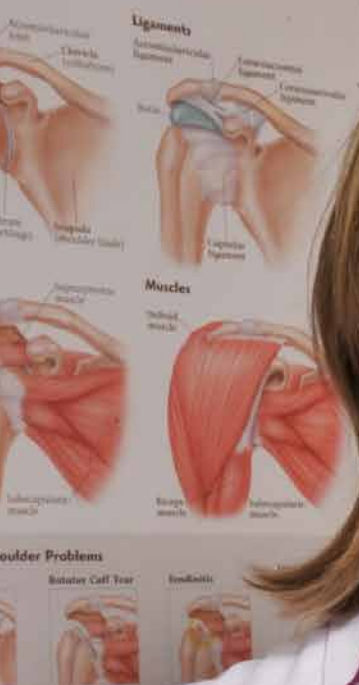


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THE SHOULDER JOINT



University of Minnesota Physicians Alicia Harrison, M.D., Orthopaedic Surgeon:

Providing Solutions
to Shoulder and
Elbow Complications



University of Minnesota Physicians Alicia Harrison, M.D., Orthopaedic Surgeon: Providing Solutions to Shoulder and Elbow Complications

By Marian Deegan



The practice of Alicia Harrison, M.D., is concentrated in some of the more unique joint replacement and revision rotator cuff repair treatments offered by the University of Minnesota Physicians.

MINNESOTANS ARE LAUDED for their stoic, Scandinavian toughness, but it's not always an advantage. University of Minnesota Physicians (UMPhysicians) shoulder and elbow orthopaedic surgeon Alicia Harrison, M.D., remembers her first conversation with a Minnesotan farmer who had been referred to her.

"He was relatively young — in his mid-50s — and had been living with shoulder arthritis pain for a decade," she says. "I

don't think he ever got an X-ray. He had to have been in significant pain, but he was one of those tough Minnesota guys who just gritted through it. When the pain got so bad that he couldn't sleep, he consulted his primary care physician, and X-rays revealed the extent of his arthritis. He was referred to me."

Dr. Harrison recommended a shoulder replacement, one of the complex surgeries for which her UMPhysicians specialty group is recognized.

"Orthopaedics has a huge impact on quality of life," Dr. Harrison explains. "My practice allows me to help people of all activity levels, from children and athletes to the elderly. With a shoulder replacement, we can significantly improve range of motion and dramatically decrease pain. For me, it's one of the most satisfying procedures because it is so life-changing for patients. I can return patients to a higher quality of function and to activities that previously were too

At University of Minnesota Physicians, the first measure of success is providing patients a great care experience and delivering optimal clinical outcomes.



painful. After surgery, my patients tell me they can finally sleep through the night, reach over their heads and hug their grandchildren again — without pain. It's quite rewarding."

Six weeks after shoulder replacement surgery, the farmer Dr. Harrison treated returned for a follow-up appointment.

"This tough guy was tearful because his pain was gone," she recalls. "He told me he was sleeping soundly and doing things with his family again without pain. Granted, there are some restrictions following surgery — we didn't want him cutting his own firewood or lifting very heavy things — but even with these limitations, his quality of life improved significantly."

The UMPhysicians shoulder and elbow orthopaedic specialty group treats a range of shoulder cases, from conditions that don't require surgery to degenerative problems, lifestyle and wear and tear issues, and fractures and tendon ruptures resulting from trauma. Frequently, through the university's transplant program, specialists at UMPhysicians treat transplant patients with shoulder issues and very ill patients with medically complex conditions and a history of previous shoulder surgeries.

"My patients range from 2-week-old infants to 93 year olds," Dr. Harrison explains. "We treat a range of issues, from the simple to the complex, and our practice is recognized for treating more complex and unique cases. These include revision surgeries, reverse shoulder replacements and revision rotator cuff repair.

"The shoulder is a ball-and-socket joint. In a patient who does not have an intact rotator cuff tendon and muscle, a total shoulder replacement will wear out very quickly and will not function very well. A reverse procedure addresses this by switching the ball and socket side; the mechanics of the reverse joint replacement compensate for the absent rotator cuff tendon. This surgery is not indicated often and has only been FDA approved since 2003, but it offers an option for patients who don't have functioning rotator cuffs."

Tendon transfer is another more unique procedure handled by UMPhysicians. Typically, tendon transfers become necessary after multiple shoulder surgeries have taken a toll on tendon quality. When a rotator cuff tear is very large or has been treated by multiple surgeries, the muscle can atrophy, and the tendon quality becomes so poor that the rotator cuff cannot be repaired. In these instances, a tendon transfer is performed to move the tendon attachment point so it does most of the job of the rotator cuff and returns some function to the patient.

"Many of our patients have complex heart and lung conditions and are on other medications that affect their tendons' ability to heal," says Dr. Harrison. "We have a multidisciplinary approach and facilities designed to manage these conditions to try to maximize the patient's healing potential."

Other surgeries offered by Dr. Harrison's group include minimally invasive or joint-preserving surgeries for younger patients who are not good candidates for complete shoulder replacement.

"We might resurface a portion of the joint or the humeral head," Dr. Harrison explains. "Younger patients with progressively degenerative arthritis will sometimes develop avascular necrosis, in which the bone dies in a segment of the joint. We see this particularly as a side effect in transplant patients or other patients who are on prednisone for medical conditions. Where the focal area of bone loss has occurred, we can do a partial replacement for that section of bone. These joint-preserving procedures are advantageous in that they delay the need for a full joint replacement, which is mechanical and will wear out over time. A procedure that preserves more of a younger patient's normal anatomy is ideal."

Patients are guided through a comprehensive evaluation to minimize treatment risks. An arthritis patient who might be a candidate for a shoulder replacement sees a primary care doctor first. In early to moderate cases of arthritis, primary care physicians provide initial nonoperative treatments, such as anti-inflammatory

medications and cortisone injections.

"Nonoperative treatments are extremely effective and the best options for patients who don't have end-stage arthritis," explains Dr. Harrison. "When the patient moves into end-stage arthritis and nonoperative treatment is no longer effective, I'll talk with the patient about surgical options. I have the luxury of telling them that this isn't cancer or heart disease. Ultimately, surgery is the patient's choice. Our preanesthesia clinic can evaluate complex patients before surgery to assess and minimize surgical risk."

Joint replacement surgery requires several hours, and most patients recuperate in the hospital for two nights. They begin physical therapy the day after surgery and continue therapy exercises on their own when they go home. Patients wear a sling for six weeks and can return to activities, such as swimming and golfing, after about four months. At six months, the majority of rehabilitation is complete, though some patients continue to see strength improvements as much as a year after surgery.

Advances in technology have expanded options for shoulder patients. Arthroscopic surgical tools are being modified and changed to handle an expanded range of procedures. New materials provide grafts for tendon repair and promise improved longevity of replacement surgery.

"New metals that allow for bone ingrowth are available," notes Harrison. "The surfaces of these metals are rough, not smooth, and bone can actually grow into the metal. These metals are already used in hip and knee replacement, but they are a newer option for shoulder procedures. These continue to be studied, but may prove fruitful in terms of the survival rates of shoulder replacements. Because fewer shoulder replacements are done compared to hip or knee replacements, the public may not be aware that this is an option for patients with degenerative shoulder arthritis."

Biologics, or treatments that can improve the biology of the surgical area, are another promising development on the horizon.



The UMPhysicians shoulder and elbow orthopaedics group treats patients with a range of shoulder symptoms, from everyday issues such as small rotator cuff tears to medically complex conditions such as end-stage arthritis that impacts bone anatomy. UMPhysicians has expertise in bone grafting and special implant options when bone loss has made a regular shoulder replacement difficult.

“With rotator cuff repairs, you can securely repair the tendon to the bone, but you rely on the patient’s biology to heal the tendon to the bone,” explains Dr. Harrison. “We are hopeful that ongoing research into that biology has the potential to improve outcomes.”

“What is most distinctive about the University of Minnesota Physicians orthopaedics department is our subspecialty expertise,” explains Mary Johnson, COO, University of Minnesota Physicians. “In addition to general orthopaedics, we offer expertise through fellowship-trained surgeons who specialize in complex orthopaedic conditions. Our physicians are studying conditions, treatment protocol outcomes and treatment methodology comparisons. We use outcomes data to improve treatment protocols and optimize patient results. In addition to our focus on treatment methodology innovation, we are providing new approaches to patient care. We consider all of the dimensions of a great patient experience: a great teaching facility, treatment innovation, measurement of outcome and patient satisfaction.”

The UMPhysicians’ orthopaedic surgeons have extensive experience caring for professional athletes and use this

experience to benefit all of their patients. The practice oversees player safety and treats injuries for the Minnesota Wild, Minnesota Vikings, Minnesota Timberwolves, Minnesota Lynx, Minnesota Twins, and all Minnesota Gophers teams other than the university’s football team. The typical patient doesn’t experience the physical intensity that these athletes do, and UMPhysicians is able to gather data on the impact of injuries and use of the body in very rugged, destructive ways. Because professional athletes’ teams want to get players back on the field as quickly as possible without sacrificing safety, more diagnostic tests are ordered to track injury recovery with more specificity than the ordinary patient requires. UMPhysicians extrapolate the lessons from their experience in athlete care and safety and translate this knowledge into the way they care for all patients.

“Our passion is centered on inquiry, learning and translating experience into benefit for our patients,” Johnson explains. “We are dedicated to advancing the practice of orthopaedics in the community so that orthopaedic residents will have the most advanced knowledge of treatment methodologies.

We directly affect the population for which we care, as well as the much broader population cared for by the physicians we train.”

Research conducted by UMPhysicians includes both National Institutes of Health-funded and internally funded trials.

“Our physicians have chosen to take dollars normally paid out as physician compensation and use them instead to fund our own research initiatives,” explains Johnson. “We also recruit some physicians who bring external research funding with them. Our sense of who we are encompasses use of clinical practice dollars to fund research as well as education. We strive to improve methodology as we track outcomes. In some cases, a protocol change improves outcomes. In other cases, a change may remove an unnecessary step that decreases treatment plan costs without affecting outcomes. We feel a social responsibility to decrease health care costs while improving outcomes.

“Training isn’t just about medicine,” continues Johnson, “it’s also about the human relationship that creates a good experience for the patient. We strive to train physicians who are caring and knowledgeable. The quality of the patient experience reflects the teaching environment fostered at University of Minnesota Physicians. By training and educating learners in patients’ presence, we draw patients into the team and help them feel more informed about their care.

“Because we see routine and complex patients, we are able to wrap around the patient experience resources that other environments can’t always provide,” Johnson says. “Our nurses, social workers, pharmacists and dietitians come together as interdisciplinary teams to augment the physicians. This makes the patient experience more meaningful. At UMPhysicians, we are striving to improve the practice of medicine as a whole; through teaching, research and improving patient care.” ■