscle imbalances that result in pain and muscle weakness.

As we have come to better understand the hip and more specifically, FAI, we have developed several effective

techniques for treating this condition, that include physical therapy, injections and minimally invasive surgery. When non-operative treatment is not successful, minimally invasive surgery called hip arthroscopy may be recommended. Arthroscopy is a procedure where a camera and instruments are inserted through small, 1-inch incisions to visualize and correct the abnormal areas of contact of the hip joint. With this technique, we can address labral tears, cartilage damage and reshape the bony areas that are causing impingement. Combined with post-operative physical therapy, this treatment has been effective for patients who are unable to return to their athletic endeavors with non-operative means.

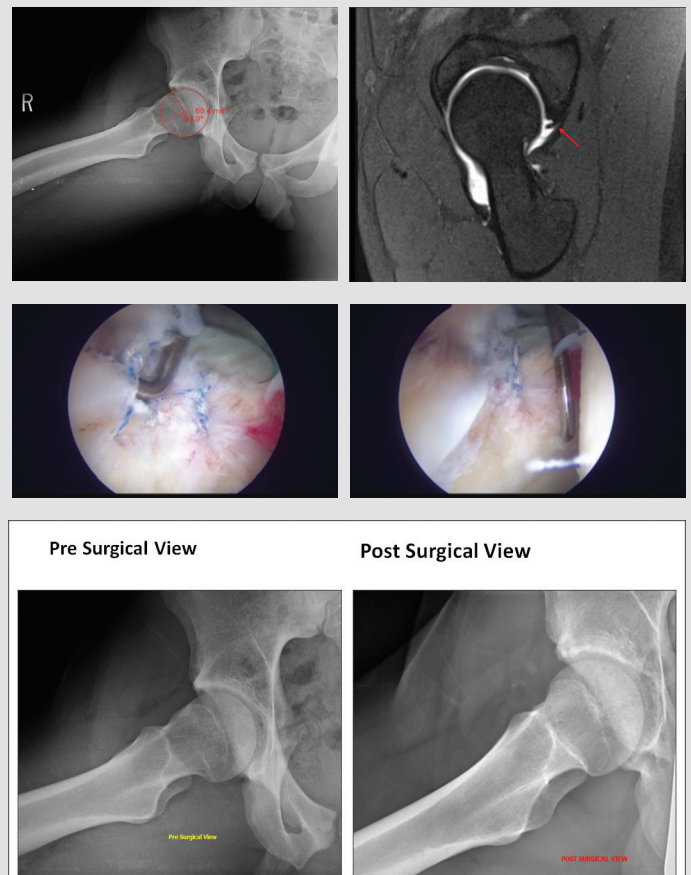
If you are having hip pain that persists despite rest, stretching, and over-the-counter medications, do not ignore it. The Sports Medicine specialists at UOA have advanced training in athletic hip injury care, hip arthroscopy, and experience caring for many recreational, high school, collegiate, and elite level athletes. Let us evaluate your hip pain and help determine which treatment is right for you to get you back to the sport you love.

Case Study

20-year-old male hockey goalie who presented to the office with right hip and groin pain. He had attempted physical therapy, activity modification, and anti-inflammatory medication without relief of his pain. He also complained of loss of internal rotation and flexion of his hip impairing his sport participation. His exam in the office demonstrated pain with flexion and internal rotation with an asymmetric loss of motion of his right hip.

X-rays were obtained in the office demonstrating femoroacetabular impingement (FAI) morphology of his hip. He had a CAM deformity of his proximal femur with an alpha angle of 81 degrees and an over-coverage of his acetabulum with a center edge angle of 40. MRI demonstrated an acetabular labral tear and edema at the site of his CAM deformity.

After additional FAI focused physical therapy failed to provide relief, the patient underwent successful right hip arthroscopy to repair his labral tear and reshape his pincer and CAM deformity. At 3 months follow-up, the patient is pain free, demonstrates improved range of motion of his hip, and continues to work toward full return to sports.



Anesthesia Consultants of New Jersey (ACNJ) and Surgical Pain Relief

BY JEREMY BARON, MD, ANESTHESIOLOGIST
MEDICAL DIRECTOR, UNIVERSITY CENTER FOR AMBULATORY SURGERY

MICHAEL PICONE, MD, ANESTHESIOLOGIST
CHAIRMAN, DEPARTMENT OF ANESTHESIOLOGY, RWJ UNIVERSITY HOSPITAL SOMERSET

Anesthesia Consultants of New Jersey (ACNJ) is the premiere anesthesia group in central New Jersey. We provide patient focused anesthesia care to patients at a number of hospitals and ambulatory surgery centers throughout central New Jersey. The physicians of University Orthopedic Associates have selected ACNJ to provide anesthesia services in their beautiful facility: University Center for Ambulatory Surgery (UCAS) at 2 Worlds Fair Drive in Somerset. Much of our success in patient care comes from our professional care designed for maximum safety, effectiveness, and minimal side effects.

Our care starts with a review of your medical records in advance of your surgery. If you are considered a good candidate for outpatient surgery, we may ask your surgeon to order some additional tests to ensure you have the best surgical results. In addition to making our patients comfortable prior to and during surgery, we provide post-operative pain relief to assist you in your recovery from surgery. We'll meet with

you prior to surgery to review the anesthesia plan and answer any additional questions. Our care continues throughout the surgery and through the recovery period for post-operative pain relief.

Traditional pain relief after surgery typically uses only narcotic medications like codeine, oxycodone, hydromorphone (Dilaudid), or morphine. These medications can cause breathing difficulty, nausea, vomiting, sedation, constipation, urinary retention, and other side effects. Narcotic medications affect the whole body and may cause grogginess and sleepiness that can slow recovery. For certain procedures and for certain patients, this type of pain relief may be necessary to help you with your pain relief. Narcotics also known as opioids, have a high addiction potential. Our country has an opioid crisis, with high levels of addiction, and death from overdose. The best solution is to avoid opioids whenever possible.



Your surgeon, based on the type of surgery you have, may order a special pain procedure commonly referred to as a pain block or nerve block. Nerve blocks help ease you into a more comfortable recovery period by reducing the amount of pain you may feel after surgery. In addition to the pain blocks, our anesthesiologists utilize a multimodal approach to pain management. This includes preoperative medications targeting a variety of pain pathways. The need for supplemental narcotic medication may be minimized or eliminated entirely. The overall goal is to decrease the patient's post-operative pain, facilitating an easy discharge and comfortable postoperative recovery.

One exciting device in anesthesia that we utilize to great effectiveness at UCAS is the On-Q* Pain Relief System by AVANOS*. For many orthopedic procedures, it is only necessary to anesthetize one extremity of the patient. The On-Q* Pain Relief system continuously infuses local anesthetic via a small catheter to the operative limb for up to 72 hours. The catheter is placed adjacent to the nerves that need to be anesthetized using real time ultrasound by a highly trained anesthesiologist. Local anesthetic is continuously infused through this catheter with a small disposable pump. The catheter is securely glued and taped down, and removed at home by the patient, simply by pulling the tape off when the treatment is complete. When the patient is home with the On-Q* system running, an anesthesiologist is available at any time day or night to answer questions or address any issues with pain management. Our patients and surgeons both appreciate our availability. This is utilized most commonly in total or partial knee replacements,

ACL (anterior cruciate ligament) repair, shoulder surgery, and other upper extremity procedures. The On-Q* in combination with other pain blocks and multi-modal anesthesia provides for a positive patient experience.

Our patient satisfaction response surveys show the incredible benefit our anesthesia and postoperative pain management provides. At University Center for Ambulatory Surgery, the patient's operative experience is dramatically different. Patients have an extremely quick recovery the day of surgery. Many times patients are completely pain free. The early post-operative course is amazingly better, with higher patient satisfaction, fewer complications, and possibly better surgical outcomes.

Anesthesia is an important consideration for patients undergoing surgery. At UCAS, we provide the safest and most effective medications and techniques. We look forward to taking excellent care of you or your loved one! For patient videos on types of anesthesia we provide, please visit our website: <https://anesthesiaconsultantsnj.com/media/>.

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William Baione, MD

Dr. Baione is board certified in orthopaedic surgery. He obtained his medical degree from the Weill Cornell Medical College at Cornell University and his bachelor's and master's degrees in biomedical engineering from the University of Miami. He completed his internship and residency in orthopaedic surgery at Rutgers Robert Wood Johnson Medical School followed by a fellowship in adult reconstruction and joint replacement at the Florida Orthopaedic Institute.

ACCOMPLISHMENTS

- Subspecialty certified in Adult Reconstruction and Joint Replacement
- Member of the American Academy of Orthopedic Surgeons (AAOS)
- Member of the American Association of Hip and Knee Surgeons (AAHKS)
- Member of the International Congress for Joint Reconstruction
- Presented over a dozen professional research and grand rounds presentations on various orthopaedic surgery topics
- Conducted clinical, basic science and biomechanics research at numerous institutions including the Department of Biomechanics, Hospital for Special Surgery, Max Biedermann Institute for Biomechanics Research at Mount Sinai Medical Center, Miami Beach and Ryder Trauma Center, Jackson Memorial Hospital
- Outstanding Master's Student Award, University of Miami Dept. of Biomedical Engineering
- Honors Graduate, University of Miami
- Society of Professional Hispanic Engineers
- Inducted into Tau Beta Pi Engineering Honor Society
- Inducted into Alpha Eta Mu Beta Biomedical Engineering Honor Society
- Fluent in Spanish

CLINICAL INTERESTS

- Rapid Recovery Outpatient Same Day Hip and Knee Replacement
- Minimally Invasive Anterior Approach Total Hip Replacement
- Partial Knee Replacement, Certified Oxford Mobile Bearing Uni®
- Robotic Assisted Total Joint Replacement, Certified in MAKOpasty®
- Complex Revision Hip and Knee Replacement
- Management of Periprosthetic Joint Infections
- Post-Traumatic Joint Replacement
- Periprosthetic Fractures

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- Central Jersey Surgical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- Hackensack Meridian Health – Raritan Bay Medical Center, Old Bridge
- Hackensack Meridian Health – Raritan Bay Medical Center, Perth Amboy
- RWJ Barnabas Health, New Brunswick
- Surgical Institute



Jeffrey R. Bechler, MD

Dr. Bechler is board certified in orthopaedic surgery. He earned his medical degree from New York Medical College after earning his undergraduate degree from Dartmouth College. He completed his internship and residency at UMDNJ-Robert Wood Johnson Medical School, and a fellowship in sports medicine at the Kerlan Jobe Orthopaedic Clinic in Los Angeles.

ACCOMPLISHMENTS

- Subspecialty certification in sports medicine
- Head orthopaedic consultant for Princeton University Athletics
- Academic appointment as a Clinical Associate Professor of Orthopaedic Surgery at Rutgers Robert Wood Johnson Medical School
- Published numerous articles in referred journals
- Speaker at numerous regional and national meetings
- Elected by his peers for inclusion in Best Doctors in America®

HOSPITAL AFFILIATIONS

- Hackensack Meridian Health – Jersey Shore University Medical Center
- Penn Medicine Princeton Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)



Cris Beiro, MD

Dr. Cris Beiro is a board certified orthopaedic surgeon. Prior to joining UOA, Dr. Beiro was a former Navy corpsman and co-founder of Garden State Bone and Joint. He is a clinical assistant professor of orthopaedic surgery at Rutgers New Jersey Medical School.

Dr. Beiro received his medical degree from Rutgers New Jersey Medical School, where he also completed his internship and residency. He completed his fellowship in sports medicine at Union Memorial Hospital in Baltimore, and acted as assistant team physician to professional and college teams, including the Baltimore Ravens NFL team and the Washington Nationals MLB team.

ACCOMPLISHMENTS:

- Member of The American Academy of Orthopaedic Surgeons
- Member of The American Orthopaedic Society for Sports Medicine
- Member of The Arthroscopy Association of North America
- Orthopaedic Administrative Chief Resident, UMDNJ, Newark, NJ
- Department of Orthopaedics Resident Teaching Award, UMDNJ, Newark, NJ
- Deans Honor List - Cornell University

HOSPITAL AFFILIATIONS:

- Hackensack Meridian Health - Bayshore Medical Center
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- Hackensack Meridian Health - Raritan Bay Medical Center, Perth Amboy
- Metropolitan Surgical Institute – South Amboy
- University Center for Ambulatory Surgery (UCAS)





Patrick S. Buckley, MD

Dr. Patrick S. Buckley is board eligible in orthopaedic surgery. He is a sports medicine specialist with advanced training in the treatment of knee, shoulder and hip injuries. He graduated cum laude from Villanova University. Dr. Buckley obtained his medical degree from Sidney Kimmel Medical College at Thomas Jefferson University. He completed his residency in orthopaedic surgery at the Rothman Institute and Thomas Jefferson University Hospital in Philadelphia, PA followed by a fellowship in sports medicine at The Steadman Clinic and the Steadman Philippon Research Institute in Vail, CO.

ACCOMPLISHMENTS

- Member of The American Academy of Orthopaedic Surgery (AAOS)
- Member of The American Orthopaedic Society for Sports Medicine (AOSSM)
- Member of The American Shoulder and Elbow Society (ASES)
- Member of The Steadman Clinic Fellowship Alumni Association
- Member of The Jefferson Orthopaedic Society
- Helped provide team coverage for Villanova University, the Philadelphia Phillies and the Philadelphia Marathon
- During his fellowship training, Dr. Buckley treated professional athletes from the NBA, MLB, NFL, NHL, MLS and professional ballet companies
- Traveled to Japan and New Zealand to provide team coverage for the U.S. Olympic Ski and Snowboard team athletes
- The Clinical Fellow Award for Outstanding Basic Science Research
- The Outstanding Fellow Teaching Award
- The Everett J. Gordon Chief Resident Award
- The Medical Student Teaching Award
- The Mark Chilton Compassion Award
- Selection as Graduation Speaker by medical school classmates
- Membership in the Alpha Omega Alpha Honor Society

HOSPITAL AFFILIATIONS

- CentraState Medical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- Saint Peter's University Hospital
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)



Gino Chiappetta, MD

Dr. Chiappetta is board certified in orthopaedic surgery. He obtained his medical degree from UMDNJ-Robert Wood Johnson Medical School after earning his undergraduate degree from Rutgers University. He completed his internship and residency at the University of Miami, Jackson Memorial Hospital. Following his residency, he did a fellowship at the Spine Institute of New York at Beth Israel Medical Center.

ACCOMPLISHMENTS

- Subspecialty certified in surgery of the spine and orthopedic trauma
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Inducted into the Alpha Omega Alpha Honor Medical Society
- Advanced training in robotic spine surgery utilizing the Mazor Renaissance Robotic® system
- Advanced training in cervical and lumbar disc replacement surgery
- Voted Vitals Patients' Choice Award
- Voted NJ Top Docs

HOSPITAL AFFILIATIONS

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- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)



Mark S. Butler, MD

Dr. Butler is board certified in orthopaedic surgery. He obtained his medical degree from UMDNJ-Rutgers Medical School after earning his undergraduate degree and master's degrees from Lafayette College and Lehigh University. He completed his residency in orthopaedic surgery at UMDNJ-Robert Wood Johnson Medical School. Dr. Butler completed a fellowship at the Maryland Institute for Emergency Medical Services Systems specializing in traumatology and foot and ankle surgery.

ACCOMPLISHMENTS

- Subspecialty certified in traumatology and surgery of the foot and ankle
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- New Jersey Task Force One (NJ-TF1) volunteer
- Published numerous articles in refereed journals
- Speaker at numerous regional and National meetings.
- Elected by his peers for inclusion in Best Doctors in America®
- "Top Docs" Award, Jersey's Best Magazine 2019

HOSPITAL AFFILIATIONS

- Saint Peter's University Hospital
- RWJ Barnabas Health, New Brunswick
- University Center for Ambulatory Surgery (UCAS)





Ryan Coyle, MD

Dr. Ryan Coyle is a board eligible orthopaedic surgeon with a specialty in the hand and upper extremity.

He received his medical degree from Columbia University after earning his undergraduate degree from Princeton University. He completed his internship and residency at Lennox Hill Hospital in New York. He completed a fellowship in hand and upper extremity surgery at NYU Hospital for Joint Diseases, part of one of the top orthopaedic hospitals in the country.

Dr. Coyle was a four-year punter on the Princeton University varsity football team, where he was named to the Walter Camp Football Foundation All-American Team, the nation's oldest All-America squad.

CLINICAL INTERESTS

- Arthritis of the upper extremity
- Carpal tunnel syndrome
- De Quervain's tenosynovitis
- Dupuytren's contracture
- Fractures of the upper extremity
- Hand trauma
- Nerve repair
- Nerve entrapments
- Orthopaedic trauma
- Rheumatoid arthritis
- Shoulder arthroscopy
- Shoulder replacement
- Tendon repair
- Trigger finger
- Wrist arthroscopy

HOSPITAL AFFILIATIONS

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- Hackensack Meridian Health – Jersey Shore University Medical Center
- Hackensack Meridian Health – Raritan Bay Medical Center, Old Bridge
- Hackensack Meridian Health – Raritan Bay Medical Center, Perth Amboy
- RWJ Barnabas Health – New Brunswick
- Saint Peter's University Hospital
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)



Christopher Doumas, MD

Dr. Doumas is board certified in orthopaedic surgery. He obtained his medical degree from UMDNJ-New Jersey Medical School after earning his undergraduate degree from the College of William & Mary. He completed his internship and residency at the University of Miami/Jackson Memorial Hospital. Following his residency, he did a fellowship in hand and upper extremity surgery at the Hospital of the University of Pennsylvania.

ACCOMPLISHMENTS

- Subspecialty certified in surgery of the hand and upper extremity
- Director of Hand Surgery at Jersey Shore University Medical Center
- Academic appointment as a clinical assistant professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Volunteered as a surgeon in Haiti following 2010 earthquake
- Nurse's Choice Physician of the Year at Jersey Shore University Medical Center
- Co-author of the orthopaedic textbook Operative Techniques in Orthopaedic Surgery
- Founder and President of LibraryOfMedicine.com
- Inducted into the Alpha Omega Alpha Honor Medical Society
- Fellow of the American Academy of Orthopaedic Surgeons (AAOS)
- Member of the American Society for Surgery of the Hand (ASSH)
- Actively reviews scientific articles for publication in several prominent orthopedic journals
- "Top Docs" Award, Jersey's Best Magazine 2019

CLINICAL INTERESTS

- Joint replacements of the shoulder, elbow, wrist and hand
- Arthroscopy of the shoulder, wrist and hand
- Nerve decompression
- Nerve transfers
- Performs Tenex for various tendon disorders including lateral epicondylitis

HOSPITAL AFFILIATIONS

- CentraState Medical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- Saint Peter's University Hospital
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)





Justin Fleming, DPM, FACFAS

Dr. Fleming is a foot and ankle surgeon board certified by the American Board of Foot and Ankle Surgeons (ABFAS). He obtained his medical degree from Temple University and his undergraduate degree from Widener University. He received extensive training in foot and ankle reconstruction for three years in the Emory Healthcare System where he served as the chief resident. He gained additional training in fracture management with the U.S. Army at Fort Benning as well as in Europe.

ACCOMPLISHMENTS:

- Board Certified in Reconstructive Rearfoot and Ankle Surgery
- Board Certified in Foot Surgery
- Fellow, American Board of Foot and Ankle Surgery
- Diplomate, American College of Foot and Ankle Surgeons
- Extensive continuing education in external fixator, ankle arthroscopy and ankle arthroplasty
- Extensive physician training, instructed nearly 50 courses to date
- Given over 100 lectures to date both nationally and internationally
- Faculty member, The Podiatry Institute
- Faculty member, American Academy of Foot and Ankle Osteosynthesis (AAFAO)
- Humanitarian work in Guatemala with Healing the Children medical mission
- Two-time Teaching Physician of the Year Award Aria – Jefferson Health Valedictorian, Temple University School of Medicine

HOSPITAL AFFILIATIONS:

- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)



Charles J. Gatt, Jr., MD

Dr. Gatt is board certified in Orthopaedic Surgery. He obtained his medical degree from UMDNJ-Robert Wood Johnson Medical School after earning his undergraduate degree from Lafayette College. He completed an internship and his residency at UMDNJ-Robert Wood Johnson Medical School. Following his residency, he did a fellowship specializing in Orthopaedic Sports Medicine at the Cleveland Clinic Foundation.

ACCOMPLISHMENTS

- Subspecialty certified in Orthopaedic Sports Medicine
- Orthopaedic Consultant and Team Physician at Rutgers University
- Head Orthopaedic Consultant for Rider University Athletics, 1997–Present
- Chairman & Program Director of Orthopaedic Surgery at Rutgers Robert Wood Johnson Medical School
- Associate Professor of Orthopaedic Surgery at Rutgers Robert Wood Johnson Medical School
- Program Director of the Limb Salvage Program at Armed Forces Institute of Regenerative Medicine (AFIRM)
- Published numerous articles in referred journals
- Speaker at numerous regional and National meetings
- Voted NJ Top Docs
- Patients' Choice Award Recipient
- Elected by his peers for inclusion in Best Doctors in America®
- Patients' Choice On-Time Physician recognition

HOSPITAL AFFILIATIONS

- Hackensack Meridian Health - Jersey Shore University Medical Center
- Penn Medicine Princeton Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)



David A. Harwood, MD

Dr. Harwood is board certified in orthopaedic surgery. He obtained his medical degree from UMDNJ-Rutgers Medical School after earning his undergraduate degree from Princeton University. He completed an internship at the University of California at San Francisco (UCSF) and residency at UMDNJ-Robert Wood Johnson Medical School. Following his residency, he completed a fellowship specializing in joint replacement and arthritis surgery at the Cleveland Clinic Foundation. He is involved on an ongoing basis with clinical trials for patients with degenerative knee diseases.

ACCOMPLISHMENTS

- Subspecialty in adult reconstruction and joint replacement
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Elected by his peers for inclusion in Best Doctors in America®
- Voted NJ Top Docs
- Member of the American Academy of Orthopedic Surgeons (AAOS)
- Member of American Association of Hip and Knee Surgeons (AAHKS)
- Has published multiple articles in peer-reviewed journals
- FDA 2014 study to investigate the efficacy and safety of a new total hip replacement construction
- Speaker at regional, national and international scientific meetings

HOSPITAL AFFILIATIONS

- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)



Stephen Kayiaros, MD

Dr. Kayiaros is board certified in orthopaedic surgery. He obtained his medical degree from the UMDNJ-Robert Wood Johnson Medical School and his undergraduate degree from Johns Hopkins University. He completed his internship and residency in orthopaedic surgery as well as a fellowship in orthopaedic trauma at The Warren Alpert School of Medicine at Brown University, followed by a fellowship in adult reconstruction and joint replacement at the Hospital for Special Surgery in New York.

ACCOMPLISHMENTS

- Subspecialty in adult reconstruction and joint replacement and orthopaedic trauma
- 2015 Volunteer Faculty Award recipient, Robert Wood Johnson Medical School
- Voted NJ Top Docs
- Member of the American Academy of Orthopaedic Surgeons (AAOS)
- Member of the American Association of Hip and Knee Surgeons (AAHKS)
- Clinical Assistant Professor, Department of Orthopaedic Surgery, Rutgers Robert Wood Johnson Medical School
- Senior Clinical Associate and Clinical Instructor, Dept. of Orthopaedic Surgery, Weill Cornell Medical College, Cornell University; Hospital for Special Surgery and Dept. of Orthopaedic Surgery; The Warren Alpert School of Medicine, Brown University
- Resident of the Year, Dept. of Orthopaedics, Warren Alpert School of Medicine, Brown University
- Inducted into the Alpha Omega Alpha Honor Medical Society
- Excellence in Pathology, Robert Wood Johnson Medical School
- Honors Graduate, Johns Hopkins University
- Nearly two dozen professional presentations on orthopaedic surgery topics as of 2016
- Fluent in Greek, working knowledge of French

HOSPITAL AFFILIATIONS

- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)





Timothy P. Leddy, MD

Dr. Leddy is board certified in orthopaedic surgery. He obtained his medical degree from Jefferson Medical College after earning his undergraduate degree from Lehigh University. He completed an internship and his residency at UMDNJ-Robert Wood Johnson Medical School. Dr. Leddy then completed a fellowship in surgery of the hand and upper extremity at the Mayo Clinic.

ACCOMPLISHMENTS

- Subspecialty certified in hand and upper extremity surgery
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Health Volunteers Overseas (HVO) Site Director 2005 - present
- Reviewer for Journal of the American Academy of Orthopaedic Surgeons
- Published numerous articles in referred journals
- Speaker at numerous regional and national meetings
- Voted NJ Top Docs

HOSPITAL AFFILIATIONS

- Children's Specialized Hospital
- Hackensack Meridian Health - Jersey Shore University Medical Center
- Penn Medicine Princeton Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)



Michael T. Lu, MD

Dr. Michael Lu is a board certified orthopaedic surgeon. Before joining University Orthopaedic Associates, Dr. Lu co-founded Garden State Bone and Joint in Woodbridge. He is a clinical assistant professor of orthopaedic surgery at Rutgers New Jersey Medical School.

Dr. Lu earned his medical degree from Washington University in St. Louis School of Medicine, and completed both an internship and residency at Rutgers New Jersey Medical School. He then completed a fellowship in shoulder and elbow surgery at University of Pennsylvania.

ACCOMPLISHMENTS:

- Member of The American Academy of Orthopaedic Surgeons
- Member of The Arthroscopy Association of North America
- Member of The Mid-Atlantic Shoulder and Elbow Society
- Alfred F. Behrens Outstanding Resident Award
- Frederick F. Buechel, Sr. Award for Resident Research
- Outstanding Resident Research Award, NJMS Dept. of Orthopaedics
- Starr Foundation Scholar
- Dean's List at Temple University

HOSPITAL AFFILIATIONS:

- Raritan Bay Medical Center, Perth Amboy, NJ
- Raritan Bay Medical Center, Old Bridge, NJ
- JFK Medical Center, Edison NJ



Matthew McDonnell, MD

Dr. McDonnell is board certified in orthopaedic surgery. He obtained his medical degree from New Jersey Medical School after completing his undergraduate degree at The College of New Jersey. He then completed his internship and residency training in Orthopaedic Surgery at Brown University and Rhode Island Hospital in Providence, RI. Dr. McDonnell completed a fellowship in Orthopaedic Trauma at Brown University followed by a fellowship in Spine Surgery at Rothman Institute and Thomas Jefferson University Hospital in Philadelphia, PA.

ACCOMPLISHMENTS

- Subspecialty certified in surgery of the spine
- Fellowship trained in spine surgery and orthopaedic trauma surgery
- Clinical assistant professor, Department of Orthopaedic Surgery, Rutgers Robert Wood Johnson Medical School
- Advanced training in robotic spine surgery utilizing the Mazor Renaissance Robotic® system
- Advanced training in cervical disc replacement surgery
- Served as Executive Chief Resident of the Orthopaedic Residency Program at Brown University/Rhode Island Hospital 2011-2012
- Awarded the Haffenreffer House Staff Excellence Award at Brown University/Rhode Island Hospital 2012
- Awarded the Lucas/Palumbo Spine Achievement Award at Brown University/Rhode Island Hospital 2012
- Voted NJ Top Docs
- Selected by his peers as Most Valuable Resident at Brown University 2010
- Served as a member of the Graduate Medical Education Committee at Brown University/Rhode Island Hospital 2010-2013
- Member of the American Academy of Orthopaedic Surgeons (AAOS); North American Spine Society (NASS); Cervical Spine Research Society (CSRS); Orthopaedic Trauma Association (OTA)
- Inducted into the Alpha Omega Alpha Honor Medical Society
- Published numerous peer-reviewed articles, abstracts and chapters in the fields of spine surgery and orthopaedic trauma

HOSPITAL AFFILIATIONS

- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)





James T. Monica, MD

Dr. Monica is board certified in orthopaedic surgery. He obtained his medical degree from Columbia University College of Physicians and Surgeons after completing his undergraduate degree from Johns Hopkins University. He completed his internship at the Brigham and Women's Hospital Department of Surgery and his residency at Harvard. He then completed fellowships at Massachusetts General Hospital specializing in hand and upper extremity surgery as well as open and arthroscopic shoulder surgery.

ACCOMPLISHMENTS

- Subspecialty certified in hand and upper extremity surgery
- Orthopaedic hand and upper extremity consultant for Princeton University Athletics
- Rutgers Robert Wood Johnson Hospital Department of Orthopaedic Surgery Volunteer Faculty Teaching Award 2013
- Voted NJ Top Docs
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Chief Resident, Harvard Combined Orthopaedic Residency Program, Massachusetts General Hospital 2009
- Resident Representative, Massachusetts General Hospital Committee on Teaching and Education 2007-2009
- Inducted into Alpha Omega Alpha Honor Medical Society in 2016
- Published numerous peer-reviewed articles and book chapters, and presented at regional, national and international scientific meetings in the United States, Scotland and Korea

HOSPITAL AFFILIATIONS

- Hackensack Meridian Health – Jersey Shore University Medical Center
- Penn Medicine Princeton Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)



Robert Pannullo, MD

Dr. Robert Pannullo, MD is a board certified interventional physiatrist, pain management physician and independent medical examiner. Dr. Pannullo received his medical degree from Wayne State University School of Medicine and graduated with highest honors from Upsala College, where he earned a Bachelor of Science in biochemistry. He received postgraduate training at New York-Presbyterian/Weill Cornell Medical Center and completed his fellowship in interventional spine techniques and pain management at OSS Health in York, PA. under the direction of Michael B. Furman, MS, MD.

ACCOMPLISHMENTS

- New Jersey Monthly Top Doctors 2013, 2015, 2016
- Wayne State University School of Medicine
- Honors: Family medicine, general surgery
- Recommended for clinical honors in internal medicine
- Member, American Academy of Physical Medicine and Rehabilitation
- Member, American Academy of Pain Medicine
- Member, Phi Beta Kappa honors society

HOSPITAL AFFILIATIONS

- CentraState Medical Center
- RWJ Barnabas Health, New Brunswick
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)



David R. Polonet, MD

Dr. Polonet is board certified in orthopaedic surgery by the American Board of Orthopaedic Surgery. He obtained his medical degree from the School of Medicine at SUNY Stony Brook after earning his undergraduate degree from Stanford University. He completed his internship and residency at the School of Medicine at SUNY Stony Brook. Dr. Polonet then completed a fellowship in Traumatology at Harborview Medical Center.

ACCOMPLISHMENTS

- Subspecialty certified in traumatology
- Director of Orthopedic Trauma at Jersey Shore University Medical Center
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Volunteered as a surgeon in Haiti following the 2010 earthquake
- Associate Editor, Journal of Orthopaedic Trauma
- Fellow of the American Academy of Orthopedic Surgeons (AAOS)
- Fellow of the American College of Surgeons
- MD with Distinction in Research, School of Medicine SUNY at Stony Brook
- Published numerous articles in referred journals
- Speaker at numerous regional and national meetings

HOSPITAL AFFILIATIONS

- CentraState Medical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- Saint Peter's University Hospital
- Surgical Institute



Sergei Pushilin, MD

Dr. Sergei Pushilin is board eligible in orthopaedic surgery. He graduated magna cum laude with a bachelor's in psychology from Brooklyn College. He obtained his medical degree from SUNY Downstate College of Medicine and completed his residency in orthopaedic surgery at State University of New York (SUNY) Downstate Medical Center. Dr. Pushilin then completed a trauma fellowship in orthopaedic surgery at University of Pittsburgh Medical Center. He also served as a clinical instructor of orthopaedic surgery at the University of Pittsburgh School of Medicine.

ACCOMPLISHMENTS

- Subspecialty certified in traumatology
- Assistant Director of Orthopaedic Trauma at Jersey Shore University Medical Center
- The Christopher Pavlides, MD Memorial Award
- The Brooklyn College Foundation Presidential Scholarship
- The Carolyn R. Freeman Award
- Served as a team physician for the NYC Public School Athletics League (PSAL)
- Volunteered in the Brooklyn Free Clinic
- Published numerous articles and presentations
- Fluent in Russian

HOSPITAL AFFILIATIONS

- CentraState Medical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)





Carlos A. Sagebien, MD

Dr. Sagebien is board certified in orthopaedic surgery. He obtained his medical degree from UMDNJ-Robert Wood Johnson Medical School after earning his undergraduate degree from Hamilton College. He completed his internship and residency at UMDNJ-Robert Wood Johnson Medical School. Dr. Sagebien then completed a fellowship in traumatology at University of Maryland Medical Center/R Adams Cowley Shock Trauma Center.

ACCOMPLISHMENTS

- Subspecialty certified in traumatology
- Academic appointment as a clinical associate professor of orthopaedic surgery at Rutgers Robert Wood Johnson Medical School
- Director of Orthopaedic Trauma, Robert Wood Johnson University Hospital
- Member Orthopaedic Trauma Association (OTA)
- Fellow of the AO Foundation
- 2015 Volunteer Faculty Award recipient, Robert Wood Johnson Medical School
- Published numerous articles in peer-reviewed journals
- Speaker at numerous regional and national scientific meetings

HOSPITAL AFFILIATIONS

- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Saint Peter's University Hospital
- University Center for Ambulatory Surgery (UCAS)



Kenneth G. Swan, Jr., MD

Dr. Swan is board certified in orthopaedic surgery. He obtained his medical degree from Cornell University, where he also earned his undergraduate degree with a B.S. in Nutritional Sciences. He completed his internship and residency at the University of Medicine and Dentistry of New Jersey (UMDNJ). He subsequently did a sports medicine and shoulder surgery fellowship at the University of Colorado.

ACCOMPLISHMENTS

- Subspecialty certified in orthopaedic sports medicine
- Director, Division of Orthopedic Surgery, Raritan Bay Medical Center
- Director, Human Motion Institute, Raritan Bay Medical Center
- Fellow of the American Orthopaedic Society for Sports Medicine (AOSSM)
- Fellow of the American Academy of Orthopaedic Surgeons (AAOS)
- Team Physician, Woodbridge Township School District, NJ
- Team Physician, Perth Amboy High School, NJ
- "Gold Doc" Humanism Award, Arnold P. Gold Foundation 2014
- "Top Docs" Award, Inside Jersey Magazine 2012- 2013
- Clinical Assistant Professor, Rutgers Robert Wood Johnson Medical School
- Volunteer Faculty Award, Department of Orthopaedic Surgery, Rutgers Robert Wood Johnson Medical School 2011, 2016
- Resident Teaching Award, Department of Orthopaedic Surgery, Rutgers New Jersey Medical School 2005
- Published numerous articles in peer-reviewed journals
- Speaker at numerous regional and national scientific meetings; extensive medical and academic presentations

HOSPITAL AFFILIATIONS

- CentraState Medical Center
- Central Jersey Surgical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- Hackensack Meridian Health – Raritan Bay Medical Center, Old Bridge
- Hackensack Meridian Health – Raritan Bay Medical Center, Perth Amboy
- RWJ Barnabas Health, New Brunswick
- Saint Peter's University Hospital
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)



Ravi Verma, MD

Dr. Ravi Verma is a board eligible orthopaedic spine surgeon. He was born and raised in Monmouth County, New Jersey. Dr. Verma earned his medical degree from Rutgers University – New Jersey Medical School through the highly competitive seven-year medical program with The College of New Jersey. He was one of 12 people selected from a pool of over 400 candidates for this program.

He completed his orthopaedic surgery residency at New York Medical College (NYMC). While at NYMC, a busy Level 1 regional trauma referral center, he was actively involved in treating patients with orthopaedic and spine high-energy trauma injuries.

Dr. Verma completed a spine surgery fellowship at the Hospital for Special Surgery, ranked the top orthopaedic hospital in the country for the past 10 years. While at HSS, Dr. Verma learned expert techniques in treating spine patients with minimally invasive surgery, scoliosis correction surgery, motion-sparing (nonfusion) spine surgery with artificial disc replacement and using non-narcotic pathways for spine surgery patients. Dr. Verma also treated patients at New York Presbyterian-Cornell and spine oncology patients at Memorial Sloan-Kettering Cancer Center.

Throughout his education and training, Dr. Verma has maintained a strong interest in researching topics that will benefit his patients. At Rutgers, he was awarded the Alpha Omega Alpha (AOA) Honor Society Medical Student Research Award for his work on the role of diabetes in orthopaedic fracture healing. While at NYMC, he studied the effects of hematomas in the spine of polytrauma patients, research for which he won the best clinical paper.

In addition, Dr. Verma did extensive research on spine deformity (scoliosis), minimally invasive spine surgery, motion preservation (artificial disc replacement) and the use of non-narcotic pathways in spine surgery. He was one of 10 fellows selected to present his research at the HSS Research Symposium.

ACCOMPLISHMENTS

- New York Medical College (NYMC) - Louis Del Guercio Research Day – 1st place – Best Clinical Paper
- Alpha Omega Alpha (AOA) Medical Student Research Recognition Award
- NJMS Alumni Association Scholarship

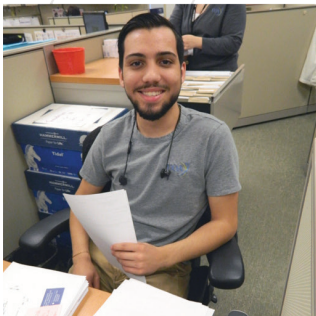
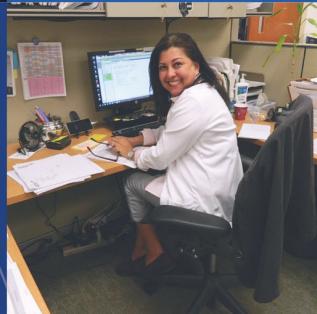
HOSPITAL AFFILIATIONS

- CentraState Medical Center
- Hackensack Meridian Health – Jersey Shore University Medical Center
- RWJ Barnabas Health, New Brunswick
- RWJ Barnabas Health, Somerset
- Surgical Institute
- University Center for Ambulatory Surgery (UCAS)

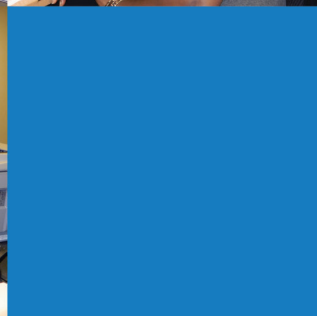
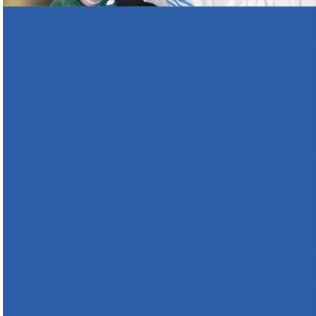


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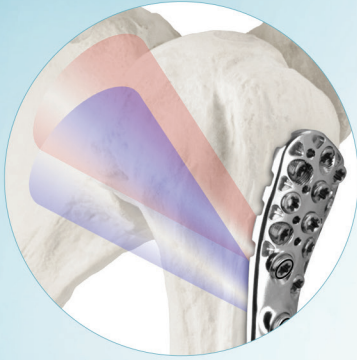
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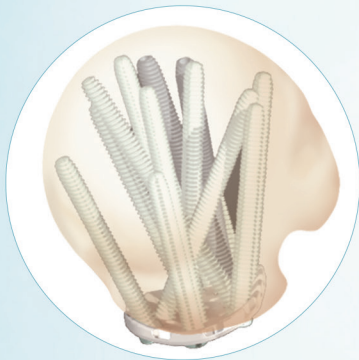
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