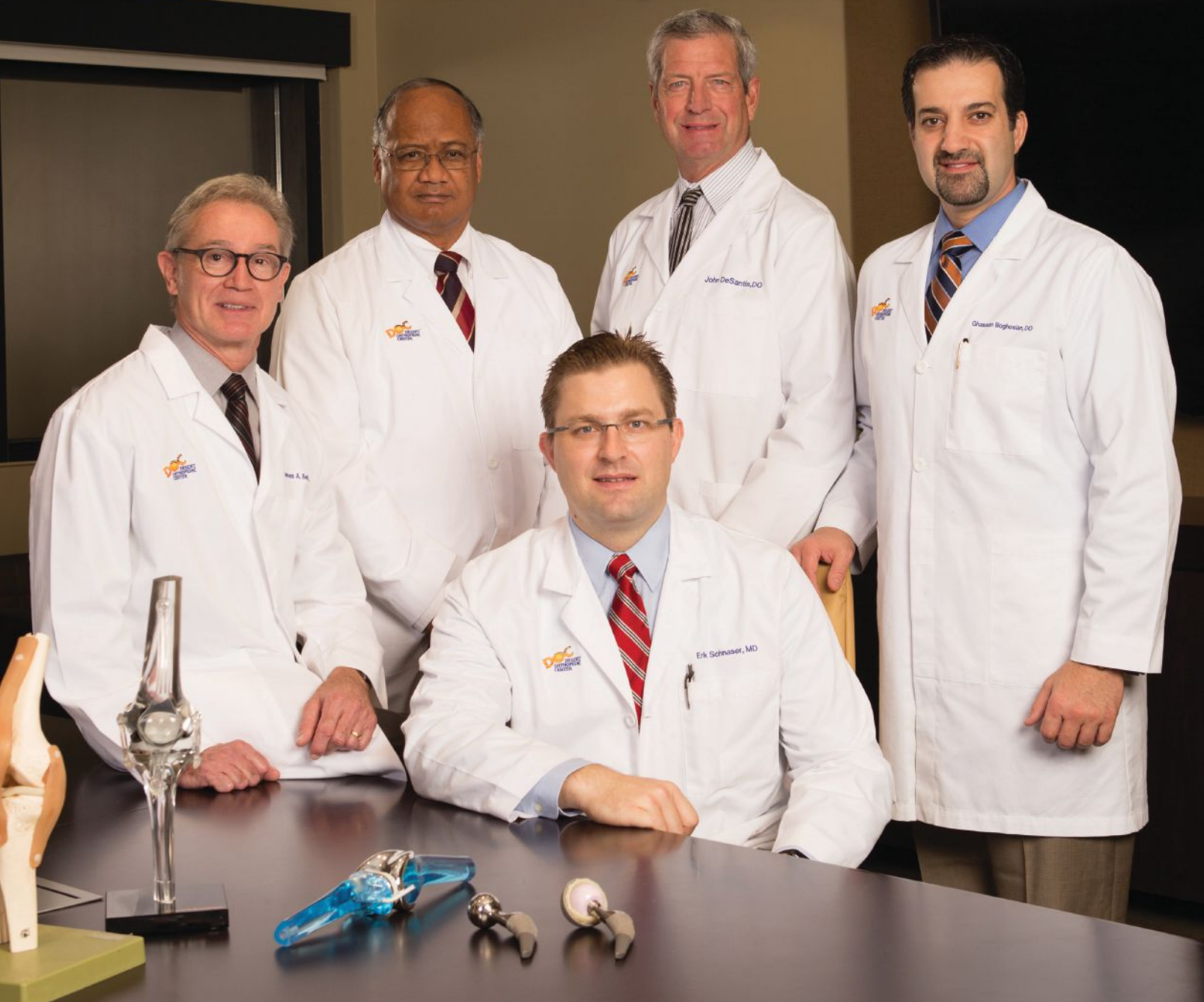


CONVERSATIONS IN ORTHOPEDICS

A publication of Eisenhower Desert Orthopedic Center • emc.org/desert-orthopedic-center



Meet Eisenhower Desert
Orthopedic Center's
Orthopedic Surgeons

Page 12

**CUSTOM-MADE
KNEE REPLACEMENTS**
The Future Has Arrived

Page 8

No matter where your road takes you, durability matters

VERILAST[®] Technology and the Direct Anterior Approach for hip replacement surgery combine to address both long-term wear and short-term recovery.

What does it mean to be an active patient? It means hiking more, walking more, dancing more — living more.

VERILAST Hip Technology was created to stand up to the added wear and tear active patients put on their implants. In fact, it was tested for durability 9-times longer than the industry standard.¹

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The Direct Anterior Approach to hip replacement may be able to get you up on your feet and back to your active life faster than with traditional hip replacement surgery. That's because it uses a small incision made at the front of your hip joint, rather than the typical side or back incision. Doing so may help minimize soft-tissue damage, improve the postoperative stability of your joint and even shorten your hospital stay.

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Erik Schnaser, M.D.
Desert Orthopedic Center
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¹Zardiackas, Lyle D., Kraay, Matthew J., Froese, Howard L, editors. Titanium, Niobium, Zirconium, and Tantalum for Medical and Surgical Applications ASTM special technical publication, 1471. Ann Arbor, MI: ASTM, Dec. 2005.

Testing concluded at 45 million cycles. ISO 14242-1 defines test completion at 5 million cycles.

Hip replacement surgery is intended to relieve hip pain and improve hip function. However, implants may not produce the same feel or function as your original hip. There are potential risks with hip replacement surgery such as loosening, fracture, dislocation, wear and infection that may result in the need for additional surgery. Longevity of implants depends on many factors, such as types of activities and weight. Do not perform high impact activities such as running and jumping unless your surgeon tells you the bone has healed and these activities are acceptable. Early device failure, breakage or loosening may occur if you do not follow your surgeon's limitations on activity level. Early failure can happen if you do not guard your hip joint from overloading due to activity level, failure to control body weight, or accidents such as falls. Talk to your doctor to determine what treatment may be best for you.

Additional information available at www.RediscoverYourGo.com.

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EISENHOWER DESERT ORTHOPEDIC CENTER

CONVERSATIONS IN ORTHOPEDICS

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Eisenhower Desert Orthopedic Center is committed to helping people lead active lives, whether it's through treating a sports or work-related injury, detecting osteoporosis, replacing a joint, or relieving chronic or acute pain. Our mission is to continually develop and maintain comprehensive programs in all areas of orthopedics, addressing each aspect of patient care from initial consultation, diagnosis and treatment through recovery. Our focus is on quality care, investing in the technology and personnel necessary to deliver our services efficiently and to achieve the desired results for each patient.

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On the cover: Eisenhower Desert Orthopedic Center's orthopedic specialists: James Bell, MD; Rufus Gore, MD; Erik Schnaser, MD; John DeSantis, DO; Ghassan Boghosian, DO

DIRECTOR'S LETTER

A Tradition of Better Care



Eisenhower Medical Center (EMC) has the tradition of being one of the leading joint replacement hospitals in California. EMC has recently gained recognition by *U.S. News & World Report* as being the best hospital in Riverside County for nine specialties, including hip and knee replacement surgery, as well as earning a "High Performing" grade for these two procedures. With the opening of our Orthopedic Wellness Center on Annenberg 4 North, we have developed a multidisciplinary joint replacement recovery program that includes nursing, physical therapy, pain management, home therapy and home

nursing. We have two nurse practitioners who are a constant presence in the wellness center, and they are the eyes and ears of the physicians while expediting care. With our new program, we have enhanced postoperative pain control, reduced the amount of time patients are staying in the hospital and minimized postoperative complications. In short, patients are going home healthier and happier than ever before.

In the 2015 calendar year, EMC performed nearly 2,000 total joint replacements, and 2016 looks to surpass this number, making it one of the busiest joint replacement centers in the state. Eisenhower Desert Orthopedic Center (EDOC) asks all of its joint replacement patients to participate in the American Joint Replacement Registry (AJRR), formerly the California Joint Replacement Registry. This registry tracks implant survivorship, complication rates, infection rates and readmission rates. Over 150 hospitals in California participate in this registry, and we are able to compare ourselves with the other hospitals, which include major academic centers throughout California. EDOC enrolls approximately 85 percent of its total joint replacement patients in this registry, and our results demonstrate that the surgeons at EDOC have patients with more preoperative medical problems (such as heart disease, diabetes, kidney disease, etc.) when compared to other hospitals. However, EDOC's postoperative complication rate is lower, our hospital lengths of stays are shorter, and our readmission rates are better. The registry provides feedback while setting benchmark data for us and for our patients so we can continue to improve our care.

With more pressure on doctors and hospitals from public and private insurance providers to deliver value-based medical care, we feel that we are developing strategies that allow us to improve our joint replacement service line while eliminating costly and often ineffective medical practices. In 2017, we will continue to make value-based enhancements to our program that will allow our patients to have access to cutting-edge, evidence-based practices in order to continue to provide the highest quality of care in the region and California.

Thank you,

Erik Schnaser, MD



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EMPOWR 3D Knee[®]

TaperFill™

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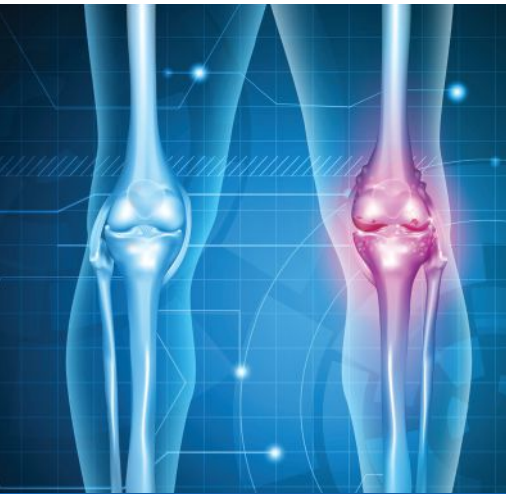


MOTION IS MEDICINE⁺



EISENHOWER
DESERT ORTHOPEDIC CENTER

CONVERSATIONS IN ORTHOPEDICS



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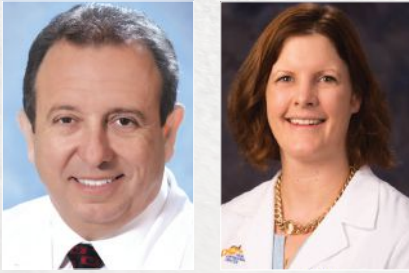
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Advancements in Ankle Replacement Surgery



by David Friscia, MD, and Julie Johnson, MD

The human ankle works like a hinge. One of the most flexible, free-moving joints in the body, a normal ankle can move forward, move side to side and twist. Like all joints, the ankle contains cartilage to absorb shock and prevent the bones from grinding against one another. Ligaments hold the joint together, keeping it from dislocating.

The ankle's multiple parts are highly vulnerable to injuries, including breaks, sprains, and stretched or torn ligaments. After injury, arthritis can set in, leading to pain and stiffness later in life as well as restricted range of movement and daily activities.

Unlike arthritis in the hip, for example, people get ankle arthritis from an injury. The joints get out of line, which causes the cartilage to wear down abnormally. Most patients with ankle arthritis are in their 60s or 70s, but arthritis could have been caused from an injury sustained in their 30s or 40s.

When the cartilage in the ankle joint wears down, the bone-on-bone contact can cause severe pain, making any weight-bearing activity — even walking — difficult. For patients who have not responded to physical therapy, anti-inflammatory medications, cortisone injections or other treatment options, ankle replacement surgery may be an excellent option. With joint replacement surgery, the damaged joint is removed and replaced with a metal and plastic implant that functions as a new joint. Ankle replacement surgery is very similar to replacements performed in the hip and knee.

The technology for ankle replacements has improved dramatically in recent years. New techniques and products have made the surgery less invasive, and surgeons are able to preserve more bone.

With new surgical techniques and improvements in technology, ankle replacements offer a number of advantages. Recent studies show ankle replacement can lead to a better range of motion and improved ankle function. That improvement can also limit wear and tear on other joints, helping to prevent further arthritis.

At Eisenhower, we have been pioneering the use of the Wright Medical INFINITY Total Ankle System with the PROPHECY CT-guided navigation system and custom



INFINITY total ankle replacement

cutting jigs for the implants. There are several modern total ankle implants available today, including the Agility LP system (Depuy), the INBONE (Wright Medical), the INFINITY (Wright Medical), the STAR (Stryker), the Eclipse (Kinetikos), the Salto Talaris (Integra) and the Zimmer total ankle, giving the patient and surgeon more choices. We are the only board-certified foot and ankle orthopedic surgeons in the desert. Eisenhower Desert Orthopedic Center has implanted the most total ankle replacements in the Coachella Valley.

Ankle replacement surgery typically takes two hours, with a one- to two-day hospital stay. Then the patient must stay off the ankle for six weeks. After approximately three months, most patients can begin to hike, golf and return to low-impact activities — free of arthritis pain. ■



INFINITY total ankle replacement

SHOULDER REPLACEMENTS

To Reverse or Not to Reverse, That is the Question



The shoulder can develop arthritis, just like the knee and hip. It just doesn't occur as frequently. The incidence of shoulder replacements is five times less than hip replacements and 10 times less than knee replacements. That makes sense because, after all, we don't have to walk on our shoulders.



by Patrick
St. Pierre, MD

However, when one does develop arthritis of the shoulder, the pain and loss of motion can affect many aspects of life, including quality of sleep, the ability to perform activities of daily living, the ability to work in the occupation one desires or is trained in, and, of course, the ability to participate in sports or recreational activities that improves one's quality of life. The initial treatment, as it is for knees and hips, is to start off with conservative nonoperative treatment consisting of rest, rehabilitation and injections. Cortisone injections

may be very helpful, as a significant amount of pain that a patient with arthritis will experience is often from inflammation of the synovial lining of the joint. Viscosupplementation injections of a substance called hyaluronic acid (HA) have been used in all arthritic joints, including the shoulder. They have been very effective in delaying the need for a joint replacement. HA is a component of normal synovial fluid and is found in cartilage. These injections work to replace that component that decreases with the disease. Although these injections do not cure arthritis, I have many patients with mild to moderate arthritis who have been able to put off shoulder replacements for many years by getting these injections every six to 12 months.

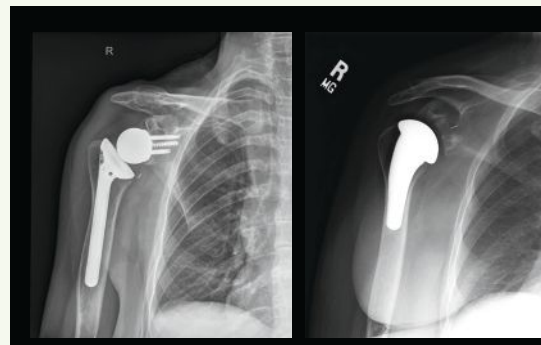
Recent studies using stem cells from the patient have been at least as effective as HA. The use of stem cells is still investigational and not covered by most insurance companies; however, there is hope on the horizon as we learn more about how to activate these stem cells to develop into the tissue desired. Eisenhower Desert Orthopedic Center has been working with the industry and our Institutional Review Board to become a research center that not only provides this resource but also does it in a way to protect our patients and to do valuable research to learn more about how these new technologies work in a concerted scientific manner.

Historically, shoulder replacements have been performed in an anatomic manner, replacing the joint to re-create the normal anatomy of the shoulder, as is done with hip and knee replacements. These shoulder replacements have done well, with very good results, as long as the patient's rotator cuff is normal and the surgery heals as intended. For many years, this was our only option to treat arthritis, but in cases where there is a torn or poor rotator cuff, the results were not as good and often would provide only pain relief but not better function. However, a new shoulder

replacement was developed for patients with severely torn rotator cuffs or arthritis that resulted from a torn rotator cuff — the "reverse shoulder" replacement. When the rotator cuff is unrepairable or has failed previous attempts at rotator cuff repair, the shoulder can be quite painful and weak.

In 2004, the Food and Drug Administration approved the use of the reverse shoulder replacement for patients with these conditions. It has also been used in the treatment of severe shoulder fractures with great success. The early results from Europe were concerning because of a high incidence of complications. These complications have been reduced significantly with more experience and modifications of the implants to reduce their occurrence.

Because the population in the desert consists of a higher proportion of more senior patients, who still desire to be very active and participate in sports, there has been a very high demand for shoulders that not only relieve pain but also allow patients to participate in golf, tennis and pickleball! I serve as a consultant and design surgeon for major implant company DJO Surgical, perform about 200 reverse shoulder replacements a year, and teach other orthopedic surgeons around the country on the indications and surgical techniques for this shoulder replacement. The results have been so good that I rarely complete "anatomic" shoulder replacement for our Coachella Valley patients. My philosophy is that even though our patients don't feel 70 or 80 years old, their rotator cuffs are 70 to 80 years old, and they will do much better with a replacement that accounts for this. The reverse shoulder replacement has now allowed hundreds of patients to return to golf, tennis, light weightlifting and swimming. With results like that, it is hard to not reverse the ball and socket to move toward higher and higher shoulder function! ■

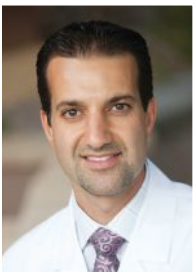


Left: Reverse
shoulder
replacement

Right: Anatomic
shoulder
replacement



Custom-Made Knee Replacements *The Future Has Arrived*



by Ghassan
Boghosian, DO

Osteoarthritis of the knee is the most common presentation of the disease, with the hand being second and the hip third in prevalence. It affects approximately 22 percent of the patient population, and women are slightly more at risk than men. With the aging U.S. population, the prevalence of arthritis is expected to increase in the coming decades. By the year 2040, an estimated 78 million, or 26 percent of the population, will have doctor-diagnosed arthritis.

Although there are multiple types of conservative (nonsurgical) treatment options, rarely are these curative. Treatments such as activity modification, joint supplements, anti-inflammatory medications, braces, and cortisone and hyaluronic acid (gel) injections typically alleviate the pain and inflammation associated with the disease but cannot reverse it. Platelet-rich plasma and stem cells have also been shown to help decrease pain, but they too are not curative, contrary to community belief.

I predict that by the time my 1-year-old twins are orthopedic surgeons themselves, a curative treatment will have been discovered. Until about the 1980s and early 1990s, patients with rheumatoid arthritis were a common finding in the offices of joint replacement surgeons. Now, they are a rare phenomenon. This is thanks to the disease-

modifying drugs that inhibit the progression of rheumatoid arthritis to a diseased joint.

For now, knee replacement surgery is the only definitive treatment. It is estimated that about 5 million people today have knee replacements. This number will exponentially increase as members of the baby boomer population hit their 60s and 70s.

Whether a partial or total knee replacement, the technology behind knee replacement implants have not changed much since the mid-1970s. Although improvements have been made to the materials, fixation methods and surgical technique, the overall process has remained the same. The surgeon opens the knee, removes the arthritic surfaces of the knee, and replaces the end of the femur and top of the

tibia with an appropriately sized implant. Unlike the knee replacement of the past, today, multiple sizes are available, and it is not difficult to find an “off-the-shelf” implant that fits the patient.

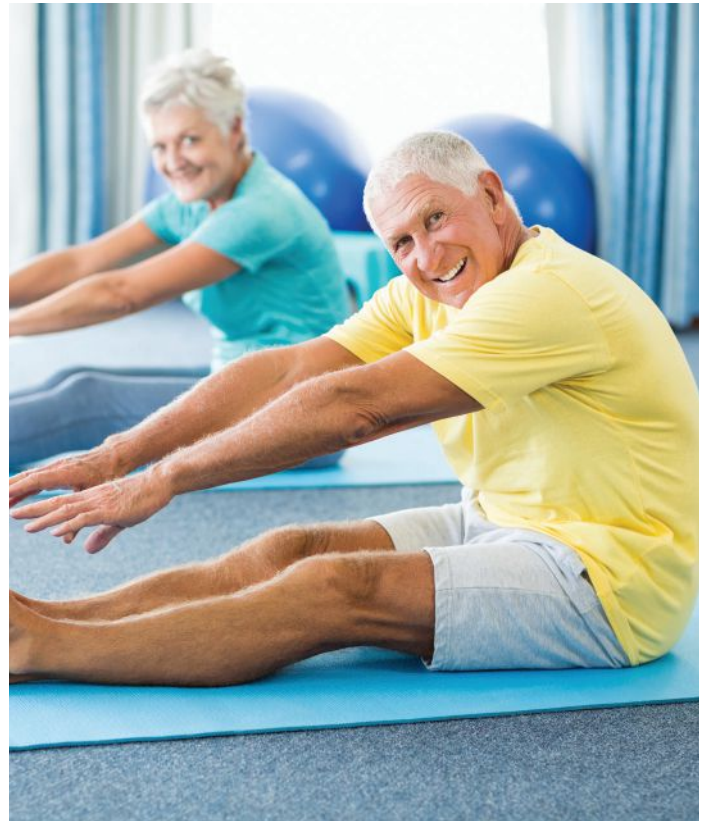
Conventional, off-the-shelf, implants continue to be the gold standard and are more commonly performed in the orthopedic community. There are certain appreciable benefits of the conventional knee, specifically the modularity. This is the ability to mix and match parts in surgery until the perfect balance is achieved.

In 2011, a Massachusetts-based company, ConforMIS, revolutionized the knee replacement world. Just like Amazon to the shopping industry or Uber to the transportation world, ConforMIS has been a game changer.

Now, a surgeon can order a CT scan of the patient’s knee and custom design a knee replacement specifically for that individual. The CT scan is used to design a knee replacement that not only matches the exact size of the patient’s knee but also, more importantly, the shape. This is, in my opinion, the revolutionary step. Every other knee replacement in the industry, although available in numerous off-the-shelf sizes, are of the same shape. ConforMIS knee replacements combine advanced 3-D imaging technology with the latest manufacturing techniques to create a customized implant for each and every patient. They are designed in conjunction with the surgeon; fabricated in the Bedford, Massachusetts, plant; sterilized and packaged; and delivered to the surgeon ready for implantation. From the date of the CT scan, this process takes about six weeks.

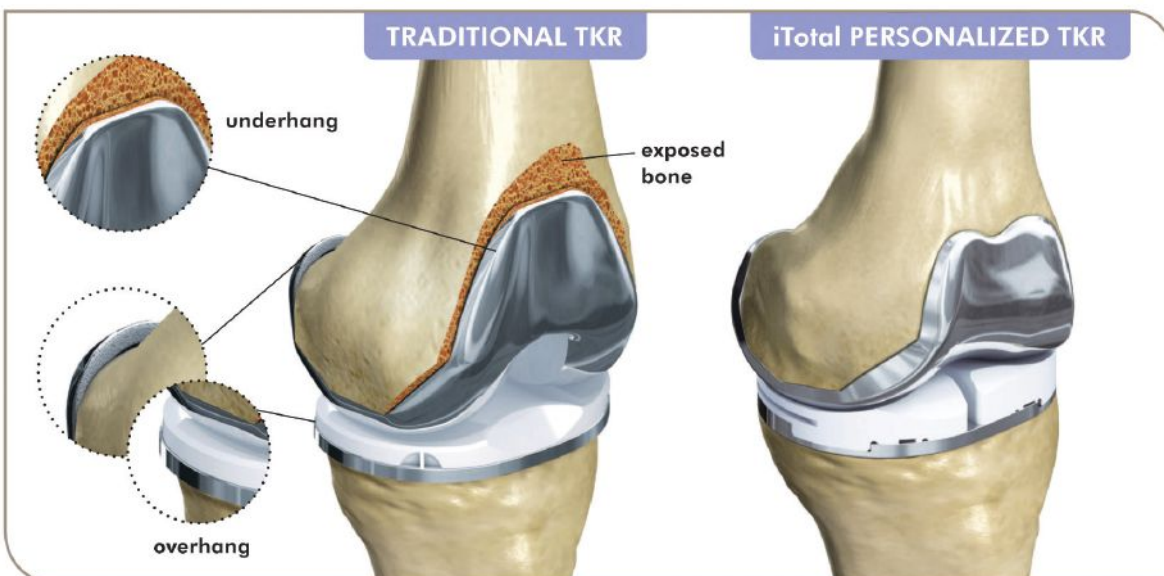
Since 2011, many studies have now been performed to understand the functionality of these implants. Research has shown us that knee kinematics (how a knee functions) is much better replicated with a ConforMIS knee than an off-the-shelf implant.

Previous designs of knee replacements have done a pretty good job of alleviating the pain caused by arthritis. However, those patients have always reported that, despite having much less pain, their knee replacements feel artificial or mechanical. The ConforMIS custom-



made implant is helping put an end to this. My patients now report the “forgotten knee.” That is, when asked which knee was replaced, they have to really stop and think about their answer. My greatest reward as a surgeon is the gratitude that patients share after a joint replacement has allowed them a return to a painless and active lifestyle.

Despite these advancements, limitations do exist in using a custom knee replacement, specifically in those with severe bone loss and/or deformity. In these situations, specialized implants or techniques may be needed to correct the bone loss or deformity. ■



The ConforMIS approach makes sure that your implant is made to fit you precisely, avoiding sizing and fit issues common to standard total knee implants.

The Anterior Approach for Total Hip Replacement



by Erik Schnaser, MD

The anterior approach has gained popularity recently. This approach has been heavily marketed to patients as having a quicker recovery, resulting in less pain, having a lower dislocation rate, being less invasive, improving muscle sparing and having no range-of-motion restrictions during the postoperative period.

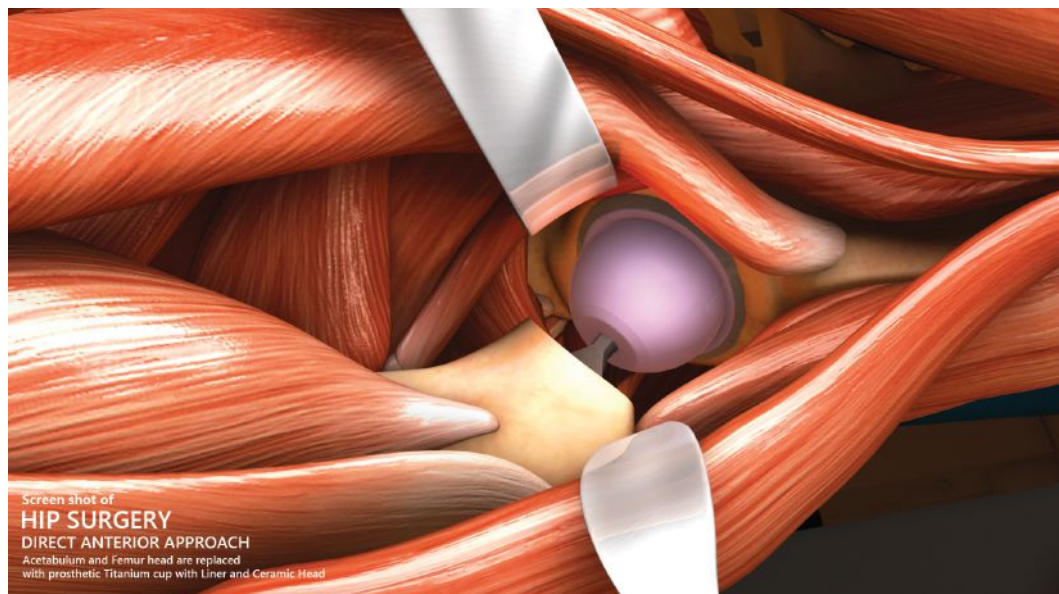
The benchmark procedure that this is generally compared to is the posterior approach. To date, the evidence demonstrates that the anterior approach may cause less muscle damage than the posterior approach. There have been studies that show markers of muscle damage (markers taken from blood labs after surgery) are lower with the anterior approach. However, there is really no good scientific data showing patients who have the anterior approach recover quicker or have less pain or that the procedure appears otherwise less invasive. There are decent quality studies that show the dislocation rate between the anterior and posterior approaches are similar. In reality, there are range-of-motion restrictions following the anterior approach, but they are just different when compared to the posterior approach, and those restrictions tend to be less cumbersome for the patient.

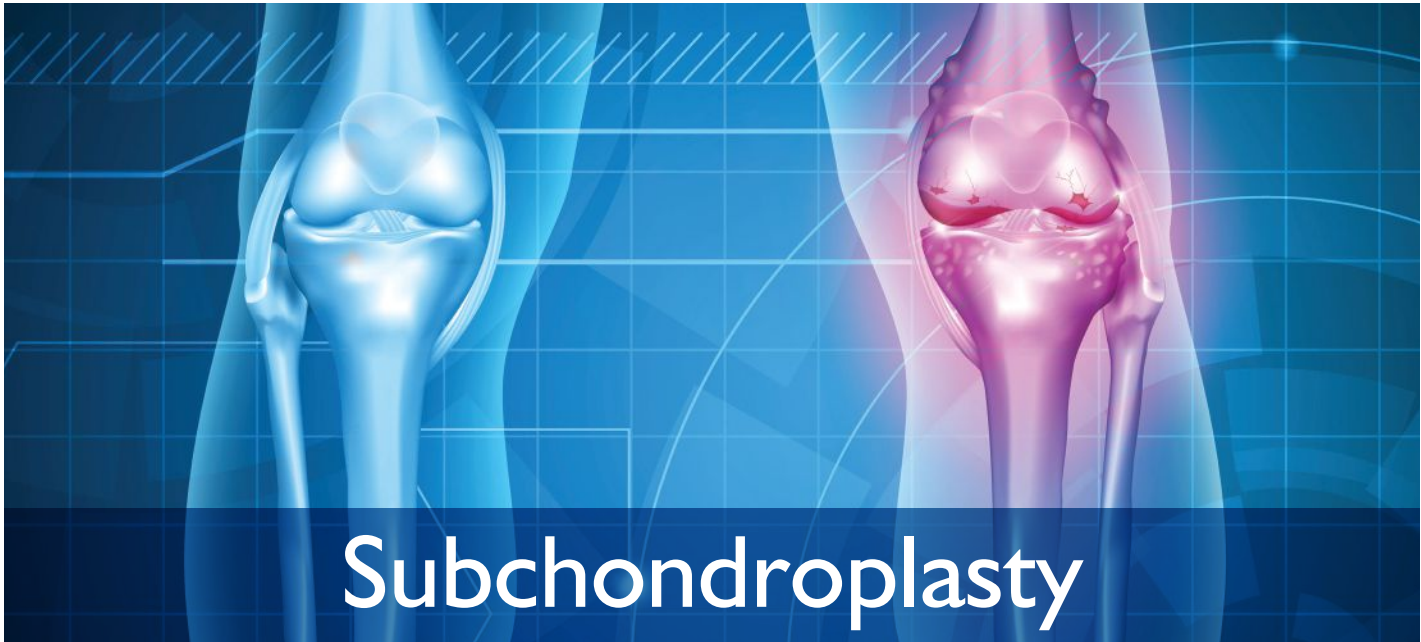
There are downsides to the anterior approach. A common issue following an anterior approach is lateral thigh numbness. This is because a nerve that provides sensation for the lateral part of the thigh runs right over where the incision is often based. Injuring this nerve, in many cases, is unavoidable. Even if this nerve is not cut during the anterior approach, it is often placed under a lot of traction. This traction can cause damage to the nerve, which can take several months to recover from.

Generally speaking, patients don't complain about the numbness too much, but it can be an annoyance for some. Because this approach is "muscle-sparing," meaning no muscles are cut, the muscles are often also placed under a fair amount of traction during the procedure. Some patients have what feels like a pulled muscle in their thigh for a few months following the procedure. Again, this is more of an annoyance than a debilitating issue.

Lastly, if your surgeon does not have a lot of experience with this approach, the

potential for complications can be high. These are discussions to have with your surgeon when choosing what is best for each patient, as some patients may not be ideal candidates for an anterior approach. The big thing to keep in mind with any hip replacement is when you have a hip replacement for the right reasons (e.g., end-stage arthritis of the hip), have a lot of pain and suffering, and have failed conservative management, either approach will likely provide you with significant relief, and the recovery differences are likely to be identical. ■





Subchondroplasty



by James Bell, MD

Millions of Americans have chronic pain and limited activity due to osteoarthritis. In the past few years, research has looked into the structural breakdown of bone in joints that occurs in the development of osteoarthritis, which can contribute to pain and probable progression of the disease. A new treatment has evolved to treat these bone defects and promote new bone growth, which may delay, or perhaps prevent, the need for joint replacement.

A bone marrow lesion is a defect of spongy cancellous bone that supports the cartilage of a joint. Damage to the subchondral bone has been shown to correlate with loss of articular cartilage support, leading to destruction, bone attrition, joint degeneration and pain. Such lesions are detected by MRI and appear as edema in the bone marrow. They are thought to be insufficiency fractures, or “microfractures,” and are commonly found in the hip, knee and ankle. It is a stress reaction in the bone, perhaps from overuse, excessive bending or poor joint mechanics.

Subchondroplasty is a minimally invasive surgery that treats subchondral bone defects. The goal is to repair and strengthen the interface between weaker cancellous bone and hardened sclerotic bone. The procedure involves guiding a small cannula into the affected area using fluoroscopy. The surgeon then delivers a bone substitute material into the defect. Once filled, it hardens within 10 minutes

The procedure is done as an outpatient. Commonly patients have pain for 48 to 72 hours.

and matches the same structural makeup as healthy cancellous bone. Over time, it is resorbed and replaced with new bone in physiological bone turnover. In doing so, it may delay or avoid further degenerative joint changes. By stabilizing the bone, the pain resolves. The procedure is done as an outpatient. Commonly, patients have pain for 48 to 72 hours. Crutches may be advised, and usually, a course of physical therapy is undertaken.

Other areas being explored for the use of this technique are stabilizing nondisplaced cancellous fractures and filling in defects caused by avascular necrosis and bone cysts, which may lead to fractures. ■



A. Proximal tibial lesion
B. The same lesion being filled with the Accufill bone cement



MRI of femur depicting a large edematous lesion



EISENHOWER
DESERT ORTHOPEDIC CENTER

Orthopedic Surgeons

**James A. Bell,
M.D., Ph.D.**
Orthopedic Surgery



James A. Bell, M.D., Ph.D., is a board-certified orthopedic surgeon specializing in orthopedic trauma, sports medicine and joint replacement. He is also certified in sports medicine. He joined Desert Orthopedic Center in 1996.

A native of New York, Dr. Bell knew at a young age that he wanted to be a doctor. With anatomy as his favorite school subject, it was only natural for him to pursue medicine.

Commenting on his specialty, Dr. Bell says, "Orthopedic trauma is like a puzzle. You have to determine your plan of action and treat the injuries with the most serious consequences first."

Dr. Bell received his Bachelor of Arts in biology from the University of Rochester, New York, and his master's and doctorate degrees in physiology from Pennsylvania State University. He earned his medical degree and served his orthopedic surgery residency at the University of Southern California.

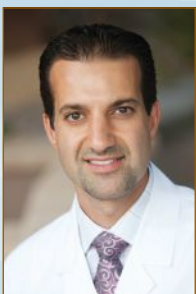
Following graduation at USC, Dr. Bell spent four years in the U.S. Army as an orthopedic surgeon serving at U.S. hospitals and traveling around the world. Prior to joining DOC, he was chief of the Department of Orthopedics and lieutenant colonel for the 67th Combat Support Hospital in Wuerzburg, Germany.

He is a fellow of the American Academy of Orthopaedic Surgeons and a member of the American Medical Association, the California Medical Association and the Riverside County Medical Association.

Dr. Bell serves as the team physician for Palm Springs High School football games and is also a team physician with the U.S. Figure Skating association.

"What I like most about this profession is helping people recover from traumatic situations or get back to their favorite sport."

**Ghassan
Boghosian, D.O.**
Adult Hip and Knee
Joint Replacement
and Reconstruction



Ghassan Boghosian, D.O., is a fellowship-trained orthopedic surgeon, specializing in adult primary and revision joint replacement of the hip and knee. He tailors individual treatment plans for all of his patients, with the goal of restoring function and relieving pain as quickly and completely as possible to improve quality of life.

Dr. Boghosian completed his fellowship training at the world-renowned Cleveland Clinic, where he gained extensive experience in minimally invasive techniques to treat osteoarthritis of the hip and knee. He completed his orthopedic surgery residency at South Point Hospital, also a Cleveland Clinic hospital, where he served as the chief resident. Dr. Boghosian obtained his medical degree from Lake Erie College of Osteopathic Medicine and his bachelor's degree from San Diego State University.

While at the Cleveland Clinic Foundation, he trained in utilizing minimally invasive techniques in hip and knee replacements, such as direct anterior approach to the hip and subvastus approach to the knee. He became proficient at computer navigation to reconstruct joints, hip arthroscopy and other

joint preservation techniques. Most importantly, he gained valuable experience in managing revision cases for patients who have complicated failed hip and knee replacements.

He continues to remain active in academia, local leadership and his community. Dr. Boghosian frequently holds lectures and seminars in an attempt to educate the community about arthritis and other related ailments. He also enjoys invitations to fellow orthopedic seminars, where he lectures to fellow orthopedic surgeons about his specialty. He is a member of the American Osteopathic Association, the American Osteopathic Academy of Orthopedics, the American Academy of Orthopaedic Surgeons, and the American Association of Hip and Knee Surgeons.

Dr. Boghosian takes a very personal approach to treating his patients and strives to return patients to activities that are important to them.

"As a hip and knee replacement specialist, I am privileged to have the opportunity to restore people's function and alleviate their pain."



John DeSantis, D.O. Joint Replacement Surgery



John G. DeSantis, D.O., is a board-certified, fellowship-trained orthopedic surgeon specializing in total hip and total knee reconstruction. A native of Michigan, Dr. DeSantis moved to Southern California to join Desert Orthopedic Center in 2008. Prior to moving to Rancho Mirage, Dr. DeSantis practiced in Michigan where he had established the Knee and Orthopedic Center in 1988 after completion of his fellowship in Florida.

Dr. DeSantis has successfully performed thousands of hip and knee surgeries including arthroscopic knee surgery, total hip replacement and hip resurfacing, total knee and partial knee replacement, custom knee replacement, revision hip and revision knee replacement, bilateral knee replacement, and combined hip and knee replacement surgery. Dr. DeSantis performs hip surgeries through the “bikini incision” anterior approach. The biggest advantage for his patients is that this allows immediate freedom in their hip range of motion and early return to their desired

activities. He prefers this approach, as patients are not required to follow traditional hip precautions, which limit hip flexion and range of motion postoperatively.

Dr. DeSantis graduated from Michigan State University College of Osteopathic Medicine and completed an orthopedic residency at Detroit Osteopathic/Bi County Community Hospital in Michigan. He is a Diplomat of the National Board of Examiners and has served as an oral examiner for the AOA Orthopedic Certification Examination. He is a member of the American Medical Association, the American Osteopathic Academy of Orthopedics, American Osteopathic Association, the American Osteopathic Academy of Sports Medicine and the American Association of Hip and Knee Surgeons.

“The most rewarding part of hip and knee reconstruction is hearing from patients how happy they are that they can get back to activities they once enjoyed.”

Rufus W. Gore, M.D. Orthopedic Surgery



Rufus W. Gore, M.D., is a board-certified orthopedic surgeon specializing in general orthopedics with an emphasis on total joint replacement. He joined Desert Orthopedic Center in November 1999. Dr. Gore came to Desert Orthopedic Center from Orange County, where he practiced orthopedics for 11 years.

“I’m a doctor first,” Dr. Gore comments. “I want patients to see that I genuinely care about them. I take the time to help them understand their injury and the treatment necessary to get them back to their normal activities as soon as possible.”

Dr. Gore earned his medical degree from Georgetown University Medical School in Washington, D.C. He served his internship at the National Naval Medical Center and his residency at the Naval Hospital, both in Bethesda, Maryland. Following his residency, he spent 12 years in the U.S. Navy holding key positions, such

as department head of the U.S. Naval Hospital in Naples, Italy, and head of orthopedic surgery at the U.S. Naval Hospital in Long Beach, California. He has held several faculty appointments, including program director and director of orthopedics training at the U.S. Naval Hospital in Long Beach, and clinical instructor of surgery at Uniform Services School of Health Sciences/Herbert Medical School. Dr. Gore has held several medical staff leadership positions, including chief of surgery and chief of staff.

Dr. Gore is a fellow of the American Academy of Orthopaedic Surgeons and a member of the American Medical Association, the California Medical Association and the Riverside County Medical Association.

“Orthopedics is great medicine. It is very satisfying work. I like the challenge of the mechanics aspect, but the best is helping people.”

Orthopedic Surgeons

Erik Schnaser, M.D. Adult Hip and Knee Joint Replacement and Reconstruction



Erik Allen Schnaser, M.D., is a fellowship-trained hip and knee replacement surgeon. He specializes in adult hip and knee disorders, including pre-arthritis and arthritic conditions. He has a special interest in patient-specific instrumentation, surgical navigation, robotic surgery, as well as taking care of and revising patients with failing or failed total joint replacements. His surgical skill set includes, but is not limited to, total hip replacements, total knee replacements, partial knee replacements, knee arthroscopies, total hip revisions, total knee revisions and lower extremity traumatic injuries.

Dr. Schnaser is originally from Carson City, Nevada, and is the son of an orthopedic surgeon. He received his Bachelor of Science in biochemistry from the University of Southern California and then attended medical school at the University of Nevada School of Medicine. He then completed a surgical internship and an orthopedic surgical residency at Case Western Reserve University School of Medicine. Following his residency, Dr. Schnaser completed a fellowship in adult hip and knee reconstruction at the Hospital for Special Surgery in New York City.

Dr. Schnaser is particularly interested in researching clinical outcomes after hip and knee replacements. He believes that patient-specific instrumentation, navigation and robotics have the potential to increase patient satisfaction and clinical outcomes following joint replacement surgery. He has given over 20 national and international presentations stemming from his research, authored several peer-reviewed publications, and written book chapters on the subject of joint replacement surgery. He was a member of the American Academy of Orthopaedic Surgeons' Research Development Committee and has spent time on Capitol Hill in order to ensure that the National Institutes of Health continues to receive research support for musculoskeletal conditions.

"The great thing about specializing in hip and knee replacements is that these procedures truly have the ability to give patients their lives back. Few careers are this rewarding."

Matthew Diltz, M.D. Orthopedic Sports Medicine



Matthew V. Diltz, M.D. is a board certified and fellowship-trained orthopedic surgeon specializing in Sports Medicine. He is a native of Southern California. After graduating from the University of Southern California with a major in Sports Medicine and Exercise Physiology, he traveled to New Orleans to attend medical school at Tulane University. He returned for his residency at the University of California at Irvine. He completed his training at Boston Children's Hospital – Harvard with a fellowship in Adult and Pediatric Sports Medicine.

Dr. Diltz has worked with athletes of all levels. He has served as team physician for Desert Hot Springs High School, Cathedral City High School, Xavier College Preparatory High School, College of the Desert, Northeastern University and the Boston Ballet. He has received special training in hip arthroscopy and the treatment of complex ACL injuries. Dr. Diltz believes in an integrated approach to treatment of sports injuries, with the involvement of physical therapy and trainers. He

is committed to providing the highest level of care to each and every individual who comes to his practice. "I believe it is important to sit down with the patient and determine their goals, then use the resources available to achieve an optimal result."

Dr. Diltz remains involved in clinical research. Multiple articles are in preparation as well as book chapters for Operative Techniques in Pediatric Orthopaedics. He continues to provide education to the community with lectures.

Memberships include American Board of Orthopaedic Surgery, American Academy of Orthopaedic Surgeons, American Orthopaedic Society for Sports Medicine, Arthroscopy Association of North America, California Orthopaedic Association and California Medical Association.

"It is important to sit down with the patient and determine their goals, then use the resources available to achieve an optimal result."



David A. Friscia, M.D.
Director of Foot & Ankle Surgery



David A. Friscia, M.D. joined Desert Orthopedic Center in 1990 to serve as director of the Center's foot and ankle program. A Southern California native, Dr. Friscia was raised in Long Beach.

He says he always had an interest in science and a desire to work with people, which is why he pursued medicine. He has been involved in implant design and research. In addition, he is an Assistant Editor of the journal *Foot & Ankle International*.

Dr. Friscia graduated magna cum laude from Harvard University. Returning to California, he earned his Medical Degree from the University of California at San Francisco (UCSF).

Following medical school in 1984, he spent five years as a resident at UCLA. In 1990, he went to the Mayo Clinic in Scottsdale, AZ and received his subspecialty training as a fellow in foot and ankle surgery.

Dr. Friscia is a member of the California Medical Association, American Orthopedic Foot and Ankle

Society, North American Foot & Ankle Association and the American Academy of Orthopaedic Surgeons. He is a Diplomat of the American Board of Orthopedic Surgery and serves as an assistant clinical professor at USC where he teaches surgery residents and students.

He is a member of the Board of Trustees of the California Medical Association and past president of the Riverside County Medical Association and has served several terms as an officer of the Medical Staff of Eisenhower Medical Center. In addition, Dr. Friscia has served as Chairman and is President of Desert Orthopedic Center, and has served as Eisenhower Desert Orthopedic Center Medical Director. He also was Chairman of the Department of Surgery at Eisenhower Medical Center for four years and has served on numerous committees and has had many leadership roles. He has done one of the highest volumes of total ankle replacements in Southern California.

"Foot and ankle surgery is especially challenging with the breadth and diversity of patients, conditions, and the need to be creative in your problem solving."

Julie Johnson, M.D.
Orthopedic Foot & Ankle



Julie Johnson, M.D. joined Desert Orthopedic Center in 2016 as an orthopedic foot and ankle specialist. Dr. Johnson formerly practiced in Fargo, North Dakota, but as a native Nevadan, she is happy to return to the West Coast after 10 years living across the country.

Dr. Johnson graduated from Santa Clara University. She returned to Nevada, earning her medical degree from the University Of Nevada School Of Medicine. She completed her residency training in orthopedic surgery from GRMEP/ Michigan State University in Grand Rapids, Michigan. Following her residency, Dr. Johnson completed her fellowship in foot and ankle surgery at the Warren Alpert School of Medicine at Brown University in Providence, Rhode Island.

Dr. Johnson is a member of the American Medical Association, California Medical Association, American Academy of Foot and Ankle Society, and the American Academy of Orthopaedic

Surgery. She is also a diplomat of the American Board of Orthopedic Surgery. Dr. Johnson remains engaged in education and advocacy. She is the past president of the First District North Dakota Medical Association and has served on committees for the AOFAS, hospitals, and medical associations alike. She testified at the North Dakota Legislature to further the quality of foot and ankle care. Dr. Johnson's high quality care is her focus and she has been awarded the CG-CAHPS award for excellence in patient care.

Dr. Johnson is passionate about maintaining and restoring foot and ankle health. She is thrilled to be a new resident of the desert with her husband and daughter, and the diverse culture, strong community, and beautiful weather are ideal. She enjoys trail running, hiking, golf, cycling, and yoga.

"The feet and ankles are the foundation for the entire body."

Orthopedic Surgeons

**Stephen J.
O'Connell, M.D.**
**Director of Hand
& Upper Extremity
Surgery and
Reconstruction**



Stephen J. O'Connell, M.D., a fellowship-trained, board-certified orthopedic surgeon specializing in surgery of the hand, wrist and shoulder. He joined Desert Orthopedic Center in 1988 to establish and direct the Center's hand and upper extremity program.

A native of our nation's capital, Dr. O'Connell grew up in the Maryland suburbs. He graduated magna cum laude from the University of Notre Dame. He returned to Maryland for medical school and earned his Medical Degree from the University of Maryland School of Medicine in Baltimore, where he also served his internship and residency. Dr. O'Connell then completed a fellowship at the renowned Indiana Center for Surgery and Rehabilitation of the Hand and Upper Extremity in Indianapolis. He also received an added qualification in hand surgery from the American Society for Surgery of the Hand.

Dr. O'Connell is a fellow of the American Academy of Orthopaedic Surgeons and a member of the American Society for Surgery of the Hand, the American Medical Association, the California Medical Association, the Riverside County Medical Association, as well as the Indiana Hand Society and the University of Maryland Surgical Society.

Dr. O'Connell actively lectures to the medical community on surgical techniques and to the public on topics of interest in orthopedics.

He has a particular interest in arthroscopic rotator cuff and stabilization surgery of the shoulder, fracture of the wrist and hand, and soft tissue reconstruction of the hand and wrist.

"Helping people regain function or relieve pain so they can get back to their work or favorite activity is what I enjoy about surgery of the hand and shoulder."

**Patrick
St. Pierre, M.D.**
**Director of
Sports Medicine**



Committed to the care of athletes of all ages, Dr. Patrick St. Pierre is the team physician for College of the Desert, Palm Desert High School and Palm Springs Power Baseball. As Medical Director for the BNP Paribas Tennis Open, he cares for the world's best tennis players on a yearly basis. He has also served as team physician for Army Athletics (West Point), Tacoma Sabercats (AA Professional Hockey) West Coast Hockey League, Tacoma Rainiers (AAA Professional Baseball) Pacific Coast Baseball League and Marymount University. He is a nationally recognized shoulder expert and, as such, is the only Coachella Valley member of the prestigious American Shoulder and Elbow Surgeons and one of only 200 nationwide.

Dr. St. Pierre is a graduate of the United States Military Academy at West Point and the Uniformed Services University of Health Sciences in Bethesda, Maryland. After completing his Orthopaedic surgery residency at Madigan Army Medical Center,

he completed fellowships in Medical Research at the Walter Reed Army Institute of Research and in Orthopaedic Sports Medicine at West Point. He is certified by the American Board of Orthopaedic Surgery and is an active member of the American Academy of Orthopaedic Surgery, the Arthroscopy Association of North America, the American Orthopaedic Society for Sports Medicine and the American Shoulder and Elbow Surgeons.

Dr. St. Pierre is very involved in sports medicine and shoulder research and has been recognized with several international and national awards. He has written numerous articles and book chapters and has edited four books on Sports Medicine. He frequently lectures around the world on sports medicine, shoulder and arthroscopy topics.

"My goal each day is to help patients alleviate pain, restore function and to stay active and healthy so they can stay fit for life."

PHYSICAL THERAPY

After Joint Replacement Surgery



by Paige Larson,
MPT, Director of
Physical Therapy

Over 1 million people in the United States will have a joint replaced this year. Whether it is a knee or hip replacement, more Americans are going under the knife than ever before, and more and more will be under the age of 65. In 2015, Eisenhower Medical Center performed nearly 2,000 joint replacements alone and is expected to exceed that number in 2016. As the surgical techniques evolve and the implant designs continue to improve, more people are opting for a joint replacement rather than living with the pain.

A joint is where two or more bones come together (such as the hip or knee), and a joint replacement is when the ends of these bones are removed and replaced with a ceramic, plastic or metal implant. Joint replacements are often due to arthritis, rheumatoid arthritis or osteoarthritis. In each case, the joint becomes inflamed and painful, resulting in weakness, limping, joint stiffness and loss of motion. All of this causes an overall decrease in the ability to perform daily activities and diminishes quality of life. Genetics also play a role in joint health. Even if you have lived a rather sedentary lifestyle, you may find yourself with the same arthritic joint as someone who lived an active lifestyle. Conversely, just because you lived a sports-filled life, doesn't always mean you'll experience arthritic joints. Either way, the cartilage that lines the end of bones in the joints wears away or becomes damaged over time (this can also be accelerated by a fracture or other uncommon conditions or diseases). The joint then becomes painful, leading to treatment options such as physical therapy, medication, injections, supplementations, and possibly a total or partial joint replacement. Your orthopedic physician will help determine which option is best for you.

If conservative measures fail and your physician determines a joint replacement is appropriate, physical therapy will be a part of your recovery process. The day of your

surgery, depending when your surgery is completed, you can expect to be up and walking. You may need a cane or walker to assist you, but you will be up within 24 hours of your surgery with the assistance of a physical therapist (PT). The benefits of this include aiding circulation and breathing, and preventing joint stiffness. Your hospital stay will be one to three nights, and upon

The day of your surgery, depending when your surgery is completed, you can expect to be up and walking.

discharge from the hospital, a PT may come to your home a few times each week to help further your recovery.

Around three to four weeks after your surgery, your physician will most likely refer you to outpatient physical therapy. A PT will perform an evaluation, which includes a detailed history, measurements of your range of motion, strength and function, and establish appropriate goals based on his or her findings. A plan of care for the duration of your therapy will be outlined, with the ultimate goal of returning you to your prior level of function when you could

do most anything you wanted without painful limitations.

At the Eisenhower Desert Orthopedic Center, your care team will also include a physical therapy assistant, and appointments are usually two to three times a week for six to 12 weeks total. The initial focus of therapy will be restoring range of motion to your joint through stretching, with progression into strengthening the muscles directly and indirectly impacting the joint. As these two limitations lessen, you'll also see functional gains, such as being able to walk farther, walk without limping, sit longer without stiffness, climb stairs, etc. During the course of your care, you will also be instructed in exercises to perform at home. Compliance with your home program is instrumental in your recovery.

The goals of physical therapy are to return you to your optimum health so you can again enjoy the life you desire. Long walks with your dog, dinners out with friends, and competitive matches on the tennis court and golf course are just a few things we know are important to you. Working as a team with your physician and therapists will provide you with the best possible outcome after a joint replacement and get you back into all the fun our desert living has to offer! ■

Why Do Patients Request *Bilateral Total Knees and Hips ... and More?*



by John DeSantis, DO

Total knee replacement (TKR) and total hip replacement (THR) are very successful surgeries to help patients with bad knee or hip arthritis. Bilateral arthritis means both the right and left side are arthritic. Bilateral TKR means a patient has one surgery in which both knees are replaced, one after the other, with one period of recovery. The research data on bilateral knee or hip replacements is mixed with regard to its pros and cons. For that reason, some surgeons recommend that their patients have their two arthritic joints replaced in the same setting, while others don't. In my knee fellowship, I was trained to do bilateral TKR, and I have found it is often the best treatment for the patient with severe bilateral knee arthritis. I let the patient know ahead of surgery that the first five to 10 days are a bit rougher doing both knees, but we get the patient up standing and walking the next day, just like we would a single-knee surgery.

Although my training included doing many same-day bilateral TKRs, I have since performed many bilateral THRs, and even THR and TKR on the same patient during a single surgery.

Back to the original question, why?

It is not unusual for a trauma patient to come to the hospital with a broken tibia and femur. Typically, the patient is medically stabilized, and the surgeries for both fractures are done in a single stage in order to mobilize that patient as best as can be done immediately. Why? Because the less downtime a patient has, avoiding the patient going through multiple surgeries over several days, the quicker the patient can recover and be mobile again.

I was trained in and am very comfortable doing bilateral TKR. So how did I get to the point of doing bilateral THR, or THR and TKR, on the same patient during a single-stage surgery? In answer to that, many years ago, when I was practicing in Michigan, I had a 76-year-old woman come to see me with pain in her left hip and left knee. Both joints were painful. After obtaining her X-rays, I told her both were very arthritic and eliminating her pain would require that her hip and knee be replaced at some time. I asked her which joint was worse, and she responded that they both hurt and asked if I could just fix them both at once. Although I never had done a hip and a knee at the

same time, I knew I could do each surgery in less than one hour, and that after less than two hours total surgical time, she could be relieved of her pain and on the road to recovery.

One might ask, what is the risk of doing two surgeries on the same day? All surgeries have some risk. Having two surgeries has a greater

risk than having one surgery done, but having two surgeries separately on two different days has a greater risk than having two surgeries performed in a single operative setting on the same day.

What about the pain of having two procedures? All total joint patients have some amount of postoperative pain. Typically, TKR patients have more pain than THR patients. Some THR patients only report soreness and not actual pain on the day after surgery. It's unusual for a TKR patient to feel that way. No matter how much pain a patient feels, there are different levels, or strengths, of pain medication used to control postoperative pain. Since TKR patients usually experience more pain, bilateral TKR patients are likely to have more pain than bilateral THR patients or combined THR and TKR patients. No matter what surgery is done, pain control is a top priority.

So back to the original question, why do patients request same-day double joint replacement surgery? The answer is because the patient wants to get back on the road to recovery in the shortest amount of time possible.

I have yet to have a double joint replacement patient come back to the office and say, "I wish I hadn't done that." Rather, patients typically say, "I'm glad I'm on the road to recovery and I don't have to go through another surgery." ■



Joint Preservation Through Biologics



by Matthew Diltz, MD

At Eisenhower Desert Orthopedic Center, we are looking for ways to preserve the native joints for as long as possible. We are working with Eisenhower hospital to develop a biologic center. The use of orthobiologics and regenerative medicine in the treatment of musculoskeletal diseases is a relatively new and exciting area. This is a list of the current treatments available:

- **Steroid or cortisone injections:** Corticosteroid injections have been used in orthopedics for many years. They are very powerful anti-inflammatories that can break the cycle of inflammation. Even elite athletes can develop conditions that are recalcitrant to typical treatments. In these instances, often a steroid injection helps to provide relief.
- **Viscosupplementation or hyaluronic acid injection:** As the cartilage ages, it loses building blocks that help with the ability to provide cushioning. We inject the building blocks into the knee, and it helps to preserve the joint. It has been shown effective, and most insurance plans cover the injection for the knee. We are currently participating in a study to determine if it is as effective

for the hip. As with most new technology, it is important not only to provide the service for patients but also to follow the patient outcomes or results.

- **Platelet-rich plasma (PRP):** These injections involve collecting the patient's blood. This is spun in a centrifuge to collect the layer with the highest concentration of healing factors. These factors are then injected into an area of injury to help stimulate a more robust healing response. Many tendon injuries, such as tennis elbow, occur from repetitive microtrauma. PRP therapy has proven effective in this setting. We have used PRP injections in professional athletes for many years. Insurance companies are now starting to cover these injections even for the recreational athlete.
- **Stem cells:** These are basic cells that have not differentiated into specific types. We are able to harvest mesenchymal stem cells from the pelvis that have the potential to differentiate into muscle, bone, fat or cartilage. These are injected into an area of injury. They are able to produce healing factors that reduce inflammation and promote regeneration. Research is ongoing to determine if they differentiate into new cartilage or tendon cells. These injections are considered experimental and are rarely covered by insurance. ■

How Does PRP Work?

Blood is drawn from a patient into a test tube, and then placed in a centrifuge for a "spin."

Plasma and platelets
White blood cells
Red blood cells

Low gravitational force separates the plasma and platelets from the red and white blood cells. The increased concentration of platelets is then combined with the remaining blood.

PRP can be carefully injected into the injured area or inflamed tissue, or by preparing the PRP in a way that allows it to be stitched into torn tissues.

What Is Platelet-rich Plasma (PRP)?

Blood is a liquid (plasma) that contains red and white blood cells, and platelets. Platelets help clot blood and also contain hundreds of proteins called growth factors important in the healing of injuries.

Platelet-rich plasma (PRP) has 5 to 10 times more platelets than what is typically found in blood. The concentration of platelets—and growth factors—has important implications in healing, and can potentially regenerate tissue and cartilage.

What Conditions Can Be Treated With PRP?

Some cases of anterior cruciate ligament (ACL) tears and injuries, tennis elbow, and rotator cuff injuries.

What You Should Know

While more clinical research is needed, the risks associated with PRP therapy are minimal: There may be increased pain at the injection site, but the incidence of other problems appears to be no different from that associated with cortisone injections.

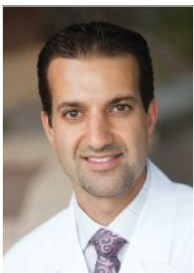
Considering PRP treatment? Be sure to check your eligibility with your orthopaedic surgeon and health insurance carrier.

For more information, visit OrtholInfo.org.

Infographic courtesy of the **AAOS**
AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS

Minimally Invasive Surgery and Pain Control After Joint Replacement Surgery

The term “minimally invasive surgery” (MIS) is commonly used in reference to various joint replacement surgeries, especially hip and knee replacements. The bandwagon started about a decade ago when surgeons started performing the same operation within a smaller and smaller incision. Today, MIS is something completely different. MIS, in my opinion, should not be a focus on the size of the incision but rather on what is done below the incision. Careful soft tissue management is crucial in allowing a speedy recovery. Smaller incisions can decrease visualization and commonly lead to poorly placed components, which can fail prematurely. Furthermore, at times, the smaller incision is stretched to a point where wound complications may arise.



by Ghassan Boghosian, DO

Although we surgeons continue to use the term MIS, we refer to a technique that respects and protects the soft tissue, muscle and fascia around the joint under operation.

The modern mini-posterior and direct anterior hip replacement have replaced the conventional regular posterior and lateral approach to the hip. These new approaches to the hip are muscle-sparing and allow for a quicker recovery. There are specific pros and cons to both approaches. The decision to have one

over the other is a personal decision and should be discussed with your surgeon.

Although less commonly discussed, a similar conversation can be had regarding the knee. There are several approaches, including the medial parapatellar, midvastus and subvastus approach to the knee. As with the hip, there are pros and cons to all of the above.

A quick recovery is dependent on more than the approach. Orthopedic surgeons commonly employ a “multimodal pain regimen” for patients undergoing surgery. This entails using smaller doses of multiple medications prior to, during and after surgery. Using small doses, the side effect threshold is rarely reached. With multiple types of medications, multiple pain receptors are inhibited. By administering these medications prior to surgery, receptors are inhibited before they have a chance to be triggered. These medications commonly include anti-inflammatories, such as Celebrex; nerve stabilizers, like Lyrica; intravenous Tylenol; and small doses of steroids.

Also, prior to surgery, Eisenhower’s specialized anesthesiologists can administer a local block. These can further inhibit the pain signal transmission to the brain. Also performed by the anesthesiologist, a spinal block is performed immediately before the operation. This

allows avoidance of a general anesthesia. Spinal block comes with other favorable byproducts: It can lower the patient’s blood pressure, which lowers the risk of bleeding, it decreases the risk of blood clot, and it provides a sustained pain relief well beyond its administration and the completion of surgery.

During the operation, and combined with MIS, physicians may also use a long-acting Marcaine injection, Exparel, which is infiltrated into the tissues. This infiltration provides 36 to 72 hours of pain relief after its injection.

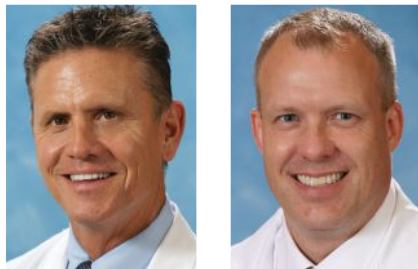
After surgery, the multimodal pain regimen continues with small doses of various medications similar to those mentioned above, which further decrease pain and inflammation. This allows for a very comfortable postsurgical experience, early and aggressive physical therapy, and comfortable ambulation.

Most patients return home on the day following their surgery. A waterproof dressing allows patients to shower right away. The home health nurse and physical therapist will see patients shortly after their return to home. Home therapy is usually continued for two weeks and is usually followed with outpatient physical therapy.

It is our overall objective to use as little narcotic medication as possible while maintaining the patient’s pain level between a two and a three. With the use of MIS and advancements in multimodal pain regimen, this has become possible. ■



Joint Replacements for the Arthritic Hand



by Stephen J. O'Connell, MD and Andrew Allen, PA

Sir Isaac Newton asserted, "In the absence of any other proof, the thumb alone would convince me of God's existence." Whether divine engineering or evolutionary biology, the thumb is a magnificent combination of motion and power, allowing for pinching and grasping. The thumb moves in no less than six different directions, maximizing mobility. It makes opposition possible and produces unequalled grip, torque and dexterity, making the human hand unique. An average person can generate 20 pounds per square inch of force when pinching, which translates to 240 pounds per square inch of force at the base of the thumb (12 times pinch strength). Unfortunately, there is a significant drawback to all of this strength and mobility — the increased risk of arthritis at the base of the thumb, or carpometacarpal (CMC) joint.

To allow for motion, the CMC joint is shallow and relies on ligaments, the structures that hold bone to bone, to stabilize the joint. Over time, in response to inflammation and repetitive stress, these ligaments stretch and loosen (laxity), altering the normal functional position of the thumb and allowing the CMC joint to slip and partially dislocate. This leads to joint incongruity, which can cause cartilage, the protective covering on the joint surface, to wear away. Without cartilage, the bones no longer glide over each other, thus producing painful rubbing between the surfaces. This dyad of laxity and cartilaginous loss can produce a painful, dysfunctional thumb, known as basal thumb or thumb CMC osteoarthritis (OA).

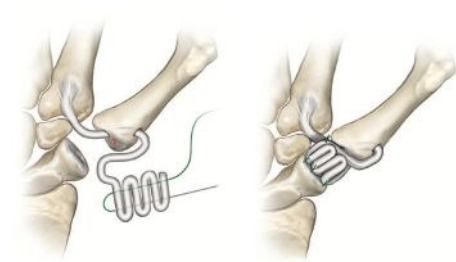
Thumb CMC OA is the most common form of OA involving the hand. It usually occurs

after the age of 40 and affects women 10 to 20 times more often than men, or one in four women compared to one in 12 men. Between the ages of 50 and 60, women and men experience symptomatic basal thumb OA at the rates of 15 percent and 7 percent, respectively. By the age of 75, 25 percent of men and 40 percent of women have X-ray findings of CMC OA involving the thumb. While thumb CMC OA is quite prevalent, it is not always symptomatic. However, when it becomes problematic, the symptoms may range from the occasional nuisance to completely intolerable and functionally limiting pain.

Symptoms of basal thumb OA include pain with activities requiring grip or pinch, often perceived as decreased strength in the thumb or hand. Swelling or a bony prominence over the base of the thumb may occur. Loss of motion and stiffness are also common. These symptoms may wax and wane, or become constant and unyielding. Evaluation by a hand surgeon is warranted at any point along the spectrum of symptoms.

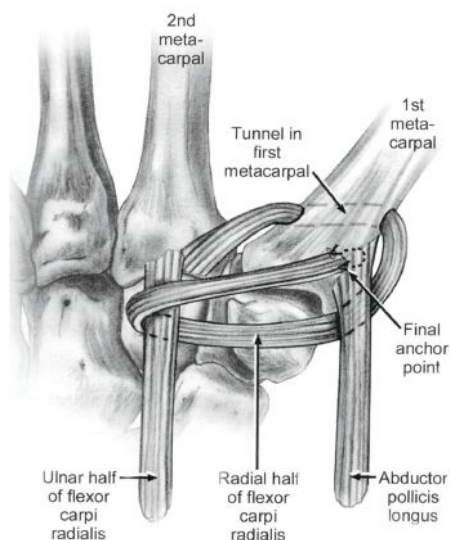
Conservative measures, such as rest, ice and modification of activities, are initial treatment modalities. Splinting and anti-inflammatories (oral, topical and injectable) are indicated for more aggressive symptomatology. When these measures fail and the individual is suffering with intolerable pain and/or loss of function, surgery may be indicated.

When surgery is necessary, a thumb CMC joint replacement or arthroplasty may be



an option. There are several variations on the theme, but the basis is the same — eliminating the painful joint and, in some cases, re-creating the stability of the joint through ligament reconstruction. One of these procedures, ligament reconstruction with tendon interposition (LRTI) arthroplasty, is a well-studied, well-tested and commonly performed surgery.

LRTI is performed in an outpatient setting in which the patient will return home after the procedure. The procedure can typically be performed under regional or general anesthesia in about 60 minutes. The surgery involves removing the trapezium, one of the bones that make up the painful CMC joint. This is done through a small incision over the base of the thumb, thus eliminating the painful contact between the bones. To address the second part of the painful dyad, ligament instability, the remaining bone of the joint (metacarpal) is stabilized. This is done via a tendon graft obtained through two small incisions in the wrist/forearm or with a man-made implant. This portion of the procedure not only restores stability to the joint but also re-creates the normal position of function for the thumb.



After surgery, a period of immobilization is necessary using a cast and/or splint. Hand therapy is also part of the rehabilitation process and is customized to the individual and his or her particular procedure. Therapy is focused on regaining motion, improving strength and restoring function. Regular postoperative visits with the surgeon are scheduled to assess progress and ensure an optimal outcome. The vast majority of patients resume their normal activities approximately three to four months after the surgery.

While not as commonly symptomatic, the CMC and the proximal and distal interphalangeal (PIP, DIP) joints of the remaining four digits are also susceptible to arthritis. The "knuckles," as they are often referred to, are under similar forces, which precipitate arthritic changes. Furthermore, recent or remote trauma to the joint may also contribute to arthritic pain. Swelling, stiffness, pain and loss of motion are typical symptoms.

Nonsurgical treatment options for these joints are similar to those for thumb arthritis, with modification of activities and anti-inflammatories as mainstays.

The human hand is a remarkable structure, capable of producing the finest, most delicate movements or generating the greatest of force, allowing for infinite activities.

When these modalities fail, surgery may be indicated, and a joint replacement may be an option. These joints, made out of PyroCarbon, a material similar in strength and elasticity to bone, resemble the natural joint shape and contour, preserving motion and reducing pain. These implants are inserted through a small incision over the affected joint. The damaged joint is removed, and the implants are inserted in its place. This surgery, routinely done in under an hour, is also done as an outpatient

procedure under regional or general anesthesia. Splinting and hand therapy follow the procedure, with close supervision by a certified hand therapist. Comprehensive follow-ups with the surgeon throughout the rehabilitation process maximize the outcome.

The human hand is a remarkable structure, capable of producing the finest, most delicate movements or generating the greatest of force, allowing for infinite activities. Regardless of the endeavor, the joints of the human hand are exponentially susceptible to wear and tear, and thus arthritis. It is important to note that not all patients with arthritis are symptomatic, and not all those individuals who are symptomatic will require surgery. However, early diagnosis and treatment in those experiencing symptoms may preserve function and relieve pain. The majority of patients can be treated with nonsurgical modalities. In cases where these treatment options fail and intolerable pain and loss of function persist, joint replacement procedures are available to relieve pain and restore function. ■



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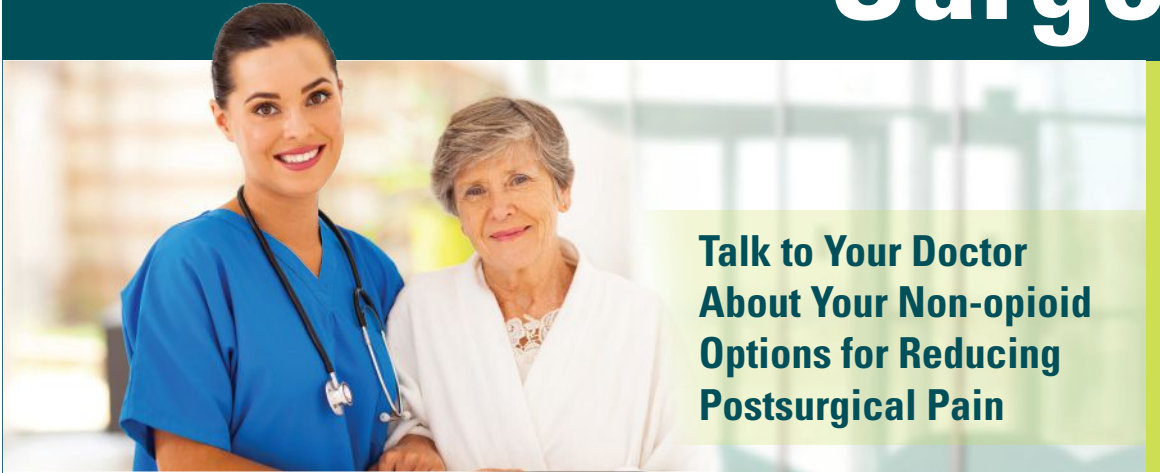


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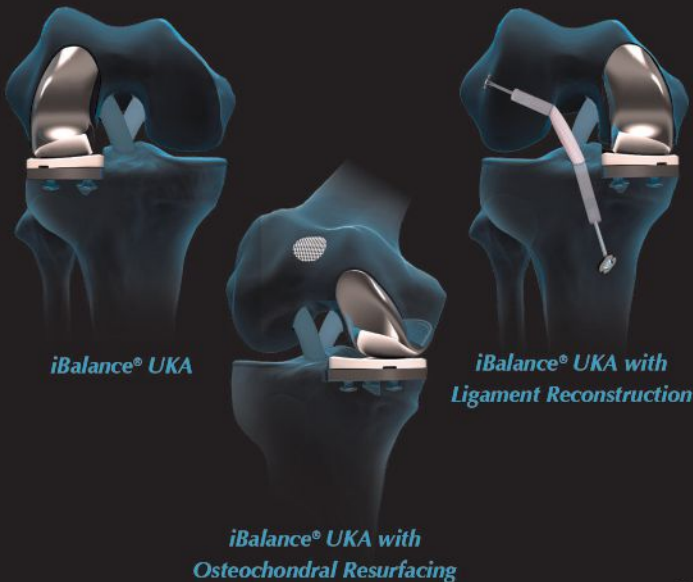
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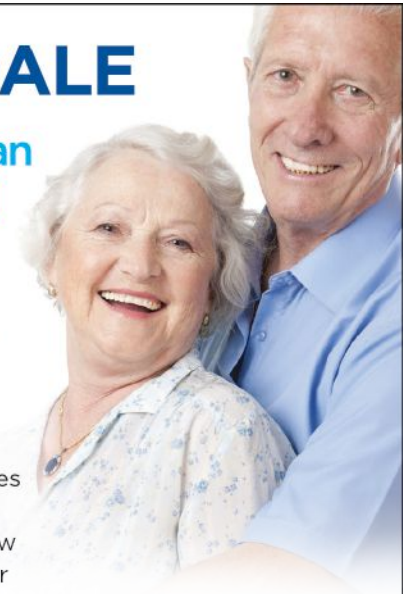
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