

## > Leading Edge Therapies in Orthopaedics



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New option for patients under 60 with arthritis

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New implants more closely match differences in male, female anatomy

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Older patients benefit from reduced pain, restored movement and function

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What physicians are saying

# Emerging Hip Replacement Techniques Conserve Bone

*An alternative to total hip replacement, hip resurfacing conserves bone in patients under 60.*

A resurfacing approach to Total Hip Arthroplasty requires only the removal of the damaged surface of the hip, replacing it with a durable high-carbide cobalt chrome implant. During the procedure the hip socket is replaced, similar to a total hip replacement, but the femur is “resurfaced” with a hemispherical component fitted over the head of the femur, sparing the bone structure of the femoral head and femoral neck. The implant has a short stem that passes into the femoral neck and is fixed to the femoral head with cement. Clinical studies of the materials indicate they can enhance the surrounding bone, increasing the overall strength of the hip.

*“This option is the best choice for patients under 60 with arthritis because there is less bone recession, and more bone available should patients need revisions during their lifetimes.”*  
**Brent Wiersema, DO, MMC Orthopaedic Surgeon**

“Bone conservation is the greatest benefit to patients, especially younger patients. However, if older patients have strong bones, this can be a good option for them also,” Wiersema said.

## Enhancing Quality of Life

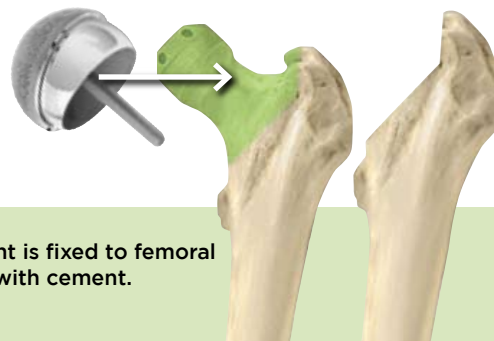
While the procedure is not minimally invasive – it is actually a more extensive approach – rehabilitation and recovery is similar to total hip replacement procedures, and the outcomes are proving to be better for younger patients in test groups. “After the bone has adapted to new stresses, at about one year, patients are back to their activities,” Wiersema said.

In addition to bone conservation for future revision or conversion to total hip replacement, a secondary benefit to hip resurfacing is a decreased risk of dislocation.

“This procedure gives patients the ability to continue their activities and uphold their quality of life,” Wiersema said.

“The most important thing to understand as a patient is whether or not you’re a good candidate.” Hip resurfacing risks are similar to the total hip procedure including infection, blood clots, and fracture of the femoral neck, as there is more load on the femoral neck.

Because the procedure is so new, long-term U.S. studies are not available, but trial and European studies published in March 2006 indicate 99.5% of patients are pleased or extremely pleased at five years post surgery. <



## Mercy Hospital Grayling Clinics in Prudenville and Roscommon

Mercy Hospital Grayling (MHG) is improving orthopaedic care by bringing physicians to rural community patients at its clinic in Prudenville. In 2008 the hospital will extend its outreach with the addition of orthopaedic services to the Roscommon Clinic.

“This level of outreach respects our patients’ inability to travel, either because of injury or other factors,” said

**Darius Divina, DO, MHG Orthopaedic Surgeon.**

Bringing physicians, rehabilitation facilities, and services to patients improves outcomes, Divina said.

# Trials Underway for Gender-Specific Knee Replacement

With women comprising approximately two thirds of knee replacement patients in America, the first ever FDA-approved gender-specific knee replacement is emerging as a viable option.

## Responding to Patient Requests

While driven by patient demand, the latest human anatomy research is backing up the need for a gender-specific knee implant. In a recent study, three-dimensional CT data of more than 800 femurs and patellas reveal distinct differences between distal femurs of the male and female knee, especially the anterior flange.

The female knee has a less-pronounced anterior condyle than males, which means less bone is resected from the female knee for replacements. Gender-specific designs account for this difference with a thinner anterior flange.

*"This option offers an overall better fit, higher flexion, more natural movement, and less intra-operative adjustments."*  
**Michael Peters, II, DO, MMC Orthopaedic Surgeon**

"We don't have to 'stuff' the knee, as we do with traditional implants, which inevitably limits the range of motion for patients."

Studies also have found a narrower distal femoral width in females, indicating a traditional implant may be too wide anteriorly/posteriorly and mediolaterally for some patients. This is suspected of causing soft-tissue irritation that some patients report after surgery. Gender-specific replacements have made adjustments to account for these differences.

Lastly, studies indicate females have a higher Q-angle than men, or increased trochlear groove angle. Traditionally, patellar maltracking posed the greatest problem for women after total knee arthroplasty. "I've observed the knee cap tracking much better because the hip-to-knee angle is different between men and women," Peters added.

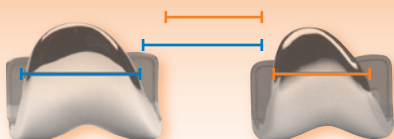
Not every female is a candidate for the gender-specific knee replacement and the surgeon can make the decision intra-operatively. "When we're making the cuts, fitting the knee intra-operatively, we assess how much improvement the gender-specific replacement will offer over traditional replacement," Peters said.

While the gender-specific knee replacement has only been available for eight months, an ongoing outcome study indicates less pain and more knee flexion. "My clinical observation is at six weeks post-surgery patients are doing better than with traditional knee replacements," Peters said. <



> **New gender-specific knee shown in a 76-year-old female provides better fit, less pain.**

## Achieving a Better Fit\*



**Contoured Shape**  
 more closely matches the narrower anatomy of a woman's knee



**Thinner Profile**  
 in front, so the knee feels natural, not "bulky"



**More Natural Movement**  
 when bending and walking

● Traditional Knee ● Gender-Specific Knee

\*Zimmer, Inc.

# Outcomes Improve with Reverse Shoulder Replacements

*A new approach for shoulder replacement is improving outcomes for older patients with long-standing cuff tear arthropathy or trauma reconstruction.*

“This advancement to total shoulder replacement reverses the structure of the shoulder, resulting in reduced pain, restored movement and function, plus the ability to perform daily activities, which is especially important to elderly patients,” said MMC Orthopaedic Surgeon **Christopher Chuinard, MD, MPH**.

Of the 65 total shoulder replacements Chuinard performed at MMC between January and November 2007, 40 were reverse shoulder procedures.


## Total vs. Reverse Shoulder Replacement

Reverse Shoulder Arthroplasty (RSA) techniques were developed in Europe in the 1980s and are unique procedures in most of the U.S., said Chuinard. Candidates for RSA have completely torn rotator cuffs, cuff tear arthropathy, or are experiencing a failed shoulder replacement. “These patients will be experiencing chronic pain and will be unable to lift their arm up past a 90-degree angle,” Chuinard said.

X-rays are the best way to determine a positive indication for RSA. “The humeral head will be high riding. Or clinically, if patients can’t raise their arms above the shoulder, this indicates a functional loss of the rotator cuff,” Chuinard said.

The RSA procedure differs from total shoulder replacement because the normal ball and socket are reversed. A metal ball replaces the glenoid and a plastic socket replaces the humeral head, changing the mechanics of the shoulder and allowing the patient to use the deltoid muscle instead of the torn rotator cuff to lift the arm. “Patients who do not have a working deltoid muscle are not candidates for this procedure,” Chuinard added.



 **Reverse Shoulder Geometry improves range of motion.**

## Reverse Shoulder Geometry

“Two biomechanical principles are at play: the medialized center of rotation located inside the glenoid bone surface, and a 155 degree angle of inclination. These two principles combined increase the deltoid lever arm by distalizing the humerus and make the prosthesis inherently stable.”

“The geometry of RSA stabilizes the shoulder and allows patients to regain movement. It provides a stable fulcrum for the deltoid muscle to move the arm,” Chuinard said.

In addition, the baseplate design of the reversed shoulder prosthesis increases surgeons’ flexibility and accuracy when choosing screw angle placement. This flexibility improves outcomes by providing more options than before – for both the standard cuff tear patient and the complicated rheumatoid or revision case.

## Younger Patients Experiencing Musculoskeletal Injuries

*As more children participate in year-round activities, orthopaedic surgeons are seeing younger patients suffering from overuse injuries.*

### Early Diagnosis Minimizes Damage

**Peter McAndrews III, DO**, Munson Medical Center (MMC) Orthopaedic Surgeon says injuries are skyrocketing in younger patients. “Four seasons of sports and ongoing activities, like dance and gymnastics, lead to more injuries,” he said. “I’ve seen patients as young as nine years old.”

Research indicates that the younger the patient when the injury occurs, the more problematic the symptoms and greater incidents of recurrence if left untreated.

It can be difficult to detect injuries in young patients, but early diagnosis minimizes damage to cartilage and surrounding structures, improves long-term outcome, and restores quality of life.

*“We know from recent studies that if we treat young patients within four months of the injury there are less residual problems.”*  
**Peter McAndrews, III, DO**  
MMC Orthopaedic Surgeon

### Most Common Overuse Injuries

Torn anterior cruciate ligament (ACL) and shoulder rotator cuff dislocation are the two most common injuries McAndrews sees in patients of all ages.

#### **Knee injury symptoms include:**

- Unresolved swelling with 48-72 hours of RICE (rest, ice, compression, elevation) method
- Sudden giving way or instability
- Locking of the knee
- Sharp pain

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### Clinical Studies

For the last 10 years, a French focus group’s research has supported the success of the procedure. In the U.S., the results have been the same.

*“Clinical research shows that reverse shoulder replacement restores active overhead motion for nearly every patient.”*  
**Christopher Chuinard, MD, MPH**  
MMC Orthopaedic Surgeon

### What Patients Can Expect

A well-planned rehabilitation program is critical to the success of a shoulder replacement. “Our patients can expect two to three days in the hospital following surgery, and pain to dissipate after a few weeks,” he said. “After six weeks, they typically regain full range of motion with the help of physical therapy. Driving a car is not allowed for six weeks after surgery.” <

### Munson Medical Center Orthopaedic Care Receives HealthGrade’s Highest Ranking

HealthGrades recently named Munson Medical Center (MMC) the number one Michigan hospital for overall orthopaedic care based on 2006 outcomes. The ratings were accumulated in the areas of total hip, total knee, hip fracture, neck, back, and spinal fusion procedures.

“It’s particularly gratifying to see the hospital and our physicians filter to the top of quality rankings,” said **John Bruder, MD**, Medical Director of Orthopaedics at MMC.

Attention to all the details of recovery before surgery is essential to the improved outcomes the MMC orthopaedic programs deliver. “We continuously focus on improving these elements,” Bruder said. “This honor is a validation of that commitment.”

For more information, visit [healthgrades.com](http://healthgrades.com).

*“ACL injury patients typically have full range of motion in three to four months, rather than casts for a full year as in the past.”*

**Brian Kerr, MD, MMC Orthopaedic Surgeon**

#### **Shoulder injury symptoms:**

- Pain after two weeks of non-steroid medication (Tylenol® or acetaminophen)
- Pain that wakes the patient at night
- Difficulty with range of motion
- Symptoms unresolved with physical therapy

## Increasing Recovery Statistics

Leading-edge treatments combined with comprehensive rehabilitation are primary factors in rising recovery rates.

Accelerated rehabilitation – which includes pre-surgical exercises – also contributes to shorter recovery times, said **Brian Kerr, MD, MMC Orthopaedic Surgeon**. “In the 1980s physicians learned their approach to rehab could be more aggressive. Patients who consistently pushed the limits during recovery were healing faster. For example, ACL injury patients typically have full range of motion in three to four months, rather than casts for a full year as in the past,” he said.

While the healing response of accelerated rehabilitation does not translate to all surgeries, especially rotator cuff tears, clearly identifying patient goals and employing pre-surgical rehabilitation steps mentally and physically prepares patients before their operations, also leading to faster recovery. “When we have a post-surgical process that includes exercises patients did before surgery, joints are stronger, muscles remember the exercises, and patients know what to expect,” Kerr said.

Treatment for overuse injuries is the same for children and adults, but early diagnosis is more critical to a growing body, because of growth plates, McAndrews emphasized. “We know that if we don’t tend to the injuries, there can be a lifetime of problems for the patients. And when we do, patients resume their activity and quality of life.” <

## Mercy Hospital Cadillac Joint Camp Improves Patient Progress

Joint Camp – a pre-operative education and post-operative therapy program – prepares total joint replacement patients at Mercy Hospital Cadillac for surgery and gives them an overall understanding of what to expect after it.

“When people are comfortable with expectations of their surgery and rehabilitation, they have less apprehension,” said Mercy Hospital Cadillac Orthopaedic Surgeon **Paul Bizzigotti, MD**. “And less apprehension helps patients recover.”

The program is multi-disciplinary and includes daily bedside and group physical therapy, personal coaching from family or friends, plus nursing, discharge, pharmacological, dietary, and physical therapy education.

## Otsego Memorial Hospital Expansion Improves Orthopaedic Access

Otsego Memorial Hospital is better serving orthopaedic patients with its ambulatory services expansion in Gaylord.

“The biggest benefit to patients is reduced wait time,” said **Gilbert Noirot, MD, OMH Orthopaedic Surgeon**. Faster care is especially important to sports medicine patients and those with traumatic injuries, Noirot said. “We can treat patients and they can go home the same day.”

The facility hosts five orthopaedic surgeons in three outpatient rooms to provide greater access to patients than before.

The OMH ambulatory unit received the 2006 Governor’s Award of Excellence for Improving Care in the Ambulatory Care Setting.

## West Shore Medical Center Brings Specialized Care to Patients

Responding to community need, West Shore Medical Center (WSMC) has expanded rehabilitation services in Bear Lake, bringing a broader continuum of orthopaedic care to the community. Expanded hours and additional space make room for increased physical therapy volume.

“Positive outcomes are based on how well physicians, physical therapists, and patients work together,” said Esther Sigurdardottir, WSMC Rehabilitation Manager. “We’re improving the orthopaedic pathway by bringing services where they are most needed.”

# Munson Healthcare Opportunities

The Munson Healthcare System is a nationally recognized, non-profit system of seven hospitals serving 24 counties in northern Michigan. More than 650 physicians practice in the region, providing a continuum of high-quality care in 57 specialties.

## Do You Know Someone Interested in Joining the Largest Physician Network in Northern Lower Michigan?

To learn more, please contact Deborah Glicker, Director of Physician Services and Recruitment, by phone at (231) 935-5890, by fax at (231) 935-5885, by cell at (231) 342-5642, or by email at [dglicker@mhc.net](mailto:dglicker@mhc.net).

## What They're Saying...

During the past year, 40 physicians have joined medical staffs within the Munson Healthcare System. Here's why:



**Steven T. Mast, MD** | Cardiology  
Grand Traverse Heart Associates, Traverse City

*"I wanted to be in a place that was very progressive, cutting edge, and also had good outcomes. I think Munson Medical Center is terrific. The facility, the availability of equipment, and the staff have all exceeded my expectations. I love northern Michigan – I really wanted to be here."*



**Gilbert Noirot, MD** | Orthopaedic Surgery  
N'Orthopedics, Gaylord

*"Three big variables attracted me to Gaylord. Most importantly was the individuals I would be working with. I heard good things about the physicians. The support staff and nurses are very helpful. I was impressed by Otsego Memorial Hospital's new facility, and operating rooms. I love being here in Gaylord."*



**Brian Dunlop, MD** | Anesthesiology  
West Shore Medical Center, Manistee

*"I've been extremely satisfied – my expectations have been exceeded. I'm very happy with the quality of care and the quality of people that I work with, the family feel of the hospital, the friendly staff, and the nursing community. I'm happy too, with the relationship with Munson Medical Center as a resource for patient referrals and tertiary care."*



**Robert L. Balestrero, MD** | Radiology  
Mercy Hospital Grayling

*"Mercy Hospital Grayling is doing a multi-million dollar expansion that will put it on the cutting edge of the technology that's expected in a community hospital. I prefer to practice in a more rural environment where you can make a bigger difference. The administration has given me the latitude to put my mark on the department as I see fit. I'm totally happy to be here – I can't ask for anything more."*



**Val Syring, DO** | Neurology  
Great Lakes Family Care, Cadillac

*"It was the goal of Great Lakes Family Care and myself to establish a neurological clinic that will hopefully blossom and provide enough work for a full-time Neurologist in Cadillac. I was looking for a place to work as an outpatient Neurologist in a semi-retirement position without a lot of hospital duties or on-call status. I've also always wanted to live up north to kayak, hike, and mountain bike without having to drive to get here. I am enjoying Cadillac."*



**Lisa B. Klassen, MD** | Pediatrics  
Grand Traverse Children's Clinic, Traverse City

*"We were looking for a good community to raise our family in and I wanted a job that would offer long-term sustainability. The medical community here is highly-qualified, the caliber you'd expect to find at a university hospital, rather than a community setting. Because of the location, people want to be here so there are a lot of resources."*