

Rising Number of Female Joint Replacements Area Providers Weigh In on Trends

By Julie Van Benthuisen

YEAR OVER YEAR, MORE AMERICAN WOMEN ARE CHOOSING partial or full joint replacement surgery to address conditions plaguing their hips and knees. A woman's different anatomical joint structure, and the impact of weight, hormonal changes and even childbirth, are all contributing to this growing trend.

Women are living longer, and with advanced age comes more potential orthopedic issues. Conversely, active younger women (even teens) are affected by joint conditions from sports and associated injuries, while the inactive, often obese younger female suffers from added joint pressure. Regardless of age, area healthcare providers are addressing more joint conditions to help their patients regain greater quality of life. Significant advancements in surgical techniques and therapeutic approaches are lending themselves well to the rate of success.

Recent statistics project that by 2030, two of the three million anticipated joint replacements will be performed on women -- a sizable leap from the 600,000 U.S. replacements performed today. Drs. Frank Puppato of Greater Rochester Orthopaedics and Gregory Lewish, Chief of Surgery at Unity Hospital both note the rising numbers of joint replacements among female patients.

Common Issues Affecting Joints

These two busy surgeons acknowledge that based on the multiple factors affecting women's joints, and the growing elderly population; there may actually be a dearth of providers to handle the surgical cases down the road.

When it comes to the knee, there are numerous culprits. As the body's largest joint, the knee is anatomically complicated and prone to arthritis and osteoarthritis. As people age, joint cartilage starts to gradually or completely wear away, leaving no protection for joint bones from bone-on-bone contact. Bones may also begin to bulge, or stick out at the joint's end. Predisposing factors to knee osteoarthritis include abnormalities of knee joint function resulting from fractures, torn cartilage and ligaments. The associated wear and tear and joint pain limits normal range of motion and profoundly impacts activity levels and lifestyle. Other conditions include bursitis, tendinitis and gout.

"The general thinking is that women have a decreased bone density as they age, so their joint surfaces are not as well sup-

ported," says Dr. Puppato. "There's more laxity in the joints, so the adverse loading of joints leads to earlier deterioration." Factor in obesity -- which affects more women than men -- and more problems arise.



Dr. Frank Puppato of Greater Rochester Orthopaedics

Younger people, however, are also increasingly seeing their lives disrupted by arthritic pain. It's actually the active, athletic person who more often experiences accelerated cartilage degeneration, adds Dr. Lewish.

Physicians can help patients of all ages identify what's causing joint pain. Inflammation is the body's natural response to injury, so doctors and patients

should recognize the clear warning signs of redness, swelling, heat and/or pain, early morning stiffness and skin changes. Arthritic joint pain can vary from a little uncomfortable to debilitating and lasting pain if not addressed proactively.

Critical Connection Between Hips and Knees

Hip stability might be the primary but most often overlooked issue facing women when it comes to joint injuries and ailments, say the doctors. As the lower body's 'control unit,' the hip cuff governs the thigh, which interacts with the knee and affects foot positioning. Most back and hip problems occur because of improper mobility and stability and faulty utilization of the hips. Unfortunately, most women move from their knee joints rather than their hip joints, stimulating the quadriceps to fire up first. Absorbing this much force in the quads alone can encourage ACL and other leg injuries like shin splints and stress fractures.

Dr. Lewish has seen a much higher incidence of female ACL tears. "Part of the ACL and arthritis risk is the neuromuscular balance and anatomical shape of the femur, because the notch

is narrower,” he says. Women’s hips are slightly wider relative to their knees and often fall more toward the body’s midline, creating a greater angle from knee to hip. “This presents a higher risk in athletic women – the knees come down at a funny angle when they jump.” He encourages more pre-season training and exercises specifically before a sports activity to prevent injury.

Developing more femoral control by focusing on the hip cuff can help manage the control center for the knees and lower legs. Focusing on movements that challenge the hip rotators can help protect the knee and back. Treating osteoarthritis means focusing on decreasing pain and improving joint movement with exercises that keep joints flexible and improve muscle strength, heat/cold therapy for pain relief, and joint protection to prevent strain or stress. Exercise increases joint lubrication and strengthens the surrounding muscles, putting less stress on joints, increasing flexibility, muscle strength and energy.

These doctors agree that a woman’s weight can become the single most important factor in joint conditions. “Being overweight puts an additional burden on your hips, knees, ankles and feet,” says Dr. Lewish. “For every pound of weight, we put four pounds of pressure on our knee.”

Innovations in Knee Replacements

When it comes to ACL tears, Dr. Lewish is encouraged by the research being done on cartilage damage. “More techniques are available now to repair the meniscus rather than removing it.” One promising technique involves taking cartilage from a different part of the knee. Similar advancements have been made in total or partial knee replacements. When pain associated with osteoarthritis or injury becomes unmanageable, a range of techniques and prosthetic components now exist to replace part or all of the knee joint surfaces. According to the American Academy of Orthopaedic Surgeons, 1 in 20 Americans over age 50 has an artificial knee. MIS techniques are resulting in much less muscle dissection, blood loss and pain, shorter incisions and hospital stays, faster rehabilitation and improved range of motion.

“Knee replacements have only been around for about 40 years, so they’re still considered a relatively new technology,” says Dr. Lewish. “In that time, however, we’ve seen many improvements in design and technique, especially where female anatomical differences are taken into account. Studies were originally



Dr. Gregory Lewish, Chief of Surgery at Unity Hospital

done on a man’s knees, but because women have a narrower femur, their knee replacement requires a different design.” Replacements today have a thinner, more contoured shape than traditional implants, providing more natural movement and preventing the implant from overhanging the bone and potentially pressing on or damaging the surrounding ligaments or tendons. When osteoarthritis only affects either the medial or lateral knee compartments, a total knee replacement may no longer even be necessary.

The replaced joints are also lasting twice as long – 20 years vs. ten. The techniques for revision are a lot better, and knee manufacturers have really stepped up to the plate, he adds. “A few years ago, patient-specific

instrumentation became very popular.” This includes MRIs or CAT scans before surgery to help delineate patient anatomy, enabling the manufacturer to design the knee to fit the exact patient. “It can definitely save time in the OR if it’s a complicated case.”

Beyond prosthesis design, however, other factors influence knee replacement surgery success, including patient selection, the extent of joint damage, accuracy of the surgical technique in terms of soft tissue balancing and limb alignment, and post-operative rehab.

As more women outlive their spouses, they are living independently and demanding a higher quality of life. “People used to just live with the pain,” says Dr. Puppato. “Womens’ higher expectations and willingness to seek out medical care, especially older women, have increased the demand for joint replacements.

By the same token, younger patients are also seeking out replacements at a higher rate. At Unity Hospital alone, the average knee replacement patient is between 63 and 64 – younger than the national average. “Women probably gain the most from joint replacements, largely because of their narrower knee,” adds Dr. Lewish. “Our goal and theirs is to restore their lives to where they were and relieve chronic pain.”

Recovery time is also notable in success rates. Previously, patients were hospitalized for up to two weeks after a joint replacement. “Now, people are out of bed right afterwards, and usually home in a few days.” Dr. Puppato also notes the more aggressive recovery plan. “We’re moving away from narcotics like morphine, which can cause side effects like stomach upset and constipation, and leave patients too sedated to successfully perform PT.” Instead, patients take a multi-modal pain man-

agement approach – using a combination of local anesthesia and nerve blocks. “The first night post-surgery, patients are smiling.”

Dr. Lewish agrees that the post-surgical care is critical. “Joint replacement programs like ours at Unity have helped to standardize the approach – from equipment used to physician, nursing and staff care and PT.” He recently performed bilateral knee replacements on a 60-year-old patient’s knees. “He walked out of here on his own in just three days.”

Opportunities with Hip Replacements

Hip replacements have also become more successful. “Because the female pelvis is aligned differently than a man’s, women face similar hip issues as with knees,” says Dr. Lewish. Fortunately, design has caught up with demand. Patients can now choose a “bearing surface” based on durability, performance level, wear resistance, and personal need. The most common is a metal femoral head (ball) made of either stainless steel, cast or wrought cobalt, a metal-base alloy against a polyethylene (plastic)-lined acetabular cup. This option provides durability, versatility, non-toxicity, and adequate toughness for most lifestyles.

Ceramic bearings are designed with either a polyethylene or ceramic liner, which reduce wear and offer improved lubrication and reduced friction. “The metal ball technique is still considered satisfactory for older patients, but for younger patients, we use ceramic techniques.”

Dr. Puppato also sees big improvements in technology and design, using less cement and more bone-in growth technology. “The fixation is far more reliable now, with many sizes to choose from to fit the patient more precisely,” he says. “Ultimately, the joints are just more comfortable with less risk of dislocation. It’s a better procedure for quality of life and pain relief. The computer-assisted technology and instruments help place the implants more accurately and function better, contributing to a far more normal feel of the joint.”

He also notes the improvements in hip replacement recovery. We hold educational sessions for our patients so they gain a greater knowledge of what they’ll experience to help alleviate any fears. “Now, patients are walking the day of surgery, with less blood clots and infection risk.” A greater number are going home than ever before, no longer requiring transition to a nursing home or rehab facility, which is critical to reducing infections.

“From a joint replacement standpoint,” adds Dr. Puppato, “it’s becoming a very high demand/volume procedure. There’s no better procedure with better short-term results. We’re as grateful as our patients every day when we see how quickly they regain their quality of life.”

Post-Surgery Rehab

Sharon Osborne, Director of Rehabilitation Services at St. Ann’s Community, confirms this trend toward improved recovery for patients 65 and younger. “We’re seeing the younger seniors undergoing outpatient rather than transitional care. Patients used to just live with the pain for years. Now they are pre-planning their surgeries.”

For those older patients who do require transition to rehab before being safely discharged to home, the approach to recovery is comprehensive. “Our elderly patients average 80 years of age, and can’t go straight home after a knee or hip replacement. That’s why having a thorough transitional care plan is so important.” Care is multi-factorial – most patients have osteoarthritis and co-morbidities which clearly govern when they can go home. Ensuring these patients won’t require re-hospitalization means the care plan is very personalized, with the average length of stay 14-16 days. Working with the team of doctors, nurses, PTs, OTs, social workers and nutritionists, patients’ goals for their future living situation are mapped out.

The therapy team works on independence, taking into account all factors of surgery -- from getting up and out of bed, to dressing and bathing post-op. “We consider everything from walking on uneven surfaces, to opening a door or gate, using a walker -- even how to carry a cup of coffee to the kitchen table.”

Osborne notes that the surgery itself is not the biggest hurdle – it’s the patient’s overall health and well-being. “Patients are often in a frailer state, coping with diabetes, high blood pressure or obesity, which makes it harder to recover. We want to ensure that at discharge, each patient is participating in what’s happening, making informed decisions to successfully manage their health long-term.” Additional services, from Meals on Wheels to visiting nurse services, special adaptive equipment and ramp rails are all considerations once they return home.

She’s encouraged by the more varied options for joint implants – being gender specific and lasting longer – but is most concerned about the overall co-morbidity issues and the expected increased volume of elderly patients moving forward. For her and these busy surgeons, being prepared to meet these growing demands is critical.

While fewer patients are requiring extensive rehab after surgery, early prevention is still key to avoiding the need for surgery in the first place. “We encourage all our partnering physicians to continue promoting conservative activity for the joints, moderate exercise, anti-inflammatories, and using assistive devices if needed. “If patients can help manage their weight, using elliptical machines, switching from high impact to lower impact activity,” joint degeneration will lessen,” says Dr. Puppato. “Otherwise, our concern is there won’t be enough orthopedic surgeons to cover the demand.”