



# ORTHOPÆDICS

Warrenville • Wheaton • Carol Stream • Naperville • Bartlett • Winfield • 630-225-BONE (2663) • [www.OADortho.com](http://www.OADortho.com)

## Minimally invasive surgery: Expertise flourishes at OAD Orthopaedics

### What is Minimally Invasive Surgery?

Technology improves every aspect of our life, and nowhere is this more apparent than in the field of medicine. For example, in orthopaedic surgery, physicians have taken advantage of the latest advances in technology – customized instruments, innovative techniques, and computerized navigation – to develop minimally invasive surgery (MIS).

Minimally invasive techniques have refined traditional “large-open procedures” by using a smaller incision, thereby reducing the amount of pain, blood loss and scarring associated with orthopaedic surgery. Subsequently, minimally invasive procedures result in quicker recoveries, shorter hospital stays, improved patient satisfaction and, potentially, lower incidences of complications.

### What Orthopaedic Surgical Procedures are Available as Minimally Invasive?

Approximately 20-25 years ago, arthroscopic surgery revolutionized the treatment of many orthopaedic problems. Today, through advancements in technology, the development of customized instruments and the development of innovative techniques, MIS is revolutionizing some surgical procedures. Following are brief descriptions of minimally invasive surgery for hip and knee replacement, spine and neck surgery, and hand/upper extremity procedures – all performed by OAD Orthopaedics’ specialists.

### Minimally Invasive Hip Replacement

Traditionally, a hip replacement is performed through a large incision on the side of the hip, extending from about the mid-thigh to the center of the buttocks. By using customized instruments, innovative techniques, and computerized navigation, however, a hip replacement can be now accomplished through an incision as small as 3.5 inches – a stark contrast to the size of the incision that typically measures 12-16 inches in length for the traditional hip replacement technique.

The traditional incision involves a large area of dissection that caused damage to the muscles and tendons supporting the hip. Due to the large incision and extensive dissection, and the subsequent mechanical trauma to the soft tissue, patients may incur prolonged operating times, increased blood loss and lengthy rehabilitations.

With MIS, OAD Orthopaedics’ hip specialists, Drs. David Chang, David Mochel and William Sterba, are now able to replace a hip resulting in less damage to the soft tissue and muscles, thereby leading to a shorter operating time, less blood loss, reduced pain and a quicker recovery. Patients who have an MIS hip replacement leave the hospital sooner, ambulate better, and get back to a “normal” life much quicker than those patients who have a traditional hip replacement.

### Minimally Invasive Knee Replacement

As in the MIS hip replacement, the minimally invasive knee replacement involves a much smaller incision as well. The incision has been reduced from about 10-12 inches to approximately 5-6 inches. More importantly, the MIS knee replacement does less damage to the soft tissue compared to the traditional knee replacement technique.

With the traditional replacement incision, the deep dissection cuts the quadriceps muscle and tendon (the quadriceps muscle is the thigh muscle that contracts or tightens when straightening the knee). The MIS technique, however, allows a patient to rehabilitate sooner after surgery because it does not cut the quadriceps muscle nearly as much. As a result, patients have better muscle control and knee strength immediately after surgery compared to those patients who have their quadriceps muscle cut during a traditional knee replacement procedure.

OAD Orthopaedics’ minimally invasive knee replacement patients have experienced less blood loss, reduced pain,

shorter hospital stays and quicker recovery periods compared to those patients who have traditional knee replacements.

### Minimally Invasive Spine and Neck Surgery

One of the most innovative minimally invasive procedures performed by OAD Orthopaedics’ spine specialists, John Andreshak, Stephen Heim and Jerome Kolavo, is laparoscopic anterior lumbar spinal fusion with bone morphogenetic protein (rh-BMP). This state-of-the-art spine surgery is specifically for patients with degenerative disk disease – a disease occurring when the spinal disks are worn and do not provide the appropriate cushioning support between the vertebrae.

The traditional surgery required a big posterior spinal fusion, with an incision approximately 4 to 5 inches long, and a hospital stay of almost one week. Undergoing an MIS for this condition involves accessing the front of the spine via several small abdominal incisions and removing the injured disk to replace it with a hollow cylinder filled with a synthetic compound known as BMP.

BMP mimics a naturally occurring body protein whose function is to “turn on the bone cells” and actually manufacture the needed bone tissue on its own. This procedure results in almost no blood loss and patients can sometimes go home the same day.

Patients plagued with sciatica or other chronic pain caused by herniated disks, can undergo a microlumbar discectomy. OAD Orthopaedics’ spine surgeons perform this minimally invasive procedure by making a one-inch or less incision, and then with a microscope, remove the piece of disk that is herniated to relieve pressure on the nerves. Because a microscope is used, the procedure is much less painful and recovery is fast—an alternative to a traditional laminectomy’s three to four-inch incision.

If a herniated disk exists in the neck or cervical spine, as opposed to the lower back, a minimally invasive procedure



# ORTHOPÆDICS

known as microcervical discectomy and fusion can be very effective. Surgeons enter through the front of the neck through a one and a half inch incision and proceed with a microscope as a surgical aid.

## Minimally Invasive Hand/ Upper Extremity Surgery

The subject of minimally invasive techniques in hand and upper extremity surgery may seem redundant considering the minute structures in the hand compared to the majority of most orthopaedic procedures. Actually, it could even be argued that all hand procedures are minimally invasive. Certainly, that is the goal of every operation ... to create an incision just large enough to execute the procedure with precision and safety.

Yet recent advances in techniques and instrumentation have made the term "minimally invasive" truly applicable to hand surgery. OAD's Hand Care Associates' MDs Anup Bendre, Thomas Kiesler, Mary Ling, John Showalter and Richard Thomas, believe the following three procedures are notably minimally invasive:

- Carpal tunnel release
- Wrist arthroscopy
- Fracture fixation

Carpal tunnel release (to relieve hand numbness and pain) can be performed through incisions that are one-quarter to one-eighth the size of previous techniques, thus minimizing pain and shortening recovery periods. Wrist arthroscopy uses scopes and instruments less than 3mm in diameter to visualize and correct injuries of the wrist that previously required extensive and disruptive dissection.

Perhaps the most dramatic advancement is in the field of fracture care, according to Dr. Showalter of OAD's Hand Care Associates. In the past, stable surgical fixation of small-bone fractures of the wrist required extensive exposure through incisions that demanded prolonged postoperative immobilization, resulting in significant stiffness and delayed recovery.

Today, novel instruments and fluo-

roscopic imaging techniques allow these small bones to be stabilized securely with compression screws through a single incision less than one-quarter inch in length. Protective ligaments are spared, and exercises can begin as soon as 2-3 days after the operation.

Undoubtedly, even the care of small structures of the hand and wrist can benefit from advances in minimally invasive surgery.

## Who is a Candidate for MIS?

Anyone who is a candidate for a hip or knee replacement because of severe osteoarthritis or rheumatoid arthritis, in addition to patients evaluated for various spine/neck or hand/upper extremity conditions, can be considered for minimally invasive procedures. However, although the innovative techniques that have been developed for MIS are constantly evolving, thereby allowing more patients to elect to have minimally invasive surgery, those patients with serious medical conditions may not be ideal surgical candidates. Therefore, patients should consult an OAD Orthopaedics' physician to determine if an MIS procedure is an appropriate option for them.

## Benefits/Advantages of MIS

Compared to traditional orthopaedic surgery, the benefits/advantages of MIS include:

- Less trauma to the body: smaller incision, reduced blood loss and less scarring
- Reduced postoperative pain
- A shorter hospital stay
- Faster recovery; more rapid return to function and activities of daily living

## Risks of MIS

As with any surgical procedure, there are inherent risks. Fortunately, for orthopaedic procedures, the incidence of risk complications is very low regardless of the type of surgery performed. Risks associated with surgery, such as anesthetic complications, nerve damage, wound healing, fracture, infection, and

deep venous thrombosis (blood clot), are further reduced with minimally invasive techniques.

Given the fact that MIS is not only new, but more challenging than traditional procedures, it is important to consult an orthopaedic surgeon who is extensively trained in MIS. The OAD Orthopaedics' specialists performing MIS have endured tremendous training to master the procedures' necessary skills.

## Latest Technology

The physicians at OAD Orthopaedics are currently using the latest technology to offer MIS to their patients. To optimize the success of the minimally invasive techniques, OAD Orthopaedics' Dr. David Mochel is utilizing surgical computerized navigation for minimally invasive total joint replacements. He performed the first surgically navigated total knee replacement at Central DuPage and Edward Hospitals, in addition to Central DuPage Hospital's first computer-assisted total hip replacement surgery. Computerized navigation ensures the accurate alignment of all knee and hip implants and may maximize the longevity of the hip or knee replacement as well.

*This article was submitted by OAD Orthopaedics, a multi-subspecialty orthopaedic practice, with convenient office locations in Warrenville, Wheaton, Carol Stream, Naperville, Bartlett and Winfield. OAD Orthopaedics' specialists provide surgical and non-surgical expertise in all areas of orthopaedics including shoulder, hip & knee problems; sports medicine; total joint replacement, reconstruction, & revision; hand/upper extremity; spine and neck conditions; physiatry; foot and ankle/podiatry; and workers' compensation. In addition, on-site diagnostic testing/MRI, physical, occupational, industrial and specialized hand therapy services, and industrial health services are available at OAD Orthopaedics' state-of-the-art facilities. For appointments and information, call (630) 225-BONE (2663), and visit online at [www.OADortho.com](http://www.OADortho.com)*

As featured in...

